



Energy Efficiency

Exhibit 2 2012 Program-Level Cost-Effectiveness Calculations

February 15, 2013



PUGET SOUND ENERGY
The Energy To Do Great Things

Exhibit 2: 2013 Cost-Effectiveness Estimates
Summary

Electric Programs: Benefit Cost Summary

Program Name	Energy Savings	Utility Costs	Non-Energy Benefits	UCT	TRC
Low Income Wx	1,601,537	\$ 2,414,265	\$ -	1.30	1.33
Residential Lighting	86,687,007	\$ 12,605,565	\$ -	3.94	2.18
Space Heat	7,345,207	\$ 2,968,354	\$ -	4.72	1.99
Water Heat	580,014	\$ 253,881	\$ -	2.23	2.02
HomePrint	1,942,191	\$ 1,054,382	\$ -	0.85	0.93
Home Appliances	8,627,078	\$ 5,314,655	\$ -	1.23	0.98
Showerheads Elect	5,691,334	\$ 300,736	\$ -	14.37	5.65
SF Weatherization	3,477,074	\$ 1,038,517	\$ -	8.26	1.94
ARRA Weatherization	1,712,023	\$ 527,124	\$ -	5.08	3.45
Mobile Home Duct Sealing	3,235,827	\$ 1,188,014	\$ -	3.90	4.29
Home Energy Reports	5,498,052	\$ 80,691	\$ -	6.64	7.30
Single Family New Construction	1,437,686	\$ 1,301,065	\$ -	1.30	1.04
Manufactured Homes	58,412	\$ 3,817	\$ -	29.13	7.81
Fuel Conversion Rebate	1,531,500	\$ 540,306	\$ -	2.17	1.46
Multifamily Existing	22,952,418	\$ 10,247,241	\$ -	2.96	2.42
Multifamily New Construction	961,437	\$ 542,893	\$ -	2.02	2.11
Total Residential Energy Management	153,338,797	\$ 40,381,506	\$ -	3.19	2.06
Commercial/Industrial Retrofit	70,515,972	\$ 18,943,779	\$ -	3.11	1.86
Commercial/Industrial New Construction	5,268,375	\$ 2,181,743	\$ -	2.33	1.90
Resource Conservation Manager	16,025,805	\$ 1,044,155	\$ -	3.90	2.07
Small Business Lighting	16,999,528	\$ 4,967,718	\$ -	2.94	2.15
High Voltage, Self-Directed Technology Evaluation	22,482,223 0	\$ 7,204,833 -	\$ - -	2.87 -	2.72 -
Business Rebates	35,455,567	\$ 6,172,499	\$ -	3.55	2.50
Total Business Energy Management	166,747,470	\$ 40,514,727	\$ -	3.09	2.11
Northwest Energy Efficiency Alliance	19,400,000	\$ 4,687,146	\$ -	1.81	1.99
Transmission & Distribution	0	\$ -	\$ -	-	-
Total Regional Programs	19,400,000	\$ 4,687,146	\$ -	1.81	1.99
Total Electric Portfolio	339,486,267	\$ 91,122,523	\$ 0	2.89	2.00

Gas Programs: Benefit Cost Summary

Program Name	Energy Savings	Utility Costs	Non-Energy Benefits	UCT	TRC
Low Income WX	22,622	\$ 378,512	\$ -	0.90	0.83
Residential Space Heat	471,295	\$ 1,344,372	\$ -	4.27	1.90
Residential Appliances 1	29,462	\$ -	\$ -	-	-
Residential Showerheads	221,180	\$ 195,035	\$ -	6.32	1.76
Single Family Retrofit-Wx	516,601	\$ 3,176,957	\$ -	2.46	0.87
AARA WX	15,342	\$ 88,652	\$ -	2.02	1.14
Mobile Home Duct Sealing	6,385	\$ 50,945	\$ -	1.07	1.07
Home Energy Reports	346,724	\$ 30,356	\$ -	8.84	8.84
Multifamily Existing	90,156	\$ 451,953	\$ -	2.63	0.91
Multifamily New Construction	33,025	\$ 221,598	\$ -	1.11	1.11
Pilots	0	\$ 479	\$ -	-	-
Total Residential Efficiency Programs	1,753,536	\$ 6,104,217	\$ -	2.83	1.15
Commercial / Industrial Retrofit	873,098	\$ 4,628,671	\$ -	1.95	1.05
Commercial/Industrial New Construction	129,777	\$ 694,300	\$ -	1.94	1.63
Resource Conservation Manager	1,109,236	\$ 550,738	\$ -	4.40	2.11
Energy Efficient Technology Evaluation	0	\$ -	\$ -	-	-
Commercial Rebates	1,338,854	\$ 463,016	\$ -	8.91	3.34
Total Commercial Programs	3,450,965	\$ 6,336,725	\$ -	2.67	1.43
Total Electric Portfolio	5,204,501	\$ 13,652,557	\$ -	2.51	1.22

