Bonneville Power Administration
Transmission Services

2013 NOS Cluster Study Generation Assumptions

May 20th, 2014

Bonneville Power Administration
Transmission Services

Generation Scenarios			Summer			Winter		
	TTC with 2010 NOS Projects	TTC with 2013 NOS Projects	BASE	High Wind	No Wind	Base	High Wind	No Wind
Flowgate	**TTC**	**TTC**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**
NW - B.C.	2400	2850	-2576	-2575	-2576	1678	1677	1627
South of Custer N->S		2200	2202	1952	2317	-1540	-1539	-1491
North of Echo Lake S->N		3500	-370	76	-572	2429	2413	2408
West of Cascades North E->W	10350	10350	4392	5185	3951	9442	9667	9187
West of Cascades South E->W	7700	7575	5444	5834	4589	6527	7029	5857
North of Hanford N->S	4400	4650	2626	2060	3500	-304	-227	-237
North of John Day N->S	8400	8400	6925	6473	7086	3707	4258	3030
Raver to Paul	1700	1760	1316	1213	1272	521	665	389
Paul to Allston	2990	3180	2157	2002	2163	700	878	533
South of Allston N->S	3890	4470	2855	2674	3362	1342	1376	1223
West of McNary E->W	4500	4500	3413	3204	2027	3674	4609	2330
West of Slatt E->W	7500†	4760	3920	4223	2474	3506	4557	1923
West of John Day E->W		4400	2967	3284	1547	3177	4016	1795
West of Lower Monumental		3650	2098	2301	1467	2364	2678	1773
West of Hatwai E->W	4800	4800	1167	920	1353	583	493	558
COI	4800	4800	4806	4808	2377	3016	4796	656
PDCI	3220	3220	3220	3220	1500	2000	3220	0

† The 2010 NOS CS listed TTC across West of Slatt based upon a different flowgate definition.

Plant	MW	MW	MW	MW	MW	MW
FCRPS -- Big 10 Hydro	8345	8304	8484	13480	13447	14093
FCRPS -- Upper Columbia	5762	5721	7228	6903	6870	7516
FCRPS -- Lower Columbia	2079	2079	984	4795	4795	4795
FCRPS -- Lower Snake	504	504	272	1782	1782	1782
Mid-Columbia Gen	3882	3882	3882	4616	4616	4616
Northwest Wind	5688	9158	64	5738	9208	64
Northwest Thermal Total	12632	9332	13744	13805	13794	13693

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Generation Scenarios	Summer			Winter		
	BASE	High Wind	No Wind	Base	High Wind	No Wind
Hydro	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**
Grand Coulee Gen Total	3933	3892	5286	4701	4668	5314
Chief Joseph Gen Total	1829	1829	1942	2202	2202	2202
Upper Columbia Total	***5762***	***5721***	***7228***	***6903***	***6870***	***7516***
Wells	729	729	729	800	800	800
Rocky Reach	1165	1165	1165	1225	1225	1225
Rock Island	387	387	387	460	460	460
Wanapum	879	879	879	1081	1081	1081
Priest Rapids	722	722	722	1050	1050	1050
Mid C. Total	***3882***	***3882***	***3882***	***4616***	***4616***	***4616***
McNary (Total) Gen	452	452	246	997	997	997
John Day	813	813	343	1645	1645	1645
The Dalles Gen Total	524	524	272	1320	1320	1320
Bonneville Gen Total	290	290	123	833	833	833
Lower C. Total	***2079***	***2079***	***984***	***4795***	***4795***	***4795***
Lower Granite	155	155	70	418	418	418
Little Goose	173	173	70	438	438	438
Lower Monumental	119	119	75	466	466	466
Ice Harbor	57	57	57	460	460	460
Lower Snake Total	***504***	***504***	***272***	***1782***	***1782***	***1782***
Boundary	650	650	650	850	850	850
Cabinet Gorge	230	230	230	228	228	228
Noxon	520	520	520	520	520	520
Libby	441	441	441	484	484	484
Hungry Horse	252	252	252	214	214	214
Dworshak	453	453	453	453	453	453
Albani Falls	36	36	36	24	24	24
Northern Idaho/Western Montana Total	***1932***	***1932***	***1932***	***1923***	***1923***	***1923***
Diablo	133	133	133	113	113	113
Gorge	141	141	141	117	117	117
Ross	104	104	104	170	170	170
SCL Skagit Total Gen	***378***	***378***	***378***	***400***	***400***	***400***
Mossy Rock	250	250	250	340	340	340
Mayfield	60	60	60	140	140	140
Cowlitz River Total	***310***	***310***	***310***	***480***	***480***	***480***
Swift	298	298	298	298	298	298
Merwin	30	30	30	135	135	135
Yale	100	100	100	100	100	100
Lewis River Total	***428***	***428***	***428***	***533***	***533***	***533***
Jackson (Sultan River)	70	70	70	80	80	80

