

2012 BPA Initial Rate Proposal

**Power Loads and Resources Study
Documentation**

November 2010

BP-12-E-BPA-03A



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LOADS AND RESOURCES STUDY DOCUMENTATION

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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
CanEnt	Canadian Entitlement
CBFWA	Columbia Basin Fish & Wildlife Authority
CCCT	combined-cycle combustion turbine
CDD	cooling degree day(s)
CDQ	Contract Demand Quantity
cfs	cubic feet per second
CGS	Columbia Generating Station
CHJ	Chief Joseph
CHWM	Contract High Water Mark
C/N/X	Capacity Energy Exchange
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)

DFS	Diurnal Flattening Service
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
FORS	Forced Outage Reserve Service
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
GPU	Generating Public Utility
GRI	Gas Research Institute
GRSPs	General Rate Schedule Provisions
GSP	Generation System Peak
GSU	generator step-up transformers
GTA	General Transfer Agreement
GWh	gigawatthour
HDD	heating degree day(s)
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
IRM	Irrigation Rate Mitigation
IRP	Integrated Resource Plan
ISD	incremental standard deviation
ISO	Independent System Operator
JDA	John Day
JOE	Joint Operating Entity
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)
NGP	Non-Generating Public Utility

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
RHWM	Rate Period High Water Mark

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
RR	Resource Replacement (rate)
RSS	Resource Support Services
RT1SC	RHWM Tier 1 System Capability
RTF	Regional Technical Forum
RTO	Regional Transmission Operator
SCADA	Supervisory Control and Data Acquisition
SCCT	single-cycle combustion turbine
SCS	Secondary Crediting Service
Slice	Slice of the System (product)
SME	subject matter expert
S/N/X	Seasonal Energy Exchange
S/Pwr/X	Seasonal Power Exchange
SRCA	Shared Rate Cost Allocator
SRP	Shared Rate Plan
T1SFCO	Tier 1 System Firm Critical Output
Tcf	trillion cubic feet
TCMS	Transmission Curtailment Management Service
TDA	The Dalles
TOCA	Tier 1 Cost Allocator
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
TSS	Transmission Scheduling Service
UAI	Unauthorized Increase
UDC	utility distribution company
ULC	Unanticipated Load Charge
URC	Upper Rule Curve
USFWS	U.S. Fish and Wildlife Service
VERBS	Variable Energy Resources Balancing Service (rate)
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.	DOCUMENTATION FOR THE LOADS AND RESOURCES STUDY	1
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Table 1.1.1
Load Following Service Customers

Albion, City of	Flathead Elec Coop	Plummer, City of
Alder Mutual	Forest Grove, City of	Port Angeles, City of
Ashland, City of	Glacier Elec Coop	Port of Seattle
Asotin County PUD #1	Grant County PUD #2	Puget Sound Naval Shipyard (Bremerton)
Bandon, City of	Harney Elec Coop	Raft River Rural Elec Coop
Benton REA	Hermiston, City of	Ravalli Elec Coop
Big Bend Elec Coop	Heyburn, City of	Richland, City of
Blachly-Lane Electric Coop	Hood River Elec Coop	Riverside Elec Coop
Blaine, City of	Idaho County L & P	Rupert, City of
Bonniers Ferry, City of	Inland P & L	Salem Elec Coop
Burley, City of	Kittitas County PUD #1	Salmon River Elec Coop
Canby, City of	Kootenai Electric Coop	Skamania County PUD #1
Cascade Locks, City of	Lakeview L & P (WA)	Soda Springs, City of
Central Lincoln	Lane Elec Coop	South Side Elec
Central MT Elec Power Coop	Lewis County PUD #1	Springfield Utiltiy Board
Centralia, City of	Lincoln Elec Coop	Steilacoom, Town of
Cheney, City of	Lost River Elec Coop	Sumas, Town of
Chewelah, City of	Lower Valley P & L	Surprise Valley Elec Coop
Clallam County PUD #1	Mason County PUD #1	Tanner Elec Coop
Clearwater Power	Mason County PUD #3	Tillamook PUD #1
Columbia Basin Elec Coop	McCleary, City of	Troy, City of
Columbia Power Coop	McMinnville, City of	U.S. Bureau of Reclamation (Roza)
Columbia REA	Midstate Elec Coop	U.S. Naval Station, Everett (Jim Creek)
Columbia River PUD	Milton Freewater, City of	U.S. Naval Submarine Base,(Bangor)
Consol Irrig Dist #19	Milton, Town of	Umatilla Elec Coop
Consumer's Power	Minidoka, City of	Umpqua Indian Utility Cooperative
Coos-Curry Electric Coop	Mission Valley Power	United Electric Coop
Coulee Dam, City of	Missoula Elec Coop	USBIA Wapato
Declo, City of	Modern Elec Coop	USDOE-Albany
Douglas Electric Coop	Monmouth, City of	USDOE-Richland
Drain, City of	Nespelem Valley Elec Coop	Vera Irrigation District
East End Mutual Electric	Northern Lights	Vigilante Elec Coop
Eatonville, City of	Northern Wasco County PUD	Wahkiakum County PUD #1

Table 1.1.1 - continued
Load Following Service Customers

Ellensburg, City of	Ohop Mutual Light Company	Wasco Elec Coop
Elmhurst Mutual P & L	Okanogan County Elec Coop	Weiser, City of
Energy Northwest	Orcas P & L	Wells Rural Elec Co
Fairchild AFB	Oregon Trail Coop	West Oregon Elec Coop
Fall River Rural Elec Coop	Parkland L & W	Whatcom County PUD #1
Farmers Elec Coop	Peninsula Light Company	Yakama Power
Ferry County PUD #1		

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Table 1.1.2
Slice Service Customers

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

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Table 1.1.3
USBR Obligation Customers

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

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Table 1.2.1
BPA Power Sale Contracts
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Federal Entities															
1 Federal Entities	113	137	155	155	139	131	122	122	113	112	123	126	126	113	128
2 Total Federal Entities	113	137	155	155	139	131	122	122	113	112	123	126	126	113	128
U.S. Bureau of Reclamation															
3 U.S. Bureau of Reclamation	116	24	24	7	10	60	246	246	333	336	396	294	294	272	177
4 Total U.S. Bureau of Reclamation	116	24	24	7	10	60	246	246	333	336	396	294	294	272	177
Direct Service Industry															
5 Direct Service Industry	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340
6 Total Direct Service Industry	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340
Public Entities															
Load Following 2012 PSC															
7 Load Following 2012 PSC	2,822	3,234	3,698	3,642	3,393	3,087	2,956	2,956	2,907	3,003	3,221	3,118	3,118	2,902	3,165
8 Total Load Following 2012 PSC	2,822	3,234	3,698	3,642	3,393	3,087	2,956	2,956	2,907	3,003	3,221	3,118	3,118	2,902	3,165
Block Only 2012 PSC															
9 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Total Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slice 2012 PSC															
11 Slice 2012 PSC	1,690	2,111	2,028	2,053	1,827	1,728	1,481	1,370	2,484	2,040	1,729	2,051	1,832	1,859	1,910
12 Total Slice 2012 PSC	1,690	2,111	2,028	2,053	1,827	1,728	1,481	1,370	2,484	2,040	1,729	2,051	1,832	1,859	1,910
Slice Block 2012 PSC															
13 Slice Block 2012 PSC	1,885	2,145	2,331	2,136	1,978	1,888	1,762	1,762	1,685	1,670	1,716	1,692	1,692	1,643	1,878
14 Total Slice Block 2012 PSC	1,885	2,145	2,331	2,136	1,978	1,888	1,762	1,762	1,685	1,670	1,716	1,692	1,692	1,643	1,878
Investor-Owned Entities															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Total Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Entities															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Sales Contracts															
19 Federal Entities	113	137	155	155	139	131	122	122	113	112	123	126	126	113	128
20 U.S. Bureau of Reclamation	116	24	24	7	10	60	246	246	333	336	396	294	294	272	177
21 Direct Service Industry	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340
22 Public Entities	6,396	7,490	8,057	7,831	7,198	6,702	6,199	6,088	7,075	6,713	6,665	6,861	6,642	6,405	6,954
23 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Total Power Sales Contracts	6,965	7,991	8,576	8,332	7,688	7,233	6,907	6,796	7,861	7,501	7,524	7,621	7,402	7,130	7,599

Table 1.2.1 - continued
BPA Power Sale Contracts
PNW Loads and Resource Study
2012 - 2013 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Federal Entities															
1 Federal Entities	115	139	158	156	145	132	123	123	114	113	124	127	127	114	130
2 Total Federal Entities	115	139	158	156	145	132	123	123	114	113	124	127	127	114	130
U.S. Bureau of Reclamation															
3 U.S. Bureau of Reclamation	116	24	24	7	10	60	246	246	333	336	396	294	294	272	177
4 Total U.S. Bureau of Reclamation	116	24	24	7	10	60	246	246	333	336	396	294	294	272	177
Direct Service Industry															
5 Direct Service Industry	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340
6 Total Direct Service Industry	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340
Public Entities															
Load Following 2012 PSC															
7 Load Following 2012 PSC	2,864	3,277	3,742	3,694	3,525	3,136	3,003	3,003	2,954	3,051	3,270	3,166	3,166	2,948	3,218
8 Total Load Following 2012 PSC	2,864	3,277	3,742	3,694	3,525	3,136	3,003	3,003	2,954	3,051	3,270	3,166	3,166	2,948	3,218
Block Only 2012 PSC															
9 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Total Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slice 2012 PSC															
11 Slice 2012 PSC	1,692	2,110	2,026	2,054	1,830	1,733	1,486	1,375	2,307	1,767	1,707	2,050	1,832	1,859	1,872
12 Total Slice 2012 PSC	1,692	2,110	2,026	2,054	1,830	1,733	1,486	1,375	2,307	1,767	1,707	2,050	1,832	1,859	1,872
Slice Block 2012 PSC															
13 Slice Block 2012 PSC	1,739	1,979	2,151	2,183	2,169	1,930	1,802	1,802	1,723	1,707	1,754	1,729	1,729	1,680	1,877
14 Total Slice Block 2012 PSC	1,739	1,979	2,151	2,183	2,169	1,930	1,802	1,802	1,723	1,707	1,754	1,729	1,729	1,680	1,877
Investor-Owned Entities															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Total Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Entities															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Sales Contracts															
19 Federal Entities	115	139	158	156	145	132	123	123	114	113	124	127	127	114	130
20 U.S. Bureau of Reclamation	116	24	24	7	10	60	246	246	333	336	396	294	294	272	177
21 Direct Service Industry	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340
22 Public Entities	6,294	7,366	7,919	7,931	7,525	6,799	6,290	6,179	6,983	6,526	6,732	6,946	6,727	6,486	6,968
23 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Total Power Sales Contracts	6,865	7,869	8,441	8,434	8,021	7,332	7,000	6,889	7,770	7,316	7,592	7,707	7,488	7,212	7,616

Table 1.2.2
BPA Power Sale Contracts
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal Entities															
1 Federal Entities	51,330	57,109	63,703	65,098	57,158	58,323	25,273	27,379	49,839	49,838	54,745	27,782	29,919	48,184	665,679
2 Total Federal Entities	51,330	57,109	63,703	65,098	57,158	58,323	25,273	27,379	49,839	49,838	54,745	27,782	29,919	48,184	665,679
U.S. Bureau of Reclamation															
3 U.S. Bureau of Reclamation	24,885	3,266	2,013	2,095	4,369	12,925	34,995	37,899	104,956	83,787	99,753	33,740	36,335	51,382	532,401
4 Total U.S. Bureau of Reclamation	24,885	3,266	2,013	2,095	4,369	12,925	34,995	37,899	104,956	83,787	99,753	33,740	36,335	51,382	532,401
Direct Service Industry															
5 Direct Service Industry	141,440	136,000	141,440	136,000	135,680	146,880	65,600	70,720	141,120	141,440	136,320	70,400	76,160	130,880	1,670,080
6 Total Direct Service Industry	141,440	136,000	141,440	136,000	135,680	146,880	65,600	70,720	141,120	141,440	136,320	70,400	76,160	130,880	1,670,080
Public Entities															
Load Following 2012 PSC															
7 Load Following 2012 PSC	1,278,313	1,369,398	1,565,494	1,540,395	1,411,889	1,392,318	612,289	663,313	1,280,195	1,327,646	1,415,774	689,773	742,833	1,232,782	16,522,411
8 Total Load Following 2012 PSC	1,278,313	1,369,398	1,565,494	1,540,395	1,411,889	1,392,318	612,289	663,313	1,280,195	1,327,646	1,415,774	689,773	742,833	1,232,782	16,522,411
Block Only 2012 PSC															
9 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Total Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slice 2012 PSC															
11 Slice 2012 PSC	795,349	934,289	919,803	930,932	783,559	782,489	318,767	290,521	1,175,107	938,735	807,987	497,943	450,066	836,131	10,461,677
12 Total Slice 2012 PSC	795,349	934,289	919,803	930,932	783,559	782,489	318,767	290,521	1,175,107	938,735	807,987	497,943	450,066	836,131	10,461,677
Slice Block 2012 PSC															
13 Slice Block 2012 PSC	783,992	858,103	969,645	854,347	791,340	815,428	338,399	366,599	701,053	694,774	686,396	351,875	378,942	631,026	9,221,917
14 Total Slice Block 2012 PSC	783,992	858,103	969,645	854,347	791,340	815,428	338,399	366,599	701,053	694,774	686,396	351,875	378,942	631,026	9,221,917
Investor-Owned Entities															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Total Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Entities															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Sales Contracts															
19 Federal Entities	51,330	57,109	63,703	65,098	57,158	58,323	25,273	27,379	49,839	49,838	54,745	27,782	29,919	48,184	665,679
20 U.S. Bureau of Reclamation	24,885	3,266	2,013	2,095	4,369	12,925	34,995	37,899	104,956	83,787	99,753	33,740	36,335	51,382	532,401
21 Direct Service Industry	141,440	136,000	141,440	136,000	135,680	146,880	65,600	70,720	141,120	141,440	136,320	70,400	76,160	130,880	1,670,080
22 Public Entities	2,857,654	3,161,789	3,454,942	3,325,674	2,986,788	2,990,235	1,269,454	1,320,432	3,156,355	2,961,155	2,910,156	1,539,592	1,571,841	2,699,939	36,206,006
23 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Total Power Sales Contracts	3,075,309	3,358,165	3,662,098	3,528,866	3,183,996	3,208,362	1,395,322	1,456,431	3,452,270	3,236,221	3,200,974	1,671,513	1,714,255	2,930,385	39,074,166

Table 1.2.2 - continued
BPA Power Sale Contracts - continued
PNW Loads and Resource Study
2012 - 2013 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal Entities															
1 Federal Entities	52,036	58,061	67,277	68,108	57,629	58,977	26,503	26,503	50,372	50,571	55,073	28,039	30,196	48,697	678,042
2 Total Federal Entities	52,036	58,061	67,277	68,108	57,629	58,977	26,503	26,503	50,372	50,571	55,073	28,039	30,196	48,697	678,042
U.S. Bureau of Reclamation															
3 U.S. Bureau of Reclamation	24,663	3,266	2,319	2,179	4,216	13,124	36,049	36,049	104,943	84,240	99,275	33,724	36,319	51,373	531,740
4 Total U.S. Bureau of Reclamation	24,663	3,266	2,319	2,179	4,216	13,124	36,049	36,049	104,943	84,240	99,275	33,724	36,319	51,373	531,740
Direct Service Industry															
5 Direct Service Industry	146,560	136,000	136,320	141,120	130,560	141,760	70,720	70,720	141,120	136,320	141,440	70,400	76,160	130,880	1,670,080
6 Total Direct Service Industry	146,560	136,000	136,320	141,120	130,560	141,760	70,720	70,720	141,120	136,320	141,440	70,400	76,160	130,880	1,670,080
Public Entities															
Load Following 2012 PSC															
7 Load Following 2012 PSC	1,307,430	1,388,227	1,620,328	1,625,169	1,415,102	1,404,637	653,393	653,393	1,301,534	1,339,921	1,448,797	700,684	754,583	1,253,022	16,866,219
8 Total Load Following 2012 PSC	1,307,430	1,388,227	1,620,328	1,625,169	1,415,102	1,404,637	653,393	653,393	1,301,534	1,339,921	1,448,797	700,684	754,583	1,253,022	16,866,219
Block Only 2012 PSC															
9 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Total Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slice 2012 PSC															
11 Slice 2012 PSC	792,075	931,845	914,751	929,326	755,906	780,114	321,742	289,833	1,060,054	815,988	797,606	493,637	441,807	826,036	10,150,721
12 Total Slice 2012 PSC	792,075	931,845	914,751	929,326	755,906	780,114	321,742	289,833	1,060,054	815,988	797,606	493,637	441,807	826,036	10,150,721
Slice Block 2012 PSC															
13 Slice Block 2012 PSC	751,128	791,692	860,247	908,303	833,065	802,758	374,796	374,796	716,745	682,968	729,694	359,698	387,367	645,098	9,218,355
14 Total Slice Block 2012 PSC	751,128	791,692	860,247	908,303	833,065	802,758	374,796	374,796	716,745	682,968	729,694	359,698	387,367	645,098	9,218,355
Investor-Owned Entities															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Total Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Entities															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Sales Contracts															
19 Federal Entities	52,036	58,061	67,277	68,108	57,629	58,977	26,503	26,503	50,372	50,571	55,073	28,039	30,196	48,697	678,042
20 U.S. Bureau of Reclamation	24,663	3,266	2,319	2,179	4,216	13,124	36,049	36,049	104,943	84,240	99,275	33,724	36,319	51,373	531,740
21 Direct Service Industry	146,560	136,000	136,320	141,120	130,560	141,760	70,720	70,720	141,120	136,320	141,440	70,400	76,160	130,880	1,670,080
22 Public Entities	2,850,632	3,111,764	3,395,326	3,462,798	3,004,073	2,987,510	1,349,931	1,318,023	3,078,333	2,838,877	2,976,097	1,554,019	1,583,756	2,724,156	36,235,295
23 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Total Power Sales Contracts	3,073,891	3,309,092	3,601,242	3,674,205	3,196,477	3,201,371	1,483,204	1,451,295	3,374,768	3,110,008	3,271,885	1,686,183	1,726,431	2,955,106	39,115,157

Table 1.2.3
BPA Power Sale Contracts
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal Entities															
1 Federal Entities	32,851	41,726	51,795	50,075	39,664	39,025	18,364	16,615	34,191	31,019	36,940	17,444	18,362	33,275	461,345
2 Total Federal Entities	32,851	41,726	51,795	50,075	39,664	39,025	18,364	16,615	34,191	31,019	36,940	17,444	18,362	33,275	461,345
U.S. Bureau of Reclamation															
3 U.S. Bureau of Reclamation	61,057	14,049	16,894	2,824	2,932	32,017	54,833	49,619	142,484	158,178	194,659	72,387	76,197	144,239	1,022,368
4 Total U.S. Bureau of Reclamation	61,057	14,049	16,894	2,824	2,932	32,017	54,833	49,619	142,484	158,178	194,659	72,387	76,197	144,239	1,022,368
Direct Service Industry															
5 Direct Service Industry	111,520	109,140	111,520	116,960	100,480	105,740	56,800	51,680	111,840	103,360	116,640	52,000	54,400	113,920	1,316,000
6 Total Direct Service Industry	111,520	109,140	111,520	116,960	100,480	105,740	56,800	51,680	111,840	103,360	116,640	52,000	54,400	113,920	1,316,000
Public Entities															
Load Following 2012 PSC															
7 Load Following 2012 PSC	821,355	962,193	1,183,291	1,161,358	949,503	901,138	447,634	405,002	882,372	834,737	980,396	432,366	455,122	856,710	11,273,174
8 Total Load Following 2012 PSC	821,355	962,193	1,183,291	1,161,358	949,503	901,138	447,634	405,002	882,372	834,737	980,396	432,366	455,122	856,710	11,273,174
Block Only 2012 PSC															
9 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Total Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slice 2012 PSC															
11 Slice 2012 PSC	461,781	587,843	588,832	596,628	488,029	501,106	214,072	202,850	672,625	529,714	478,084	240,330	253,644	502,686	6,318,224
12 Total Slice 2012 PSC	461,781	587,843	588,832	596,628	488,029	501,106	214,072	202,850	672,625	529,714	478,084	240,330	253,644	502,686	6,318,224
Slice Block 2012 PSC															
13 Slice Block 2012 PSC	618,148	688,627	764,528	734,739	585,591	587,032	296,099	267,899	552,753	507,720	590,300	257,139	270,673	552,148	7,273,396
14 Total Slice Block 2012 PSC	618,148	688,627	764,528	734,739	585,591	587,032	296,099	267,899	552,753	507,720	590,300	257,139	270,673	552,148	7,273,396
Investor-Owned Entities															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Total Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Entities															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Sales Contracts															
19 Federal Entities	32,851	41,726	51,795	50,075	39,664	39,025	18,364	16,615	34,191	31,019	36,940	17,444	18,362	33,275	461,345
20 U.S. Bureau of Reclamation	61,057	14,049	16,894	2,824	2,932	32,017	54,833	49,619	142,484	158,178	194,659	72,387	76,197	144,239	1,022,368
21 Direct Service Industry	111,520	109,140	111,520	116,960	100,480	105,740	56,800	51,680	111,840	103,360	116,640	52,000	54,400	113,920	1,316,000
22 Public Entities	1,901,283	2,238,664	2,536,651	2,492,724	2,023,123	1,989,276	957,805	875,751	2,107,750	1,872,171	2,048,780	929,835	979,438	1,911,544	24,864,795
23 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Total Power Sales Contracts	2,106,711	2,403,578	2,716,859	2,662,583	2,166,199	2,166,058	1,087,802	993,665	2,396,265	2,164,727	2,397,019	1,071,665	1,128,397	2,202,978	27,664,507

Table 1.2.3 - continued
BPA Power Sale Contracts
PNW Loads and Resource Study
2012 - 2013 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal Entities															
1 Federal Entities	33,596	42,432	49,943	48,218	39,890	39,240	17,748	17,748	34,523	31,148	37,454	17,594	18,520	33,615	461,669
2 Total Federal Entities	33,596	42,432	49,943	48,218	39,890	39,240	17,748	17,748	34,523	31,148	37,454	17,594	18,520	33,615	461,669
U.S. Bureau of Reclamation															
3 U.S. Bureau of Reclamation	61,279	14,049	15,842	2,693	2,819	31,817	52,623	52,624	142,498	157,725	195,137	72,402	76,213	144,248	1,021,970
4 Total U.S. Bureau of Reclamation	61,279	14,049	15,842	2,693	2,819	31,817	52,623	52,624	142,498	157,725	195,137	72,402	76,213	144,248	1,021,970
Direct Service Industry															
5 Direct Service Industry	106,400	109,140	116,640	111,840	97,920	110,860	51,680	51,680	111,840	108,480	111,520	52,000	54,400	113,920	1,308,320
6 Total Direct Service Industry	106,400	109,140	116,640	111,840	97,920	110,860	51,680	51,680	111,840	108,480	111,520	52,000	54,400	113,920	1,308,320
Public Entities															
Load Following 2012 PSC															
7 Load Following 2012 PSC	823,023	974,491	1,163,760	1,123,230	954,020	925,701	427,599	427,599	895,920	857,001	984,222	438,721	461,811	869,196	11,326,293
8 Total Load Following 2012 PSC	823,023	974,491	1,163,760	1,123,230	954,020	925,701	427,599	427,599	895,920	857,001	984,222	438,721	461,811	869,196	11,326,293
Block Only 2012 PSC															
9 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Total Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slice 2012 PSC															
11 Slice 2012 PSC	466,662	589,332	592,680	598,581	474,129	507,420	213,155	205,072	656,300	456,471	472,747	244,321	261,668	512,237	6,250,776
12 Total Slice 2012 PSC	466,662	589,332	592,680	598,581	474,129	507,420	213,155	205,072	656,300	456,471	472,747	244,321	261,668	512,237	6,250,776
Slice Block 2012 PSC															
13 Slice Block 2012 PSC	542,481	635,333	739,813	716,162	624,799	631,014	273,890	273,890	565,126	546,375	575,335	262,856	276,691	564,460	7,228,224
14 Total Slice Block 2012 PSC	542,481	635,333	739,813	716,162	624,799	631,014	273,890	273,890	565,126	546,375	575,335	262,856	276,691	564,460	7,228,224
Investor-Owned Entities															
15 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Total Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Entities															
17 Other PNW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Sales Contracts															
19 Federal Entities	33,596	42,432	49,943	48,218	39,890	39,240	17,748	17,748	34,523	31,148	37,454	17,594	18,520	33,615	461,669
20 U.S. Bureau of Reclamation	61,279	14,049	15,842	2,693	2,819	31,817	52,623	52,624	142,498	157,725	195,137	72,402	76,213	144,248	1,021,970
21 Direct Service Industry	106,400	109,140	116,640	111,840	97,920	110,860	51,680	51,680	111,840	108,480	111,520	52,000	54,400	113,920	1,308,320
22 Public Entities	1,832,166	2,199,156	2,496,253	2,437,973	2,052,947	2,064,135	914,644	906,561	2,117,346	1,859,847	2,032,304	945,897	1,000,170	1,945,893	24,805,294
23 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Total Power Sales Contracts	2,033,441	2,364,777	2,678,677	2,600,724	2,193,577	2,246,052	1,036,696	1,028,613	2,406,207	2,157,200	2,376,415	1,087,894	1,149,304	2,237,677	27,597,253

Table 1.2.4
BPA Power Sale Contracts - Customer System Peaks
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
1937 Water Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Customer System Peak (MW)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal Entities															
1 Federal Entities	149	157	177	195	170	157	149	149	125	128	146	149	149	132	202
2 Total Federal Entities	149	157	177	195	170	157	149	149	125	128	146	149	149	132	202
Public Entities															
Load Following 2012 PSC															
3 Load Following 2012 PSC	3,938	4,067	4,677	4,774	4,535	4,057	3,725	3,725	3,210	3,342	3,840	3,689	3,689	3,367	5,359
4 Total Load Following 2012 PS	3,938	4,067	4,677	4,774	4,535	4,057	3,725	3,725	3,210	3,342	3,840	3,689	3,689	3,367	5,359
Block Only 2012 PSC															
5 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Total Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slice Block 2012 PSC															
7 Slice Block 2012 PSC	1,885	2,145	2,331	2,136	1,978	1,888	1,762	1,762	1,685	1,670	1,716	1,692	1,692	1,643	2,393
8 Total Slice Block 2012 PSC	1,885	2,145	2,331	2,136	1,978	1,888	1,762	1,762	1,685	1,670	1,716	1,692	1,692	1,643	2,393

Table 1.2.4 - continued
BPA Power Sale Contracts - Customer System Peaks
PNW Loads and Resource Study
2012 - 2013 Fiscal Years
1937 Water Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Customer System Peak (MW)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Federal Entities															
1 Federal Entities	151	159	180	196	180	158	150	150	126	128	146	149	149	132	202
2 Total Federal Entities	151	159	180	196	180	158	150	150	126	128	146	149	149	132	202
Public Entities															
Load Following 2012 PSC															
3 Load Following 2012 PSC	3,994	4,118	4,732	4,839	4,643	4,119	3,784	3,784	3,265	3,399	3,903	3,750	3,750	3,417	5,425
4 Total Load Following 2012 PS	3,994	4,118	4,732	4,839	4,643	4,119	3,784	3,784	3,265	3,399	3,903	3,750	3,750	3,417	5,425
Block Only 2012 PSC															
5 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Total Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slice Block 2012 PSC															
7 Slice Block 2012 PSC	1,739	1,979	2,151	2,183	2,169	1,930	1,802	1,802	1,723	1,707	1,754	1,729	1,729	1,680	2,283
8 Total Slice Block 2012 PSC	1,739	1,979	2,151	2,183	2,169	1,930	1,802	1,802	1,723	1,707	1,754	1,729	1,729	1,680	2,283