2012 Program Planning Electric Cost-Effectiveness Tests:

WACC		8.10%										
Program Number	Program Name	Measure Life	kWh Savings	Other Contributions	Total Utility Costs	Total Resource Costs	Present Value of Total Utility Program Costs in Time Zero*	Present Value of Total Resource Costs in Time Zero*	Utility Cost Test: Present Value Electric Savings In Time Zero	Utility Cost Test: Benefit Cost Ratio	Total Resource Cost Test: Benefit Cost Ratio	
E201	Low Income Wx	25	1,601,537	\$ -	\$ 2,414,265	\$ 2,595,581	\$ 2,233,363	\$ 2,401,092	\$ 2,906,556	1.30	1.33	
E214	Residential Lighting	7	86,687,007	\$ -	\$ 12,605,565	\$ 24,997,341	\$ 11,661,023	\$ 23,124,275	\$ 45,904,862	3.94	2.18	
E214	Space Heat	20	7,345,207	\$ -	\$ 2,968,354	\$ 7,728,244	\$ 2,745,934	\$ 7,149,162	\$ 12,959,995	4.72	1.99	
E215	Water Heat	14	580,014	\$ -	\$ 253,881	\$ 308,860	\$ 234,858	\$ 285,717	\$ 524,084	2.23	2.02	
E214	HomePrint	5	1,942,191	\$ -	\$ 1,054,382	\$ 1,054,382	\$ 975,376	\$ 975,376	\$ 825,641	0.85	0.93	
E214	Home Appliances	11	8,627,078	\$ -	\$ 5,314,655	\$ 7,302,059	\$ 4,916,424	\$ 6,754,911	\$ 6,024,846	1.23	0.98	
E214	Showerheads Elect	10	5,691,334	\$ -	\$ 300,736	\$ 841,845	\$ 278,201	\$ 778,765	\$ 3,996,765	14.37	5.65	
E214	Weatherization Total		8,424,924	325,692	2,753,655	6,905,301	2,547,322	6,387,883	14,695,369	5.77	2.53	
E214	SF Weatherization	29	3,477,074	\$ -	\$ 1,038,517	\$ 4,864,472	\$ 960,700	\$ 4,499,974	\$ 7,933,681	8.26	1.94	
E214	ARRA Weatherization	16	1,712,023	\$ 325,692	\$ 527,124	\$ 852,816	\$ 487,626	\$ 788,914	\$ 2,476,217	5.08	3.45	
E214	Mobile Home Duct Sealing	15	1,188,014	\$ -	\$ 1,188,014	\$ 1,188,014	\$ 1,098,995	\$ 1,098,995	\$ 4,285,471	3.90	4.29	
E249	Home Energy Reports	1	5,498,052	\$ -	\$ 80,691	\$ 80,691	\$ 74,645	\$ 74,645	\$ 495,487	6.64	7.30	
E215	Single Family New Construction	16	1,437,686	\$ -	\$ 1,301,065	\$ 1,783,057	\$ 1,203,575	\$ 1,649,452	\$ 1,565,457	1.30	1.04	
E215	Manufactured Homes	18	58,412	\$ -	\$ 3,817	\$ 15,664	\$ 3,531	\$ 14,490	\$ 102,857	29.13	7.81	
E216	Fuel Conversion Rebate	30	1,531,500	\$ -	\$ 540,306	\$ 1,473,389	\$ 1,360,160	\$ 2,223,326	\$ 2,956,577	2.17	1.46	
E217	Multifamily Existing	19	22,952,418	\$ -	\$ 10,247,241	\$ 13,765,905	\$ 9,479,409	\$ 12,734,417	\$ 28,044,032	2.96	2.42	
E218	Multifamily New Construction	15	961,437	\$ -	\$ 542,893	\$ 570,964	\$ 502,214	\$ 528,181	\$ 1,015,287	2.02	2.11	
	Total Residential Energy Management		153,338,797	\$ 325,692	\$ 40,381,506	\$ 69,423,283	\$ 38,216,034	\$ 65,081,693	\$ 122,017,814	3.19	2.06	
E250	Commercial/Industrial Retrofit	12	70,515,972	\$ -	\$ 18,943,779	\$ 34,869,447	\$ 17,524,310	\$ 32,256,657	\$ 54,495,723	3.11	1.86	
E251	Commercial/Industrial New Construction	14	5,268,375	\$ -	\$ 2,181,743	\$ 2,933,067	\$ 2,018,264	\$ 2,713,290	\$ 4,693,870	2.33	1.90	
E253	Resource Conservation Manager	3	16,025,805	\$ -	\$ 1,044,155	\$ 2,169,234	\$ 965,916	\$ 2,006,692	\$ 3,771,436	3.90	2.07	
E255	Small Business Lighting	12	16,999,528	\$ -	\$ 4,967,718	\$ 7,461,830	\$ 4,595,484	\$ 6,902,711	\$ 13,508,122	2.94	2.15	