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Generation Scenarios	Summer			Winter		
	BASE	High Wind	No Wind	Base	High Wind	No Wind
Thermal	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**
Cherry Point Gen	0	0	0	0	0	0
Beaver Gen	0	0	531	531	389	531
Whitehorn Gen	0	0	162	162	162	162
Rathdrum Gen	0	0	182	182	182	182
Fredrickson Gen (PSE)	0	0	162	162	162	162
Fredonia Gen	203	0	341	341	341	341
Klamath Expansion Peaking	90	0	90	90	90	90
Northeast Combustion Turbine	0	0	0	0	0	0
Kettle Falls Gen	43	43	43	42	42	42
Big Hanaford Gen	0	0	0	0	0	0
Grays Harbor Gen	630	630	630	630	630	630
Klamath Falls Gen	400	0	400	395	395	395
Tenaska Gen	246	0	246	267	267	267
Enserch Gen	156	0	156	177	177	177
Sumas Gen	116	0	116	130	130	130
River Road Gen	235	0	235	240	240	240
March Point Gen	138	0	138	149	149	149
Hermiston Gen (HGP)	490	0	490	490	490	490
Hermiston Power Gen (HPP)	536	0	536	536	536	536
Frederickson Gen (WCE)	150	0	150	150	150	150
Lancaster Gen	250	0	250	250	250	250
Coyote Springs I Gen	248	0	248	240	240	240
Coyote Springs II Gen	251	200	251	282	282	282
Goldendale Gen	277	277	277	277	277	277
Port Westward Gen	388	388	388	430	430	430
Chehalis Gen	520	520	520	520	520	520
Mint Farm Gen	305	305	305	305	305	305
Centralia G2 Gen	757	757	757	757	757	757
Boardman Gen	540	540	540	578	578	578
Centralia G1 Gen	0	0	0	0	0	0
Jim Bridger Gen	2210	2210	2210	2080	2080	2080
Colstrip Gen	2269	2278	2206	2228	2359	2116
CGC Nuclear Gen (Ashe)	1184	1184	1184	1184	1184	1184
Kimberly Clarke Gen	0	0	0	0	0	0

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Generation Scenarios	Summer			Winter		
	BASE	High Wind	No Wind	Base	High Wind	No Wind
Wind	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**
Northwest Total	5688	9158	64	5738	9208	64
Total Central Ferry	480	801	0	480	801	0
Total John Day	535	883	0	535	883	0
Total Jones Canyon	360	600	0	360	600	0
Total Rock Creek	668	1100	0	668	1160	0
Bettas Road	30	50	0	30	50	0
Big Eddy DeMoss	52	90	0	52	90	0
Big Horn	120	200	0	120	200	0
Biglow Canyon	200	455	0	200	455	0
Combine Hills (PAC and BPA)	62	103	0	62	103	0
Combine Hills I (PAC)	25	41	0	25	41	0
Combine Hills II (BPA)	37	62	0	37	62	0
Echo Wind	39	65	0	39	65	0
Elk Horn	75	75	0	75	75	0
Hopkins Ridge	94	157	0	94	157	0
Linden	30	50	0	30	50	0
Marengo (PAC)	126	210	0	126	210	0
Nine Canyon	37	62	0	37	62	0
Saddleback	0	0	0	0	0	0
Shepards Flat	615	1024	0	615	1024	0
Stateline	55	92	0	55	92	0
Stateline (PAC & BPA)	181	302	0	181	302	0
Stateline	126	210	0	126	210	0
Stateline (Total)	181	302	0	181	302	0
Vancycle (BPA & PAC)	60	100	0	0	0	0
Vancycle	0	0	0	0	0	0
Vancycle II	60	100	0	60	100	0
Vantage	60	100	0	60	100	0
Wild Horse	138	230	0	138	230	0
Willow Creek	55	92	0	55	92	0
Stanfield	180	300	0	180	300	0
Sandpiper	0	0	0	0	0	0
Saddle Mountain	60	100	0	60	100	0
Longhorn	540	900	0	540	900	0
Longhorn jrdn butte	60	100	0	60	100	0
Harney 500 kV (NOS-08)	0	0	0	0	0	0
Harney 115 kV	45	75	0	45	75	0
Dot	36	60	0	36	60	0
Diamond Butte	360	420	0	360	420	0
Montague	120	380	0	120	380	0

