

Memorandum

To: Don Jones, Jason Berry, PacifiCorp/Rocky Mountain Power
From: Justin Spencer, David Basak, Navigant
Date: 05/11/2012
Re: Revised Benefit/Cost CE Analysis PY 2012-2014

This memo presents the cost effectiveness findings for the analysis of the Utah ENERGY STAR Homes Program. The memo addresses the following:

- **Participation Variations:** Navigant provides three levels of participation; high (+10%), expected, and low (-10%).
- **CO₂ Cost/Ton Scenarios:** The team performed an analysis using the decrement cost scenario for “Medium” and “None” carbon streams (East Side, whole house, 35% load factor) provided in the 2011 PacifiCorp Integrated Resource Plan.¹
- **Multiple Scenario Combinations:**
 - “Medium” carbon with expected participation
 - “Medium” carbon with 10% higher than expected participation
 - “Medium” carbon with 10% lower than expected participation
 - “None” carbon with expected participation
 - “None” carbon with 10% higher than expected participation
 - “None” carbon with 10% lower than expected participation

The benefit-cost results for the combination of program years 2012-2014 are as follows:

Table 1: Total Program Results with Expected Participation - Medium Carbon

Benefit/Cost Test Performed	Total Program 2012-2014		
	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$10,599,590	\$6,903,597	0.65
Total Resource Cost Test (TRC)	\$10,599,590	\$6,275,998	0.59
Utility Cost Test (UCT)	\$5,081,491	\$6,275,998	1.24
Rate Impact Test (RIM)	\$11,231,143	\$6,275,998	0.56
Participant Cost Test (PCT)	\$5,518,099	\$9,883,515	1.79
Levelized Cost (\$/kWh)	\$10,599,590	\$59,730,097	0.18

¹ PacifiCorp 2011 IRP Addendum, Chapter 2—DSM Decrement Analysis Tables 8 &10 (See Exhibit A)

Table 2: Single Family and Multi-Family Results with Expected Participation - Medium Carbon

Benefit/Cost Test Performed	Single Family 2012-2014			Multi-Family 2012-2014		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$7,871,930	\$5,490,370	0.70	\$2,727,660	\$1,413,228	0.52
Total Resource Cost Test (TRC)	\$7,871,930	\$4,991,245	0.63	\$2,727,660	\$1,284,752	0.47
Utility Cost Test (UCT)	\$4,046,489	\$4,991,245	1.23	\$1,035,002	\$1,284,752	1.24
Rate Impact Test (RIM)	\$8,937,375	\$4,991,245	0.56	\$2,293,768	\$1,284,752	0.56
Participant Cost Test (PCT)	\$3,825,441	\$7,852,728	2.05	\$1,692,658	\$2,030,787	1.20
Levelized Cost (\$/kWh)	\$7,871,930	\$47,519,758	0.17	\$2,727,660	\$12,210,339	0.22

Table 3: Total Program Results with High Participation - Medium Carbon

Benefit/Cost Test Performed	Total Program 2012-2014		
	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$11,371,045	\$7,593,957	0.67
Total Resource Cost Test (TRC)	\$11,371,045	\$6,903,597	0.61
Utility Cost Test (UCT)	\$5,301,136	\$6,903,597	1.30
Rate Impact Test (RIM)	\$12,065,753	\$6,903,597	0.57
Participant Cost Test (PCT)	\$6,069,909	\$10,871,867	1.79
Levelized Cost (\$/kWh)	\$11,371,045	\$65,703,107	0.17

Table 4: Single Family and Multi-Family Results with High Participation - Medium Carbon

Benefit/Cost Test Performed	Single Family 2012-2014			Multi-Family 2012-2014		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$8,428,386	\$6,039,407	0.72	\$2,942,659	\$1,554,550	0.53
Total Resource Cost Test (TRC)	\$8,428,386	\$5,490,370	0.65	\$2,942,659	\$1,413,228	0.48
Utility Cost Test (UCT)	\$4,220,401	\$5,490,370	1.30	\$1,080,735	\$1,413,228	1.31
Rate Impact Test (RIM)	\$9,600,376	\$5,490,370	0.57	\$2,465,377	\$1,413,228	0.57
Participant Cost Test (PCT)	\$4,207,985	\$8,638,001	2.05	\$1,861,924	\$2,233,866	1.20
Levelized Cost (\$/kWh)	\$8,428,386	\$52,271,734	0.16	\$2,942,659	\$13,431,373	0.22