E258	High Voltage, Self-Directed	14	22,482,223	\$ -	\$ 7,204,833	\$ 8,352,921	\$ 6,664,970	\$ 7,727,031	\$ 19,113,053	2.87	2.72	
E261	Technology Evaluation	NA	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-	-	
E262	Business Rebates	7	35,455,567	\$ -	\$ 6,172,499	\$ 9,658,562	\$ 5,709,990	\$ 8,934,840	\$ 20,279,488	3.55	2.50	
	Total Business Energy Management		166,747,470	\$ -	\$ 40,514,727	\$ 65,445,061	\$ 37,478,934	\$ 60,541,222	\$ 115,861,693	3.09	2.11	
	Northwest Energy Efficiency Alliance	5	19,400,000	\$ -	\$ 4,687,146	\$ 4,687,146	\$ 4,335,936	\$ 4,335,936	\$ 7,861,399	1.81	1.99	
	Transmission & Distribution	0		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-	-	
	Total Regional Programs		19,400,000	\$ -	\$ 4,687,146	\$ 4,687,146	\$ 4,335,936	\$ 4,335,936	\$ 7,861,399	1.81	1.99	
	Customer Engagement & Education				\$ 1,179,797.28	\$ 1,179,797.28	\$ 1,091,394.34	\$ 1,091,394.34			-	
	Energy Advisors				\$ 742,603	\$ 742,603	\$ 686,959	\$ 686,959			-	
	Events				\$ 298,869	\$ 298,869	\$ 276,475	\$ 276,475			-	
	Brochures				\$ 45,981	\$ 45,981	\$ 42,535	\$ 42,535			-	
	Education				\$ 92,345	\$ 92,345	\$ 85,425	\$ 85,425			-	
	CS Web Experience (Ringel)				\$ 873,838.16	\$ 873,838.16	\$ 808,360.93	\$ 808,360.93			-	
	Customer Online Experience				\$ 634,822	\$ 634,821.90	\$ 587,254	\$ 587,254			-	
	Web Development				\$ -	\$ -	\$ -	\$ -			-	
	Web content, maintenance + analytics				\$ -	\$ -	\$ -	\$ -			-	
	Online customer tools				\$ -	\$ -	\$ -	\$ -			-	
	E-news				\$ 1,781	\$ 1,781	\$ 1,648	\$ 1,648			-	
	Miscellaneous applications				\$ -	\$ -	\$ -	\$ -			-	
	Market Integration (Ringel)				\$ 237,235	\$ 237,235	\$ 219,459	\$ 219,459			-	
	Energy Efficient Communities				\$ 251,803	\$ 251,803	\$ 232,936	\$ 232,936			-	
	Trade Ally Support				\$ 36,517	\$ 36,517	\$ 33,781	\$ 33,781			-	
	Marketing Research				\$ 251,392	\$ 251,392	\$ 232,555	\$ 232,555			-	
	Total Portfolio Support				\$ 2,593,348	\$ 2,593,348	\$ 2,399,027	\$ 2,399,027			-	
	Conservation Supply Curves				\$ 388,262	\$ 388,262	\$ 359,170	\$ 359,170			-	
	Strategic Planning				\$ 98,033	\$ 98,033	\$ 90,687	\$ 90,687			-	
	Program Evaluation				\$ 1,745,480	\$ 1,745,480	\$ 1,614,690	\$ 1,614,690			-	
	Program Support				\$ 281,686	\$ 281,686	\$ 260,579	\$ 260,579			-	
	Verification Team				\$ 432,335	\$ 432,335	\$ 399,939	\$ 399,939			-	
	Total Research and Compliance				\$ 2,945,796	\$ 2,945,796	\$ 2,725,065	\$ 2,725,065			-	
	Total In CE Calculations	10.28	339,486,267	\$ 325,692	\$ 91,122,523	\$ 145,094,634	\$ 85,154,995	\$ 135,082,942	\$ 245,740,906	2.89	2.00	
	Net Metering				\$ 362,556	\$ 362,556	\$ 335,389	\$ 335,389			-	
	Renewable Energy Education				\$ 104,074	\$ 104,074	\$ 96,276	\$ 96,276			-	
	C/I Load Control				\$ 99,617	\$ 99,617	\$ 92,153	\$ 92,153			-	
	Residential Demand Response				\$ 86,099	\$ 86,099	\$ 79,647	\$ 79,647			-	
	Total Other Programs				\$ 652,346	\$ 652,346	\$ 603,465	\$ 603,465			-	
	Grand Total of All EES Programs		38.8 aMW		\$ 91,774,869							