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Table 1.3.1
Table A-2: Federal Exports
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Exports East of Continental Divide-															
1 BPA to Other Entities	5.1	5.2	6.1	5.4	5.3	4.6	3.4	3.4	4.9	5.3	6.6	5.8	5.8	4.6	5.2
2 Total Exports to ECD	5.1	5.2	6.1	5.4	5.3	4.6	3.4	3.4	4.9	5.3	6.6	5.8	5.8	4.6	5.2
-Exports to Pacific Southwest-															
3 BPA to Other Entities	25	20	17	18	18	24	35	34	28	36	37	42	40	28	27
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	2.7	2.7	2.7	2.7	2.5	2.8	0	0	11	11	11	9.5	4.8
7 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	26	26	0	0	0	0	4.3
8 BPA NW-SW Intertie Losses	1.1	0.7	0.6	0.6	0.6	0.8	1.1	1.1	1.7	1.9	1.6	1.7	1.7	1.2	1.1
9 Total Exports To PSW	36	24	20	21	21	27	39	38	58	66	54	59	57	43	39
-Exports to Inland Southwest-															
10 BPA to SPP PwrS	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
11 Total Exports To ISW	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
-Exports to Canada-															
12 BPA to BCHP CanEnt	526	526	526	526	526	526	526	526	526	526	526	504	504	504	522
13 Total Exports To Canada	526	526	526	526	526	526	526	526	526	526	526	504	504	504	522
-Exports to Other Entities-															
14 Total Exports To Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Exports-															
15 Federal Entities	612	600	597	597	597	603	643	642	664	673	661	644	643	627	627
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
19 Total Exports.	612	600	597	597	597	603	643	642	664	673	661	644	643	627	627

Table 1.3.1 - continued
Table A-2: Federal Exports
PNW Loads and Resource Study
2012 - 2013 Fiscal Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Exports East of Continental Divide-															
1 BPA to Other Entities	5.1	5.2	6.1	5.5	5.3	4.6	3.4	3.4	5	5.3	6.6	5.8	5.8	4.6	5.2
2 Total Exports to ECD	5.1	5.2	6.1	5.5	5.3	4.6	3.4	3.4	5	5.3	6.6	5.8	5.8	4.6	5.2
-Exports to Pacific Southwest-															
3 BPA to Other Entities	25	20	17	18	18	24	36	34	28	36	37	42	40	28	27
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	11	2.8	2.5	2.8	2.7	2.5	2.8	2.8	0	0	11	11	10	10	4.9
7 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	26	26	0	0	0	0	4.3
8 BPA NW-SW Intertie Losses	1.1	0.7	0.6	0.6	0.6	0.8	1.1	1.1	1.7	1.9	1.6	1.7	1.6	1.3	1.1
9 Total Exports To PSW	37	24	20	21	21	27	39	38	58	66	54	59	57	43	39
-Exports to Inland Southwest-															
10 BPA to SPP PwrS	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
11 Total Exports To ISW	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
-Exports to Canada-															
12 BPA to BCHP CanEnt	504	504	504	504	504	504	504	504	504	504	504	506	506	506	505
13 Total Exports To Canada	504	504	504	504	504	504	504	504	504	504	504	506	506	506	505
-Exports to Other Entities-															
14 Total Exports To Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Exports-															
15 Federal Entities	592	579	576	576	576	581	622	621	643	651	640	645	643	628	609
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
19 Total Exports.	592	579	576	576	576	581	622	621	643	651	640	645	643	628	609

Table 1.3.2
Table A-2: Federal Exports
PNW Loads and Resource Study
2011 - 2012 Fiscal Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Exports East of Continental Divide-															
1 BPA to Other Entities	2326	2222	2621	2403	2146	1936	727	727	2283	2381	3106	1345	1435	2079	27735
2 Total Exports to ECD	2326	2222	2621	2403	2146	1936	727	727	2283	2381	3106	1345	1435	2079	27735
-Exports to Pacific Southwest-															
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	7550	1983	1980	1980	1890	1977	903	990	0	0	7920	3960	4320	6840	42292
7 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	12420	11340	0	0	0	0	23760
8 BPA NW-SW Intertie Losses	226	59	59	59	57	59	27	30	422	388	337	167	181	302	2375
9 Total Exports To PSW	7776	2042	2039	2039	1947	2037	930	1020	14501	13334	11575	5733	6214	10353	81540
-Exports to Inland Southwest-															
10 BPA to SPP PwrS	18720	18000	18720	18000	18000	19440	14400	15600	31200	31200	30000	15600	16800	28800	294480
11 Total Exports To ISW	18720	18000	18720	18000	18000	19440	14400	15600	31200	31200	30000	15600	16800	28800	294480
-Exports to Canada-															
12 BPA to BCHP CanEnt	391270	379174	391270	391270	366026	390744	189324	189324	391270	378648	391270	181620	193728	363240	4588176
13 Total Exports To Canada	391270	379174	391270	391270	366026	390744	189324	189324	391270	378648	391270	181620	193728	363240	4588176
-Exports to Other Entities-															
14 Total Exports To Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Exports-															
15 Federal Entities	420092	401438	414650	413712	388119	414156	205380	206670	439254	425563	435951	204298	218177	404472	4991930
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
19 Total Exports.	420092	401438	414650	413712	388119	414156	205380	206670	439254	425563	435951	204298	218177	404472	4991930

Table 1.3.2 - continued
Table A-2: Federal Exports
PNW Loads and Resource Study
2012 - 2013 Fiscal Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Exports East of Continental Divide-															
1 BPA to Other Entities	2326	2222	2621	2447	2072	1936	727	727	2329	2381	3106	1345	1435	2079	27752
2 Total Exports to ECD	2326	2222	2621	2447	2072	1936	727	727	2329	2381	3106	1345	1435	2079	27752
-Exports to Pacific Southwest-															
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	8269	1983	1890	2070	1800	1887	993	990	0	0	8280	3960	3960	7200	43282
7 BPA to RVSD S/Pwr/X	0	0	0	0	0	0	0	0	12420	10800	0	0	0	0	23220
8 BPA NW-SW Intertie Losses	248	59	57	62	54	57	30	30	422	372	348	167	170	312	2388
9 Total Exports To PSW	8517	2042	1947	2132	1854	1944	1023	1020	14501	12778	11946	5733	5843	10724	82003
-Exports to Inland Southwest-															
10 BPA to SPP PwrS	19440	18000	18000	18720	17280	18720	15600	15600	31200	30000	31200	15600	16800	28800	294960
11 Total Exports To ISW	19440	18000	18000	18720	17280	18720	15600	15600	31200	30000	31200	15600	16800	28800	294960
-Exports to Canada-															
12 BPA to BCHP CanEnt	375348	363744	375348	375348	339024	374844	181620	181620	375348	363240	375348	181980	194112	363960	4420884
13 Total Exports To Canada	375348	363744	375348	375348	339024	374844	181620	181620	375348	363240	375348	181980	194112	363960	4420884
-Exports to Other Entities-															
14 Total Exports To Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Exports-															
15 Federal Entities	405631	386009	397916	398647	360230	397443	198969	198966	423379	408399	421600	204658	218190	405563	4825598
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
19 Total Exports.	405631	386009	397916	398647	360230	397443	198969	198966	423379	408399	421600	204658	218190	405563	4825598

Table 1.3.3
Table A-2: Federal Exports
PNW Loads and Resource Study
2011 - 2012 Fiscal Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Exports East of Continental Divide-															
1 BPA to Other Entities	1469	1527	1917	1615	1543	1482	497	497	1363	1435	1805	743	792	1233	17919
2 Total Exports to ECD	1469	1527	1917	1615	1543	1482	497	497	1363	1435	1805	743	792	1233	17919
-Exports to Pacific Southwest-															
3 BPA to Other Entities	18700	14716	12691	13031	12448	17527	12747	12222	21194	26078	27577	15073	15397	19844	239245
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	6768	7344	0	0	0	0	14112
8 BPA NW-SW Intertie Losses	561	441	381	391	373	526	382	367	839	1003	827	452	462	595	7601
9 Total Exports To PSW	19261	15157	13072	13422	12821	18053	13130	12588	28801	34424	28404	15525	15859	20439	260957
-Exports to Inland Southwest-															
10 BPA to SPP PwrS	14760	14445	14760	15480	13320	13995	12600	11400	24600	22800	25800	11400	12000	25200	232560
11 Total Exports To ISW	14760	14445	14760	15480	13320	13995	12600	11400	24600	22800	25800	11400	12000	25200	232560
-Exports to Canada-															
12 BPA to BCHP CanEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Total Exports To Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Exports to Other Entities-															
14 Total Exports To Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Exports-															
15 Federal Entities	35490	31130	29749	30517	27684	33530	26227	24486	54764	58659	56009	27668	28651	46872	511436
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
19 Total Exports.	35490	31130	29749	30517	27684	33530	26227	24486	54764	58659	56009	27668	28651	46872	511436

Table 1.3.3 - continued
Table A-2: Federal Exports
PNW Loads and Resource Study
2012 - 2013 Fiscal Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Exports East of Continental Divide-															
1 BPA to Other Entities	1469	1527	1917	1645	1490	1482	497	497	1391	1435	1805	743	792	1233	17923
2 Total Exports to ECD	1469	1527	1917	1645	1490	1482	497	497	1391	1435	1805	743	792	1233	17923
-Exports to Pacific Southwest-															
3 BPA to Other Entities	18724	14754	12698	13056	12031	17549	12794	12256	21194	26155	27629	15060	15397	19844	239142
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	6768	7632	0	0	0	0	14400
8 BPA NW-SW Intertie Losses	562	443	381	392	361	526	384	368	839	1014	829	452	462	595	7606
9 Total Exports To PSW	19286	15197	13079	13448	12392	18075	13177	12623	28801	34801	28458	15511	15859	20439	261148
-Exports to Inland Southwest-															
10 BPA to SPP PwrS	14040	14445	15480	14760	12960	14715	11400	11400	24600	24000	24600	11400	12000	25200	231000
11 Total Exports To ISW	14040	14445	15480	14760	12960	14715	11400	11400	24600	24000	24600	11400	12000	25200	231000
-Exports to Canada-															
12 BPA to BCHP CanEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Total Exports To Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Exports to Other Entities-															
14 Total Exports To Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Exports-															
15 Federal Entities	34795	31169	30476	29852	26842	34273	25075	24521	54792	60236	54862	27654	28651	46872	510071
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
19 Total Exports.	34795	31169	30476	29852	26842	34273	25075	24521	54792	60236	54862	27654	28651	46872	510071

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2.	RESOURCE FORECASTS	27
2.1	Regulated Hydro	
Table 2.1.1	Federal Regulated Hydro Projects	
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Table 2.1.3	Federal Regulated Hydro Projects	
	Table A-3 - LLH MWHr.....	32

Table 2.1.1
Table A-3: Federal Regulated Hydro Projects
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
1937 Water Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Regulated Hydro Projects-															
1 Albeni Falls	36	20	23	16	14	14	25	23	41	43	38	26	22	26	27
2 Bonneville	440	546	557	569	536	500	323	138	377	298	137	183	139	484	402
3 Chief Joseph	879	1275	1178	1294	1072	916	699	675	1294	987	1030	1380	1178	992	1074
4 Dworshak	51	51	51	51	50	50	51	53	56	300	448	448	409	179	148
5 Grand Coulee	1634	2354	2117	2263	1768	1399	1005	978	1991	1711	1918	2555	2142	1816	1861
6 Hungry Horse	87	92	93	94	93	90	69	28	29	85	122	121	120	119	89
7 Ice Harbor	132	95	141	108	137	175	204	201	332	266	157	120	140	114	166
8 John Day	685	904	895	914	846	805	698	586	972	854	662	731	627	762	802
9 Libby	113	245	173	86	85	84	84	83	495	212	179	182	182	180	177
10 Little Goose	132	97	141	111	124	168	247	306	522	289	155	134	146	124	190
11 Lower Granite	131	98	144	113	127	172	244	315	528	293	104	124	150	132	188
12 Lower Monumental	134	94	142	108	139	178	263	318	528	301	112	80	145	119	188
13 McNary	473	594	587	607	561	512	407	320	546	459	319	354	302	532	490
14 The Dalles	539	704	727	738	687	642	527	399	656	575	442	487	416	606	602
Total Regulated Hydro Projects	5467	7170	6968	7071	6239	5705	4846	4422	8367	6673	5824	6926	6118	6185	6405
-Idle Capacity-															
15 Operational Peaking Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Idle Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Hydro Maintenance-															
16 Federal Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Regulated Hydro w/Enc.-															
17 Federal System	5467	7170	6968	7071	6239	5705	4846	4422	8367	6673	5824	6926	6118	6185	6405
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
21 Total Regulated Hydro w/Enc.	5467	7170	6968	7071	6239	5705	4846	4422	8367	6673	5824	6926	6118	6185	6405

Table 2.1.1 - continued
Table A-3: Federal Regulated Hydro Projects
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Regulated Hydro Projects-															
1 Albeni Falls	36	20	23	16	14	14	25	23	41	43	38	26	22	26	27
2 Bonneville	440	546	557	569	536	500	323	138	377	298	137	183	139	484	402
3 Chief Joseph	879	1275	1178	1294	1072	916	699	675	1294	987	1030	1380	1178	992	1074
4 Dworshak	51	51	51	51	50	50	51	53	56	300	448	448	409	179	148
5 Grand Coulee	1634	2354	2117	2263	1768	1399	1005	978	1991	1711	1918	2555	2142	1816	1861
6 Hungry Horse	87	92	93	94	93	90	69	28	29	85	122	121	120	119	89
7 Ice Harbor	132	95	141	108	137	175	204	201	332	266	157	120	140	114	166
8 John Day	685	904	895	914	846	805	698	586	972	854	662	731	627	762	801
9 Libby	113	245	173	86	85	84	84	83	495	212	179	182	182	180	177
10 Little Goose	132	97	141	111	124	168	247	306	522	289	155	134	146	124	191
11 Lower Granite	131	98	144	113	127	172	244	315	528	293	104	124	150	132	189
12 Lower Monumental	134	94	142	108	139	178	263	318	528	301	112	80	145	119	189
13 McNary	473	594	587	607	561	512	407	320	555	437	319	354	302	532	488
14 The Dalles	539	704	727	738	687	642	527	399	656	575	442	487	416	606	602
Total Regulated Hydro Projects	5467	7170	6968	7071	6239	5705	4846	4422	8376	6651	5824	6926	6118	6185	6404
-Idle Capacity-															
15 Operational Peaking Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Idle Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Hydro Maintenance-															
16 Federal Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Regulated Hydro w/Enc.-															
17 Federal System	5467	7170	6968	7071	6239	5705	4846	4422	8376	6651	5824	6926	6118	6185	6404
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
21 Total Regulated Hydro w/Enc.	5467	7170	6968	7071	6239	5705	4846	4422	8376	6651	5824	6926	6118	6185	6404

Table 2.1.2
Table A-3: Federal Regulated Hydro Projects
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Regulated Hydro Projects															
1 Regulated Hydro Projects	2,721,779	3,312,948	3,308,066	3,374,098	2,808,798	2,709,506	1,103,073	977,906	4,090,724	3,157,666	2,842,182	1,739,457	1,550,233	2,901,295	36,597,729
Total Regulated Hydro w/Enc.	2,721,779	3,312,948	3,308,066	3,374,098	2,808,798	2,709,506	1,103,073	977,906	4,090,724	3,157,666	2,842,182	1,739,457	1,550,233	2,901,295	36,597,729
Idle Capacity															
2 Operational Peaking Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Idle Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro Maintenance															
3 Federal Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Regulated Hydro w/Enc.															
4 Federal System	2,721,779	3,312,948	3,308,066	3,374,098	2,808,798	2,709,506	1,103,073	977,906	4,090,724	3,157,666	2,842,182	1,739,457	1,550,233	2,901,295	36,597,729
5 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Total Regulated Hydro w/Enc.	2,721,779	3,312,948	3,308,066	3,374,098	2,808,798	2,709,506	1,103,073	977,906	4,090,724	3,157,666	2,842,182	1,739,457	1,550,233	2,901,295	36,597,729

Table 2.1.2 - continued
Table A-3: Federal Regulated Hydro Projects
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Regulated Hydro Projects															
1 Regulated Hydro Projects	2,682,748	3,300,321	3,301,374	3,346,143	2,701,359	2,703,217	1,091,961	966,118	3,930,269	3,106,828	2,812,628	1,724,148	1,519,637	2,865,466	36,052,216
Total Regulated Hydro w/Enc.	2,682,748	3,300,321	3,301,374	3,346,143	2,701,359	2,703,217	1,091,961	966,118	3,930,269	3,106,828	2,812,628	1,724,148	1,519,637	2,865,466	36,052,216
Idle Capacity															
2 Operational Peaking Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Idle Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro Maintenance															
3 Federal Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Regulated Hydro w/Enc.															
4 Federal System	2,682,748	3,300,321	3,301,374	3,346,143	2,701,359	2,703,217	1,091,961	966,118	3,930,269	3,106,828	2,812,628	1,724,148	1,519,637	2,865,466	36,052,216
5 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Total Regulated Hydro w/Enc.	2,682,748	3,300,321	3,301,374	3,346,143	2,701,359	2,703,217	1,091,961	966,118	3,930,269	3,106,828	2,812,628	1,724,148	1,519,637	2,865,466	36,052,216

Table 2.1.3
Table A-3: Federal Regulated Hydro Projects
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Regulated Hydro Projects															
1 Regulated Hydro Projects	1,345,446	1,856,406	1,876,126	1,886,950	1,533,894	1,529,309	641,451	614,194	2,134,250	1,646,678	1,490,651	754,083	799,117	1,552,193	19,660,749
Total Regulated Hydro w/Enc.	1,345,446	1,856,406	1,876,126	1,886,950	1,533,894	1,529,309	641,451	614,194	2,134,250	1,646,678	1,490,651	754,083	799,117	1,552,193	19,660,749
Idle Capacity															
2 Operational Peaking Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Idle Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro Maintenance															
3 Federal Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Regulated Hydro w/Enc.															
4 Federal System	1,345,446	1,856,406	1,876,126	1,886,950	1,533,894	1,529,309	641,451	614,194	2,134,250	1,646,678	1,490,651	754,083	799,117	1,552,193	19,660,749
5 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Total Regulated Hydro w/Enc.	1,345,446	1,856,406	1,876,126	1,886,950	1,533,894	1,529,309	641,451	614,194	2,134,250	1,646,678	1,490,651	754,083	799,117	1,552,193	19,660,749

Table 2.1.3 - continued
Table A-3: Federal Regulated Hydro Projects
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
Regulated Hydro Projects															
1 Regulated Hydro Projects	1,384,477	1,869,033	1,882,818	1,914,904	1,491,585	1,535,598	652,563	625,982	2,301,400	1,681,676	1,520,205	769,392	829,714	1,588,022	20,047,369
Total Regulated Hydro w/Enc.	1,384,477	1,869,033	1,882,818	1,914,904	1,491,585	1,535,598	652,563	625,982	2,301,400	1,681,676	1,520,205	769,392	829,714	1,588,022	20,047,369
Idle Capacity															
2 Operational Peaking Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Idle Capacity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro Maintenance															
3 Federal Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Regulated Hydro w/Enc.															
4 Federal System	1,384,477	1,869,033	1,882,818	1,914,904	1,491,585	1,535,598	652,563	625,982	2,301,400	1,681,676	1,520,205	769,392	829,714	1,588,022	20,047,369
5 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 Total Regulated Hydro w/Enc.	1,384,477	1,869,033	1,882,818	1,914,904	1,491,585	1,535,598	652,563	625,982	2,301,400	1,681,676	1,520,205	769,392	829,714	1,588,022	20,047,369

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Table 2.2.1	Federal Independent Hydro Projects	
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Table 2.2.3	Federal Independent Hydro Projects	
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Table 2.2.1
Table A-4: Federal Independent Hydro Projects
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
1937 Water Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Independent Hydro Projects-															
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
Total Independent Hydro w/Enc.	336	297	210	188	186	275	402	438	730	783	496	456	436	421	399
-Total Independent Hydro W/Enc.-															
23 Federal System	336	297	210	188	186	275	402	438	730	783	496	456	436	421	399
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
27 Total Independent Hydro w/Enc.	336	297	210	188	186	275	402	438	730	783	496	456	436	421	399

Table 2.2.1 - continued
Table A-4: Federal Independent Hydro Projects
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Independent Hydro Projects-															
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
Total Independent Hydro w/Enc.	336	297	210	188	186	275	402	438	730	783	496	456	436	421	400
-Total Independent Hydro W/Enc.-															
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
27 Total Independent Hydro w/Enc.	336	297	210	188	186	275	402	438	730	783	496	456	436	421	400

Table 2.2.2
Table A-4: Federal Independent Hydro Projects
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
1937 Water Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWHr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Independent Hydro Projects-															
1 Anderson Ranch	2665	2582	2698	2632	2452	2660	1281	1322	14372	13798	13526	5570	3591	4328	73476
2 Big Cliff	4687	5224	2622	2913	2326	3124	1802	1802	8560	8369	2877	1184	1263	3191	49946
3 Black Canyon	3710	2411	3035	3730	1880	3374	2036	2036	4249	3323	3167	2017	2151	3255	40374
4 Boise River Diversion	176	0	0	0	0	0	0	471	1289	1084	1274	617	658	1020	6589
5 Bonneville Fishway	10192	4900	5096	4900	9800	10584	4704	5096	10192	10192	9800	5096	5488	9800	105840
6 Chandler	2808	4961	5024	3958	3676	5504	2028	2028	3541	3251	1825	1115	1189	1658	42567
7 Cougar	10793	10005	2534	1910	2575	3082	1654	5739	11488	11839	4766	1914	2041	10169	80510
8 Cowlitz Falls	2625	1213	9421	4112	5403	14115	9398	10254	26188	27333	11502	2409	1835	3308	129117
9 Detroit	26259	26124	9974	11046	8620	14099	9615	10337	54964	50907	19744	8061	8434	18990	277174
10 Dexter	4091	6259	1553	1551	1815	1970	2090	3228	6901	6994	2346	2107	2443	1767	45116
11 Foster	4227	2977	4151	1883	4007	8470	3984	3736	8363	9336	2665	1360	1451	4972	61582
12 Green Peter	11608	8241	8658	3932	434	18083	23678	11931	28750	25900	7160	4733	5146	17336	175591
13 Green Springs - USBR	1366	2240	3763	4288	3642	3134	1285	1285	2560	3805	4552	2451	2321	2966	39658
14 Hills Creek	10064	11392	2408	2499	2382	3009	2396	6594	13983	14099	5683	1872	1997	9212	87590
15 Idaho Falls - City Plant	894	1295	1688	1325	1334	1802	1093	1093	2923	2967	2860	955	1018	1289	22537
16 Idaho Falls - Lower Plant	936	1355	1766	1387	1395	1885	1144	1144	3202	3194	2992	999	1065	1349	23813
17 Idaho Falls - Upper Plant	996	1425	1836	1459	1463	1953	1166	1166	3117	3082	2970	1028	1097	1417	24174
18 Lookout Point	23650	27190	4807	4714	6317	9683	11258	18364	46661	47131	15256	13104	14433	10485	253052
19 Lost Creek	7596	7918	7649	7730	5171	5895	3143	3389	22451	22687	18499	8247	8466	11757	140598
20 Minidoka	5129	1284	3838	1199	1053	936	2760	2760	13030	12533	12857	6245	6661	11838	82125
21 Palisades	23830	7687	6696	14796	10906	9408	3861	3861	41349	67662	68213	29114	29822	54332	371536
22 Roza	1483	0	2014	1681	1711	5482	2667	2667	5426	5338	5245	2707	2887	0	39310
Total Independent Hydro w/Enc.	159786	136684	91232	83645	78360	128254	93045	100307	333558	354824	219782	102903	105457	184439	2172276
-Total Independent Hydro W/Enc.-															
23 Federal System	159786	136684	91232	83645	78360	128254	93045	100307	333558	354824	219782	102903	105457	184439	2172276
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
27 Total Independent Hydro w/Enc.	159786	136684	91232	83645	78360	128254	93045	100307	333558	354824	219782	102903	105457	184439	2172276

Table 2.2.2 - continued
Table A-4: Federal Independent Hydro Projects
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Independent Hydro Projects-															
1 Anderson Ranch	2665	2582	2698	2632	2367	2660	1281	1322	14372	13798	13526	5570	3591	4328	73391
2 Big Cliff	4687	5224	2622	2913	2246	3124	1802	1802	8560	8369	2877	1184	1263	3191	49866
3 Black Canyon	3710	2411	3035	3730	1815	3374	2036	2036	4249	3323	3167	2017	2151	3255	40309
4 Boise River Diversion	176	0	0	0	0	0	0	471	1289	1084	1274	617	658	1020	6589
5 Bonneville Fishway	10192	4900	5096	4900	9462	10584	4704	5096	10192	10192	9800	5096	5488	9800	105502
6 Chandler	2808	4961	5024	3958	3549	5504	2028	2028	3541	3251	1825	1115	1189	1658	42440
7 Cougar	10793	10005	2534	1910	2486	3082	1654	5739	11488	11839	4766	1914	2041	10169	80421
8 Cowlitz Falls	2625	1213	9421	4112	5217	14115	9398	10254	26188	27333	11502	2409	1835	3308	128931
9 Detroit	26259	26124	9974	11046	8322	14099	9615	10337	54964	50907	19744	8061	8434	18990	276877
10 Dexter	4091	6259	1553	1551	1752	1970	2090	3228	6901	6994	2346	2107	2443	1767	45054
11 Foster	4227	2977	4151	1883	3869	8470	3984	3736	8363	9336	2665	1360	1451	4972	61444
12 Green Peter	11608	8241	8658	3932	419	18083	23678	11931	28750	25900	7160	4733	5146	17336	175577
13 Green Springs - USBR	1366	2240	3763	4288	3516	3134	1285	1285	2560	3805	4552	2451	2321	2966	39532
14 Hills Creek	10064	11392	2408	2499	2300	3009	2396	6594	13983	14099	5683	1872	1997	9212	87508
15 Idaho Falls - City Plant	894	1295	1688	1325	1288	1802	1093	1093	2923	2967	2860	955	1018	1289	22491
16 Idaho Falls - Lower Plant	936	1355	1766	1387	1347	1885	1144	1144	3202	3194	2992	999	1065	1349	23765
17 Idaho Falls - Upper Plant	996	1425	1836	1459	1412	1953	1166	1166	3117	3082	2970	1028	1097	1417	24124
18 Lookout Point	23650	27190	4807	4714	6099	9683	11258	18364	46661	47131	15256	13104	14433	10485	252834
19 Lost Creek	7596	7918	7649	7730	4993	5895	3143	3389	22451	22687	18499	8247	8466	11757	140420
20 Minidoka	5129	1284	3838	1199	1017	936	2760	2760	13030	12533	12857	6245	6661	11838	82089
21 Palisades	23830	7687	6696	14796	10530	9408	3861	3861	41349	67662	68213	29114	29822	54332	371160
22 Roza	1483	0	2014	1681	1652	5482	2667	2667	5426	5338	5245	2707	2887	0	39251
Total Independent Hydro w/Enc.	159786	136684	91232	83645	75658	128254	93045	100307	333558	354824	219782	102903	105457	184439	2169574
-Total Independent Hydro W/Enc.-															
23 Federal System	159786	136684	91232	83645	75658	128254	93045	100307	333558	354824	219782	102903	105457	184439	2169574
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
27 Total Independent Hydro w/Enc.	159786	136684	91232	83645	75658	128254	93045	100307	333558	354824	219782	102903	105457	184439	2169574