Table 5: Total Program Results with Low Participation - Medium Carbon

Benefit/Cost Test Performed	Total Program 2012-2014		
	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$9,828,135	\$6,213,238	0.63
Total Resource Cost Test (TRC)	\$9,828,135	\$5,648,398	0.57
Utility Cost Test (UCT)	\$4,861,846	\$5,648,398	1.16
Rate Impact Test (RIM)	\$10,396,532	\$5,648,398	0.54
Participant Cost Test (PCT)	\$4,966,289	\$8,895,164	1.79
Levelized Cost (\$/kWh)	\$9,828,135	\$53,757,087	0.18

Table 6: Single Family and Multi-Family Results with Low Participation - Medium Carbon

Benefit/Cost Test Performed	Single Family 2012-2014			Multi-Family 2012-2014		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$7,315,474	\$4,941,333	0.68	\$2,512,661	\$1,271,905	0.51
Total Resource Cost Test (TRC)	\$7,315,474	\$4,492,121	0.61	\$2,512,661	\$1,156,277	0.46
Utility Cost Test (UCT)	\$3,872,577	\$4,492,121	1.16	\$989,269	\$1,156,277	1.17
Rate Impact Test (RIM)	\$8,274,374	\$4,492,121	0.54	\$2,122,158	\$1,156,277	0.54
Participant Cost Test (PCT)	\$3,442,897	\$7,067,455	2.05	\$1,523,392	\$1,827,708	1.20
Levelized Cost (\$/kWh)	\$7,315,474	\$42,767,782	0.17	\$2,512,661	\$10,989,305	0.23

Table 7: Total Program Results with Expected Participation - None Carbon

Benefit/Cost Test Performed	Total Program 2012-2014		
	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$10,599,590	\$5,898,315	0.56
Total Resource Cost Test (TRC)	\$10,599,590	\$5,362,104	0.51
Utility Cost Test (UCT)	\$5,081,491	\$5,362,104	1.06
Rate Impact Test (RIM)	\$11,231,143	\$5,362,104	0.48
Participant Cost Test (PCT)	\$5,518,099	\$9,883,515	1.79
Levelized Cost (\$/kWh)	\$10,599,590	\$59,730,097	0.18

Table 8: Single Family and Multi-Family Results with Expected Participation - None Carbon

Benefit/Cost Test Performed	Single Family 2012-2014			Multi-Family 2012-2014		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$7,871,930	\$4,694,073	0.60	\$2,727,660	\$1,204,242	0.44
Total Resource Cost Test (TRC)	\$7,871,930	\$4,267,339	0.54	\$2,727,660	\$1,094,766	0.40
Utility Cost Test (UCT)	\$4,046,489	\$4,267,339	1.05	\$1,035,002	\$1,094,766	1.06
Rate Impact Test (RIM)	\$8,937,375	\$4,267,339	0.48	\$2,293,768	\$1,094,766	0.48
Participant Cost Test (PCT)	\$3,825,441	\$7,852,728	2.05	\$1,692,658	\$2,030,787	1.20
Levelized Cost (\$/kWh)	\$7,871,930	\$47,519,758	0.17	\$2,727,660	\$12,210,339	0.22

Table 9: Total Program Results with High Participation - None Carbon

Benefit/Cost Test Performed	Total Program 2012-2014		
	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$11,371,045	\$6,488,146	0.57
Total Resource Cost Test (TRC)	\$11,371,045	\$5,898,315	0.52
Utility Cost Test (UCT)	\$5,301,136	\$5,898,315	1.11
Rate Impact Test (RIM)	\$12,065,753	\$5,898,315	0.49
Participant Cost Test (PCT)	\$6,069,909	\$10,871,867	1.79
Levelized Cost (\$/kWh)	\$11,371,045	\$65,703,107	0.17

Table 10: Single Family and Multi-Family Results with High Participation - None Carbon

Benefit/Cost Test Performed	Single Family 2012-2014			Multi-Family 2012-2014		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$8,428,386	\$5,163,480	0.61	\$2,942,659	\$1,324,667	0.45
Total Resource Cost Test (TRC)	\$8,428,386	\$4,694,073	0.56	\$2,942,659	\$1,204,242	0.41
Utility Cost Test (UCT)	\$4,220,401	\$4,694,073	1.11	\$1,080,735	\$1,204,242	1.11
Rate Impact Test (RIM)	\$9,600,376	\$4,694,073	0.49	\$2,465,377	\$1,204,242	0.49
Participant Cost Test (PCT)	\$4,207,985	\$8,638,001	2.05	\$1,861,924	\$2,233,866	1.20

Levelized Cost (\$/kWh)	\$8,428,386	\$52,271,734	0.16	\$2,942,659	\$13,431,373	0.22
--------------------------------	-------------	--------------	------	-------------	--------------	------