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Sensitivities	Summer					Winter				
	S1- Load Growth	S2- Export	S3- FCRPS Reduction	S4- B2H	S4- B2H w/ Adjustment	S1- Load Growth	S2- Export	S3- FCRPS Reduction	S4- B2H	S4- B2H w/ Adjustment
Flowgate	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**
NW - B.C.	-2584	-2439	-2586	-2575	-2574	1048	1236	1703	1678	1679
South of Custer N->S	2282	2176	2319	2201	2212	-947	-1111	-1565	-1541	-1541
North of Echo Lake S->N	-400	-473	-484	-370	-455	2228	2170	2477	2430	2432
West of Cascades North E->W	4396	4105	3808	4379	4182	9408	9146	9371	9436	9413
West of Cascades South E->W	5553	5246	5165	5371	5337	6881	6553	6503	6474	6429
North of Hanford N->S	2692	2996	2542	2649	2817	-321	22	-563	-279	-298
North of John Day N->S	7060	7314	6746	6995	7189	3815	4179	3368	3779	3702
Raver to Paul	1306	1291	1193	1307	1338	628	629	459	516	501
Paul to Allston	2112	2184	2059	2145	2228	743	836	620	694	675
South of Allston N->S	2472	2555	2456	2841	2940	1377	1448	1283	1336	1322
West of McNary E->W	3391	3460	3348	3501	3510	3612	3765	3573	3749	3731
West of Slatt E->W	3942	4065	3888	3443	3412	3469	3634	3405	3138	2999
West of John Day E->W	2917	2727	2858	2947	2875	3058	3108	3013	3158	3061
West of Lower Monumental	2205	2148	2131	2153	2150	2403	2398	2367	2414	2368
West of Hatwai E->W	1329	1259	1376	1219	1234	629	598	682	634	573
COI	4777	5369	4779	4742	4752	2810	3319	2812	2973	2614
PDCI	3100	3285	3206	3220	3220	1500	2091	1606	2000	1860

Plant	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**
FCRPS -- Big 10 Hydro	8434	8481	6865	8295	8348	13571	13660	12638	13460	13473
FCRPS -- Upper Columbia	5851	5866	4739	5712	5765	6994	7051	6360	6883	6896
FCRPS -- Lower Columbia	2079	2105	1715	2079	2079	4795	4821	4581	4795	4795
FCRPS -- Lower Snake	504	510	411	504	504	1782	1788	1697	1782	1782
Mid-Columbia Gen	3882	3882	3882	3882	3882	4616	4616	4616	4616	4616
Northwest Wind	5838	5838	5838	5688	5688	5838	5824	5838	5738	5738
Northwest Thermal Total	13923	13597	13921	12626	12434	13933	13214	13928	13803	12747