Table 2.2.3
Table A-4: Federal Independent Hydro Projects
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
1937 Water Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Independent Hydro Projects-															
1 Anderson Ranch	2023	1889	1915	1981	1864	1947	987	1018	10700	10178	10356	4258	2745	3304	55164
2 Big Cliff	3646	4365	2288	2369	1780	2374	1366	1366	7064	6463	2479	940	1002	2569	40072
3 Black Canyon	2986	1843	2248	2818	1461	2496	1564	1564	3191	2509	2413	1583	1689	2433	30796
4 Boise River Diversion	149	0	0	0	0	0	0	354	943	801	958	463	494	756	4919
5 Bonneville Fishway	8036	3932	4018	4214	7252	7620	4116	3724	8036	7448	8428	3724	3920	7840	82308
6 Chandler	2177	3330	4425	3110	2797	4155	1572	1572	2709	2581	1597	757	808	1294	32883
7 Cougar	8551	8020	2227	1586	1949	2342	1334	4629	9940	8897	4013	1398	1492	8407	64785
8 Cowlitz Falls	1988	1022	7765	3328	4132	10627	7198	7854	21130	20403	10000	1875	1429	2380	101130
9 Detroit	7146	8123	5576	5099	3700	4699	2841	3055	20627	17349	4436	1335	1397	5274	90655
10 Dexter	3200	5132	1348	1276	1387	1448	1546	2388	5747	5246	1969	1601	1857	1545	35691
11 Foster	3288	2430	3513	1539	3092	6390	2964	2780	6889	7224	2245	1016	1083	4028	48481
12 Green Peter	2603	3799	5254	2169	193	7030	8686	4377	14997	9740	1693	883	960	3976	66359
13 Green Springs - USBR	586	139	105	348	376	496	368	368	1138	1627	2232	1126	1066	1699	11675
14 Hills Creek	7792	9445	2056	2040	1864	2266	1816	4998	11685	10741	4807	1404	1498	7708	70119
15 Idaho Falls - City Plant	683	962	1278	978	1016	1331	813	813	2148	2177	2130	711	758	970	16772
16 Idaho Falls - Lower Plant	715	1007	1337	1024	1063	1392	851	851	2353	2344	2229	744	793	1015	17719
17 Idaho Falls - Upper Plant	761	1059	1390	1077	1115	1443	867	867	2291	2261	2212	766	817	1066	17993
18 Lookout Point	4547	8067	2484	2428	2175	2205	3286	5360	14868	9245	3790	2376	2617	2691	66140
19 Lost Creek	5945	5925	6413	6182	4016	4358	2365	2551	18320	17057	15353	6117	6279	9987	110869
20 Minidoka	4096	951	2858	884	617	698	2136	2136	9662	9427	9835	4735	5051	8682	61768
21 Palisades	18057	5796	5133	10797	8234	6938	2943	2943	30596	51354	51943	21646	22172	40996	279549
22 Roza	1196	0	1706	1295	1282	4102	1977	1977	4172	3950	4352	1937	2066	0	30011
Total Independent Hydro w/Enc.	90171	77239	65338	56544	51364	76356	51595	57543	209206	209022	149472	61396	61993	118620	1335858
-Total Independent Hydro W/Enc.-															
23 Federal System	90171	77239	65338	56544	51364	76356	51595	57543	209206	209022	149472	61396	61993	118620	1335858
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
27 Total Independent Hydro w/Enc.	90171	77239	65338	56544	51364	76356	51595	57543	209206	209022	149472	61396	61993	118620	1335858

Table 2.2.3 - continued
Table A-4: Federal Independent Hydro Projects
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Independent Hydro Projects-															
1 Anderson Ranch	2023	1889	1915	1981	1799	1947	987	1018	10700	10178	10356	4258	2745	3304	55100
2 Big Cliff	3646	4365	2288	2369	1719	2374	1366	1366	7064	6463	2479	940	1002	2569	40010
3 Black Canyon	2986	1843	2248	2818	1410	2496	1564	1564	3191	2509	2413	1583	1689	2433	30746
4 Boise River Diversion	149	0	0	0	0	0	0	354	943	801	958	463	494	756	4919
5 Bonneville Fishway	8036	3932	4018	4214	7002	7620	4116	3724	8036	7448	8428	3724	3920	7840	82058
6 Chandler	2177	3330	4425	3110	2700	4155	1572	1572	2709	2581	1597	757	808	1294	32787
7 Cougar	8551	8020	2227	1586	1882	2342	1334	4629	9940	8897	4013	1398	1492	8407	64718
8 Cowlitz Falls	1988	1022	7765	3328	3990	10627	7198	7854	21130	20403	10000	1875	1429	2380	100988
9 Detroit	7146	8123	5576	5099	3572	4699	2841	3055	20627	17349	4436	1335	1397	5274	90528
10 Dexter	3200	5132	1348	1276	1339	1448	1546	2388	5747	5246	1969	1601	1857	1545	35643
11 Foster	3288	2430	3513	1539	2986	6390	2964	2780	6889	7224	2245	1016	1083	4028	48374
12 Green Peter	2603	3799	5254	2169	186	7030	8686	4377	14997	9740	1693	883	960	3976	66353
13 Green Springs - USBR	586	139	105	348	364	496	368	368	1138	1627	2232	1126	1066	1699	11662
14 Hills Creek	7792	9445	2056	2040	1799	2266	1816	4998	11685	10741	4807	1404	1498	7708	70055
15 Idaho Falls - City Plant	683	962	1278	978	981	1331	813	813	2148	2177	2130	711	758	970	16737
16 Idaho Falls - Lower Plant	715	1007	1337	1024	1026	1392	851	851	2353	2344	2229	744	793	1015	17682
17 Idaho Falls - Upper Plant	761	1059	1390	1077	1076	1443	867	867	2291	2261	2212	766	817	1066	17954
18 Lookout Point	4547	8067	2484	2428	2100	2205	3286	5360	14868	9245	3790	2376	2617	2691	66065
19 Lost Creek	5945	5925	6413	6182	3878	4358	2365	2551	18320	17057	15353	6117	6279	9987	110731
20 Minidoka	4096	951	2858	884	596	698	2136	2136	9662	9427	9835	4735	5051	8682	61747
21 Palisades	18057	5796	5133	10797	7950	6938	2943	2943	30596	51354	51943	21646	22172	40996	279265
22 Roza	1196	0	1706	1295	1237	4102	1977	1977	4172	3950	4352	1937	2066	0	29967
Total Independent Hydro w/Enc.	90171	77239	65338	56544	49593	76356	51595	57543	209206	209022	149472	61396	61993	118620	1334087
-Total Independent Hydro W/Enc.-															
23 Federal System	90171	77239	65338	56544	49593	76356	51595	57543	209206	209022	149472	61396	61993	118620	1334087
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
27 Total Independent Hydro w/Enc.	90171	77239	65338	56544	49593	76356	51595	57543	209206	209022	149472	61396	61993	118620	1334087

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Table 2.3.1
Table A-5: Federal Imports
PNW Loads and Resource Study
2011 - 2012 Fiscal Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Imports From East of Continental Divide-															
1 PPL to BPA PwrS	145	206	277	277	256	246	216	187	54	58	74	79	65	59	160
2 Total Imports From ECD	145	206	277	277	256	246	216	187	54	58	74	79	65	59	160
-Imports From Pacific Southwest-															
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	0	16	16	17	16	16	17	0	0	0	0	0	0	0	7.3
7 RVSD to BPA S/Pwr/X	0	9.3	9.2	9.7	9.4	9.3	10	0	0	0	0	0	0	0	4.3
8 RVSD to BPA PkRepl	10	2.7	2.7	2.7	2.7	2.7	2.7	2.5	0	0	11	11	11	9.5	4.8
9 Total Imports From PSW	14	32	32	33	32	30	30	2.5	0	0	15	16	16	18	20
-Imports From Inland Southwest-															
10 SPP to BPA PwrS	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
11 Total Imports From ISW	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
-Imports From Canada-															
12 BCHP to BPA PwrS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13 Total Imports From Canada	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
-Imports From Other Entities-															
14 Total Imports From Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Imports-															
15 Federal System	206	284	355	356	334	321	322	265	130	134	165	171	156	153	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
19 Total Imports.	206	284	355	356	334	321	322	265	130	134	165	171	156	153	241

Table 2.3.1 - continued
Table A-5: Federal Imports
PNW Loads and Resource Study
2012 - 2013 Fiscal Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Imports From East of Continental Divide-															
1 PPL to BPA PwrS	145	206	277	277	256	246	216	187	54	58	74	79	65	59	160
2 Total Imports From ECD	145	206	277	277	256	246	216	187	54	58	74	79	65	59	160
-Imports From Pacific Southwest-															
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	0	16	17	16	16	17	16	0	0	0	0	0	0	0	7.3
7 RVSD to BPA S/Pwr/X	0	9.3	9.8	9.3	9.5	9.8	9.3	0	0	0	0	0	0	0	4.3
8 RVSD to BPA PkRepl	11	2.7	2.5	2.8	2.7	2.5	2.7	2.8	0	0	11	11	11	10	4.9
9 Total Imports From PSW	15	32	33	32	32	31	28	2.8	0	0	16	15	15	19	20
-Imports From Inland Southwest-															
10 SPP to BPA PwrS	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
11 Total Imports From ISW	45	45	45	45	45	45	75	75	75	75	75	75	75	75	60
-Imports From Canada-															
12 BCHP to BPA PwrS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13 Total Imports From Canada	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
-Imports From Other Entities-															
14 Total Imports From Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Imports-															
15 Federal System	207	284	356	355	334	323	320	266	130	134	166	170	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
19 Total Imports.	207	284	356	355	334	323	320	266	130	134	166	170	156	154	241

Table 2.3.2
Table A-5: Federal Imports
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Imports From East of Continental Divide-															
1 PPL to BPA PwrS	77230	103094	142159	140748	119797	125777	52542	46450	32366	34496	46014	23370	20725	35022	999790
2 Total Imports From ECD	77230	103094	142159	140748	119797	125777	52542	46450	32366	34496	46014	23370	20725	35022	999790
-Imports From Pacific Southwest-															
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
9 Total Imports From PSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Imports From Inland Southwest-															
10 SPP to BPA PwrS	18720	18000	18720	18000	18000	19440	14400	15600	31200	31200	30000	15600	16800	28800	294480
11 Total Imports From ISW	18720	18000	18720	18000	18000	19440	14400	15600	31200	31200	30000	15600	16800	28800	294480
-Imports From Canada-															
12 BCHP to BPA PwrS	416	416	432	416	400	432	192	208	432	416	416	208	224	400	5008
13 Total Imports From Canada	416	416	432	416	400	432	192	208	432	416	416	208	224	400	5008
-Imports From Other Entities-															
14 Total Imports From Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Imports-															
15 Federal System	96366	121510	161311	159164	138197	145649	67134	62258	63998	66112	76430	39178	37749	64222	1299278
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
19 Total Imports.	96366	121510	161311	159164	138197	145649	67134	62258	63998	66112	76430	39178	37749	64222	1299278

Table 2.3.2 - continued
Table A-5: Federal Imports
PNW Loads and Resource Study
2012 - 2013 Fiscal Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Imports From East of Continental Divide-															
1 PPL to BPA PwrS	77230	103094	142159	140748	115666	125777	52542	46450	32366	34496	46014	23370	20725	35022	995659
2 Total Imports From ECD	77230	103094	142159	140748	115666	125777	52542	46450	32366	34496	46014	23370	20725	35022	995659
-Imports From Pacific Southwest-															
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
9 Total Imports From PSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Imports From Inland Southwest-															
10 SPP to BPA PwrS	19440	18000	18000	18720	17280	18720	15600	15600	31200	30000	31200	15600	16800	28800	294960
11 Total Imports From ISW	19440	18000	18000	18720	17280	18720	15600	15600	31200	30000	31200	15600	16800	28800	294960
-Imports From Canada-															
12 BCHP to BPA PwrS	432	416	416	432	384	416	208	208	432	400	432	208	224	400	5008
13 Total Imports From Canada	432	416	416	432	384	416	208	208	432	400	432	208	224	400	5008
-Imports From Other Entities-															
14 Total Imports From Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Imports-															
15 Federal System	97102	121510	160575	159900	133330	144913	68350	62258	63998	64896	77646	39178	37749	64222	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
19 Total Imports.	97102	121510	160575	159900	133330	144913	68350	62258	63998	64896	77646	39178	37749	64222	1295627

Table 2.3.3
Table A-5: Federal Imports
PNW Loads and Resource Study
2011 - 2012 Fiscal Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Imports From East of Continental Divide-															
1 PPL to BPA PwrS	30834	45348	64251	65317	58174	56656	25119	20797	7633	7046	8990	5085	4083	7709	407042
2 Total Imports From ECD	30834	45348	64251	65317	58174	56656	25119	20797	7633	7046	8990	5085	4083	7709	407042
-Imports From Pacific Southwest-															
3 PASA to BPA XchgNrg	2589	2509	2589	2589	2422	1293	0	0	0	0	0	0	0	2506	16497
4 PASA to BPA S/N/X	513	497	513	513	480	238	0	0	0	0	0	0	0	497	3252
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	11380	11680	12279	11081	11680	6252	0	0	0	0	0	0	0	64352
7 RVSD to BPA S/Pwr/X	0	6698	6874	7226	6521	6874	3679	0	0	0	0	0	0	0	37872
8 RVSD to BPA PkRepl	7560	1980	1980	1980	1890	1980	989	901	0	0	7920	4034	4246	6840	42300
9 Total Imports From PSW	10662	23065	23636	24587	22394	22065	10920	901	0	0	11238	5640	5959	13054	174121
-Imports From Inland Southwest-															
10 SPP to BPA PwrS	14760	14445	14760	15480	13320	13995	12600	11400	24600	22800	25800	11400	12000	25200	232560
11 Total Imports From ISW	14760	14445	14760	15480	13320	13995	12600	11400	24600	22800	25800	11400	12000	25200	232560
-Imports From Canada-															
12 BCHP to BPA PwrS	328	305	312	328	296	311	168	152	312	304	328	152	160	320	3776
13 Total Imports From Canada	328	305	312	328	296	311	168	152	312	304	328	152	160	320	3776
-Imports From Other Entities-															
14 Total Imports From Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Imports-															
15 Federal System	56584	83163	102959	105712	94184	93027	48807	33250	32545	30150	46356	22277	22202	46283	817499
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
19 Total Imports.	56584	83163	102959	105712	94184	93027	48807	33250	32545	30150	46356	22277	22202	46283	817499

Table 2.3.3 - continued
Table A-5: Federal Imports
PNW Loads and Resource Study
2012 - 2013 Fiscal Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Imports From East of Continental Divide-															
1 PPL to BPA PwrS	30834	45348	64251	65317	56168	56656	25119	20797	7633	7046	8990	5085	4083	7709	405036
2 Total Imports From ECD	30834	45348	64251	65317	56168	56656	25119	20797	7633	7046	8990	5085	4083	7709	405036
-Imports From Pacific Southwest-															
3 PASA to BPA XchgNrg	2589	2509	2589	2589	2339	1293	0	0	0	0	0	0	0	2506	16413
4 PASA to BPA S/N/X	513	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	11433	12336	11734	10832	12336	5679	0	0	0	0	0	0	0	64350
7 RVSD to BPA S/Pwr/X	0	6729	7260	6906	6375	7260	3342	0	0	0	0	0	0	0	37872
8 RVSD to BPA PkRepl	8280	1980	1890	2070	1800	1890	987	993	0	0	8280	3858	4062	7200	43290
9 Total Imports From PSW	11382	23149	24588	23812	21809	23017	10008	993	0	0	11598	5464	5775	13414	175009
-Imports From Inland Southwest-															
10 SPP to BPA PwrS	14040	14445	15480	14760	12960	14715	11400	11400	24600	24000	24600	11400	12000	25200	231000
11 Total Imports From ISW	14040	14445	15480	14760	12960	14715	11400	11400	24600	24000	24600	11400	12000	25200	231000
-Imports From Canada-															
12 BCHP to BPA PwrS	312	305	328	312	288	327	152	152	312	320	312	152	160	320	3752
13 Total Imports From Canada	312	305	328	312	288	327	152	152	312	320	312	152	160	320	3752
-Imports From Other Entities-															
14 Total Imports From Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Imports-															
15 Federal System	56568	83247	104647	104201	91225	94715	46679	33342	32545	31366	45500	22101	22018	46643	814797
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
19 Total Imports.	56568	83247	104647	104201	91225	94715	46679	33342	32545	31366	45500	22101	22018	46643	814797

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2.4	Renewable Resource	51
Table 2.4.1	Federal Renewable Resources - Table A-8 - Energy	52
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Table 2.4.1
Table A-8: Federal Renewable Resources
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Federal System-															
1 Condon Wind Project	10	14	13	13	11	14	11	8.8	9.6	9.5	7	7.2	7.9	8.1	11
2 Foote Creek 1	5.3	7.1	7.1	7.1	7.3	7.1	5.5	4.6	3.9	3.3	1.8	2.7	2.7	3.3	5.1
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	6.3	4.9	4.4	5.2	4.6	7.6	9.3	8.9	9.7	12	10	11	9.2	8	7.7
6 Klondike III	13	9.3	7.1	9.5	7.3	17	21	18	20	25	21	23	19	14	15
7 Stateline Wind Project	20	23	18	20	15	31	28	23	24	26	21	20	21	18	22
8 Total Federal System	59	64	55	62	51	84	80	67	70	79	62	66	63	55	65
-Renewable Resources-															
9 Federal System	59	64	55	62	51	84	80	67	70	79	62	66	63	55	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
13 Total Renewable Resources	59	64	55	62	51	84	80	67	70	79	62	66	63	55	65

Table 2.4.1 - continued
Table A-8: Federal Renewable Resources
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Federal System-															
1 Condon Wind Project	10	14	13	13	11	14	11	8.8	9.6	9.5	7	7.2	7.9	8.1	11
2 Foote Creek 1	5.3	7.1	7.1	7.1	7.3	7	5.5	4.6	3.9	3.3	1.8	2.7	2.7	3.3	5.1
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	5.3	4.4	3.9	3.1	2.9	1.4	2.1	2.5	2.9	4.1
5 Klondike I	6.4	4.9	4.4	5.2	4.6	7.6	9.4	8.9	9.7	12	10	11	9.2	8	7.7
6 Klondike III	13	9.3	7.1	9.5	7.3	17	21	18	20	25	21	23	19	14	15
7 Stateline Wind Project	20	23	18	20	15	31	28	23	24	26	20	20	21	18	22
8 Total Federal System	59	64	55	62	51	84	80	67	70	80	62	66	63	55	65
-Renewable Resources-															
9 Federal System	59	64	55	62	51	84	80	67	70	80	62	66	63	55	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
13 Total Renewable Resources	59	64	55	62	51	84	80	67	70	80	62	66	63	55	65

Table 2.4.2
Table A-8: Federal Renewable Resources
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Federal System-															
1 Condon Wind Project	4285	5200	5075	5440	4280	6091	2246	1955	4160	3994	2960	1560	1837	3264	52347
2 Foote Creek 1	2247	2782	2894	2856	2960	3245	1073	931	1601	1478	858	593	646	1236	25400
3 Foote Creek 2	199	252	235	230	240	266	91	85	129	137	68	50	67	119	2167
4 Foote Creek 4	1855	2352	2197	2148	2238	2485	849	789	1201	1281	634	470	622	1106	20229
5 Klondike I	2733	2056	1805	2172	2017	3320	1899	1755	3782	4508	3714	2314	1966	3128	37168
6 Klondike III	5721	4132	2781	4061	3157	7216	4229	3637	7944	9516	7567	4823	4127	5453	74366
7 Stateline Wind Project	7654	9000	6989	8040	5640	12830	4973	4077	8403	8736	6480	3203	4122	6221	96368
8 Total Federal System	24695	25774	21977	24948	20532	35454	15360	13229	27219	29650	22282	13014	13387	20526	308046
-Renewable Resources-															
9 Federal System	24695	25774	21977	24948	20532	35454	15360	13229	27219	29650	22282	13014	13387	20526	308046
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
13 Total Renewable Resources	24695	25774	21977	24948	20532	35454	15360	13229	27219	29650	22282	13014	13387	20526	308046

Table 2.4.2 - continued
Table A-8: Federal Renewable Resources
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Federal System-															
1 Condon Wind Project	4450	5200	4880	5658	4109	5866	2434	1955	4160	3840	3078	1560	1837	3264	52290
2 Foote Creek 1	2334	2782	2782	2971	2842	3125	1162	931	1601	1421	893	593	646	1236	25318
3 Foote Creek 2	206	252	226	239	230	256	99	85	129	132	71	50	67	119	2161
4 Foote Creek 4	1927	2352	2113	2234	2149	2393	920	789	1201	1232	660	470	622	1106	20167
5 Klondike I	2838	2056	1736	2259	1936	3197	2057	1755	3782	4335	3862	2314	1966	3128	37221
6 Klondike III	5941	4132	2674	4223	3031	6949	4581	3637	7944	9150	7870	4823	4127	5453	74537
7 Stateline Wind Project	7949	9000	6720	8362	5414	12355	5387	4077	8403	8400	6739	3203	4122	6221	96352
8 Total Federal System	25644	25774	21132	25945	19711	34141	16640	13229	27219	28509	23173	13014	13387	20526	308045
-Renewable Resources-															
9 Federal System	25644	25774	21132	25945	19711	34141	16640	13229	27219	28509	23173	13014	13387	20526	308045
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
13 Total Renewable Resources	25644	25774	21132	25945	19711	34141	16640	13229	27219	28509	23173	13014	13387	20526	308045

Table 2.4.3
Table A-8: Federal Renewable Resources
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Federal System-															
1 Condon Wind Project	3444	4622	4231	4541	3138	4603	1730	1216	2985	2858	2270	1049	1184	2554	40424
2 Foote Creek 1	1687	2304	2391	2393	2092	2002	901	725	1335	922	496	394	373	1119	19135
3 Foote Creek 2	147	206	187	204	183	160	80	67	119	87	44	31	35	104	1654
4 Foote Creek 4	1369	1923	1750	1903	1710	1491	742	624	1113	811	414	289	329	975	15441
5 Klondike I	1988	1471	1487	1660	1213	2360	1450	1452	3451	4098	3978	1758	1575	2655	30594
6 Klondike III	3682	2541	2479	2992	1920	5675	3430	2699	6894	8559	7823	3416	3252	4771	60133
7 Stateline Wind Project	7183	7576	6494	7121	4825	10481	5191	4028	9315	10093	8875	3861	4032	6821	95896
8 Total Federal System	19499	20642	19020	20813	15079	26771	13525	10811	25213	27427	23901	10797	10780	18999	263277
-Renewable Resources-															
9 Federal System	19499	20642	19020	20813	15079	26771	13525	10811	25213	27427	23901	10797	10780	18999	263277
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
13 Total Renewable Resources	19499	20642	19020	20813	15079	26771	13525	10811	25213	27427	23901	10797	10780	18999	263277

Table 2.4.3 - continued
Table A-8: Federal Renewable Resources
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Federal System-															
1 Condon Wind Project	3276	4622	4438	4330	3053	4840	1566	1216	2985	3008	2165	1049	1184	2554	40284
2 Foote Creek 1	1605	2304	2507	2282	2035	2105	815	725	1335	971	473	394	373	1119	19044
3 Foote Creek 2	139	206	197	194	178	168	72	67	119	91	42	31	35	104	1645
4 Foote Creek 4	1302	1923	1835	1815	1664	1567	672	624	1113	854	394	289	329	975	15355
5 Klondike I	1891	1471	1559	1582	1180	2481	1312	1452	3451	4313	3793	1758	1575	2655	30473
6 Klondike III	3502	2541	2600	2853	1868	5967	3103	2699	6894	9009	7459	3416	3252	4771	59935
7 Stateline Wind Project	6833	7576	6811	6790	4694	11020	4697	4028	9315	10624	8462	3861	4032	6821	95563
8 Total Federal System	18548	20642	19947	19845	14672	28148	12237	10811	25213	28870	22789	10797	10780	18999	262299
-Renewable Resources-															
9 Federal System	18548	20642	19947	19845	14672	28148	12237	10811	25213	28870	22789	10797	10780	18999	262299
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
13 Total Renewable Resources	18548	20642	19947	19845	14672	28148	12237	10811	25213	28870	22789	10797	10780	18999	262299

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Table 2.5.1
Table A-9: Federal Cogeneration
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Federal System-															
1 Georgia-Pacific Paper (Wauna)	18	20	23	24	23	23	22	22	19	14	18	12	12	14	19
2 Total Federal System	18	20	23	24	23	23	22	22	19	14	18	12	12	14	19
-Cogeneration-															
3 Federal System	18	20	23	24	23	23	22	22	19	14	18	12	12	14	19
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 Total Cogeneration	18	20	23	24	23	23	22	22	19	14	18	12	12	14	19

Table 2.5.1 - continued
Table A-9: Federal Cogeneration
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Federal System-															
1 Georgia-Pacific Paper (Wauna)	18	20	23	24	23	23	22	22	19	14	18	12	12	14	19
2 Total Federal System	18	20	23	24	23	23	22	22	19	14	18	12	12	14	19
-Cogeneration-															
3 Federal System	18	20	23	24	23	23	22	22	19	14	18	12	12	14	19
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 Total Cogeneration	18	20	23	24	23	23	22	22	19	14	18	12	12	14	19

Table 2.5.2
Table A-9: Federal Cogeneration
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Federal System-															
1 Georgia-Pacific Paper (Wauna)	7642	7840	9406	9580	9212	9919	4222	4574	7929	5907	7248	2583	2782	5545	94389
2 Total Federal System	7642	7840	9406	9580	9212	9919	4222	4574	7929	5907	7248	2583	2782	5545	94389
-Cogeneration-															
3 Federal System	7642	7840	9406	9580	9212	9919	4222	4574	7929	5907	7248	2583	2782	5545	94389
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 Total Cogeneration	7642	7840	9406	9580	9212	9919	4222	4574	7929	5907	7248	2583	2782	5545	94389

Table 2.5.2 - continued
Table A-9: Federal Cogeneration
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Federal System-															
1 Georgia-Pacific Paper (Wauna)	7936	7840	9044	9963	8844	9551	4574	4574	7929	5680	7538	2583	2782	5545	94383
2 Total Federal System	7936	7840	9044	9963	8844	9551	4574	4574	7929	5680	7538	2583	2782	5545	94383
-Cogeneration-															
3 Federal System	7936	7840	9044	9963	8844	9551	4574	4574	7929	5680	7538	2583	2782	5545	94383
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 Total Cogeneration	7936	7840	9044	9963	8844	9551	4574	4574	7929	5680	7538	2583	2782	5545	94383

Table 2.5.3
Table A-9: Federal Cogeneration
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWHr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Federal System-															
1 Georgia-Pacific Paper (Wauna)	6025	6292	7416	8239	6817	7141	3694	3342	6252	4317	6233	1888	1987	4852	74495
2 Total Federal System	6025	6292	7416	8239	6817	7141	3694	3342	6252	4317	6233	1888	1987	4852	74495
-Cogeneration-															
3 Federal System	6025	6292	7416	8239	6817	7141	3694	3342	6252	4317	6233	1888	1987	4852	74495
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 Total Cogeneration	6025	6292	7416	8239	6817	7141	3694	3342	6252	4317	6233	1888	1987	4852	74495

Table 2.5.3 - continued
Table A-9: Federal Cogeneration
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWHr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Federal System-															
1 Georgia-Pacific Paper (Wauna)	5731	6292	7778	7856	6633	7508	3342	3342	6252	4544	5943	1888	1987	4852	73948
2 Total Federal System	5731	6292	7778	7856	6633	7508	3342	3342	6252	4544	5943	1888	1987	4852	73948
-Cogeneration-															
3 Federal System	5731	6292	7778	7856	6633	7508	3342	3342	6252	4544	5943	1888	1987	4852	73948
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 Total Cogeneration	5731	6292	7778	7856	6633	7508	3342	3342	6252	4544	5943	1888	1987	4852	73948

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Table 2.6.3	Federal Large Thermal - Table A-10 - LLH MWHr	72

Table 2.6.1
Table A-10: Federal Large Thermal
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Columbia Generating Station: Uranium															
1 BPA - Power Business	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030
2 Columbia Generating Station: Regional Total	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030
Total Large Thermal															
3 Federal System	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030
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	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030