Table 11: Total Program Results with Low Participation - None Carbon

Benefit/Cost Test Performed	Total Program 2012-2014		
	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$9,828,135	\$5,308,483	0.54
Total Resource Cost Test (TRC)	\$9,828,135	\$4,825,894	0.49
Utility Cost Test (UCT)	\$4,861,846	\$4,825,894	0.99
Rate Impact Test (RIM)	\$10,396,532	\$4,825,894	0.46
Participant Cost Test (PCT)	\$4,966,289	\$8,895,164	1.79
Levelized Cost (\$/kWh)	\$9,828,135	\$53,757,087	0.18

Table 12: Single Family and Multi-Family Results with Low Participation - None Carbon

Benefit/Cost Test Performed	Single Family 2012-2014			Multi-Family 2012-2014		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$7,315,474	\$4,224,665	0.58	\$2,512,661	\$1,083,818	0.43
Total Resource Cost Test (TRC)	\$7,315,474	\$3,840,605	0.52	\$2,512,661	\$985,289	0.39
Utility Cost Test (UCT)	\$3,872,577	\$3,840,605	0.99	\$989,269	\$985,289	1.00
Rate Impact Test (RIM)	\$8,274,374	\$3,840,605	0.46	\$2,122,158	\$985,289	0.46
Participant Cost Test (PCT)	\$3,442,897	\$7,067,455	2.05	\$1,523,392	\$1,827,708	1.20
Levelized Cost (\$/kWh)	\$7,315,474	\$42,767,782	0.17	\$2,512,661	\$10,989,305	0.23

The benefit-cost results for program year 2012 are as follows:

Table 13: Benefit-Cost Test Results for Program Year 2012 with Expected Participation - Medium Carbon

Benefit/Cost Test Performed	Single Family 2012			Multi-Family 2012			Total Program 2012		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$1,382,098	\$1,006,894	0.73	\$468,670	\$250,381	0.53	\$1,850,768	\$1,257,275	0.68
Total Resource Cost Test (TRC)	\$1,382,098	\$915,358	0.66	\$468,670	\$227,619	0.49	\$1,850,768	\$1,142,978	0.62
Utility Cost Test (UCT)	\$737,911	\$915,358	1.24	\$183,634	\$227,619	1.24	\$921,545	\$1,142,978	1.24
Rate Impact Test (RIM)	\$1,685,776	\$915,358	0.54	\$419,100	\$227,619	0.54	\$2,104,876	\$1,142,978	0.54
Participant Cost Test (PCT)	\$644,187	\$1,477,692	2.29	\$285,036	\$371,345	1.30	\$929,223	\$1,849,036	1.99
Levelized Cost (\$/kWh)	\$1,382,098	\$9,992,706	0.14	\$468,670	\$2,481,962	0.19	\$1,850,768	\$12,474,668	0.15

Table 14: Benefit-Cost Test Results for Program Year 2012 with High Participation - Medium Carbon

Benefit/Cost Test Performed	Single Family 2012			Multi-Family 2012			Total Program 2012		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$1,475,802	\$1,107,583	0.75	\$504,875	\$275,420	0.55	\$1,980,677	\$1,383,003	0.70
Total Resource Cost Test (TRC)	\$1,475,802	\$1,006,894	0.68	\$504,875	\$250,381	0.50	\$1,980,677	\$1,257,275	0.63
Utility Cost Test (UCT)	\$767,197	\$1,006,894	1.31	\$191,335	\$250,381	1.31	\$958,532	\$1,257,275	1.31
Rate Impact Test (RIM)	\$1,809,848	\$1,006,894	0.56	\$450,348	\$250,381	0.56	\$2,260,196	\$1,257,275	0.56
Participant Cost Test (PCT)	\$708,606	\$1,625,461	2.29	\$313,540	\$408,479	1.30	\$1,022,145	\$2,033,940	1.99
Levelized Cost (\$/kWh)	\$1,475,802	\$10,991,976	0.13	\$504,875	\$2,730,159	0.18	\$1,980,677	\$13,722,135	0.14

Table 15: Benefit-Cost Test Results for Program Year 2012 with Low Participation - Medium Carbon

Benefit/Cost Test Performed	Single Family 2012			Multi-Family 2012			Total Program 2012		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$1,288,393	\$906,205	0.70	\$432,465	\$225,343	0.52	\$1,720,858	\$1,131,548	0.66
Total Resource Cost Test (TRC)	\$1,288,393	\$823,822	0.64	\$432,465	\$204,857	0.47	\$1,720,858	\$1,028,680	0.60
Utility Cost Test (UCT)	\$708,625	\$823,822	1.16	\$175,933	\$204,857	1.16	\$884,558	\$1,028,680	1.16
Rate Impact Test (RIM)	\$1,561,703	\$823,822	0.53	\$387,852	\$204,857	0.53	\$1,949,556	\$1,028,680	0.53
Participant Cost Test (PCT)	\$579,768	\$1,329,922	2.29	\$256,532	\$334,210	1.30	\$836,301	\$1,664,133	1.99
Levelized Cost (\$/kWh)	\$1,288,393	\$8,993,435	0.14	\$432,465	\$2,233,766	0.19	\$1,720,858	\$11,227,201	0.15