The total present value of utility and total resource costs in this spreadsheet look as if they are incorrect (i.e. dividing the utility cost and total resource costs by 1.081 does not yield the present value of utility and total resource costs listed here). They are correct. The present value of utility and TRC costs include the additional cost of gas for fuel conversion customers. Because we had gas costs in a present value already, we did not add them into the UC and TRC cost column).

2012 Program Planning: Gas Cost-Effectiveness Tests

WACC 8.10%

Conservation Credit: 10%

Prog. No.	Program Name	Measure Life	Therm Savings	Other Contributions	Total Utility Costs	Total Resource Costs	Present Value of Total Utility Costs in Time Zero	Present Value of Total Resource Costs in Time Zero	Present Value Therm Savings In Time Zero	Utility Cost Test: Benefit Cost Ratio	Total Resource Cost Test: Benefit Cost Ratio Without Conservation Credit	Total Resource Cost Test: Benefit Cost Ratio With Conservation Credit
G203	Low Income WX	27	22,622	\$ -	\$ 378,512	\$ 410,889	\$ 350,150	\$ 380,101	\$ 313,955	0.90	0.83	0.91
G214	Residential Space Heat	18	471,295	\$ -	\$ 1,344,372	\$ 3,012,288	\$ 1,243,637	\$ 2,786,575	\$ 5,306,233	4.27	1.90	2.09
	Single Family Water Heating				\$ 5,733							
G214	Residential Appliances 1	14	29,462	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 201,194	0.00	0.00	0.00
G214	Residential Showerheads	10	221,180	\$ -	\$ 195,035	\$ 702,863	\$ 180,421	\$ 650,197	\$ 1,141,118	6.32	1.76	1.93
G214	Weatherization Total		538,328	\$ 68,450	\$ 3,316,554	\$ 9,204,769	\$ 3,068,042	\$ 8,515,050	\$ 7,442,265	2.43	0.87	0.96
G214	Single Family Retrofit-Wx	27	516,601	\$ -	\$ 3,176,957	\$ 8,996,722	\$ 2,938,905	\$ 8,322,592	\$ 7,226,189	2.46	0.87	0.96
G214	AARA WX	18	15,342	\$ 68,450	\$ 88,652	\$ 157,102	\$ 82,009	\$ 145,330	\$ 165,783	2.02	1.14	1.25
G214	Mobile Home Duct Sealing	14	6,385	\$ -	\$ 50,945	\$ 50,945	\$ 47,128	\$ 50,292	\$ 50,292	1.07	1.07	1.17
G214	Home Energy Reports	1	346,724	\$ -	\$ 30,356	\$ 30,356	\$ 28,081	\$ 28,081	\$ 248,179	8.84	8.84	9.72
G214	Single Family New Construction	18	744	\$ -	\$ 159,626	\$ 162,734	\$ 147,665	\$ 150,540	\$ 8,311	0.06	0.06	0.06
G217	Multifamily Existing	24	90,156	\$ -	\$ 451,953	\$ 1,303,330	\$ 418,088	\$ 1,205,670	\$ 1,098,964	2.63	0.91	1.00
G218	Multifamily New Construction	14	33,025	\$ -	\$ 221,598	\$ 222,303	\$ 204,993	\$ 205,646	\$ 228,549	1.11	1.11	1.22
G249	Pilots				\$ 479	\$ 479	\$ 443	\$ 443	\$ -			
	Total Residential Efficiency Programs		1,753,536	68,450	\$ 6,104,217	\$ 15,050,009	5,641,521	13,922,303	15,988,768	2.83	1.15	1.26