Table 2.6.1 - continued
Table A-10: Federal Large Thermal
PNW Loads and Resource Study
2012 - 2012 Fiscal Years
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
Columbia Generating Station: Uranium															
1 BPA - Power Business	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	332	0	930	1,030	1,030	1,030	878
2 Columbia Generating Station: Regional Total	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	332	0	930	1,030	1,030	1,030	878
Total Large Thermal															
3 Federal System	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	332	0	930	1,030	1,030	1,030	878
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	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	332	0	930	1,030	1,030	1,030	878

Table 2.6.2
Table A-10: Federal Large Thermal
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Columbia Generating Station: Uranium															
1 BPA - Power Business	428,480	412,000	428,480	412,000	412,000	444,960	197,760	214,240	428,480	428,480	412,000	214,240	230,720	395,520	5,059,360
2 Columbia Generating Station: Regional Total	428,480	412,000	428,480	412,000	412,000	444,960	197,760	214,240	428,480	428,480	412,000	214,240	230,720	395,520	5,059,360
Total Large Thermal															
3 Federal System	428,480	412,000	428,480	412,000	412,000	444,960	197,760	214,240	428,480	428,480	412,000	214,240	230,720	395,520	5,059,360
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	428,480	412,000	428,480	412,000	412,000	444,960	197,760	214,240	428,480	428,480	412,000	214,240	230,720	395,520	5,059,360

Table 2.6.2 - continued
Table A-10: Federal Large Thermal
PNW Loads and Resource Study
2012 - 2013 Fiscal Years
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Columbia Generating Station: Uranium															
1 BPA - Power Business	444,960	412,000	412,000	428,480	395,520	428,480	214,240	214,240	138,112	0	386,880	214,240	230,720	395,520	4,315,392
2 Columbia Generating Station: Regional Total	444,960	412,000	412,000	428,480	395,520	428,480	214,240	214,240	138,112	0	386,880	214,240	230,720	395,520	4,315,392
Total Large Thermal															
3 Federal System	444,960	412,000	412,000	428,480	395,520	428,480	214,240	214,240	138,112	0	386,880	214,240	230,720	395,520	4,315,392
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	444,960	412,000	412,000	428,480	395,520	428,480	214,240	214,240	138,112	0	386,880	214,240	230,720	395,520	4,315,392

Table 2.6.3
Table A-10: Federal Large Thermal
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Columbia Generating Station: Uranium															
1 BPA - Power Business	337,840	330,630	337,840	354,320	304,880	320,330	173,040	156,560	337,840	313,120	354,320	156,560	164,800	346,080	3,988,160
2 Columbia Generating Station: Regional Total	337,840	330,630	337,840	354,320	304,880	320,330	173,040	156,560	337,840	313,120	354,320	156,560	164,800	346,080	3,988,160
Total Large Thermal															
3 Federal System	337,840	330,630	337,840	354,320	304,880	320,330	173,040	156,560	337,840	313,120	354,320	156,560	164,800	346,080	3,988,160
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	337,840	330,630	337,840	354,320	304,880	320,330	173,040	156,560	337,840	313,120	354,320	156,560	164,800	346,080	3,988,160

Table 2.6.3 - continued
Table A-10: Federal Large Thermal
PNW Loads and Resource Study
2012 - 2013 Fiscal Years
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
Columbia Generating Station: Uranium															
1 BPA - Power Business	321,360	330,630	354,320	337,840	296,640	336,810	156,560	156,560	108,896	0	305,040	156,560	164,800	346,080	3,372,096
2 Columbia Generating Station: Regional Total	321,360	330,630	354,320	337,840	296,640	336,810	156,560	156,560	108,896	0	305,040	156,560	164,800	346,080	3,372,096
Total Large Thermal															
3 Federal System	321,360	330,630	354,320	337,840	296,640	336,810	156,560	156,560	108,896	0	305,040	156,560	164,800	346,080	3,372,096
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	321,360	330,630	354,320	337,840	296,640	336,810	156,560	156,560	108,896	0	305,040	156,560	164,800	346,080	3,372,096

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Table 2.7.3	Canadian Entitlement Return for Canada Table A-15-LLH MWHr.....	80

Table 2.7.1
Table A-15: Canadian Entitlement Return For Canada
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-BPA Canada-															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Priest Rapids CER for Canada-															
2 GCPD to BPA	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
3 Priest Rapids: Regional Totals	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
-Wanapum CER for Canada-															
4 GCPD to BPA	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
5 Wanapum: Regional Totals	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
-Rock Island P.H. #1 CER for Canada-															
6 CHPD to BPA	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
7 Rock Island P.H. #1: Regional Totals	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
-Rock Island P.H. #2 CER for Canada-															
8 CHPD to BPA	7.3	7.3	7.3	7.3	7.3	7.3	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.2
9 Rock Island P.H. #2: Regional Totals	7.3	7.3	7.3	7.3	7.3	7.3	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.2
-Rocky Reach CER for Canada-															
10 CHPD to BPA	39	39	39	39	39	39	38	38	38	38	38	38	38	38	38
11 Rocky Reach: Regional Totals	39	39	39	39	39	39	38	38	38	38	38	38	38	38	38
-Wells CER for Canada-															
12 DOPD to BPA	25	25	25	25	25	25	24	24	24	24	24	24	24	24	25
13 Wells: Regional Totals	25	25	25	25	25	25	24	24	24	24	24	24	24	24	25
-Total CER For Canada-															
14 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Public Entities	142	142	142	142	142	142	139	139	139	139	139	139	139	139	141
16 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Total CER For Canada	142	142	142	142	142	142	139	139	139	139	139	139	139	139	141

Table 2.7.1 - continued
Table A-15: Canadian Entitlement Return For Canada
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-BPA Canada-															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Priest Rapids CER for Canada-															
2 GCPD to BPA	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29
3 Priest Rapids: Regional Totals	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29
-Wanapum CER for Canada-															
4 GCPD to BPA	29	29	29	29	29	29	28	28	28	28	28	28	28	28	28
5 Wanapum: Regional Totals	29	29	29	29	29	29	28	28	28	28	28	28	28	28	28
-Rock Island P.H. #1 CER for Canada-															
6 CHPD to BPA	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
7 Rock Island P.H. #1: Regional Totals	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
-Rock Island P.H. #2 CER for Canada-															
8 CHPD to BPA	7.1	7.1	7.1	7.1	7.1	7.1	7	7	7	7	7	7	7	7	7
9 Rock Island P.H. #2: Regional Totals	7.1	7.1	7.1	7.1	7.1	7.1	7	7	7	7	7	7	7	7	7
-Rocky Reach CER for Canada-															
10 CHPD to BPA	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38
11 Rocky Reach: Regional Totals	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38
-Wells CER for Canada-															
12 DOPD to BPA	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
13 Wells: Regional Totals	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
-Total CER For Canada-															
14 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Public Entities	139	139	139	139	139	139	137	137	137	137	137	137	137	137	138
16 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Total CER For Canada	139	139	139	139	139	139	137	137	137	137	137	137	137	137	138

Table 2.7.2
Table A-15: Canadian Entitlement Return For Canada
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-BPA Canada-															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Priest Rapids CER for Canada-															
2 GCPD to BPA	22618	21918	22618	22618	21158	22587	10656	10656	22022	21312	22022	10656	11366	21312	263520
3 Priest Rapids: Regional Totals	22618	21918	22618	22618	21158	22587	10656	10656	22022	21312	22022	10656	11366	21312	263520
-Wanapum CER for Canada-															
4 GCPD to BPA	21874	21197	21874	21874	20462	21844	10332	10332	21353	20664	21353	10332	11021	20664	255175
5 Wanapum: Regional Totals	21874	21197	21874	21874	20462	21844	10332	10332	21353	20664	21353	10332	11021	20664	255175
-Rock Island P.H. #1 CER for Canada-															
6 CHPD to BPA	8482	8219	8482	8482	7934	8470	4032	4032	8333	8064	8333	4032	4301	8064	99259
7 Rock Island P.H. #1: Regional Totals	8482	8219	8482	8482	7934	8470	4032	4032	8333	8064	8333	4032	4301	8064	99259
-Rock Island P.H. #2 CER for Canada-															
8 CHPD to BPA	5431	5263	5431	5431	5081	5424	2556	2556	5282	5112	5282	2556	2726	5112	63245
9 Rock Island P.H. #2: Regional Totals	5431	5263	5431	5431	5081	5424	2556	2556	5282	5112	5282	2556	2726	5112	63245
-Rocky Reach CER for Canada-															
10 CHPD to BPA	28942	28047	28942	28942	27074	28903	13680	13680	28272	27360	28272	13680	14592	27360	337745
11 Rocky Reach: Regional Totals	28942	28047	28942	28942	27074	28903	13680	13680	28272	27360	28272	13680	14592	27360	337745
-Wells CER for Canada-															
12 DOPD to BPA	18526	17953	18526	18526	17330	18501	8748	8748	18079	17496	18079	8748	9331	17496	216086
13 Wells: Regional Totals	18526	17953	18526	18526	17330	18501	8748	8748	18079	17496	18079	8748	9331	17496	216086
-Total CER For Canada-															
14 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Public Entities	105871	102598	105871	105871	99041	105729	50004	50004	103342	100008	103342	50004	53338	100008	1235030
16 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Total CER For Canada	105871	102598	105871	105871	99041	105729	50004	50004	103342	100008	103342	50004	53338	100008	1235030

Table 2.7.2 - continued
Table A-15: Canadian Entitlement Return For Canada
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-BPA Canada-															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Priest Rapids CER for Canada-															
2 GCPD to BPA	22022	21342	22022	22022	19891	21993	10548	10548	21799	21096	21799	10548	11251	21096	257978
3 Priest Rapids: Regional Totals	22022	21342	22022	22022	19891	21993	10548	10548	21799	21096	21799	10548	11251	21096	257978
-Wanapum CER for Canada-															
4 GCPD to BPA	21353	20693	21353	21353	19286	21324	10188	10188	21055	20376	21055	10188	10867	20376	249655
5 Wanapum: Regional Totals	21353	20693	21353	21353	19286	21324	10188	10188	21055	20376	21055	10188	10867	20376	249655
-Rock Island P.H. #1 CER for Canada-															
6 CHPD to BPA	8333	8075	8333	8333	7526	8322	3960	3960	8184	7920	8184	3960	4224	7920	97234
7 Rock Island P.H. #1: Regional Totals	8333	8075	8333	8333	7526	8322	3960	3960	8184	7920	8184	3960	4224	7920	97234
-Rock Island P.H. #2 CER for Canada-															
8 CHPD to BPA	5282	5119	5282	5282	4771	5275	2520	2520	5208	5040	5208	2520	2688	5040	61757
9 Rock Island P.H. #2: Regional Totals	5282	5119	5282	5282	4771	5275	2520	2520	5208	5040	5208	2520	2688	5040	61757
-Rocky Reach CER for Canada-															
10 CHPD to BPA	28272	27398	28272	28272	25536	28234	13500	13500	27900	27000	27900	13500	14400	27000	330684
11 Rocky Reach: Regional Totals	28272	27398	28272	28272	25536	28234	13500	13500	27900	27000	27900	13500	14400	27000	330684
-Wells CER for Canada-															
12 DOPD to BPA	18079	17520	18079	18079	16330	18055	8640	8640	17856	17280	17856	8640	9216	17280	211550
13 Wells: Regional Totals	18079	17520	18079	18079	16330	18055	8640	8640	17856	17280	17856	8640	9216	17280	211550
-Total CER For Canada-															
14 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Public Entities	103342	100147	103342	103342	93341	103203	49356	49356	102002	98712	102002	49356	52646	98712	1208858
16 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Total CER For Canada	103342	100147	103342	103342	93341	103203	49356	49356	102002	98712	102002	49356	52646	98712	1208858

Table 2.7.3
Table A-15: Canadian Entitlement Return For Canada
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-BPA Canada-															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Priest Rapids CER for Canada-															
2 GCPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Priest Rapids: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Wanapum CER for Canada-															
4 GCPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Wanapum: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Rock Island P.H. #1 CER for Canada-															
6 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Rock Island P.H. #1: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Rock Island P.H. #2 CER for Canada-															
8 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Rock Island P.H. #2: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Rocky Reach CER for Canada-															
10 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Rocky Reach: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Wells CER for Canada-															
12 DOPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Wells: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total CER For Canada-															
14 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Total CER For Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.7.3 - continued
Table A-15: Canadian Entitlement Return For Canada
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-BPA Canada-															
1 BPA: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Priest Rapids CER for Canada-															
2 GCPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Priest Rapids: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Wanapum CER for Canada-															
4 GCPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Wanapum: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Rock Island P.H. #1 CER for Canada-															
6 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Rock Island P.H. #1: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Rock Island P.H. #2 CER for Canada-															
8 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Rock Island P.H. #2: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Rocky Reach CER for Canada-															
10 CHPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 Rocky Reach: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Wells CER for Canada-															
12 DOPD to BPA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Wells: Regional Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total CER For Canada-															
14 Federal System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Non-NW Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Total CER For Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Table 2.8.1
Table A-16: Federal Intra-Regional Transfers
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Intra-Regional Transfers-															
1 BPA To AVWP WP3Set	0	101	101	101	101	50	50	49	0	0	0	0	0	0	42
2 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	35	34	0	0	0	5.7
3 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 BPA To PPL PwrS	145	206	277	277	256	246	216	187	54	58	74	79	65	59	160
5 BPA To PSE WP3Set	0	101	101	101	101	50	50	49	0	0	0	0	0	0	42
6 BPA To TBL PwrS	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	9.1
7 Other Entities To BPA	45	40	38	41	39	52	62	49	51	65	53	75	50	49	49
8 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 PPL To BPA S/Pwr/X	23	23	0	0	0	0	0	0	0	0	0	0	0	23	5.7
10 Total Contracts	222	480	527	529	506	407	387	344	114	166	170	163	123	141	313
-Total Contracts Out-															
11 Federal System	154	417	489	488	467	354	325	294	63	102	117	88	74	68	258
12 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Investor-Owned Entities	46	41	16	19	17	30	40	27	29	43	31	53	28	50	33
14 Other Entities	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
15 Total Contracts Out	222	480	527	529	506	407	387	344	114	166	170	163	123	141	313
-Total Contracts In-															
16 Federal System	77	72	47	50	48	61	72	59	61	74	62	84	59	81	64
17 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Investor-Owned Entities	145	408	480	479	458	345	316	285	54	92	108	79	65	59	249
19 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Total Contracts In	222	480	527	529	506	407	387	344	114	166	170	163	123	141	313

Table 2.8.1 - continued
Table A-16: Federal Intra-Regional Transfers
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-Intra-Regional Transfers-															
1 BPA To AVWP WP3Set	0	101	101	101	101	50	50	50	0	0	0	0	0	0	42
2 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	35	34	0	0	0	5.7
3 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 BPA To PPL PwrS	145	206	277	277	256	246	216	187	54	58	74	79	65	59	160
5 BPA To PSE WP3Set	0	101	101	101	101	50	50	50	0	0	0	0	0	0	42
6 BPA To TBL PwrS	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	9.1
7 Other Entities To BPA	81	76	74	77	75	88	99	85	87	101	89	111	86	85	85
8 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 PPL To BPA S/Pwr/X	23	23	0	0	0	0	0	0	0	0	0	0	0	23	5.7
10 Total Contracts	258	516	563	565	542	443	423	381	150	203	206	199	159	177	349
-Total Contracts Out-															
11 Federal System	154	417	489	488	467	354	324	295	63	102	117	88	74	68	258
12 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Investor-Owned Entities	46	41	16	19	17	30	41	27	29	43	31	53	28	50	33
14 Other Entities	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
15 Total Contracts Out	258	516	563	565	542	443	423	381	150	203	206	199	159	177	349
-Total Contracts In-															
16 Federal System	113	108	83	86	84	98	108	95	97	110	98	120	95	117	100
17 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Investor-Owned Entities	145	408	480	479	458	345	315	286	54	92	108	79	65	59	249
19 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Total Contracts In	258	516	563	565	542	443	423	381	150	203	206	199	159	177	349

Table 2.8.2
Table A-16: Federal Intra-Regional Transfers
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Intra-Regional Transfers-															
1 BPA To AVWP WP3Set	0	34112	35424	34112	32800	17712	7872	8528	0	0	0	0	0	0	170560
2 BPA To PPL PwrS	77230	103094	142159	140748	119797	125777	52542	46450	32366	34496	46014	23370	20725	35022	999790
3 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	14444	13441	0	0	0	27885
4 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 BPA To PSE WP3Set	0	34112	35424	34112	32800	17712	7872	8528	0	0	0	0	0	0	170560
6 BPA To TBL PwrS	3779	3633	3779	3633	3633	3924	1744	1889	3779	3779	3633	1889	2035	3488	44616
7 Other Entities To BPA	19529	16474	15670	16822	16086	22053	12365	10267	21216	25305	20621	15770	10577	19341	242095
8 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 PPL To BPA S/Pwr/X	9519	9153	0	0	0	0	0	0	0	0	0	0	0	8787	27459
10 Total Contracts	110057	200578	232455	229427	205116	187178	82394	75663	57361	78024	83709	41029	33336	66638	1682965
-Total Contracts Out-															
11 Federal System	81009	174951	216786	212605	189030	165125	70030	65395	36145	52719	63088	25259	22760	38510	1413411
12 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Investor-Owned Entities	19896	16827	6518	8022	7286	12549	8141	5691	12064	16153	11821	11194	5649	19680	161490
14 Other Entities	9152	8800	9152	8800	8800	9504	4224	4576	9152	9152	8800	4576	4928	8448	108064
15 Total Contracts Out	110057	200578	232455	229427	205116	187178	82394	75663	57361	78024	83709	41029	33336	66638	1682965
-Total Contracts In-															
16 Federal System	32827	29260	19448	20455	19719	25977	14108	12157	24995	29084	24254	17659	12611	31616	314170
17 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Investor-Owned Entities	77230	171318	213007	208972	185397	161201	68286	63506	32366	48940	59455	23370	20725	35022	1368795
19 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Total Contracts In	110057	200578	232455	229427	205116	187178	82394	75663	57361	78024	83709	41029	33336	66638	1682965

Table 2.8.2 - continued
Table A-16: Federal Intra-Regional Transfers
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Intra-Regional Transfers-															
1 BPA To AVWP WP3Set	0	34112	34112	35424	31488	17056	8528	8528	0	0	0	0	0	0	169248
2 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	13889	13978	0	0	0	27867
3 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 BPA To PPL PwrS	77230	103094	142159	140748	115666	125777	52542	46450	32366	34496	46014	23370	20725	35022	995659
5 BPA To PSE WP3Set	0	34112	34112	35424	31488	17056	8528	8528	0	0	0	0	0	0	169248
6 BPA To TBL PwrS	3924	3633	3633	3779	3488	3779	1889	1889	3779	3633	3779	1889	2035	3488	44616
7 Other Entities To BPA	35832	30874	29467	32470	29266	36212	20883	17755	36192	38732	36422	23258	18641	33165	419170
8 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 PPL To BPA S/Pwr/X	9886	9153	0	0	0	0	0	0	0	0	0	0	0	8787	27826
10 Total Contracts	126872	214978	243483	247845	211396	199880	92370	83151	72337	90750	100192	48517	41400	80462	1853634
-Total Contracts Out-															
11 Federal System	81154	174951	214016	215375	182130	163668	71487	65395	36145	52018	63771	25259	22760	38510	1406638
12 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Investor-Owned Entities	20662	16827	6267	8342	6994	12084	8819	5691	12064	15532	12294	11194	5649	19680	162100
14 Other Entities	25056	23200	23200	24128	22272	24128	12064	12064	24128	23200	24128	12064	12992	22272	284896
15 Total Contracts Out	126872	214978	243483	247845	211396	199880	92370	83151	72337	90750	100192	48517	41400	80462	1853634
-Total Contracts In-															
16 Federal System	49642	43660	33100	36249	32754	39991	22772	19645	39971	42365	40200	25147	20675	45440	491612
17 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Investor-Owned Entities	77230	171318	210383	211596	178642	159889	69598	63506	32366	48385	59992	23370	20725	35022	1362022
19 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Total Contracts In	126872	214978	243483	247845	211396	199880	92370	83151	72337	90750	100192	48517	41400	80462	1853634

Table 2.8.3
Table A-16: Federal Intra-Regional Transfers
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Intra-Regional Transfers-															
1 BPA To AVWP WP3Set	0	38781	39794	41106	37566	19364	10164	9184	0	0	0	0	0	0	195959
2 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	10556	11559	0	0	0	22115
3 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 BPA To PPL PwrS	30834	45348	64251	65317	58174	56656	25119	20797	7633	7046	8990	5085	4083	7709	407042
5 BPA To PSE WP3Set	0	38781	39794	41106	37566	19364	10164	9184	0	0	0	0	0	0	195959
6 BPA To TBL PwrS	2979	2916	2979	3125	2689	2825	1526	1381	2979	2761	3125	1381	1453	3052	35169
7 Other Entities To BPA	13762	12420	12634	13672	10907	16878	10107	7545	17097	21452	18952	11069	8486	16285	191265
8 PPL To BPA S/Pwr/X	7529	7323	0	0	0	0	0	0	0	0	0	0	0	7689	22541
9 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Total Contracts	55104	145568	159452	164326	146901	115087	57080	48090	27709	41816	42626	17534	14022	34735	1070050
-Total Contracts Out-															
11 Federal System	33813	125826	146818	150654	135995	98209	46973	40546	10612	20363	23674	6466	5536	10761	856244
12 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Investor-Owned Entities	14075	12681	5418	6104	4395	10036	6411	4201	9881	14764	11384	7725	4966	16582	128622
14 Other Entities	7216	7062	7216	7568	6512	6842	3696	3344	7216	6688	7568	3344	3520	7392	85184
15 Total Contracts Out	55104	145568	159452	164326	146901	115087	57080	48090	27709	41816	42626	17534	14022	34735	1070050
-Total Contracts In-															
16 Federal System	24270	22658	15613	16797	13595	19703	11633	8925	20076	24214	22077	12449	9939	27026	248975
17 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Investor-Owned Entities	30834	122910	143839	147529	133306	95384	45447	39165	7633	17602	20549	5085	4083	7709	821075
19 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Total Contracts In	55104	145568	159452	164326	146901	115087	57080	48090	27709	41816	42626	17534	14022	34735	1070050

Table 2.8.3 - continued
Table A-16: Federal Intra-Regional Transfers
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-Intra-Regional Transfers-															
1 BPA To AVWP WP3Set	0	38781	41106	39794	36451	20020	9328	9364	0	0	0	0	0	0	194844
2 BPA To PPL S/Pwr/X	0	0	0	0	0	0	0	0	0	11111	11022	0	0	0	22133
3 BPA To PPL S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 BPA To PPL PwrS	30834	45348	64251	65317	56168	56656	25119	20797	7633	7046	8990	5085	4083	7709	405036
5 BPA To PSE WP3Set	0	38781	41106	39794	36451	20020	9328	9364	0	0	0	0	0	0	194844
6 BPA To TBL PwrS	2834	2916	3125	2979	2616	2970	1381	1381	2979	2907	2979	1381	1453	3052	34951
7 Other Entities To BPA	24323	23976	25634	24845	20980	29518	14616	13017	28905	34102	29879	16541	14246	28381	328960
8 PPL To BPA S/N/X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 PPL To BPA S/Pwr/X	7162	7323	0	0	0	0	0	0	0	0	0	0	0	7689	22174
10 Total Contracts	65153	157124	175221	172729	152666	129184	59772	53922	39517	55165	52870	23006	19782	46831	1202943
-Total Contracts Out-															
11 Federal System	33668	125826	149588	147884	131686	99666	45156	40906	10612	21064	22991	6466	5536	10761	851808
12 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Investor-Owned Entities	13389	12681	5682	5821	4276	10552	5800	4201	9881	15542	10855	7725	4966	16582	127950
14 Other Entities	18096	18618	19952	19024	16704	18966	8816	8816	19024	18560	19024	8816	9280	19488	223184
15 Total Contracts Out	65153	157124	175221	172729	152666	129184	59772	53922	39517	55165	52870	23006	19782	46831	1202943
-Total Contracts In-															
16 Federal System	34319	34214	28758	27824	23596	32488	15997	14397	31884	37008	32858	17921	15699	39122	386086
17 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Investor-Owned Entities	30834	122910	146463	144905	129070	96696	43775	39525	7633	18157	20012	5085	4083	7709	816857
19 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Total Contracts In	65153	157124	175221	172729	152666	129184	59772	53922	39517	55165	52870	23006	19782	46831	1202943

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Table 2.9.1
Table A-24: Federal NUG Resources By Project And Project Type
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-NUG: Hydro-															
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	0.8	0	0	0	0	0	0	0	0	0	0	2.1
3 Glines Canyon Hydro	6.7	14	16	15	6	0	0	0	0	0	0	0	0	0	4.8
4 Rocky Brook	0	0.2	0.6	0.6	0.4	0.5	0.5	0.5	0.2	0.1	0	0	0	0	0.3
5 Total NUG: Hydro	13	27	30	19	9.1	3.1	3.1	3.1	2.8	2.7	2.6	2.6	2.6	2.6	9.8
-NUG: Renewables-															
6 Ashland Solar Project	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Total NUG: Renewables	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Non-Utility Generating Resources-															
10 Federal Entities	13	27	30	19	9.1	3.1	3.1	3.1	2.8	2.7	2.6	2.6	2.6	2.6	9.8
11 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Total Non-Utility Generation	13	27	30	19	9.1	3.1	3.1	3.1	2.8	2.7	2.6	2.6	2.6	2.6	9.8

Table 2.9.1 - continued
Table A-24: Federal NUG Resources By Project And Project Type
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Avg
-NUG: Hydro-															
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 Rocky Brook	0	0.2	0.6	0.6	0.4	0.5	0.5	0.5	0.2	0.1	0	0	0	0	0.3
3 Total NUG: Hydro	2.7	2.8	3.2	3.2	3.1	3.1	3.1	3.1	2.8	2.7	2.6	2.6	2.6	2.6	2.9
-NUG: Renewables-															
4 Ashland Solar Project	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 Fourmile Hill Geothermal	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
7 Total NUG: Renewables	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Total Non-Utility Generating Resources-															
8 Federal Entities	2.7	2.8	3.2	3.2	3.1	3.1	3.1	3.1	2.8	2.7	2.6	2.6	2.6	2.6	2.9
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
12 Total Non-Utility Generation	2.7	2.8	3.2	3.2	3.1	3.1	3.1	3.1	2.8	2.7	2.6	2.6	2.6	2.6	2.9

Table 2.9.2
Table A-24: Federal NUG Resources By Project And Project Type
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-NUG: Hydro-															
1 Dworshak/Clearwater Small Hydropower	1094	1052	1094	1052	1052	1136	505	547	1094	1094	1052	547	589	1010	12919
2 Elwha Hydro	1586	4027	4584	326	0	0	0	0	0	0	0	0	0	0	10524
3 Glines Canyon Hydro	2864	6028	6726	6314	2411	0	0	0	0	0	0	0	0	0	24344
4 Rocky Brook	19	88	239	247	162	199	95	95	85	36	1	1	1	0	1268
5 Total NUG: Hydro	5563	11195	12644	7940	3625	1335	600	642	1179	1130	1053	548	590	1010	49054
-NUG: Renewables-															
6 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	1.5	15
7 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Total NUG: Renewables	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	1.5	15
-Total Non-Utility Generating Resources-															
10 Federal Entities	5564	11196	12644	7940	3626	1336	601	643	1181	1132	1055	549	591	1011	49069
11 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Total Non-Utility Generation	5564	11196	12644	7940	3626	1336	601	643	1181	1132	1055	549	591	1011	49069

Table 2.9.2 - continued
Table A-24: Federal NUG Resources By Project And Project Type
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-NUG: Hydro-															
1 Dworshak/Clearwater Small Hydropower	1136	1052	1052	1094	1010	1094	547	547	1094	1052	1094	547	589	1010	12919
2 Rocky Brook	19	88	239	247	162	199	95	95	85	36	1	1	1	0	1268
3 Total NUG: Hydro	1155	1140	1291	1341	1172	1293	642	642	1179	1088	1095	548	590	1010	14187
-NUG: Renewables-															
4 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	1.5	15
5 Fourmile Hill Geothermal	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
7 Total NUG: Renewables	1.2	0.6	0.4	0.5	0.8	1.2	0.7	0.7	1.7	1.8	2	0.9	1	1.5	15
-Total Non-Utility Generating Resources-															
8 Federal Entities	1156	1141	1291	1342	1173	1294	643	643	1181	1090	1097	549	591	1011	14202
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
12 Total Non-Utility Generation	1156	1141	1291	1342	1173	1294	643	643	1181	1090	1097	549	591	1011	14202