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Sensitivities	Summer					Winter				
	S1- Load Growth	S2- Export	S3- FCRPS Reduction	S4- B2H	S4- B2H w/ Adjustment	S1- Load Growth	S2- Export	S3- FCRPS Reduction	S4- B2H	S4- B2H w/ Adjustment
Hydro	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**
Grand Coulee Gen Total	4022	4014	3230	3900	3936	4792	4826	4346	4681	4694
Chief Joseph Gen Total	1829	1852	1509	1829	1829	2202	2225	2014	2202	2202
Upper Columbia Total	***5851***	***5866***	***4739***	***5712***	***5765***	***6994***	***7051***	***6360***	***6883***	***6896***
Wells	729	729	729	729	729	800	800	800	800	800
Rocky Reach	1165	1165	1165	1165	1165	1225	1225	1225	1225	1225
Rock Island	387	387	387	387	387	460	460	460	460	460
Wanapum	879	879	879	879	879	1081	1081	1081	1081	1081
Priest Rapids	722	722	722	722	722	1050	1050	1050	1050	1050
Mid C. Total	***3882***	***3882***	***3882***	***3882***	***3882***	***4616***	***4616***	***4616***	***4616***	***4616***
McNary (Total) Gen	452	458	373	452	452	997	1003	950	997	997
John Day	813	823	671	813	813	1645	1655	1561	1645	1645
The Dalles Gen Total	524	531	432	524	524	1320	1327	1266	1320	1320
Bonneville Gen Total	290	294	239	290	290	833	837	803	833	833
Lower C. Total	***2079***	***2105***	***1715***	***2079***	***2079***	***4795***	***4821***	***4581***	***4795***	***4795***
Lower Granite	155	157	128	155	155	418	420	402	418	418
Little Goose	173	175	143	173	173	438	440	420	438	438
Lower Monumental	119	121	98	119	119	466	468	454	466	466
Ice Harbor	57	58	42	57	57	460	461	421	460	460
Lower Snake Total	***504***	***510***	***411***	***504***	***504***	***1782***	***1788***	***1697***	***1782***	***1782***
Boundary	650	650	650	650	650	850	850	850	850	850
Cabinet Gorge	230	230	230	230	230	228	228	228	228	228
Noxon	520	520	520	520	520	520	520	520	520	520
Libby	441	441	441	441	441	484	484	484	484	484
Hungry Horse	252	252	252	252	252	214	214	214	214	214
Dworshak	453	453	453	453	453	453	453	453	453	453
Albani Falls	36	36	36	36	36	24	24	24	24	24
Northern Idaho/Western Montana Total	***1932***	***1932***	***1932***	***1932***	***1932***	***1923***	***1923***	***1923***	***1923***	***1923***
Diablo	133	133	133	133	133	113	113	113	113	113
Gorge	141	141	141	141	141	117	117	117	117	117
Ross	104	104	104	104	104	170	170	170	170	170
SCL Skagit Total Gen	***378***	***378***	***378***	***378***	***378***	***400***	***400***	***400***	***400***	***400***
Mossy Rock	250	250	250	250	250	340	340	340	340	340
Mayfield	60	60	60	60	60	140	140	140	140	140
Cowlitz River Total	***310***	***310***	***310***	***310***	***310***	***480***	***480***	***480***	***480***	***480***
Swift	298	298	298	298	298	298	298	298	298	298
Merwin	30	30	30	30	30	135	135	135	135	135
Yale	100	100	100	100	100	100	100	100	100	100
Lewis River Total	***428***	***428***	***428***	***428***	***428***	***533***	***533***	***533***	***533***	***533***
Jackson (Sultan River)	70	70	70	70	70	80	80	80	80	80

Sensitivities	Summer					Winter				
	S1- Load Growth	S2- Export	S3- FCRPS Reduction	S4- B2H	S4- B2H w/ Adjustment	S1- Load Growth	S2- Export	S3- FCRPS Reduction	S4- B2H	S4- B2H w/ Adjustment
Thermal	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**
Cherry Point Gen	0	0	0	0	0	0	0	0	0	0
Beaver Gen	531	531	531	0	0	531	531	531	531	531
Whitehorn Gen	162	162	162	0	0	162	162	162	162	162
Rathdrum Gen	182	182	182	0	50	182	182	182	182	182
Fredrickson Gen (PSE)	162	162	162	0	162	162	162	162	162	162
Fredonia Gen	341	341	341	203	341	341	341	341	341	341
Klamath Expansion Peaking	90	90	90	90	90	90	90	90	90	90
Northeast Combustion Turbine	0	0	0	0	0	0	0	0	0	0
Kettle Falls Gen	43	43	43	43	43	42	42	42	42	42
Big Hanaford Gen	0	0	0	0	0	0	0	0	0	0
Grays Harbor Gen	630	630	630	630	630	630	630	630	630	630
Klamath Falls Gen	400	400	400	400	400	395	395	395	395	395
Tenaska Gen	246	246	246	246	246	267	267	267	267	267
Enserch Gen	156	156	156	156	156	177	177	177	177	177
Sumas Gen	116	116	116	116	116	130	130	130	130	130
River Road Gen	235	235	235	235	235	240	240	240	240	240
March Point Gen	138	138	138	138	138	149	149	149	149	149
Hermiston Gen (HGP)	490	490	490	490	490	490	490	490	490	490
Hermiston Power Gen (HPP)	536	536	536	536	536	536	536	536	536	536
Frederickson Gen (WCE)	150	150	150	150	150	150	150	150	150	150
Lancaster Gen	250	250	250	250	250	250	250	250	250	250
Coyote Springs I Gen	248	248	248	248	248	240	240	240	240	240
Coyote Springs II Gen	251	251	251	251	251	282	282	282	282	282
Goldendale Gen	277	277	277	277	277	277	277	277	277	277
Port Westward Gen	388	388	388	388	388	430	430	430	430	430
Chehalis Gen	520	520	520	520	520	520	520	520	520	520
Mint Farm Gen	305	305	305	305	305	305	305	305	305	305
Centralia G2 Gen	757	757	757	757	757	757	757	757	757	757
Boardman Gen	540	540	540	540	540	578	578	578	578	578
Centralia G1 Gen	0	0	0	0	0	0	0	0	0	0
Jim Bridger Gen	2211	2147	2210	2210	1660	2085	1549	2080	2080	1020
Colstrip Gen	2384	2122	2383	2263	2271	2351	2168	2351	2226	2230
CGC Nuclear Gen (Ashe)	1184	1184	1184	1184	1184	1184	1184	1184	1184	1184
Kimberly Clarke Gen	0	0	0	0	0	0	0	0	0	0