G205	Commercial / Industrial Retrofit	15	873,098	\$ -	\$ 4,628,671	\$ 8,582,312	\$ 4,281,842	\$ 7,939,234	\$ 8,342,030	1.95	1.05	1.16
G251	Commercial/Industrial New Construction	14	129,777	\$ -	\$ 694,300	\$ 825,091	\$ 642,276	\$ 763,266	\$ 1,245,261	1.94	1.63	1.79
G208	Resource Conservation Manager	3	1,109,236	\$ -	\$ 550,738	\$ 1,150,460	\$ 509,471	\$ 1,064,255	\$ 2,242,126	4.40	2.11	2.32
G261	Energy Efficient Technology Evaluation	NA	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0.00	0.00	0.00
G262	Commercial Rebates	5	1,338,854	\$ -	\$ 463,016	\$ 1,236,530	\$ 428,322	\$ 1,143,876	\$ 3,815,280	8.91	3.34	3.67
	Total Commercial Programs		3,450,965		\$ 6,336,725	\$ 11,794,392	\$ 5,861,910	\$ 10,910,631	\$ 15,644,697	2.67	1.43	1.58
	Customer Engagement & Education				\$ 232,132	\$ 232,132	\$ 214,738	\$ 214,738				
	Energy Advisors				\$ 151,200	\$ 151,200	\$ 139,870	\$ 139,870				
	Events				\$ 47,912	\$ 47,912	\$ 44,322	\$ 44,322				
	Brochures				\$ 12,235	\$ 12,235	\$ 11,318	\$ 11,318				
	Education				\$ 20,785	\$ 20,785	\$ 19,228	\$ 19,228				
	CS Web Experience (Ringel)				\$ 155,496	\$ 155,496	\$ 143,844	\$ 143,844				
	Customer Online Experience				\$ 100,993	\$ 100,993	\$ 93,426	\$ 93,426				
	Web Development				\$ -	\$ -	\$ -	\$ -				
	Web content, maintenance + analytics				\$ -	\$ -	\$ -	\$ -				
	Online customer tools				\$ -	\$ -	\$ -	\$ -				
	E-news				\$ 1,077	\$ 1,077	\$ 996	\$ 996				
	Miscellaneous applications				\$ -	\$ -	\$ -	\$ -				
	Market Integration (Ringel)				\$ 53,426	\$ 53,426	\$ 49,423	\$ 49,423				
	Energy Efficient Communities				\$ 63,948	\$ 63,948	\$ 59,156	\$ 59,156				
	Trade Ally Support				\$ -	\$ -	\$ -	\$ -				
	Marketing Research				\$ 37,693	\$ 37,693	\$ 34,869	\$ 34,869				
	Total Portfolio Support				\$ 489,269	\$ 489,269	\$ 452,607	\$ 452,607				
	Conservation Supply Curves				\$ 88,666	\$ 88,666	\$ 82,022	\$ 82,022				
	Strategic Planning & Market Research				\$ 17,685	\$ 17,685	\$ 16,360	\$ 16,360				
	Program Evaluation				\$ 514,680	\$ 514,680	\$ 476,115	\$ 476,115				
	Program Support				\$ 23,503	\$ 23,503	\$ 21,742	\$ 21,742				
	Verification				\$ 77,812	\$ 77,812	\$ 71,982	\$ 71,982				
	Total Research & Compliance				\$ 722,346	\$ 722,346	\$ 668,221	\$ 668,221				
	Grand Total All Gas Programs	10	5,204,501	\$ 68,450	\$ 13,652,557	\$ 28,056,016	\$ 12,624,259	\$ 25,953,762	\$ 31,633,465	2.51	1.22	1.34

1. The electric residential appliance program offers clothes washers which save both gas and electricity. The bulk of the savings is electric savings. Therefore, the gas savings are simply an extra non-electric benefit of the program.