Table 2.9.3
Table A-24: Federal NUG Resources By Project And Project Type
PNW Loads and Resource Study
2011 - 2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-NUG: Hydro-															
1 Dworshak/Clearwater Small Hydropower	863	844	863	905	778	818	442	400	863	800	905	400	421	884	10183
2 Elwha Hydro	1125	2826	3697	239	0	0	0	0	0	0	0	0	0	0	7887
3 Glines Canyon Hydro	2109	4246	5288	4767	1785	0	0	0	0	0	0	0	0	0	18196
4 Rocky Brook	14	61	175	181	121	149	70	70	67	26	1	0	0	0	935
5 Total NUG: Hydro	4111	7977	10023	6092	2685	967	512	470	930	826	906	400	421	884	37201
-NUG: Renewables-															
6 Ashland Solar Project	0.9	0.5	0.3	0.5	0.6	0.9	0.6	0.5	1.4	1.3	1.7	0.7	0.7	1.3	12
7 Fourmile Hill Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 White Bluffs Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 Total NUG: Renewables	0.9	0.5	0.3	0.5	0.6	0.9	0.6	0.5	1.4	1.3	1.7	0.7	0.7	1.3	12
-Total Non-Utility Generating Resources-															
10 Federal Entities	4112	7978	10023	6092	2685	968	512	470	931	827	907	400	422	885	37213
11 Public Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 Investor-Owned Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Other Entities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Total Non-Utility Generation	4112	7978	10023	6092	2685	968	512	470	931	827	907	400	422	885	37213

Table 2.9.3 - continued
Table A-24: Federal NUG Resources By Project And Project Type
PNW Loads and Resource Study
2012 - 2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	Apr1	Apr16	May	Jun	Jul	Aug1	Aug16	Sep	Sum
-NUG: Hydro-															
1 Dworshak/Clearwater Small Hydropower	821	844	905	863	757	860	400	400	863	842	863	400	421	884	10120
2 Rocky Brook	14	61	175	181	121	149	70	70	67	26	1	0	0	0	935
3 Total NUG: Hydro	835	905	1080	1044	878	1009	470	470	930	868	864	400	421	884	11055
-NUG: Renewables-															
4 Ashland Solar Project	0.9	0.5	0.4	0.4	0.6	0.9	0.5	0.5	1.4	1.4	1.6	0.7	0.7	1.3	12
5 Fourmile Hill Geothermal	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
7 Total NUG: Renewables	0.9	0.5	0.4	0.4	0.6	0.9	0.5	0.5	1.4	1.4	1.6	0.7	0.7	1.3	12
-Total Non-Utility Generating Resources-															
8 Federal Entities	835	906	1080	1044	879	1010	470	470	931	869	865	400	422	885	11067
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
12 Total Non-Utility Generation	835	906	1080	1044	879	1010	470	470	931	869	865	400	422	885	11067

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2.10	Total PNW Regional Hydro Resources	99
	Table 2.10.1 FY 2012 Total PNW Regional Resources	100
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Table 2.10.1
Pacific Northwest Regional Hydro Resources
Includes Regulated, Independent, and NUG Hydro
2011-2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5+ Self Supply) (Final)
Energy in Average Maegawatts

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep	Avg
1929	11,602	13,073	13,005	12,265	11,595	10,792	12,082	13,418	14,484	15,789	12,296	12,920	11,368	11,165	12,577
1930	10,299	11,859	12,608	13,149	11,838	11,008	11,077	11,347	14,371	12,818	13,810	12,543	11,158	10,905	12,149
1931	9,731	12,415	13,078	12,452	11,526	8,558	11,453	9,533	16,274	11,744	12,990	11,029	9,472	10,670	11,685
1932	9,716	11,080	13,140	11,646	10,695	13,414	15,396	20,951	22,452	22,336	13,925	12,918	11,443	11,487	14,187
1933	10,742	12,596	15,978	19,598	17,376	12,767	16,597	15,227	19,615	22,828	21,731	16,167	15,043	11,842	16,382
1934	13,457	18,256	23,260	24,938	22,588	18,899	21,788	20,677	21,140	18,664	14,177	10,726	10,688	10,672	18,152
1935	10,711	12,167	13,836	18,339	17,992	11,434	16,564	14,787	19,079	17,532	16,753	14,014	11,842	10,300	14,717
1936	10,348	12,110	13,035	10,929	12,274	11,603	13,468	19,087	21,614	20,366	13,860	12,298	10,850	10,572	13,707
1937	10,004	12,071	12,882	12,247	11,369	10,312	10,931	9,485	15,731	14,554	11,840	12,647	11,336	10,935	12,015
1938	10,756	12,402	15,101	19,332	15,974	14,074	18,566	21,032	22,609	19,617	15,533	12,118	10,416	11,178	15,631
1939	10,983	12,263	13,598	13,140	11,970	11,925	17,482	17,689	20,841	15,602	13,469	11,489	10,469	11,198	13,631
1940	10,533	12,167	14,267	13,140	12,827	15,810	16,910	17,564	18,420	15,264	12,652	11,254	10,212	10,337	13,617
1941	10,671	12,064	13,934	12,917	11,743	12,710	12,200	13,686	14,813	13,109	12,559	11,771	10,610	10,616	12,444
1942	10,073	13,068	15,201	16,834	12,922	10,950	12,786	16,542	17,872	20,647	16,909	13,668	12,149	12,086	14,511
1943	10,723	12,360	14,279	18,664	16,899	16,143	22,920	23,485	22,369	22,968	16,824	13,028	12,021	11,265	16,504
1944	10,811	12,742	13,223	12,635	12,232	11,599	11,751	13,780	13,600	11,816	11,660	11,873	10,402	10,497	12,058
1945	9,950	11,553	12,451	12,698	11,293	10,679	11,058	9,981	18,953	18,358	11,640	12,547	11,165	11,103	12,590
1946	9,870	12,712	15,386	17,283	15,041	16,554	19,736	22,020	22,796	20,923	16,464	13,295	12,108	11,806	16,032
1947	10,999	13,824	19,808	20,184	20,954	17,338	17,827	17,744	20,538	20,948	17,002	12,710	12,337	11,325	16,923
1948	15,970	16,475	16,933	20,542	16,673	14,058	17,272	20,440	23,597	23,556	19,078	16,230	15,000	12,376	17,815
1949	11,913	13,295	14,531	15,902	12,487	17,851	19,495	21,048	22,759	20,718	13,175	11,284	10,110	10,943	15,382
1950	10,297	12,560	13,754	20,312	19,493	19,597	20,950	19,573	21,724	22,302	18,820	16,100	14,604	11,917	17,189
1951	13,758	17,680	21,232	23,577	23,024	21,437	21,461	21,092	22,348	20,013	19,876	15,403	13,120	12,144	19,210
1952	14,944	15,156	17,335	19,356	17,359	15,362	20,717	21,956	23,433	21,218	15,978	13,433	11,909	10,767	17,072
1953	10,368	11,788	13,355	16,147	16,579	12,982	15,722	16,039	21,547	23,067	18,487	13,216	12,972	11,772	15,413
1954	11,877	13,824	16,630	19,936	19,435	16,733	18,702	17,673	21,587	22,336	22,707	18,105	17,500	15,558	18,049
1955	12,088	15,286	15,428	14,365	12,306	11,653	12,787	14,298	18,556	22,989	22,398	16,010	13,817	11,472	15,426
1956	12,788	16,564	20,459	23,377	21,716	19,427	20,398	23,343	23,071	23,502	20,407	14,294	13,016	11,663	19,032
1957	12,566	13,285	16,693	16,418	13,604	16,228	21,367	17,871	23,478	23,359	14,654	12,495	11,013	11,117	16,067
1958	10,823	12,765	13,550	17,057	17,156	14,827	18,578	18,727	23,087	21,775	14,498	12,734	11,504	10,924	15,588
1959	10,859	14,832	18,651	21,796	20,182	17,607	19,453	17,438	20,893	22,185	17,290	15,770	13,634	16,267	17,792
1960	17,537	18,470	18,724	18,650	16,021	15,135	23,440	20,294	20,407	20,210	16,185	13,530	12,206	10,929	17,249
1961	11,265	13,724	14,495	18,092	17,643	17,771	18,498	15,480	21,152	22,289	15,326	12,342	11,497	11,270	15,983
1962	9,919	12,791	14,203	16,690	14,713	11,761	21,814	22,436	21,335	20,847	13,086	12,804	11,645	10,896	15,032
1963	12,040	15,161	18,297	18,141	16,795	14,254	14,759	15,105	19,054	19,280	16,227	13,251	11,895	11,646	15,697
1964	10,726	13,250	14,777	15,358	13,775	12,019	17,194	15,951	20,692	23,469	20,912	15,864	13,406	12,895	15,756
1965	12,907	14,357	20,473	24,363	22,505	19,978	17,432	22,128	22,513	20,314	16,798	15,737	14,531	11,326	18,367
1966	12,130	13,716	15,036	16,479	14,833	11,567	21,193	16,422	19,721	18,228	16,792	13,500	12,472	11,307	15,130
1967	10,407	12,537	15,906	20,304	19,912	18,802	16,150	12,705	20,439	22,882	18,784	14,574	12,341	11,521	16,607
1968	12,069	14,036	15,364	19,405	18,777	15,885	14,355	13,405	17,173	20,446	18,123	15,009	13,996	14,107	16,137
1969	13,439	16,551	17,404	22,475	20,677	16,407	21,337	22,219	23,368	20,972	17,498	13,376	11,631	11,150	17,837

Table 2.10.1 - continued
Pacific Northwest Regional Hydro Resources
Includes Regulated, Independent, and NUG Hydro
2011-2012 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5+ Self Supply) (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	11,460	13,270	13,276	16,958	15,763	13,219	16,711	14,732	19,917	21,509	14,651	13,031	11,220	11,467	14,932
1971	10,391	12,283	13,824	22,364	24,071	20,069	20,652	20,448	23,137	23,470	20,927	17,130	14,433	12,184	18,230
1972	12,367	13,993	15,694	22,793	22,652	25,045	23,252	19,304	23,128	23,525	22,386	17,871	16,603	13,035	19,423
1973	11,921	13,692	15,740	16,541	13,772	11,878	10,517	13,337	16,913	14,171	12,727	12,206	10,354	11,422	13,502
1974	10,026	11,979	17,580	26,657	24,988	22,101	21,840	22,757	22,607	23,289	22,749	16,983	15,495	12,155	19,377
1975	10,658	13,159	14,835	18,203	16,419	14,779	15,138	15,340	22,112	22,691	21,458	14,457	14,222	12,877	16,401
1976	13,708	17,325	22,703	22,278	21,109	19,767	21,479	20,754	22,885	21,061	20,628	19,392	19,221	16,692	19,883
1977	11,768	13,058	12,988	12,474	12,359	11,532	10,676	12,482	12,782	11,242	11,421	11,973	10,240	9,894	11,850
1978	9,131	11,754	15,761	16,167	15,138	14,565	20,315	16,821	21,283	17,643	16,927	13,017	11,855	14,504	15,319
1979	11,958	12,996	13,081	15,175	12,585	15,387	14,418	15,551	20,998	15,968	12,813	11,081	10,051	10,879	13,958
1980	9,980	12,094	12,587	13,444	13,944	10,958	17,492	18,902	23,067	21,135	13,372	11,968	10,449	11,438	14,270
1981	10,964	13,237	19,828	20,511	18,053	15,246	12,582	15,162	19,453	22,783	19,169	15,938	14,975	11,736	16,697
1982	11,495	13,964	16,491	18,596	23,229	22,435	19,512	17,655	22,071	22,716	19,189	16,381	15,003	13,844	18,172
1983	13,383	14,420	17,228	21,276	18,493	21,294	19,753	18,051	21,820	20,805	19,361	16,022	14,339	12,578	17,902
1984	11,836	17,725	16,903	21,204	19,425	17,488	21,556	20,371	20,363	22,006	18,475	13,697	12,744	11,889	17,608
1985	11,800	14,720	14,978	16,012	14,790	12,047	18,691	18,768	21,747	18,338	11,192	10,974	9,939	10,670	14,611
1986	11,378	15,033	13,820	17,610	18,730	24,022	20,446	19,657	18,895	19,821	15,153	13,105	11,423	11,405	16,499
1987	10,080	13,583	14,748	13,855	11,733	13,766	13,711	15,001	19,049	15,916	13,972	10,869	9,609	10,874	13,520
1988	9,319	11,553	12,565	11,578	11,765	10,973	11,473	14,433	16,380	12,703	13,345	12,594	10,910	10,078	12,083
1989	9,828	12,274	13,703	13,630	12,747	13,091	18,968	20,777	20,550	17,905	12,164	11,783	11,217	11,228	14,033
1990	10,066	13,764	16,865	18,884	18,000	15,339	16,667	20,968	19,813	21,200	15,931	14,324	12,799	11,404	16,123
1991	9,761	17,985	17,152	20,166	19,794	15,693	18,902	17,246	20,641	19,521	20,651	16,143	14,728	11,582	17,193
1992	9,863	12,755	13,341	14,501	13,904	14,955	12,419	13,443	16,021	12,773	11,918	9,955	9,044	9,962	12,700
1993	10,086	11,930	12,729	13,233	11,740	11,944	13,647	12,817	19,878	15,227	13,601	12,750	11,335	11,133	13,072
1994	9,661	12,541	13,139	12,765	13,031	11,938	11,450	14,834	16,656	15,028	13,390	11,220	10,198	10,868	12,734
1995	9,748	11,440	12,979	14,985	17,232	15,858	18,566	15,164	20,129	21,125	15,607	12,618	11,667	11,590	14,958
1996	12,315	19,245	24,913	25,161	25,145	22,051	21,054	23,838	22,594	21,677	21,209	15,913	13,816	11,119	20,216
1997	11,692	13,991	16,858	25,175	23,995	22,985	21,372	23,415	22,801	23,427	22,050	16,290	14,705	14,200	19,573
1998	16,628	16,275	16,159	17,904	16,256	15,102	15,926	17,399	22,274	22,233	16,143	13,743	11,214	11,903	16,666

Table 2.10.2
Pacific Northwest Regional Hydro Resources
Includes Regulated, Independent, and NUG Hydro
2012-2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5+ Self Supply) (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	11,591	13,050	12,979	12,249	11,591	10,792	12,082	13,417	14,479	15,725	12,296	12,920	11,368	11,165	12,567
1930	10,289	11,835	12,582	13,133	11,833	11,008	11,078	11,347	14,367	12,818	13,811	12,543	11,158	10,905	12,142
1931	9,721	12,391	13,052	12,437	11,522	8,558	11,453	9,533	16,227	11,744	12,990	11,028	9,472	10,670	11,675
1932	9,705	11,056	13,114	11,631	10,690	13,414	15,397	20,822	22,149	21,408	13,925	12,918	11,443	11,487	14,082
1933	10,731	12,572	15,952	19,572	17,361	12,767	16,597	15,227	19,544	22,062	21,017	16,164	15,043	11,842	16,241
1934	13,447	18,210	23,186	24,816	22,559	18,888	21,512	20,387	20,668	18,286	14,177	10,726	10,688	10,672	18,021
1935	10,700	12,144	13,810	18,312	17,977	11,434	16,564	14,786	19,024	17,446	16,714	14,013	11,842	10,300	14,684
1936	10,337	12,086	13,009	10,913	12,269	11,603	13,468	19,086	21,545	19,824	13,860	12,298	10,850	10,572	13,654
1937	9,994	12,047	12,856	12,232	11,364	10,312	10,932	9,484	15,738	14,532	11,840	12,647	11,336	10,935	12,009
1938	10,746	12,379	15,075	19,305	15,970	14,074	18,562	21,021	22,178	19,255	15,513	12,117	10,416	11,178	15,554
1939	10,973	12,239	13,572	13,125	11,966	11,925	17,482	17,688	20,583	15,606	13,469	11,489	10,469	11,199	13,608
1940	10,523	12,143	14,241	13,124	12,823	15,810	16,911	17,563	18,386	15,266	12,652	11,254	10,212	10,337	13,609
1941	10,661	12,040	13,908	12,901	11,739	12,710	12,201	13,685	14,810	13,105	12,560	11,771	10,610	10,616	12,439
1942	10,062	13,044	15,175	16,818	12,917	10,950	12,786	16,541	17,814	20,173	16,833	13,667	12,149	12,086	14,459
1943	10,713	12,336	14,253	18,638	16,884	16,143	22,750	23,077	22,051	21,792	16,755	13,028	12,021	11,265	16,342
1944	10,801	12,719	13,197	12,620	12,227	11,599	11,751	13,780	13,598	11,816	11,660	11,873	10,402	10,498	12,051
1945	9,939	11,530	12,425	12,683	11,288	10,679	11,058	9,980	18,944	18,173	11,641	12,547	11,165	11,103	12,571
1946	9,859	12,689	15,360	17,268	15,037	16,554	19,697	21,948	22,316	20,322	16,421	13,294	12,108	11,806	15,930
1947	10,988	13,800	19,771	20,157	20,927	17,338	17,827	17,744	20,517	20,361	16,941	12,710	12,337	11,325	16,847
1948	15,938	16,452	16,907	20,515	16,657	14,058	17,268	20,414	22,904	22,419	18,958	16,230	15,000	12,376	17,644
1949	11,902	13,271	14,505	15,887	12,482	17,840	19,488	21,032	22,597	20,199	13,175	11,284	10,110	10,943	15,325
1950	10,287	12,536	13,728	20,286	19,477	19,586	20,910	19,553	21,497	21,312	18,705	16,100	14,604	11,917	17,060
1951	13,748	17,646	21,184	23,551	22,983	21,399	21,400	21,021	21,887	19,571	19,515	15,402	13,120	12,144	19,072
1952	14,922	15,132	17,309	19,329	17,344	15,362	20,625	21,891	22,792	20,665	15,952	13,433	11,909	10,767	16,953
1953	10,357	11,765	13,329	16,125	16,096	13,453	15,722	16,039	21,376	22,239	18,395	13,216	12,972	11,772	15,316
1954	11,867	13,800	16,604	19,910	19,420	16,733	18,702	17,672	21,365	21,296	21,919	17,888	17,439	15,536	17,852
1955	12,077	15,263	15,402	14,350	12,302	11,653	12,787	14,297	18,470	22,120	21,643	16,010	13,817	11,472	15,285
1956	12,777	16,541	20,410	23,351	21,689	19,416	20,350	22,788	22,578	22,500	20,048	14,293	13,016	11,663	18,833
1957	12,556	13,261	16,667	16,403	13,599	16,228	21,329	17,852	22,957	22,150	14,655	12,495	11,013	11,118	15,921
1958	10,812	12,741	13,524	17,042	17,141	14,827	18,578	18,726	22,675	21,063	14,499	12,733	11,504	10,924	15,482
1959	10,849	14,809	18,614	21,769	20,155	17,607	19,453	17,434	20,447	21,255	17,215	15,769	13,634	16,245	17,652
1960	17,504	18,424	18,688	18,624	16,017	15,135	23,146	20,087	20,259	19,801	16,153	13,530	12,206	10,929	17,170
1961	11,255	13,701	14,469	18,065	17,627	17,762	18,499	15,479	20,948	21,303	15,310	12,341	11,497	11,270	15,870
1962	9,909	12,767	14,177	16,675	14,709	11,761	21,758	22,061	21,113	20,257	13,087	12,804	11,645	10,896	14,941
1963	12,030	15,138	18,261	18,114	16,780	14,254	14,760	15,105	19,031	19,006	16,194	13,251	11,895	11,646	15,658
1964	10,716	13,226	14,751	15,343	13,771	12,019	17,195	15,950	20,604	22,510	20,561	15,863	13,406	12,895	15,638
1965	12,896	14,333	20,425	24,303	22,442	19,967	17,430	22,084	22,035	19,845	16,762	15,736	14,531	11,326	18,254
1966	12,119	13,692	15,010	16,463	14,829	11,567	21,158	16,409	19,712	18,061	16,753	13,500	12,472	11,307	15,104
1967	10,397	12,513	15,880	20,821	19,794	18,192	16,150	12,705	20,354	21,973	18,526	14,574	12,341	11,521	16,472
1968	12,059	14,013	15,338	19,714	18,291	15,885	14,355	13,405	17,111	20,078	17,874	15,009	13,996	14,094	16,056
1969	13,429	16,527	17,378	22,115	21,076	16,407	21,284	21,669	22,791	20,393	17,416	13,376	11,631	11,150	17,696

Table 2.10.2 - continued
Pacific Northwest Regional Hydro Resources
Includes Regulated, Independent, and NUG Hydro
2012-2013 Fiscal Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5+ Self Supply) (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	11,450	13,246	13,250	16,931	15,759	13,219	16,712	14,732	19,884	21,091	14,651	13,031	11,220	11,467	14,885
1971	10,381	12,260	13,798	23,144	23,125	20,058	20,620	20,427	22,630	22,382	20,821	17,062	14,433	12,184	18,055
1972	12,356	13,969	15,668	22,767	22,626	24,876	23,121	19,269	22,534	22,510	21,632	17,730	16,602	13,035	19,180
1973	11,910	13,668	15,714	16,526	13,768	11,878	10,517	13,336	16,883	14,166	12,727	12,206	10,354	11,422	13,492
1974	10,016	11,955	17,543	26,346	25,181	22,083	21,724	22,322	22,180	22,212	22,244	16,979	15,495	12,155	19,152
1975	10,647	13,135	14,809	18,176	16,415	14,779	15,138	15,339	21,810	21,897	21,301	14,457	14,222	12,877	16,289
1976	13,698	17,294	22,655	22,251	21,083	19,756	21,433	20,720	22,325	20,471	20,235	18,903	18,840	16,670	19,696
1977	11,758	13,034	12,962	12,459	12,355	11,532	10,677	12,481	12,781	11,243	11,421	11,973	10,240	9,894	11,842
1978	9,121	11,730	15,724	16,151	15,134	14,565	20,293	16,821	21,133	17,528	16,889	13,017	11,855	14,482	15,284
1979	11,948	12,973	13,055	15,160	12,580	15,387	14,418	15,550	20,996	15,985	12,814	11,081	10,051	10,879	13,956
1980	9,969	12,070	12,561	13,429	13,002	11,885	17,534	18,902	22,622	20,620	13,373	11,968	10,449	11,438	14,192
1981	10,953	13,213	19,792	20,485	18,037	15,246	12,582	15,161	19,394	21,861	18,779	15,897	14,975	11,736	16,569
1982	11,485	13,940	16,465	18,570	22,895	22,756	19,492	17,655	21,879	21,645	19,049	16,377	15,003	13,822	18,033
1983	13,373	14,396	17,202	21,250	18,478	21,269	19,711	18,028	21,700	20,294	19,244	16,022	14,339	12,578	17,825
1984	11,826	17,691	16,877	21,178	19,410	17,470	21,475	20,323	20,363	21,514	18,354	13,696	12,744	11,889	17,536
1985	11,790	14,696	14,952	15,997	14,786	12,047	18,691	18,767	21,678	18,160	11,192	10,973	9,939	10,670	14,583
1986	11,368	15,009	13,794	17,584	18,698	23,984	20,410	19,641	18,833	19,467	15,144	13,105	11,423	11,405	16,443
1987	10,069	13,559	14,722	13,840	11,729	13,766	13,711	15,001	19,023	15,939	13,972	10,868	9,609	10,874	13,518
1988	9,309	11,530	12,539	11,563	11,761	10,974	11,474	14,432	16,328	12,699	13,345	12,593	10,910	10,078	12,072
1989	9,818	12,250	13,677	13,614	12,743	13,091	18,936	20,653	20,443	17,788	12,165	11,783	11,217	11,228	14,005
1990	10,056	13,741	16,839	18,858	17,985	15,339	16,667	20,815	19,632	20,434	15,896	14,323	12,799	11,404	16,022
1991	9,751	17,951	17,125	20,140	19,779	15,693	18,902	17,245	20,547	19,149	20,043	16,109	14,728	11,582	17,085
1992	9,853	12,731	13,315	14,485	13,900	14,955	12,419	13,442	15,979	12,773	11,918	9,955	9,044	9,962	12,687
1993	10,076	11,906	12,703	13,217	11,736	11,944	13,648	12,817	19,861	15,209	13,602	12,750	11,335	11,133	13,066
1994	9,650	12,518	13,113	12,750	13,026	11,938	11,450	14,833	16,639	15,015	13,390	11,220	10,198	10,868	12,724
1995	9,738	11,417	12,953	14,970	17,217	15,858	18,566	15,163	20,121	20,611	15,584	12,618	11,667	11,590	14,899
1996	12,305	19,199	24,812	25,039	25,040	22,040	20,956	23,456	22,363	20,955	20,492	15,912	13,816	11,119	20,010
1997	11,681	13,967	16,830	25,088	23,907	22,968	21,283	22,891	22,337	22,414	21,489	16,290	14,705	14,178	19,343
1998	16,595	16,251	16,133	17,878	16,306	15,049	15,922	17,394	22,139	21,464	16,143	13,743	11,214	11,903	16,582

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2.11	Estimated Purchase MW Eligible For (4)H(10)C Credit.....	105
	4(h)(10)C Power Purchase Amount.....	106

Table 2.11
4(h)(10)(C) Power Purchase Amounts
Energy in Average Megawatts

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep
1929	912	650	1,594	2,030	1,677	1,544	793	348	810	0	394	-184	-123	217
1930	1,162	762	1,694	1,888	1,552	1,131	627	1,661	600	1,314	0	232	-53	-37
1931	929	245	1,965	2,479	1,251	2,748	580	2,676	-128	1,566	0	28	580	662
1932	706	800	1,637	2,645	2,343	785	0	0	0	0	0	0	0	-96
1933	1,082	1,220	0	0	0	430	0	0	0	0	0	0	0	196
1934	0	0	0	0	0	0	0	0	0	-376	0	1,139	0	-123
1935	510	1,949	1,689	0	0	1,390	0	937	0	-34	-149	0	0	936
1936	1,232	815	1,649	3,070	1,627	910	0	0	0	0	0	0	0	743
1937	1,296	333	1,549	1,771	2,037	1,652	1,192	2,395	0	864	491	-665	-93	-208
1938	564	1,358	576	0	0	0	0	0	0	0	-296	353	353	210
1939	897	935	1,850	1,751	1,872	1,015	0	0	0	-248	0	549	215	457
1940	936	300	441	1,549	1,257	0	0	0	0	0	38	1,045	317	-56
1941	394	616	1,052	1,997	1,208	-22	156	0	0	1,105	0	0	0	14
1942	647	0	322	0	1,415	2,270	0	0	0	0	0	0	0	-161
1943	505	1,517	1,199	0	0	0	0	0	0	0	0	0	0	712
1944	1,233	708	1,743	1,897	1,480	1,044	912	0	945	2,183	455	0	297	310
1945	719	726	1,903	2,365	2,948	1,304	128	1,569	0	0	401	-386	-309	-272
1946	1,094	651	635	158	0	0	0	0	0	0	0	0	0	103
1947	1,208	604	0	0	0	0	0	0	0	0	0	0	0	315
1948	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	663	762	788	0	1,661	0	0	0	0	0	-59	566	289	73
1950	916	802	1,378	0	0	0	0	0	0	0	0	0	0	160
1951	72	0	0	0	0	0	0	0	0	0	0	0	0	178
1952	0	0	0	0	0	0	0	0	0	0	0	0	0	906
1953	1,285	1,012	1,705	398	0	406	0	0	0	0	0	0	0	241
1954	659	493	0	0	0	0	0	0	0	0	0	0	0	0
1955	646	0	232	1,168	1,663	801	-162	0	0	0	0	0	0	568
1956	546	0	0	0	0	0	0	0	0	0	0	0	0	322
1957	483	798	0	0	1,366	0	0	0	0	0	0	289	71	319
1958	1,114	602	1,577	0	0	0	0	0	0	0	-67	-83	0	379
1959	1,067	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	-277	0	0	694
1961	820	646	748	0	0	0	0	0	0	0	-344	101	0	471
1962	1,566	681	754	0	0	491	0	0	0	0	94	-82	0	742
1963	311	0	0	0	0	0	0	-88	0	0	0	0	0	120
1964	1,184	837	632	831	784	603	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	646
1966	422	235	264	0	0	1,533	0	0	0	0	0	0	0	591
1967	1,183	971	158	0	0	0	0	444	0	0	0	0	0	195
1968	726	229	304	0	0	0	0	-573	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	-183	0	0	371