Sensitivities	Summer					Winter				
	S1- Load Growth	S2- Export	S3- FCRPS Reduction	S4- B2H	S4- B2H w/ Adjustment	S1- Load Growth	S2- Export	S3- FCRPS Reduction	S4- B2H	S4- B2H w/ Adjustment
Wind	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**	**MW**
Northwest Total	5838	5838	5838	5688	5688	5838	5824	5838	5738	5738
Total Central Ferry	480	480	480	480	480	480	480	480	480	480
Total John Day	535	535	535	535	535	535	535	535	535	535
Total Jones Canyon	360	360	360	360	360	360	360	360	360	360
Total Rock Creek	668	668	668	668	668	668	654	668	668	668
Bettas Road	30	30	30	30	30	30	30	30	30	30
Big Eddy DeMoss	52	52	52	52	52	52	52	52	52	52
Big Horn	120	120	120	120	120	120	120	120	120	120
Biglow Canyon	200	200	200	200	200	200	200	200	200	200
Combine Hills (PAC and BPA)	62	62	62	62	62	62	62	62	62	62
Combine Hills I (PAC)	25	25	25	25	25	25	25	25	25	25
Combine Hills II (BPA)	37	37	37	37	37	37	37	37	37	37
Echo Wind	39	39	39	39	39	39	39	39	39	39
Elk Horn	75	74	75	75	75	75	74	75	75	75
Hopkins Ridge	94	94	94	94	94	94	94	94	94	94
Linden	30	30	30	30	30	30	30	30	30	30
Marengo (PAC)	126	126	126	126	126	126	126	126	126	126
Nine Canyon	37	37	37	37	37	37	37	37	37	37
Saddleback	0	0	0	0	0	0	0	0	0	0
Shepards Flat	615	615	615	615	615	615	615	615	615	615
Stateline	55	55	55	55	55	55	55	55	55	55
Stateline (PAC & BPA)	181	181	181	181	181	181	181	181	181	181
Stateline	126	126	126	126	126	126	126	126	126	126
Stateline (Total)	181	181	181	181	181	181	181	181	181	181
Vancycle (BPA & PAC)	60	60	60	60	60	0	0	0	0	0
Vancycle	0	0	0	0	0	0	0	0	0	0
Vancycle II	60	60	60	60	60	60	60	60	60	60
Vantage	60	60	60	60	60	60	60	60	60	60
Wild Horse	138	138	138	138	138	138	138	138	138	138
Willow Creek	55	55	55	55	55	55	55	55	55	55
Stanfield	180	180	180	180	180	180	180	180	180	180
Sandpiper	0	0	0	0	0	0	0	0	0	0
Saddle Mountain	60	60	60	60	60	60	60	60	60	60
Longhorn	540	540	540	540	540	540	540	540	540	540
Longhorn jrdn butte	60	60	60	60	60	60	60	60	60	60
Harney 500 kV (NOS-08)	0	0	0	0	0	0	0	0	0	0
Harney 115 kV	45	45	45	45	45	45	45	45	45	45
Dot	36	36	36	36	36	36	36	36	36	36
Diamond Butte	360	360	360	360	360	360	360	360	360	360
Montague	120	120	120	120	120	120	120	120	120	120