Table 2.11
4(h)(10)(C) Power Purchase Amounts
Energy in Average Megawatts

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr 1	Apr 16	May	Jun	Jul	Aug 1	Aug 16	Sep
1970	761	453	1,631	0	0	301	0	-670	0	0	0	-156	0	673
1971	1,239	847	1,312	0	0	0	0	0	0	0	0	0	0	0
1972	537	558	263	0	0	0	0	0	0	0	0	0	0	0
1973	680	376	563	0	838	724	1,275	-222	0	821	133	494	602	-17
1974	827	1,134	0	0	0	0	0	0	0	0	0	0	0	0
1975	1,438	671	1,017	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	618	540	1,505	1,911	1,200	785	1,406	510	1,544	2,330	363	-277	326	614
1978	1,304	1,065	-130	0	0	216	0	0	0	0	0	0	0	0
1979	0	622	1,809	967	1,351	0	0	231	0	-180	250	739	403	86
1980	904	1,025	1,865	2,632	467	1,793	0	0	0	0	-298	404	177	0
1981	444	606	0	0	0	0	-35	479	0	0	0	0	0	74
1982	796	82	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	18	0	0	0	0	0	0	0	0	0	0	0	0
1984	653	0	0	0	0	0	0	0	0	0	0	0	0	79
1985	822	157	463	0	0	1,118	0	0	0	-563	1,263	1,179	614	36
1986	391	0	886	215	0	0	0	0	0	0	-232	0	-62	707
1987	1,517	272	458	1,604	2,111	84	0	0	0	-230	-33	808	401	189
1988	1,236	1,013	2,167	3,105	1,464	1,606	-377	833	-77	2,045	-143	-42	0	47
1989	798	885	1,255	2,591	891	542	0	0	0	-1,051	96	454	0	-67
1990	1,007	499	0	0	0	0	0	0	0	0	-296	0	0	658
1991	1,677	0	0	0	0	0	0	0	0	0	0	0	0	473
1992	1,525	735	1,452	956	1,104	-131	-628	-118	0	1,161	459	1,697	936	97
1993	500	530	1,827	2,390	1,059	889	69	817	0	118	0	-496	-60	-73
1994	1,244	583	1,287	2,707	581	1,296	102	957	0	166	-34	555	2	-85
1995	796	1,258	1,713	1,727	0	0	0	654	0	0	0	148	0	-182
1996	290	0	0	0	0	0	0	0	0	0	0	0	0	720
1997	856	459	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	-37	454
Average	745	506	691	570	442	345	84	128	63	134	27	104	37	238

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Table 2.12.1
Federal Tier 1 System Firm Critical Output Projection
PNW Loads and Resource Study
2012-2013 Fiscal Years
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

1.	T1SFCO Projections Energy in aMW	2012	2013	Average
2.	Total Federal System Hydro Generation (Table 2.12.2)	6,804	6,804	6,804
3.	Total Designated Non-Federally Owned Resources (Table 2.12.3)	1,109	949	1,029
4.	Total Designated BPA Contract Purchases (Table 2.12.4)	387	385	386
5.	Total Designated System Obligations (Table 3.12.5)	-1,232	-1,211	-1,221
6.	<i>Federal Tier 1 System Firm Critical Output</i>	7,068	6,927	6,998

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Table 2.12.2
Federal System Hydro Generation for use in the T1SFCO Calculation
Corresponds with TRM Table 3.1
PNW Loads and Resources Study
2012-2013 Fiscal Years
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

1.	Regulated Hydro	2012	2013	Average
2.	Albeni Falls	26.5	26.6	26.5
3.	Bonneville Hydro	402.3	402.0	402.2
4.	Chief Joseph Hydro	1,074.3	1,074.3	1,074.3
5.	Dworshak Hydro	147.8	148.1	148.0
6.	Grand Coulee Hydro	1,860.8	1,861.1	1,860.9
7.	Hungry Horse	89.4	89.4	89.4
8.	Ice Harbor Hydro	166.1	166.2	166.1
9.	John Day Hydro	801.5	801.4	801.5
10.	Libby	176.9	177.2	177.1
11.	Little Goose Hydro	190.3	190.5	190.4
12.	Lower Granite Hydro	188.4	188.5	188.5
13.	Lower Monumental Hydro	188.4	188.6	188.5
14.	Mc Nary Hydro	489.6	488.4	489.0
15.	The Dalles Hydro	602.1	601.9	602.0
16.	Independent Hydro			
17.	Anderson Ranch	14.6	14.7	14.7
18.	Big Cliff	10.2	10.3	10.3
19.	Black Canyon	8.1	8.1	8.1
20.	Boise River Diversion	1.3	1.3	1.3
21.	Bonneville Fishway	21.4	21.4	21.4
22.	Chandler	8.6	8.6	8.6
23.	Cougar	16.5	16.6	16.6
24.	Cowlitz Falls	26.2	26.2	26.2
25.	Detroit	41.9	41.9	41.9
26.	Dexter	9.2	9.2	9.2
27.	Foster	12.5	12.5	12.5
28.	Green Peter	27.5	27.6	27.6
29.	Green Springs - USBR	5.8	5.8	5.8
30.	Hills Creek	18.0	18.0	18.0
31.	Idaho Falls - Upper, City, and Lower Plants	14.0	14.0	14.0
32.	Lookout Point	36.3	36.4	36.4
33.	Lost Creek	28.6	28.7	28.6
34.	Minidoka	16.4	16.4	16.4
35.	Palisades	74.1	74.2	74.2
36.	Roza	7.9	7.9	7.9
37.	Total Federal System Hydro Generation	6,804.0	6,804.0	6,804.0

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Table 2.12.3
Designated Non-Federally Owned Resources for use in the T1SFCO Calculation
Corresponds with TRM Table 3.2
PNW Loads and Resources Study
2012-2013 Fiscal Years
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

1.	Project	2012	2013	Average
2.	Ashland Solar Project	0.0	0.0	0.0
3.	Columbia Generating Station	1,030.0	877.6	953.8
4.	Condon Wind Project	10.6	10.6	10.6
5.	Dworshak/Clearwater Small Hydropower	2.6	2.6	2.6
6.	Elwha Hydro	2.1	0.0	1.0
7.	Foote Creek 1	5.1	5.1	5.1
8.	Foote Creek 2	0.4	0.4	0.4
9.	Foote Creek 4	4.1	4.1	4.1
10.	Fourmile Hill Geothermal (Not included)	0.0	0.0	0.0
11.	Georgia-Pacific Paper (Wauna)	19.2	19.2	19.2
12.	Glines Canyon Hydro	4.8	0.0	2.4
13.	Klondike I	7.7	7.7	7.7
14.	Stateline Wind Project	21.9	21.9	21.9
15.	White Bluffs Solar	0.0	0.0	0.0
16.	Total Designated Non-Federally Owned Resources	1,108.5	949.2	1,028.9

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Table 2.12.4
Designated BPA Contract Purchases for use in the T1SFCO Calculation
Corresponds with TRM Table 3.3
PNW Loads and Resources Study
2012-2013 Fiscal Years
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

1.	Contract Purchases	Contract #	2012	2013	Average
2.	Priest Rapids CER for Canada	97PB-10099	30.0	29.4	29.7
3.	Rock Island #1 CER for Canada	97PB-10102	11.3	11.1	11.2
4.	Rock Island #2 CER for Canada	97PB-10102	7.2	7.0	7.1
5.	Rock Reach CER for Canada	97PB-10103	38.5	37.7	38.1
6.	Wanapum CER for Canada	97PB-10100	29.0	28.5	28.8
7.	Wells CER for Canada	97PB-10101	24.6	24.1	24.4
8.	BCHP to BPA PwrS	99PB-22685	1.0	1.0	1.0
9.	PASA to BPA Pk Repl	94BP-93658	1.1	1.1	1.1
10.	PASA to BPA S/N/X	94BP-93658	0.4	0.4	0.4
11.	PASA to BPA Xchg Nrg	94BP-93658	1.9	1.9	1.9
12.	PPL to BPA So Idaho	89BP-92524	160.2	159.9	160.0
13.	RVSD to BPA Pk Repl	94BP-93958	4.8	4.9	4.9
14.	RVSD to BPA Seas Xchg	94BP-93958	4.3	4.3	4.3
15.	RVSD to BPA Xchg Nrg	94BP-93958	7.3	7.3	7.3
16.	SPP to BPA Harney Wells	88BP-92436	60.0	60.0	60.0
17.	PPL to BPA SNX (Spring Return)	94BP-94332	0.0	0.0	0.0
18.	PPL to BPA SPX (Summer Return)	94BP-94332	5.7	5.7	5.7
19.	Total Designated BPA Contract Purchases		387.3	384.6	385.9

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Table 2.12.5
Designated BPA System Obligations for use in the T1SFCO Calculation
Corresponds with TRM Table 3.4
PNW Loads and Resources Study
2012-2013 Fiscal Years
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

1.	System Obligation	Contract #	2012	2013	Average
2.	BPA to BRCJ Chief Joseph	14-03-17506; 14-03-49151	9.2	9.2	9.2
3.	BPA to BRCB Columbia Basin Project	lbp-4512; 14-03-001-12160	136.8	137.1	137.0
4.	BPA to BRCR Crooked River Project	14-03-73152	1.1	1.1	1.1
5.	BPA to BROP Owyhee Project	EW-78-Y-83-00019	3.4	3.4	3.4
6.	BPA to BRRP Rathdrum Prairie Project	14-03-49151	0.7	0.7	0.7
7.	BPA to BRSID Southern Idaho Projects	EW-78-Y-83-00019	20.3	20.3	20.3
8.	BPA to BRSIN Spokane Indian Development	14-03-49151	0.3	0.3	0.3
9.	BPA to BRSV Spokane Valley	14-03-63656	0.9	0.9	0.9
10.	BPA to BRTD The Dallas Reclamation Project	14-03-32210	2.0	2.0	2.0
11.	BPA to BRTV Tualatin Project	14-03-49151	0.6	0.6	0.6
12.	BPA to BRUB Umatilla Basin Project	10GS-75345 (draft)	0.0	0.0	0.0
13.	BPA to BRYK Yakima Project	DE-MS79-88BP92591	1.7	1.7	1.7
12.	BPA To BCHA Can Ent	99EO-40003	522.3	504.7	513.5
13.	BPA to BHEC 2012PSC	97PB-10051	5.2	5.2	5.2
14.	BPA to PASA C/N/X	94BP-93658	1.1	1.1	1.1
15.	BPA to PASA S/N/X	94BP-93658	0.4	0.4	0.4
16.	BPA to RVSD C/N/X	94BP-93958	4.8	4.9	4.9
17.	BPA to RVSD Seas Xchg	94BP-93958	4.3	4.3	4.3
18.	BPA to SPP Pwr S	88BP-92436	60.0	60.0	60.0
19.	Federal Intertie Losses (Calculated: 3.0% of Intertie Sales in Table 2.12.5 lines 14-17)	n/a	0.3	0.3	0.3
20.	BPA to AVWP WP3 S	85BP-92186	41.7	41.6	41.6
21.	BPA to PPL SNX (Spring Delivery)	94BP-94332	0.0	0.0	0.0
22.	BPA to PPL SPX (Summer Delivery)	94BP-94332	5.7	5.7	5.7
23.	BPA to PPL SoID	89BP-92524	160.2	159.9	160.0
24.	BPA to PSE WP3 S	85BP-92185	41.7	41.6	41.6
25.	BPAP to BPAT (Dittmer/Substation Service)	09PB-12128	9.1	9.1	9.1
26.	Federal Power Trans. Losses (Calculated: 2.82% of totals in Tables 2.12.2, 2.12.3 & 2.12.4)	n/a	234.1	229.5	231.8
27.	Transmission Returns (Slice) (Calculated: 27.027%*1.9%* sum of Tables 2.12.2, 2.12.3 & 2.12.4 less sum of Table 2.12.5 lines 1-26)	n/a	-36.1	-35.4	-35.8
28.	Total Designated System Obligations		1,231.7	1,210.2	1,221.0

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3.	HYDRO REGULATION ASSUMPTIONS	121
3.1	HYDSIM Hydro Regulation Study Assumptions for 2012 and 2013	123

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STUDY NUMBER: 10_RateCase12_initial & 10_RateCase13_initial

Requested By: BPA, Rates Process

Due Date: August 11, 2010

Purpose of Study: This is a 70-year continuous study of the system operation for the initial proposal WP-12 Rate Case for FY 2012 and FY 2013.

Directory of Study: **AER Step:** Q:\RATES\10_RateCase12_initial\AER &
Q:\RATES\10_RateCase13_initial\AER

OPER Step: Q:\RATES\10_RateCase12_initial\OPER &
Q:\RATES\10_RateCase13_initial\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 the 2010 operating year (OY10) 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** 70-year study mostly based on the OY10 PNCA data submittal. The study begins on October 1, 1928, and ends on September 30, 1998. The study is run for Fiscal Year (FY) 2012 (October 2012 through September 2013) and FY 2013 (October 2012 through September 2013).
- The Coordinated System generation does not include the Tacoma projects, Brownlee, Oxbow, and Hells Canyon.
- **Stream Flow Data** are from “Modified Streamflows 2000 Level of Irrigation”. They contain irrigation depletions from the year 2000. (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.” The data on page 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 from Reclamation’s February 1, 2009, preliminary PNCA data submittal for OY10. No adjustments are made for **NTSA** storage and release. The inflows to Brownlee are adjusted to reflect the regulation of the Upper Snake reservoirs including the Upper Snake BiOp operation and the release of up to 487 thousand acre feet (KAF) for flow augmentation. The Brownlee inflow data were provided by the Bureau of Reclamation on June 1, 2007. (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** are from the PNCA plant data for operating year 2010 (OY10) for all projects.
- **Loads** are from the FELCC OY10 Critical Period study run by the Northwest Power Pool (NWPP) for the PNCA. 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** for all projects are from the PNCA OY10 data.
- **Initial Contents** for all projects came from the September 30, 1929, storage ending content from the final Rates study for 2007 (Q:\RATES\06\04RATE_07), except Mica, Arrow, Duncan projects are initialized to the content from the TSR DOP10 study. (Q:\TREATY\DOP10\FY10_RATE).
- **Critical Rule Curves** (CRC) are in accordance with PNCA 2010 adopted system critical rule curves where the 1st year critical rule curve = OY10 CRC1; 2nd year = empty; 3rd year = empty; and 4th year = empty.
- **Flood Control Rule Curves**, also known as Upper Rule Curves (URC), are the highest contents allowed for each reservoir and supersede all other reservoir elevation and content operating objectives. The curves are based on: forecasts (not actuals); no shift to Grand Coulee; a ratio of 3.6/4.08 Arrow/Mica split; and variable flood control (VARQ) at Hungry Horse and Libby. They were provided by the Corps of Engineers to BPA in April 2010. These flood control curves included the variable flood control in December at Libby, BC Hydro's updated storage reservation diagram for Duncan, a 1600 cfs minimum flow at Dworshak. (The unit 'cfs' is a common measure of flow, cubic feet per second.) The Mica, Arrow, and Duncan flood control requirements are from the TSR DOP10 study updated in July 2010. (Q:\RATES\10_RateCase12_initial\DOP10forRATE_JUL2010\bpa_tsr_dop10.dat). The flood control curves for Coulee are adjusted for the amount of storage capability available below the URC on April 30 each year for Mica, Arrow, and Duncan to more closely reflect the methodology used in real-time operations. BPA adjusts the flood control curves to shift some of Dworshak's requirement to Grand Coulee when possible.
- **Variable Energy Content Curves** (VECCs) are calculated using OY10 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 ksfd) in January-April 30 and 1240 feet (843.9 ksfd) in May. (The unit 'ksfd' is a volume of water equal to 1000 cfs for 1 day.) The Canadian projects' TSR DOP10 VECCs are based on forecasts, the ratio of 3.6/4.08 Arrow/Mica split, non-shifted flood control, 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 TSR DOP10 study run by BPA on July 16, 2010. Mica data logic in the HYDSIM program is turned off. Mica's minimum storage content is reset to 0.0 ksfd so that drafting below 2295.9 ksfd (normal minimum content) can occur.
- **Libby** has a maximum outflow of 4,000 cfs January through April, 25,000 cfs May through August, and 14,000 cfs September through December. The 25,000 cfs May through August maximum outflow is powerhouse hydraulic capacity without spill, but a higher outflow can be provided to maintain the required VARQ flood control space. It can be drafted to meet FELCC September through November as long as it does not draft below the December Variable URC. When the December forecast at Libby for April through August is less than 5500 KAF, the flood control at Libby in December is 2426.6 feet (1804.7 ksfd), When the forecast is greater than 5900 KAF, the flood control in December is 2411.0 feet (1502.2 ksfd). The flood control data is interpolated between 1804.7 ksfd and 1502.2 ksfd when the forecast is between 5500 and 5900 KAF. Libby does violate the flood control URC at times for Corra Linn's IJC operation. Otherwise, the drafting for flood control space at Libby would actually cause downstream flooding near Corra Linn. January-April, Libby operates to minimum flow (4,000 cfs) or at the flood control URC in attempt to reach the flood control URC on April 15 (as a surrogate for the BiOp's April 10 objective). During May 1 through June 30 Libby operates for Sturgeon and during May 15 through September 30 it operates for Bull Trout. Sturgeon and Bull Trout flow requirements May through July are based on May 1 April-August Kuehl-Moffit forecast at Libby and are

summarized as follows from the PNCA OY10 Corps of Engineers Data Submittal based on the USFWS BiOp dated February 18, 2006.

<u>Libby May1 Apr-Aug</u> <u>Forecast Volume</u> <u>(MAF)</u>	<u>Sturgeon Flow Volume</u> <u>Provided from</u> <u>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 can draft below the 2439 feet draft limit to meet the Bull Trout flow objective. In years when the May-1 April through August volume forecast for The Dalles is less than 71.8 million acre feet (MAF), which is the lowest 20th percentile, the project attempts to operate along a computed straight line between June 30 content and a September 30 draft limit of 2439.0 feet (2061.3 ksfd) during July and August to minimize occurrences of a second peak flow in the summer. In years when the forecast is greater than or equal to 71.8 MAF the September 30 draft limit is 2449 feet (2280.3 ksfd). Libby can not exceed the maximum powerhouse hydraulic capacity of 25,000 cfs in July-August. However, due to minimum flow for sturgeon and bull trout, the project often operates below the computed straight line.

- **Hungry Horse** can not draft below Integrated Rule Curve (IRC) curves 3545 feet (1330.2 ksfd), 3545 feet (1330.2 ksfd), and 3542 feet (1297.1 ksfd) during September through November, respectively unless drafting to meet Columbia Falls minimum flow requirements. Hungry Horse will draft to 3549.2 feet (1377.7 ksfd) for winter flood control and Chum flow in December. However, due to the minimum flow requirement at Columbia Falls, Hungry Horse often operates below 3549.2 feet in December. From January through March, Hungry Horse operates between the Biological Rule Curve (Fish VECC) and the VarQ rule curve for flood control except in periods when minimum flow requirements draft the project deeper. The Biological rule curves are calculated using assumed inflows that are exceeded 75 percent of the time, the minimum outflow, and the requirement to be at flood control elevation on April 10. Hungry Horse operates to the lower of 3545 feet (1330.2 ksfd) or VarQ flood control upper rule curve. In May-June, Hungry Horse operates on flood control when possible but drafts below flood control to meet minimum flows when necessary. In years when the May 1 April-August volume forecast for The Dalles is less than 71.8 MAF (20th percentile), the project operates along the computed straight line between June 30 content and a September 30 draft limit of 3540.0 feet (1275.0 ksfd) 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 (20th percentile), the project operates along the computed straight line between June 30 content and a September 30 draft limit of 3550.0 feet (1386.7 ksfd) during July and August to minimize occurrences of a second peak flow in the summer. Hungry Horse can not exceed 11,400 cfs in July-August, the maximum powerhouse hydraulic capacity plus 20 percent allowable spill. Hungry Horse operates to meet the Columbia Falls minimum flow between 3,200 cfs and 3,500 cfs based on the April to August volume runoff between 1190 KAF and 1790 KAF at

Hungry Horse as shown in the PNCA data submittal. The outflow at Hungry Horse is limited to maximum turbine capacity of 9,500 cfs, and no spill is allowed unless required to maintain the required flood control space. Hungry Horse's at-site minimum flow is computed between 400 cfs and 900 cfs based on the April to August volume runoff between 1190 KAF and 1790 KAF at Hungry Horse as shown in the PNCA data submittal.

- **Albeni Falls** operates at 2062.0 feet (559.1 ksfd) from June through August, 2061.5 feet (535.7 ksfd) in September, 2056 feet (279.0 ksfd) in October, 2055 feet (234.7 ksfd) November through March, 2056.0 feet (279.0 ksfd) in April, and 2060.0 feet (465.7 ksfd) in May.
- **Grand Coulee** operates to meet FELCC September through December subject to the draft limits of 1283 feet (2332.2 ksfd) in September and October, 1275 feet (2026.8 ksfd) in November, and 1270 feet (1843.0 ksfd) in December. January through March, Coulee can be drafted to the higher of winter draft limits [1260 feet (1492.2 ksfd), 1250 feet (1155.8 ksfd), 1240 feet (843.7 ksfd), respectively] or the Biological Rule Curve (fish VECC). The fish VECC reflects the expected April 10th URC and storage needed for the appropriate Vernita Bar minimum flow requirement. Grand Coulee is then operated to these minimum storage points. The fish VECCs are calculated using 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 operates on flood control. From April 30 through May, Grand Coulee may be drafted to the lower of flood control or 1280 feet (2215.5 ksfd) to support Priest Rapids and McNary flow augmentation targets. In June - July, Grand Coulee draft limits are 1288 feet (2532.4 ksfd), 1285 feet (2411.4 ksfd), respectively to support Priest Rapids and McNary flow augmentation targets. In Au1, the draft limit for BIOP flow augmentation is 1280 feet (2215.5 ksfd) if July 1 April-August runoff at The Dalles is less than 92 MAF; otherwise the draft limit is 1282 feet (2293.5 ksfd). In Au2, the draft limit is 1278 feet (2139.8 ksfd) if the July 1 forecast April through August volume runoff at The Dalles is less than 92 MAF, otherwise the draft limit is 1280 feet (2215.5 ksfd). 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 percent of the largest of the October or November flow at Wanapum or b) 70,000 cfs. Values less than 70,000 cfs are rounded to the nearest 5,000 cfs. The minimum protection level flow at Vernita Bar in any period will be no less than 36,000 cfs.
- **Priest Rapids** has a flow augmentation target of 135,000 cfs for Steelhead April 10 through June 30. From April 1-9 the minimum flow for Priest Rapids is the same as the Vernita Bar minimum flow.
- **Brownlee** operates to the 70-yr rule curves provided to BPA from the Northwest Power Pool on March 15, 2007. They are 432.1 ksfd in Au1, 380.7 ksfd in Au2, 293.8 ksfd in Sep, 491.7 ksfd in Nov, 436.3 ksfd in Dec, 385.4 ksfd in Jan, 484.7 ksfd in Jun and Jul. The rule curves are vary between 226.0 ksfd, 113.2 ksfd, 62.9 ksfd, 0.0 ksfd and 74.7 ksfd to full content of 491.7 ksfd in Oct, Feb, Mar, Ap1, Ap2 and May, respectively.
- **Dworshak** is on minimum flow of 1300 cfs or flood control objectives in all periods with the exception of July-August when it operates to meet Lower Granite flow augmentation targets. 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. On July 31, it operates to the midpoint of the straight line drawn from the end of June elevation to the end of August target elevation of 1535 feet (497.0 ksfd). Dworshak is drafted to 1520 feet (395.8 ksfd) on September 15 and run to the minimum flow of 1300 cfs for the remainder of the month. In July and August Dworshak's outflow cannot exceed 14,000 cfs, and Dworshak's outflow cannot exceed 7,650 cfs in September (7,650 cfs derived by assuming the

project discharge is 14,000 cfs in the first half of the month and 1,300 cfs in the second half of the month).

- **Lower Snake projects operate at MOP** in accordance with the PNCA data submittal. As identified in the 2008 BiOp, the Corps operates Little Goose, Lower Monumental, and Ice Harbor within one foot of minimum operating pool (MOP) during the period from approximately April 3 through August 31. Lower Granite operates within one foot of MOP from approximately April 3 through November 15 (Apr1-Oct in HYDSIM modeling). MOP for Lower Granite, Little Goose, Lower Monumental and Ice Harbor is elevation 733 (225.0 ksfd), 633 (260.5 ksfd), 537 (180.5 ksfd) and 437 feet (193.4 ksfd), respectively. During the rest of the year Lower Granite, Little Goose, Lower Monumental and Ice Harbor operate at elevation 738 (245.8 ksfd), 638 (285.1 ksfd), 540 (190.1 ksfd) and 440 feet (204.8 ksfd), respectively.
- **Turbine operations** at the four lower Snake River projects (Lower Granite, Little Goose, Lower Monumental and Ice Harbor) and the four lower Columbia River projects (McNary, John Day, The Dalles and Bonneville) are within **1 percent of peak efficiency** March through November. This requirement is reflected in the HYDSIM hydro availability file.
- **Spill for Fish Passage** is included at the eight federal mainstem projects (Lower Granite, Little Goose, Lower Monumental, Ice Harbor, McNary, John Day, The Dalles and Bonneville) based on the OY10 PNCA data, summarized below. The spill is limited at times by Spill TDG Gas Caps and minimum turbine flow requirements.
- **Juvenile Passage Spill and Total Dissolved Gas Caps from OY10 PNCA Planning**

PNCA OY10 SPILL CRITERIA (Feb 1, 2009 Data Submittal)					
Project	Spill	Min Turb	Days	Hour Ending	Gas Caps
Lower Granite	20 kcfs 18 kcfs	11.5 kcfs	Apr 3 - May 6, May 21 - 31; Jun 1 - Aug 15	All hours	40 kcfs
Little Goose	30% flow	11.5 kcfs	Apr 5 - May 6, May 21 - Aug 15	All hours	30kcfs Ap1-Ap2; 28kcfs May; 30kcfs June; 28kcfs Jul-Aug
Lower Monumental	gas cap; 17 kcfs	11.5 kcfs	Apr 7 - May 6, May 21-31; Jun 1 - Aug 15	All hours	26kcfs Ap1; 25kcfs Ap2; 22kcfs May; 19kcfs Jun; 24kcfs Jul-Aug
Ice Harbor	30% flow vs 45 kcfs day/gas cap night	9.5 kcfs	Apr 7 - May 31 Jun 1 - Aug 15	13 hrs day/11 hrs night	97 kcfs
McNary	40% flow	50 kcfs	April 10 - Jun 15	All hours	117kcfs Ap1-Ap2; 122kcfs May; 125kcfs Jun; 138kcfs Jul; 148 kcfs Aug
	40% vs 60% flow		Jun 16 - Aug 31	All hours	
John Day	30% vs 40% flow	50 kcfs	Apr 10 - Jun 15	All hours	96kcfs Ap1; 90 kcfs Ap2; 95 kcfs May-Jul; 98kcfs Aug
	30% flow		Jun 16 - Aug 31		
The Dalles	40% flow	50 kcfs	Apr 10 - Aug 31	All hours	124kcfs Ap1; 131kcfs Ap2; 132kcfs May ; 137kcfs Jun; 139kcfs Jul; 125kcfs Aug
Bonneville	lower of gas cap or 100 kcfs	30 kcfs	Apr 10 - Jun 15	All hours	100kcfs Ap1, 98kcfs Ap2; 95kcfs May; 100kfs Jun; 130kcfs Jul; 135kcfs Aug
	85 kcfs day / gas cap night	Min Turbine: 50 kcfs	Jun 16 - Jul 31	18 hrs Day/ 6 hrs night	
	75 kcfs day / gas cap night	Min Spill	Aug 1 - Aug 31	16 hrs Day/ 8 hrs night	

- **Chum Flow Objectives at Bonneville** are from November 1 through April 10 and estimated at 125,000 cfs in the PNCA data submittal. Grand Coulee drafts for this Chum flow requirement with draft limits of 1275 feet (2026.8 ksf) in November and 1270 feet (1843.0 ksf) in December.
- **McNary Flow Targets** for April 10 through June 30 are 220,000 to 260,000 cfs based on The Dalles April 1, April - August volume runoff forecasts. When the forecast is 80 MAF or less the target is 220,000 cfs, and when the forecast is 92 MAF or greater the target is 260,000 cfs. Straight-line interpolation determines the flow targets for volume forecasts between 80 and 92 MAF. McNary summer flow targets are 200,000 cfs in July and August. Grand Coulee drafts for this flow augmentation target, subject to draft limits.
- **Lower Granite Flow Targets** also vary depending on the forecast. When Lower Granite April 1, April - July runoff forecast is less than 16 MAF, then the April 3 through June 20 flow target is 85,000 cfs, and the June 21 through August 31 is 50,000 cfs. When the April 1 Lower Granite April through July forecast is greater than 20 MAF, the April 3 through June 20 target flow is 100,000 cfs. In June 21 through August 31, when the forecast is greater than 28 MAF, the flow target is 55,000 cfs. The spring flow targets are interpolated for forecasts between 16 and 20 MAF, and the summer flow targets are interpolated for forecasts between 16 and 28 MAF. Dworshak drafts to meet this flow objective, subject to draft limits.

- **John Day** is operated at 262.5 feet (127.8 ksf) from April through September. From October through March, John Day operates to elevation 265 feet (191.0 ksf).
- **The Dalles** is modeled as a reservoir instead of a run-of-river project to eliminate a minor programming bug in HYDSIM's energy calculation. The new reservoir input data was selected to very closely match the PNCA data.
- **Bonneville** second powerhouse corner collector is modeled as "other spill" in HYDSIM, using the "other spill" data from PNCA OY10.
- **Spill at non-Federal projects** is summarized below from OY10 PNCA planning data. Wells dam spills the percentage shown below if Chief Joseph's outflow is less than 140,000 cfs; otherwise Wells spills 10,200 cfs April 12 through August 26.

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

PROJECTS:	Apr1	Apr2	May	Jun	Jul	Aug1	Aug2
Wells	1.7	6.5	6.5	6.5	6.5	6.5	4.5
Rocky Reach	0.0	0.0	20.1	12.5	9.0	9.0	0.0
Rock Island	7.0	10.0	10.0	19.3	20.0	20.0	0.0
Wanapum	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Priest Rapids	0.0	61.0	0.0	19.5	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 rise to elevation 1745.32 at the Queens Bay gage. This maximum elevation at Queens Bay is in effect through January 7. After January 7 the lake will be lowered to elevation 1744 on February 1, elevation 1742.4 on March 1, and 1739.32 on May 1. From June 1 through August 31, after the lake exceeds elevation 1739.32 feet at the Queens Bay gage, the lake shall be operated using the "allowable elevation" calculation to determine the Queens Bay maximum allowable elevation until the elevation at the Nelson gage drafts back to elevation 1743.32 feet.

OPER STEP

- All AER step criteria apply unless specifically amended below.
- Loads in the OPER step are the 2012 and 2013 Coordinated System firm residual hydro loads from BPA's 2010 LARIS Study 68 on August 2010. These residual hydro loads are the total coordinated system firm load less all the other firm non-hydro resources. A variable secondary market limit based on an AURORA market analyses is also included in every period of every year. The secondary market limit is calculated as necessary to force the HYDSIM 'overgen' spill to equal the spill due to lack of market estimated by AURORA. The Coordinated System independent hydro generation from LARIS Study 68 is also used in this study to develop the residual hydro load.
- **Unit Outages & Availability Factors** for federal projects are based on the average of 2001-2009 actual outages, plus further reduced hydro availability due to large planned outages from April 2010 through August 2014 at Chief Joseph (for breaker replacements and two 88-MW units out of service for runner replacement) and March 2013 through September 2022 at Grand Coulee (for runner replacements and one 805-MW unit out of service for overhaul). The availability factors are also used to reflect reserve requirements because HYDSIM has no other mechanism to account for *inc* reserves. The availability factors assume the federal hydro system will provide 74 percent of the estimated reserves required. The availability factors reflect operating contingency reserve requirements at 5.3 percent of control area generation, which represents the requirement for 7 percent of thermal generation and 5 percent for all other

generation resources. Balancing reserve requirements for wind are also included in the availability factors and are consistent with the preliminary estimates provided by Transmission staff. The estimates of firm contingent tagging are also reflected in the HYDSIM availability factors.

- **Initial Contents** for the major federal projects are based on the 70-yr average of September 30 storage ending content from the 08RateCase10_final study.
- **Flood Control Rule Curves** for Grand Coulee are adjusted for the amount of storage capability available below the URC on April 30 each year for Mica, Arrow, and Duncan and are also adjusted to shift some Dworshak flood control space to Grand Coulee when possible.
- **Non-federal** projects are run to the resulting contents from the AER step. This allows the federal projects to operate without causing the non-federal projects to adjust operations to meet the system load.
- **Bonneville Chum Flow Objectives** are determined each period based on 11.5 or 11.3 feet tailwater elevation requirements below Bonneville November through March and 16.5 feet tailwater in April. Grand Coulee operates to meet the chum flow objectives November through March.
- **April 10 URC** objectives are included in the study. The BiOp objective is for the federal reservoirs to be at their April 10 URC elevations each year, as full as possible in preparation for providing flows to meet the spring flow objectives, although minimum flow requirements and . The objective is for Grand Coulee to operate with a 85 percent chance of reaching this April 10 elevation and for Libby and Hungry Horse to operate with a 75 percent chance.
- **Lower Granite flow targets** are removed from the OPER step because Dworshak is the only project available to help meet them and other operating requirements determine its operation.

Project Specific Data:

- **Mica, Duncan, and Arrow** are fixed to the 70-year TSR DOP10 study with the following additions: 1) One MAF of flow augmentation is stored in January. 2) The trout spawning operation is included at Arrow where April 16 through April 30 flows are at least 15,000 cfs and May and June flows are equal to or greater than the preceding month whenever possible. No more than a 10,000 cfs decrease is allowed from one month to the next. 3) Arrow and Duncan balance operations to ensure that both projects are on TSR DOP10 contents by 31 July. 4) Mica balances to the TSR DOP10 contents in July when Arrow and Duncan can not. 5) The Libby Coordination Agreement Provisional Draft is included at Arrow.
- **Duncan** targets outflow of 8,000 cfs (to support Cora Linn and Brilliant flows) but does not draft below 1,845 feet (316.2 ksfd) in September, targets 2,000 cfs in October, 2,900 cfs in November, 4,700 cfs in December (to support Kootenay Lake elevation), and 7,000 cfs in January (to support Arrow whitefish operation). In February and March, Duncan drafts for power with a draft limit of 1812.5 feet (93.1 ksfd) in February and a maximum elevation of 1807.7 feet (65.3 ksfd) in March. Duncan has a minimum flow of 3,000 cfs and 2,000 cfs in February-March, respectively. In April, Duncan drafts to empty unless the March 1 May through July forecast at Duncan is less than 1,480 KAF when Duncan operates to 1,000 cfs outflow in the first half of April and 100 cfs outflow in the second half of April. In May Duncan operates to minimum flow of 100 cfs to return to the TSR DOP10 elevation. In June and August, Duncan targets the higher of TSR DOP10 elevation or 1890 feet (688.2 ksfd),
- **Arrow** stores up to 1 MAF for flow augmentation in January in all years, and releases the 1 MAF (15 percent in May, 15 percent in June, and 70 percent in July) in years with a Feb-1 forecast April through August volume at The Dalles less than 75.0 MAF. Arrow has a minimum flow of 30,000 cfs in January if the January 1 forecast of April through August volume at The Dalles is less than 75 MAF; otherwise the minimum flow is 20,000 cfs. The flow augmentation will all be released by July 31 allowing Arrow to be on TSR DOP10 elevation by 31 July. For trout spawning, Arrow outflow operates to minimum flow of 15,000 cfs in April 15, between 15,000 cfs and 25,000 cfs in April 30, between 15,000 cfs and 35,000 cfs in May-June. During April through June the outflow at Arrow can not decline unless the TSR DOP10 balance by

June 30 is too negative. Then the outflow is allowed to reduce up to 10,000 cfs in Trout Spawning periods. The Outflow at Arrow can be increased in May-June to keep the July discharge below 80,000 cfs. Under the Libby Coordination Agreement (LCA) Arrow is allowed to draft below TSR DOP10 contents from August through December at most two times per year up to 120,000 cfs and return all the water by March (draft 30 ksfd August 1 through August 15, 30 ksfd in August 16 through August 31, 60 ksfd in September, and return all in October. Then draft 120 ksfd in December and return 60 ksfd in February and 60 ksfd in March).

- **Priest Rapids** has a flow augmentation target of 120,000 cfs April 10 through April 30, and in May and June Priest Rapids has a flow augmentation target of 135,000 cfs for Steelhead. The April 1 through April 9 minimum flow for Priest Rapids is the same as the Vernita Bar minimum for each year.
- **Brownlee** drafts to 2059.0 feet (373.5 ksfd) in July-August, 2051.5 feet (328.4 ksfd) in September. In October, Brownlee operates to variable target contents without violating a minimum flow of 9,700 cfs for IPC Fall Chinook operation. Brownlee will fill to full content of 491.7 ksfd in November without violating the 8,500 cfs minimum flow. In December through April 15, Brownlee operates to 8,700 cfs outflow unless a higher discharge is required to maintain flood control space. In April 16 through April 30 and June, Brownlee maintains full content of 491.7 ksfd without violating a minimum flow of 8,500 cfs. In May Brownlee target the elevation of 2069 feet (436.3 ksfd) without violating a minimum flow of 8,500 cfs.
- **Dworshak** has a maximum discharge of 17,000 cfs in September-June to reflect actual operations and avoid exceeding 110 percent TDG level. February through June outflows are shaped to reduce forced spill. July and August outflows are updated to reflect actual operations by using 10,000 cfs minimum in July, 13,000 cfs minimum August 1-15, and a maximum 25 percent reduction from the first half of August to the second half of August.
- **Libby** has a September minimum flow of 6,000 cfs. In the fall, Libby minimizes October draft and maximizes December draft by targeting outflow of 4,800 cfs in October, limiting November content to 2435 feet (1977.1 ksfd), and limiting outflow to 20,000 cfs maximum in October-December to avoid fall spill in all years. Libby's outflow in May is based on a VarQ allowable refill calculation as used in actual operations. Libby's June through September operation includes the sturgeon pulse with 7 days of 10,000 cfs spill during June, bull trout minimum required flows, and summer flow augmentation according to the Montana Proposal.
- **Hungry Horse** has maximum outflow of 9,000 cfs during June, July, and August. Hungry Horse will violate the flood control upper rule curve to keep its maximum outflow at 20,000 cfs or below. Hungry Horse has a maximum elevation of 3558 feet (1480.1 ksfd) in June. Hungry Horse's summer draft is shaped to provide flat flows July through September where possible.
- **Albeni Falls** drafts to 2053 feet (146.1 ksfd) by November 30, maintains this elevation through April 15, then fills to 2056.0 feet (279.0 ksfd) by April 30, and fills to 2060.0 feet (465.7 ksfd) in May.
- **Kerr** operates to elevation 2891 feet (488.6 ksfd) in October and November, 2888 feet (302.8 ksfd) in December, 2886.5 feet (211.0 ksfd) in January, 2886.4 feet (204.9 ksfd) in February, 2887 feet (241.5 ksfd) in March, 2884.8 feet (107.9 ksfd) in April 15, 2884.1 feet (65.7 ksfd) in April 30, 2890 feet (426.3 ksfd) in May, full at 2893 feet (614.7 ksfd) June through August, and 2891.8 feet (538.8 ksfd) in September. This operation is based on actual operations in recent past years.
- **Grand Coulee** operates at elevation 1285 feet (2411.4 ksfd) in September and between 1283 feet (2332.0 ksfd) and 1288 feet (2532.0 ksfd) in October. Grand Coulee can not fill above 1288 feet (2532.0 ksfd) in November-December and 1287 feet (2491.4 ksfd) in January and February. The draft limits at Grand Coulee for Priest Rapids and McNary flow targets are: 1220 feet (289.2 ksfd) on April 15, 1225 feet (418.7 ksfd) on April 30, 1240 feet (843.7 ksfd) in May, and 1285 feet (2411.4 ksfd) in June. July through August 15, Grand Coulee can not fill above 1288 feet (2532.0 ksfd). Also, the Bureau performs maintenance during the spring on the spillway drum gates at least one year of every three years, at least two of every five years, and at least three of every seven years. 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 feet/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. After meeting all modeling requirements, Grand Coulee's January through March operation is reevaluated to put more generation in January and February to evenly distribute the secondary energy when possible without violating other constraints in the study.

- **Columbia Basin Irrigation Project Pumping (Banks Lake)** is captured through the PNCA data submittal estimates of pumping, which are based on the average of the past five years actual pumping and include the equivalent of 5 feet (65.5 ksf) flow augmentation in August and the associated increase in pumping the following March-May period to return those 5 feet to Banks Lake. In years when this flow augmentation is not needed to meet the McNary flow augmentation target of 200,000 cfs, the pumping is increased by the equivalent of 5 feet in August and the following year's March-May pumping is decreased. Additionally, the Washington Columbia River Water Management Program (WCRWMP) is included in the OPER step. The WCRWMP includes the following:
 - o Grand Coulee Summer Draft
 - In years when the July 1 April-August volume forecast for The Dalles is less than 92 MAF (50th percentile), Grand Coulee drafts to the BiOp's August 31 draft limit of 1278.0 feet (2140.9 ksf).
 - In years when the July 1 April-August volume forecast for The Dalles is greater than 92 MAF (50th percentile), Grand Coulee drafts to the BiOp's August 31 draft limit of 1280.0 feet. (2216.3 ksf).
 - Also for years with less than 57,582 KAF (lower 5th percentile), Grand Coulee releases an additional 132 KAF for the Washington State Columbia River Partnership (WSCR). 47 KAF is for fish flow enhancement, 25 KAF is for municipal used in Tri-Cities, of which about 60 percent may return promptly to the river in the McNary pool as treated municipal effluent, and 33 KAF would support irrigation in MCN and JDA.
 - Also for years with greater than 57,582 KAF (lower 5th percentile) Grand Coulee releases an additional 82 KAF for the WCRWMP. 30 KAF is for fish flow enhancement and 22 KAF is for municipal used in the Tri-Cities, of which about 60 percent may return promptly to the river in the McNary pool as treated municipal effluent.
 - o Columbia Basin Project Pumping Increase
 - In all water years, Grand Coulee's inflows are reduced to reflect a pumping increase of 30 KAF in July and August (244 cfs July 1 through August 31). The study also accounts for the increased pumping load (~7 aMW July 1 through August 31).
 - o McNary Inflow Reductions
 - In all water years, McNary inflows are reduced to reflect an increase of 25 KAF to the Tri-Cities municipal water supply in July and August (81 cfs July 1 through August 31 assuming 60 percent effluent return).
 - In years with less than 57,582 KAF (lower 5th percentile), McNary inflows are reduced to reflect 16.5 KAF increased irrigation support in July and August (134 cfs July 1 through August 31).
 - o John Day Inflow Reductions
 - In years with less than 57,582 KAF (lower 5th percentile), John Day inflows are reduced to reflect 16.5 KAF increased irrigation support in July and August (134 cfs July 1 through August 31).
- **The Dalles** is modeled as a reservoir instead of a run-of-river project to eliminate a minor programming bug in HYDSIM's energy calculation. (The Dalles was the last project still modeled using HYDSIM's run-of-river project logic.) The reservoir-type input data in HYDSIM for The Dalles very nearly matches the PNCA run-of-river project data. The miscellaneous flow

aka “other spill” data is the same as PNCA OY10 data except for an additional 3,000 cfs in March to reflect the expected sluiceway operation in this study.

- **Juvenile Fish Bypass Spill** for the federal projects are summarized in the following tables. Forecasts of less than 12.8 MAF April through June at Lower Granite are used to estimate when average spring flows are likely less than 65,000 cfs and less spill will be provided at the three Snake River projects. There are 13 years in the 70-year study that meet this criterion and do not include planned spill for fish passage at the three Snake River projects.

Spill Criteria for WP12 Rate Case Initial Proposal					
Project	Spill	Min Turb	Days	Hour Ending	Notes
Lower Granite	20 kcfs(Apr3-Jun4) 18 kcfs(Jun5-Aug7)	11.5 kcfs	Apr 3 - May 6, May 21 - Jun 4; Jun 5 - Aug 7	All hours	Also see spring transport criteria.
Little Goose	30% flow	11.5 kcfs	Apr 5 - May 6, May 21 - Aug 12	All hours	Some years have no spring spill at the three Snake River transport projects.
Lower Monumental	gas cap(Apr7-Jun4) 17 kcfs(Jun5-Aug15)	11.5 kcfs	Apr 7 - May 6, May 21 - Jun 4; Jun 5 - Aug 15	All hours	
Ice Harbor	35% flow	9.5 kcfs	Apr 7 - Jun 15	All hours	
	30% flow		Jun 16 - Aug 16		
McNary	40% flow	50 kcfs	April 10 - Jun 15	All hours	
	50% flow		Jun 16 - Aug 31		
John Day	30% flow	50 kcfs	Apr 10 - 19	All hours	
	30% flow		Apr 20 - Jul 20		
	30% flow		Jul 21 - Aug 31		
The Dalles	40% flow	50 kcfs	Apr 10 - Aug 31	All hours	
Bonneville	100 kcfs	30 kcfs	Apr 10 - Jun 15	All hours	Jun1-30 day hrs are 0430-2130; Jul1-31 day hrs are 0430-2200; Aug1-15 day hrs are 0500-2145; Aug16-31 day hrs are 0500-2030.
	alternating, every 2 days: 85 kcfs day / 121 kcfs night 95 kcfs		Jun 16 - Aug 31	All hours; day/night spill hours vary	
Libby	10kcfs		7 days in June	All hours	Spill same dates as sturgeon pulse.

Summary: 2008 BiOp Snake River spring spill / max transport decisions.

Lower Granite Dam				
	Apr1	Apr2	May	June*
Seasonal Average Flows < 65	no spill	no spill	no spill	spill Jun1-30
Seasonal Average Flows > 65	spill Apr3-15	spill Apr16-30	spill May1-6,21-31	spill Jun1-30
Little Goose Dam				
	Apr1	Apr2	May	June*
Seasonal Average Flows < 65	no spill	no spill	no spill	spill Jun1-30
Seasonal Average Flows > 65	spill Apr5-15	spill Apr16-30	spill May1-6,21-31	spill Jun1-30
Lower Monumental Dam				
	Apr1	Apr2	May	June*
Seasonal Average Flows < 65	no spill	no spill	no spill	spill Jun1-30
Seasonal Average Flows > 65	spill Apr7-15	spill Apr16-30	spill May1-6,21-31	spill Jun1-30

* Fed agreement that summer spill criteria starts June 5th on average.

- Overgeneration Spill Priorities and TDG Gas Caps** are summarized in the following table. One kcfs equals one thousand cfs. Spill up to the TDG gas caps in the order listed below to avoid generation levels that exceed the secondary market limit. This is called ‘overgen spill’ in HYDSIM. First, starting with McNary, spill all projects up to the 120 percent TDG gas caps in the order shown below, then spill all projects up to the 125 percent TDG gas caps in the order shown, and then up to 130 percent, etc. The secondary market limit is calculated in HYDSIM as needed to force the ‘overgen’ spill to equal the estimated spill due to lack of market from the AURORA model.

	120%	125%	130%	135%
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:	120 kcfs	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 ¹ :	150 kcfs	200 kcfs	300 kcfs	450 kcfs
GCL ² :	30 kcfs	75 kcfs	120 kcfs	170 kcfs
GCL ³ :	10 kcfs	20 kcfs	35 kcfs	55 kcfs

¹ 50 kcfs minimum turbine flow for CHJ included during ‘overgen’ spill.

² During all periods except May.

³ During May when the reservoir is more likely below the spillway crest elevation 1260 feet and the regulating outlets must be used to spill.

4.	RATE PERIOD FY 2012-2013	
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Table 4.1.1
Loads and Resources - Federal System
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
<u>Non-Utility Obligations</u>															
1 Fed. Agencies 2012 PSC	113	137	155	155	139	131	122	122	113	112	123	126	126	113	128
2 USBR Obligation	116	24	24	7	10	60	246	246	333	336	396	294	294	272	177
3 DSI Obligation	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340
4 Total Firm Non-Utility Obligations	569	501	520	502	490	532	708	708	786	788	859	760	760	725	645
<u>Transfers Out</u>															
5 Load Following 2012 PSC	2,822	3,234	3,698	3,642	3,393	3,087	2,956	2,956	2,907	3,003	3,221	3,118	3,118	2,902	3,165
6 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Slice 2012 PSC	1,690	2,111	2,028	2,053	1,827	1,728	1,481	1,370	2,484	2,040	1,729	2,051	1,832	1,859	1,910
8 Slice Block 2012 PSC	1,885	2,145	2,331	2,136	1,978	1,888	1,762	1,762	1,685	1,670	1,716	1,692	1,692	1,643	1,878
9 IOU 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Exports	612	600	597	597	597	603	643	642	664	673	661	644	643	627	627
11 Regional Transfers (Out)	154	417	489	488	467	354	325	294	63	102	117	88	74	68	258
12 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Total Transfers Out	7,163	8,507	9,143	8,916	8,263	7,659	7,168	7,024	7,802	7,487	7,443	7,594	7,359	7,100	7,839
14 Total Firm Obligations	7,732	9,008	9,662	9,418	8,752	8,190	7,876	7,732	8,588	8,275	8,302	8,353	8,119	7,825	8,484
<u>Hydro Resources</u>															
15 Regulated Hydro	5,467	7,170	6,968	7,071	6,240	5,705	4,846	4,423	8,367	6,673	5,824	6,927	6,118	6,185	6,405
16 Independent Hydro	336	297	210	188	186	275	402	438	730	783	496	456	436	421	399
17 Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Hydro Resources	5,803	7,466	7,178	7,260	6,426	5,980	5,248	4,861	9,096	7,456	6,320	7,383	6,554	6,606	6,804
<u>Other Resources</u>															
19 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Renewables	59	64	55	62	51	84	80	67	70	79	62	66	63	55	65
22 Cogeneration	18	20	23	24	23	23	22	22	19	14	18	12	12	14	19
23 Imports	206	284	355	356	334	321	322	265	130	134	165	171	156	153	241
24 Regional Transfers (In)	68	63	38	41	39	52	62	49	51	65	53	75	50	72	55
25 Non-Fed CER (Canada)	142	142	142	142	142	142	139	139	139	139	139	139	139	139	141
26 Transmission Loss Returns	32	40	38	39	35	33	28	26	47	39	33	39	35	35	36
27 Large Thermal	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030
28 Non-Utility Generation	13	27	30	19	9	3	3	3	3	3	3	3	3	3	10
29 Augmentation Purchases	329	329	329	329	329	329	329	329	329	329	329	329	329	329	329
30 Augmentation Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 Total Other Resources	1,897	1,999	2,041	2,042	1,992	2,018	2,016	1,931	1,819	1,831	1,832	1,863	1,816	1,831	1,926
32 Total Resources	7,700	9,465	9,220	9,301	8,418	7,998	7,264	6,792	10,915	9,287	8,152	9,246	8,371	8,437	8,730
<u>Reserves & Losses</u>															
33 Contingency Reserves (Non-Spinnin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 Federal Transmission Losses	-217	-267	-260	-262	-237	-226	-205	-192	-308	-262	-230	-261	-236	-238	-246
38 Total Reserves & Losses	-217	-267	-260	-262	-237	-226	-205	-192	-308	-262	-230	-261	-236	-238	-246
39 Total Net Resources	7,483	9,198	8,960	9,039	8,180	7,772	7,059	6,600	10,607	9,025	7,922	8,985	8,135	8,199	8,484
40 Total Firm Surplus/Deficit	-249	190	-703	-379	-572	-418	-817	-1,132	2,019	750	-380	632	16	374	0

Table 4.1.1 - continued
Loads and Resources - Federal System
PNW Loads and Resource Study
2012 - 2013 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Energy (aMW)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Avg
<u>Non-Utility Obligations</u>															
1 Fed. Agencies 2012 PSC	115	139	158	156	145	132	123	123	114	113	124	127	127	114	130
2 USBR Obligation	116	24	24	7	10	60	246	246	333	336	396	294	294	272	177
3 DSI Obligation	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340
4 Total Firm Non-Utility Obligations	571	503	522	503	496	533	709	709	787	790	860	761	761	726	647
<u>Transfers Out</u>															
5 Load Following 2012 PSC	2,864	3,277	3,742	3,694	3,525	3,136	3,003	3,003	2,954	3,051	3,270	3,166	3,166	2,948	3,218
6 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Slice 2012 PSC	1,692	2,110	2,026	2,054	1,830	1,733	1,486	1,375	2,307	1,767	1,707	2,050	1,832	1,859	1,872
8 Slice Block 2012 PSC	1,739	1,979	2,151	2,183	2,169	1,930	1,802	1,802	1,723	1,707	1,754	1,729	1,729	1,680	1,877
9 IOU 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Exports	592	579	576	576	576	581	622	621	643	651	640	645	643	628	609
11 Regional Transfers (Out)	154	417	489	488	467	354	324	295	63	102	117	88	74	68	258
12 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Total Transfers Out	7,040	8,362	8,983	8,995	8,568	7,734	7,237	7,095	7,689	7,278	7,489	7,679	7,444	7,183	7,835
14 Total Firm Obligations	7,611	8,865	9,505	9,498	9,064	8,267	7,946	7,805	8,476	8,068	8,349	8,440	8,205	7,909	8,482
<u>Hydro Resources</u>															
15 Regulated Hydro	5,467	7,170	6,968	7,071	6,240	5,705	4,846	4,423	8,376	6,651	5,824	6,927	6,118	6,185	6,404
16 Independent Hydro	336	297	210	188	186	275	402	438	730	783	496	456	436	421	400
17 Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Hydro Resources	5,803	7,466	7,178	7,260	6,426	5,980	5,248	4,861	9,105	7,434	6,320	7,383	6,554	6,606	6,804
<u>Other Resources</u>															
19 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Renewables	59	64	55	62	51	84	80	67	70	80	62	66	63	55	65
22 Cogeneration	18	20	23	24	23	23	22	22	19	14	18	12	12	14	19
23 Imports	207	284	356	355	334	323	320	266	130	134	166	170	156	154	241
24 Regional Transfers (In)	104	99	74	77	75	88	99	85	87	101	89	111	86	108	91
25 Non-Fed CER (Canada)	139	139	139	139	139	139	137	137	137	137	137	137	137	137	138
26 Transmission Loss Returns	32	40	38	39	35	33	28	26	44	33	32	39	35	35	35
27 Large Thermal	1,030	1,030	1,030	1,030	1,030	1,030	1,030	1,030	332	0	930	1,030	1,030	1,030	878
28 Non-Utility Generation	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
29 Augmentation Purchases	454	454	454	454	454	454	454	454	454	454	454	454	454	454	454
30 Augmentation Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 Total Other Resources	2,046	2,133	2,173	2,183	2,144	2,177	2,173	2,090	1,277	956	1,891	2,022	1,975	1,991	1,925
32 Total Resources	7,849	9,599	9,352	9,443	8,570	8,157	7,421	6,951	10,382	8,390	8,211	9,405	8,530	8,597	8,729
<u>Reserves & Losses</u>															
33 Contingency Reserves (Non-Spinnin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 Federal Transmission Losses	-221	-271	-264	-266	-242	-230	-209	-196	-293	-237	-232	-265	-241	-242	-246
38 Total Reserves & Losses	-221	-271	-264	-266	-242	-230	-209	-196	-293	-237	-232	-265	-241	-242	-246
39 Total Net Resources	7,627	9,329	9,088	9,176	8,328	7,927	7,211	6,755	10,089	8,154	7,979	9,140	8,289	8,355	8,482
40 Total Firm Surplus/Deficit	16	463	-417	-322	-736	-340	-735	-1,049	1,614	86	-369	700	84	446	0

Table 4.1.2
Loads and Resources - Federal System
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
<u>Non-Utility Obligations</u>															
1 Fed. Agencies 2012 PSC	51,330	57,109	63,703	65,098	57,158	58,323	25,273	27,379	49,839	49,838	54,745	27,782	29,919	48,184	665,679
2 USBR Obligation	24,885	3,266	2,013	2,095	4,369	12,925	34,995	37,899	104,956	83,787	99,753	33,740	36,335	51,382	532,401
3 DSI Obligation	141,440	136,000	141,440	136,000	135,680	146,880	65,600	70,720	141,120	141,440	136,320	70,400	76,160	130,880	1,670,080
4 Total Firm Non-Utility Obligations	217,655	196,376	207,156	203,192	197,208	218,128	125,867	135,998	295,915	275,065	290,818	131,922	142,414	230,446	2,868,160
<u>Transfers Out</u>															
5 Load Following 2012 PSC	1,278,313	1,369,398	1,565,494	1,540,395	1,411,889	1,392,318	612,289	663,313	1,280,195	1,327,646	1,415,774	689,773	742,833	1,232,782	16,522,411
6 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Slice 2012 PSC	795,349	934,289	919,803	930,932	783,559	782,489	318,767	290,521	1,175,107	938,735	807,987	497,943	450,066	836,131	10,461,677
8 Slice Block 2012 PSC	783,992	858,103	969,645	854,347	791,340	815,428	338,399	366,599	701,053	694,774	686,396	351,875	378,942	631,026	9,221,917
9 IOU 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Exports	420,092	401,438	414,650	413,712	388,119	414,156	205,380	206,670	439,254	425,563	435,951	204,298	218,177	404,472	4,991,931
11 Regional Transfers (Out)	81,009	174,951	216,786	212,605	189,030	165,125	70,030	65,395	36,145	52,719	63,088	25,259	22,760	38,510	1,413,411
12 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Total Transfers Out	3,358,754	3,738,179	4,086,377	3,951,991	3,563,937	3,569,516	1,544,864	1,592,498	3,631,754	3,439,436	3,409,195	1,769,149	1,812,777	3,142,920	42,611,344
14 Total Firm Obligations	3,576,409	3,934,554	4,293,533	4,155,183	3,761,145	3,787,643	1,670,732	1,728,496	3,927,669	3,714,502	3,700,013	1,901,070	1,955,191	3,373,366	45,479,504
<u>Hydro Resources</u>															
15 Regulated Hydro	2,721,779	3,312,948	3,308,066	3,374,098	2,808,798	2,709,506	1,103,073	977,906	4,090,724	3,157,666	2,842,182	1,739,457	1,550,233	2,901,295	36,597,728
16 Independent Hydro	159,786	136,684	91,232	83,645	78,360	128,254	93,045	100,307	333,558	354,824	219,782	102,903	105,457	184,439	2,172,276
17 Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Hydro Resources	2,881,565	3,449,631	3,399,298	3,457,742	2,887,159	2,837,760	1,196,117	1,078,213	4,424,282	3,512,490	3,061,964	1,842,360	1,655,690	3,085,734	38,770,004
<u>Other Resources</u>															
19 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Renewables	24,695	25,774	21,977	24,948	20,532	35,454	15,360	13,229	27,219	29,650	22,282	13,014	13,387	20,526	308,046
22 Cogeneration	7,642	7,840	9,406	9,580	9,212	9,919	4,222	4,574	7,929	5,907	7,248	2,583	2,782	5,545	94,389
23 Imports	96,366	121,510	161,311	159,164	138,197	145,649	67,134	62,258	63,998	66,112	76,430	39,178	37,749	64,222	1,299,278
24 Regional Transfers (In)	29,048	25,627	15,670	16,822	16,086	22,053	12,365	10,267	21,216	25,305	20,621	15,770	10,577	28,128	269,554
25 Non-Fed CER (Canada)	105,871	102,598	105,871	105,871	99,041	105,729	50,004	103,342	100,008	103,342	50,004	53,338	100,008	1,235,030	
26 Transmission Loss Returns	15,034	17,661	17,387	17,597	14,812	14,791	6,026	5,492	22,213	17,745	15,273	9,413	8,508	15,805	197,756
27 Large Thermal	428,480	412,000	428,480	412,000	412,000	444,960	197,760	214,240	428,480	428,480	412,000	214,240	230,720	395,520	5,059,360
28 Non-Utility Generation	5,564	11,196	12,644	7,940	3,626	1,336	601	643	1,181	1,132	1,055	549	591	1,011	49,069
29 Augmentation Purchases	136,934	131,667	136,934	131,667	131,667	142,201	63,200	68,467	136,934	136,934	131,667	68,467	73,734	126,401	1,616,874
30 Augmentation Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 Total Other Resources	849,634	855,873	909,679	885,589	845,173	922,092	416,671	429,174	812,512	811,273	789,918	413,218	431,384	757,166	10,129,357
32 Total Resources	3,731,199	4,305,505	4,308,977	4,343,331	3,732,332	3,759,852	1,612,788	1,507,387	5,236,794	4,323,763	3,851,881	2,255,577	2,087,074	3,842,900	48,899,360
<u>Reserves & Losses</u>															
33 Contingency Reserves (Non-Spinnin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 Federal Transmission Losses	-105,220	-121,415	-121,513	-122,482	-105,252	-106,028	-45,481	-42,508	-147,678	-121,930	-108,623	-63,607	-58,856	-108,370	-1,378,962
38 Total Reserves & Losses	-105,220	-121,415	-121,513	-122,482	-105,252	-106,028	-45,481	-42,508	-147,678	-121,930	-108,623	-63,607	-58,856	-108,370	-1,378,962
39 Total Net Resources	3,625,979	4,184,090	4,187,464	4,220,849	3,627,080	3,653,824	1,567,308	1,464,879	5,089,117	4,201,833	3,743,258	2,191,970	2,028,219	3,734,531	47,520,398
40 Total Firm Surplus/Deficit	49,570	249,535	-106,069	65,666	-134,065	-133,820	-103,424	-263,617	1,161,448	487,331	43,245	290,900	73,028	361,164	2,040,894

Table 4.1.2 - continued
Loads and Resources - Federal System
PNW Loads and Resource Study
2012 - 2013 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Heavy (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
<u>Non-Utility Obligations</u>															
1 Fed. Agencies 2012 PSC	52,036	58,061	67,277	68,108	57,629	58,977	26,503	26,503	50,372	50,571	55,073	28,039	30,196	48,697	678,042
2 USBR Obligation	24,663	3,266	2,319	2,179	4,216	13,124	36,049	36,049	104,943	84,240	99,275	33,724	36,319	51,373	531,740
3 DSI Obligation	146,560	136,000	136,320	141,120	130,560	141,760	70,720	70,720	141,120	136,320	141,440	70,400	76,160	130,880	1,670,080
4 Total Firm Non-Utility Obligations	223,258	197,328	205,916	211,407	192,405	213,861	133,273	133,273	296,435	271,131	295,788	132,164	142,675	230,950	2,879,862
<u>Transfers Out</u>															
5 Load Following 2012 PSC	1,307,430	1,388,227	1,620,328	1,625,169	1,415,102	1,404,637	653,393	653,393	1,301,534	1,339,921	1,448,797	700,684	754,583	1,253,022	16,866,219
6 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Slice 2012 PSC	792,075	931,845	914,751	929,326	755,906	780,114	321,742	289,833	1,060,054	815,988	797,606	493,637	441,807	826,036	10,150,721
8 Slice Block 2012 PSC	751,128	791,692	860,247	908,303	833,065	802,758	374,796	374,796	716,745	682,968	729,694	359,698	387,367	645,098	9,218,355
9 IOU 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Exports	405,631	386,009	397,916	398,647	360,230	397,443	198,969	198,966	423,379	408,399	421,600	204,658	218,190	405,563	4,825,599
11 Regional Transfers (Out)	81,154	174,951	214,016	215,375	182,130	163,668	71,487	65,395	36,145	52,018	63,771	25,259	22,760	38,510	1,406,638
12 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Total Transfers Out	3,337,417	3,672,724	4,007,258	4,076,820	3,546,432	3,548,621	1,620,388	1,582,384	3,537,856	3,299,294	3,461,467	1,783,936	1,824,706	3,168,228	42,467,532
14 Total Firm Obligations	3,560,675	3,870,052	4,213,174	4,288,227	3,738,837	3,762,482	1,753,660	1,715,657	3,834,291	3,570,425	3,757,255	1,916,100	1,967,380	3,399,178	45,347,392
<u>Hydro Resources</u>															
15 Regulated Hydro	2,682,748	3,300,321	3,301,374	3,346,144	2,701,359	2,703,217	1,091,961	966,118	3,930,269	3,106,828	2,812,628	1,724,148	1,519,637	2,865,467	36,052,216
16 Independent Hydro	159,786	136,684	91,232	83,645	75,658	128,254	93,045	100,307	333,558	354,824	219,782	102,903	105,457	184,439	2,169,574
17 Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Hydro Resources	2,842,534	3,437,005	3,392,606	3,429,788	2,777,018	2,831,471	1,185,005	1,066,424	4,263,827	3,461,653	3,032,409	1,827,051	1,625,094	3,049,906	38,221,788
<u>Other Resources</u>															
19 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Renewables	25,644	25,774	21,132	25,945	19,711	34,141	16,640	13,229	27,219	28,509	23,173	13,014	13,387	20,526	308,045
22 Cogeneration	7,936	7,840	9,044	9,963	8,844	9,551	4,574	4,574	7,929	5,680	7,538	2,583	2,782	5,545	94,383
23 Imports	97,102	121,510	160,575	159,900	133,330	144,913	68,350	62,258	63,998	64,896	77,646	39,178	37,749	64,222	1,295,627
24 Regional Transfers (In)	45,718	40,027	29,467	32,470	29,266	36,212	20,883	17,755	36,192	38,732	36,422	23,258	18,641	41,952	446,996
25 Non-Fed CER (Canada)	103,342	100,147	103,342	103,342	93,341	103,203	49,356	49,356	102,002	98,712	102,002	49,356	52,646	98,712	1,208,858
26 Transmission Loss Returns	14,973	17,615	17,291	17,567	14,289	14,746	6,082	5,479	20,038	15,425	15,077	9,331	8,351	15,615	191,878
27 Large Thermal	444,960	412,000	412,000	428,480	395,520	428,480	214,240	214,240	138,112	0	386,880	214,240	230,720	395,520	4,315,392
28 Non-Utility Generation	1,156	1,141	1,291	1,342	1,173	1,294	643	643	1,181	1,090	1,097	549	591	1,011	14,202
29 Augmentation Purchases	196,306	181,765	181,765	189,035	174,494	189,035	94,518	94,518	189,035	181,765	189,035	94,518	101,788	174,494	2,232,071
30 Augmentation Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 Total Other Resources	937,137	907,818	935,907	968,045	869,967	961,576	475,285	462,052	585,707	434,808	838,870	446,027	466,656	817,597	10,107,452
32 Total Resources	3,779,671	4,344,823	4,328,512	4,397,833	3,646,985	3,793,047	1,660,290	1,528,476	4,849,535	3,896,461	3,871,280	2,273,078	2,091,749	3,867,503	48,329,240
<u>Reserves & Losses</u>															
33 Contingency Reserves (Non-Spinnin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 Federal Transmission Losses	-106,587	-122,524	-122,064	-124,019	-102,845	-106,964	-46,820	-43,103	-136,757	-109,880	-109,170	-64,101	-58,987	-109,064	-1,362,885
38 Total Reserves & Losses	-106,587	-122,524	-122,064	-124,019	-102,845	-106,964	-46,820	-43,103	-136,757	-109,880	-109,170	-64,101	-58,987	-109,064	-1,362,885
39 Total Net Resources	3,673,084	4,222,299	4,206,448	4,273,814	3,544,140	3,686,083	1,613,470	1,485,373	4,712,778	3,786,581	3,762,110	2,208,977	2,032,762	3,758,439	46,966,355
40 Total Firm Surplus/Deficit	112,409	352,247	-6,726	-14,413	-194,697	-76,398	-140,190	-230,284	878,487	216,156	4,854	292,878	65,382	359,261	1,618,963

Table 4.1.3
Loads and Resources - Federal System
PNW Loads and Resource Study
2011 - 2012 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
<u>Non-Utility Obligations</u>															
1 Fed. Agencies 2012 PSC	32,851	41,726	51,795	50,075	39,664	39,025	18,364	16,615	34,191	31,019	36,940	17,444	18,362	33,275	461,345
2 USBR Obligation	61,057	14,049	16,894	2,824	2,932	32,017	54,833	49,619	142,484	158,178	194,659	72,387	76,197	144,239	1,022,368
3 DSI Obligation	111,520	109,140	111,520	116,960	100,480	105,740	56,800	51,680	111,840	103,360	116,640	52,000	54,400	113,920	1,316,000
4 Total Firm Non-Utility Obligations	205,427	164,915	180,208	169,859	143,077	176,782	129,998	117,914	288,515	292,556	348,239	141,830	148,958	291,434	2,799,713
<u>Transfers Out</u>															
5 Load Following 2012 PSC	821,355	962,193	1,183,291	1,161,358	949,503	901,138	447,634	405,002	882,372	834,737	980,396	432,366	455,122	856,710	11,273,174
6 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Slice 2012 PSC	461,781	587,843	588,832	596,628	488,029	501,106	214,072	202,850	672,625	529,714	478,084	240,330	253,644	502,686	6,318,224
8 Slice Block 2012 PSC	618,148	688,627	764,528	734,739	585,591	587,032	296,099	267,899	552,753	507,720	590,300	257,139	270,673	552,148	7,273,396
9 IOU 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Exports	35,490	31,130	29,749	30,517	27,684	33,530	26,227	24,486	54,764	58,659	56,009	27,668	28,651	46,872	511,436
11 Regional Transfers (Out)	33,813	125,826	146,818	150,654	135,995	98,209	46,973	40,546	10,612	20,363	23,674	6,466	5,536	10,761	856,244
12 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Total Transfers Out	1,970,587	2,395,619	2,713,218	2,673,894	2,186,801	2,121,015	1,031,005	940,782	2,173,126	1,951,193	2,128,462	963,969	1,013,626	1,969,178	26,232,474
14 Total Firm Obligations	2,176,014	2,560,533	2,893,426	2,843,753	2,329,878	2,297,797	1,161,002	1,058,696	2,461,641	2,243,750	2,476,701	1,105,799	1,162,584	2,260,611	29,032,186
<u>Hydro Resources</u>															
15 Regulated Hydro	1,345,446	1,856,406	1,876,126	1,886,950	1,533,894	1,529,310	641,451	614,194	2,134,250	1,646,678	1,490,651	754,083	799,117	1,552,194	19,660,748
16 Independent Hydro	90,171	77,239	65,338	56,544	51,364	76,356	51,595	57,543	209,206	209,022	149,472	61,396	61,993	118,620	1,335,858
17 Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Hydro Resources	1,435,617	1,933,644	1,941,465	1,943,494	1,585,258	1,605,666	693,047	671,736	2,343,455	1,855,700	1,640,122	815,479	861,111	1,670,813	20,996,606
<u>Other Resources</u>															
19 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Renewables	19,499	20,642	19,020	20,813	15,079	26,771	13,525	10,811	25,213	27,427	23,901	10,797	10,780	18,999	263,277
22 Cogeneration	6,025	6,292	7,416	8,239	6,817	7,141	3,694	3,342	6,252	4,317	6,233	1,888	1,987	4,852	74,495
23 Imports	56,584	83,163	102,959	105,712	94,184	93,027	48,807	33,250	32,545	30,150	46,356	22,277	22,202	46,283	817,499
24 Regional Transfers (In)	21,291	19,743	12,634	13,672	10,907	16,878	10,107	7,545	17,097	21,452	18,952	11,069	8,486	23,974	213,806
25 Non-Fed CER (Canada)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 Transmission Loss Returns	8,729	11,112	11,131	11,278	9,225	9,472	4,047	3,834	12,715	10,013	9,037	4,543	4,795	9,502	119,433
27 Large Thermal	337,840	330,630	337,840	354,320	304,880	320,330	173,040	156,560	337,840	313,120	354,320	156,560	164,800	346,080	3,988,160
28 Non-Utility Generation	4,112	7,978	10,023	6,092	2,685	968	512	470	931	827	907	400	422	885	37,213
29 Augmentation Purchases	107,967	105,663	107,967	113,234	97,434	102,371	55,300	50,034	107,967	100,067	113,234	50,034	52,667	110,600	1,274,539
30 Augmentation Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 Total Other Resources	562,048	585,222	608,990	633,361	541,212	576,957	309,032	265,846	540,559	507,373	572,941	257,567	266,138	561,175	6,788,421
32 Total Resources	1,997,665	2,518,866	2,550,454	2,576,855	2,126,469	2,182,623	1,002,079	937,583	2,884,014	2,363,073	2,213,063	1,073,046	1,127,249	2,231,988	27,785,028
<u>Reserves & Losses</u>															
33 Contingency Reserves (Non-Spinnin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 Federal Transmission Losses	-56,334	-71,032	-71,923	-72,667	-59,966	-61,550	-28,259	-26,440	-81,329	-66,639	-62,408	-30,260	-31,788	-62,942	-783,538
38 Total Reserves & Losses	-56,334	-71,032	-71,923	-72,667	-59,966	-61,550	-28,259	-26,440	-81,329	-66,639	-62,408	-30,260	-31,788	-62,942	-783,538
39 Total Net Resources	1,941,330	2,447,834	2,478,531	2,504,188	2,066,503	2,121,073	973,820	911,143	2,802,685	2,296,434	2,150,655	1,042,786	1,095,460	2,169,046	27,001,490
40 Total Firm Surplus/Deficit	-234,683	-112,699	-414,895	-339,565	-263,375	-176,724	-187,182	-147,554	341,044	52,684	-326,046	-63,013	-67,124	-91,565	-2,030,696

Table 4.1.3 - continued
Loads and Resources - Federal System
PNW Loads and Resource Study
2012 - 2013 Fiscal Years
1937 Water Year

10/8/2010

[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

Light (MWhr)	Oct	Nov	Dec	Jan	Feb	Mar	1-Apr	16-Apr	May	Jun	Jul	1-Aug	16-Aug	Sep	Sum
<u>Non-Utility Obligations</u>															
1 Fed. Agencies 2012 PSC	33,596	42,432	49,943	48,218	39,890	39,240	17,748	17,748	34,523	31,148	37,454	17,594	18,520	33,615	461,669
2 USBR Obligation	61,279	14,049	15,842	2,693	2,819	31,817	52,623	52,624	142,498	157,725	195,137	72,402	76,213	144,248	1,021,970
3 DSI Obligation	106,400	109,140	116,640	111,840	97,920	110,860	51,680	51,680	111,840	108,480	111,520	52,000	54,400	113,920	1,308,320
4 Total Firm Non-Utility Obligations	201,275	165,621	182,424	162,751	140,629	181,917	122,051	122,052	288,861	297,353	344,110	141,997	149,134	291,783	2,791,960
<u>Transfers Out</u>															
5 Load Following 2012 PSC	823,023	974,491	1,163,760	1,123,230	954,020	925,701	427,599	427,599	895,920	857,001	984,222	438,721	461,811	869,196	11,326,293
6 Block Only 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Slice 2012 PSC	466,662	589,332	592,680	598,581	474,129	507,420	213,155	205,072	656,300	456,471	472,747	244,321	261,668	512,237	6,250,776
8 Slice Block 2012 PSC	542,481	635,333	739,813	716,162	624,799	631,014	273,890	273,890	565,126	546,375	575,335	262,856	276,691	564,460	7,228,224
9 IOU 2012 PSC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 Exports	34,795	31,169	30,476	29,852	26,842	34,273	25,075	24,521	54,792	60,236	54,862	27,654	28,651	46,872	510,071
11 Regional Transfers (Out)	33,668	125,826	149,588	147,884	131,686	99,666	45,156	40,906	10,612	21,064	22,991	6,466	5,536	10,761	851,808
12 Federal Diversity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Total Transfers Out	1,900,629	2,356,151	2,676,316	2,615,710	2,211,475	2,198,074	984,875	971,987	2,182,750	1,941,147	2,110,158	980,017	1,034,358	2,003,527	26,167,176
14 Total Firm Obligations	2,101,904	2,521,772	2,858,741	2,778,461	2,352,105	2,379,991	1,106,926	1,094,040	2,471,611	2,238,500	2,454,268	1,122,014	1,183,491	2,295,310	28,959,136
<u>Hydro Resources</u>															
15 Regulated Hydro	1,384,477	1,869,033	1,882,818	1,914,904	1,491,585	1,535,598	652,563	625,982	2,301,400	1,681,676	1,520,205	769,392	829,714	1,588,022	20,047,370
16 Independent Hydro	90,171	77,239	65,338	56,544	49,593	76,356	51,595	57,543	209,206	209,022	149,472	61,396	61,993	118,620	1,334,087
17 Hydro Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Total Hydro Resources	1,474,648	1,946,271	1,948,157	1,971,448	1,541,177	1,611,954	704,159	683,525	2,510,606	1,890,698	1,669,677	830,788	891,707	1,706,642	21,381,458
<u>Other Resources</u>															
19 Small Thermal & Misc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Combustion Turbines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Renewables	18,548	20,642	19,947	19,845	14,672	28,148	12,237	10,811	25,213	28,870	22,789	10,797	10,780	18,999	262,299
22 Cogeneration	5,731	6,292	7,778	7,856	6,633	7,508	3,342	3,342	6,252	4,544	5,943	1,888	1,987	4,852	73,948
23 Imports	56,568	83,247	104,647	104,201	91,225	94,715	46,679	33,342	32,545	31,366	45,500	22,101	22,018	46,643	814,797
24 Regional Transfers (In)	31,485	31,299	25,634	24,845	20,980	29,518	14,616	13,017	28,905	34,102	29,879	16,541	14,246	36,070	351,134
25 Non-Fed CER (Canada)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26 Transmission Loss Returns	8,821	11,140	11,203	11,315	8,962	9,592	4,029	3,876	12,406	8,629	8,936	4,618	4,946	9,683	118,158
27 Large Thermal	321,360	330,630	354,320	337,840	296,640	336,810	156,560	156,560	108,896	0	305,040	156,560	164,800	346,080	3,372,096
28 Non-Utility Generation	835	906	1,080	1,044	879	1,010	470	470	931	869	865	400	422	885	11,067
29 Augmentation Purchases	141,776	145,866	156,318	149,047	130,871	148,593	69,071	69,071	149,047	145,412	149,047	69,071	72,706	152,682	1,748,577
30 Augmentation Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31 Total Other Resources	585,126	630,021	680,928	655,993	570,862	655,893	307,005	290,489	364,194	253,791	568,000	281,975	291,905	615,893	6,752,076
32 Total Resources	2,059,774	2,576,293	2,629,084	2,627,441	2,112,039	2,267,848	1,011,163	974,014	2,874,801	2,144,489	2,237,677	1,112,763	1,183,612	2,322,535	28,133,534
<u>Reserves & Losses</u>															
33 Contingency Reserves (Non-Spinnin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34 Contingency Reserves (Spinning)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 Generation Imbalance Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36 Load Following Reserves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37 Federal Transmission Losses	-58,086	-72,651	-74,140	-74,094	-59,560	-63,953	-28,515	-27,467	-81,069	-60,475	-63,102	-31,380	-33,378	-65,495	-793,366
38 Total Reserves & Losses	-58,086	-72,651	-74,140	-74,094	-59,560	-63,953	-28,515	-27,467	-81,069	-60,475	-63,102	-31,380	-33,378	-65,495	-793,366
39 Total Net Resources	2,001,688	2,503,641	2,554,944	2,553,347	2,052,480	2,203,894	982,648	946,547	2,793,731	2,084,014	2,174,575	1,081,383	1,150,234	2,257,040	27,340,168
40 Total Firm Surplus/Deficit	-100,216	-18,131	-303,797	-225,113	-299,625	-176,096	-124,278	-147,492	322,120	-154,486	-279,694	-40,631	-33,257	-38,271	-1,618,968

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5.	7(b)(2) RATE TEST DATA FY 2014-2017	143
5.1	Annual – Federal System Loads and Resources Balance – (FY 2014-2017) – Energy Analysis	145

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Table 5.1
Loads and Resources - Federal System 7(B)(2)
PNW Loads and Resource Study
2014 - 2017 Fiscal Years
1937 Water Year
[72] 2012 Initial Rate Case - 30 Minute Wind (99.5 + Self Supply) (Final)

10/8/2010

Energy (aMW)	2014	2015	2016	2017
<u>Non-Utility Obligations</u>				
1 Fed. Agencies 2012 PSC	141	147	149	186
2 USBR Obligation	177	177	177	177
3 DSI Obligation	340	340	340	340
4 Total Firm Non-Utility Obligations	658	665	666	703
<u>Transfers Out</u>				
5 Load Following 2012 PSC	3,232	3,289	3,323	3,363
6 Block Only 2012 PSC	0	0	0	0
7 Slice 2012 PSC	1,912	1,878	1,911	1,867
8 Slice Block 2012 PSC	1,858	1,877	1,848	1,877
9 IOU 2012 PSC	0	0	0	0
10 Exports	604	577	591	579
11 Regional Transfers (Out)	252	252	253	252
12 Federal Diversity	0	0	0	0
13 Total Transfers Out	7,858	7,874	7,924	7,939
14 Total Firm Obligations	8,516	8,539	8,590	8,642
<u>Hydro Resources</u>				
15 Regulated Hydro	6,394	6,398	6,397	6,395
16 Independent Hydro	400	400	399	400
17 Hydro Maintenance	0	0	0	0
18 Total Hydro Resources	6,794	6,798	6,796	6,795
<u>Other Resources</u>				
19 Small Thermal & Misc.	0	0	0	0
20 Combustion Turbines	0	0	0	0
21 Renewables	65	65	65	65
22 Cogeneration	19	19	11	0
23 Imports	241	239	235	221
24 Regional Transfers (In)	31	27	27	27
25 Non-Fed CER (Canada)	137	136	135	134
26 Transmission Loss Returns	36	36	36	35
27 Large Thermal	1,030	878	1,030	878
28 Non-Utility Generation	3	3	3	3
29 Augmentation Purchases	408	586	501	734
30 Augmentation Resources	0	0	0	0
31 Total Other Resources	1,970	1,989	2,043	2,097
32 Total Resources	8,763	8,787	8,840	8,892
<u>Reserves & Losses</u>				
33 Contingency Reserves (Non-Spinning)	0	0	0	0
34 Contingency Reserves (Spinning)	0	0	0	0
35 Generation Imbalance Reserves	0	0	0	0
36 Load Following Reserves	0	0	0	0
37 Federal Transmission Losses	-247	-248	-249	-251
38 Total Reserves & Losses	-247	-248	-249	-251
39 Total Net Resources	8,516	8,539	8,590	8,642
40 Total Firm Surplus/Deficit	0	0	0	0

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