Table 16: Benefit-Cost Test Results for Program Year 2012 with Expected Participation - None Carbon

Benefit/Cost Test Performed	Single Family 2012			Multi-Family 2012			Total Program 2012		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$1,382,098	\$898,007	0.65	\$468,670	\$222,254	0.47	\$1,850,768	\$1,120,261	0.61
Total Resource Cost Test (TRC)	\$1,382,098	\$816,370	0.59	\$468,670	\$202,049	0.43	\$1,850,768	\$1,018,419	0.55
Utility Cost Test (UCT)	\$737,911	\$816,370	1.11	\$183,634	\$202,049	1.10	\$921,545	\$1,018,419	1.11
Rate Impact Test (RIM)	\$1,685,776	\$816,370	0.48	\$419,100	\$202,049	0.48	\$2,104,876	\$1,018,419	0.48
Participant Cost Test (PCT)	\$644,187	\$1,477,692	2.29	\$285,036	\$371,345	1.30	\$929,223	\$1,849,036	1.99
Levelized Cost (\$/kWh)	\$1,382,098	\$9,992,706	0.14	\$468,670	\$2,481,962	0.19	\$1,850,768	\$12,474,668	0.15

Table 17: Benefit-Cost Test Results for Program Year 2012 with High Participation - None Carbon

Benefit/Cost Test Performed	Single Family 2012			Multi-Family 2012			Total Program 2012		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$1,475,802	\$987,808	0.67	\$504,875	\$244,479	0.48	\$1,980,677	\$1,232,287	0.62
Total Resource Cost Test (TRC)	\$1,475,802	\$898,007	0.61	\$504,875	\$222,254	0.44	\$1,980,677	\$1,120,261	0.57
Utility Cost Test (UCT)	\$767,197	\$898,007	1.17	\$191,335	\$222,254	1.16	\$958,532	\$1,120,261	1.17
Rate Impact Test (RIM)	\$1,809,848	\$898,007	0.50	\$450,348	\$222,254	0.49	\$2,260,196	\$1,120,261	0.50
Participant Cost Test (PCT)	\$708,606	\$1,625,461	2.29	\$313,540	\$408,479	1.30	\$1,022,145	\$2,033,940	1.99
Levelized Cost (\$/kWh)	\$1,475,802	\$10,991,976	0.13	\$504,875	\$2,730,159	0.18	\$1,980,677	\$13,722,135	0.14

Table 18: Benefit-Cost Test Results for Program Year 2012 with Low Participation - None Carbon

Benefit/Cost Test Performed	Single Family 2012			Multi-Family 2012			Total Program 2012		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$1,288,393	\$808,206	0.63	\$432,465	\$200,028	0.46	\$1,720,858	\$1,008,235	0.59
Total Resource Cost Test (TRC)	\$1,288,393	\$734,733	0.57	\$432,465	\$181,844	0.42	\$1,720,858	\$916,577	0.53
Utility Cost Test (UCT)	\$708,625	\$734,733	1.04	\$175,933	\$181,844	1.03	\$884,558	\$916,577	1.04
Rate Impact Test (RIM)	\$1,561,703	\$734,733	0.47	\$387,852	\$181,844	0.47	\$1,949,556	\$916,577	0.47
Participant Cost Test (PCT)	\$579,768	\$1,329,922	2.29	\$256,532	\$334,210	1.30	\$836,301	\$1,664,133	1.99
Levelized Cost (\$/kWh)	\$1,288,393	\$8,993,435	0.14	\$432,465	\$2,233,766	0.19	\$1,720,858	\$11,227,201	0.15

The benefit-cost results for program year 2013 are as follows:

Table 19: Benefit-Cost Test Results for Program Year 2013 with Expected Participation - Medium Carbon

Benefit/Cost Test Performed	Single Family 2013			Multi-Family 2013			Total Program 2013		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$3,228,981	\$2,283,898	0.71	\$1,094,206	\$575,296	0.53	\$4,323,187	\$2,859,194	0.66
Total Resource Cost Test (TRC)	\$3,228,981	\$2,076,271	0.64	\$1,094,206	\$522,996	0.48	\$4,323,187	\$2,599,267	0.60
Utility Cost Test (UCT)	\$1,748,639	\$2,076,271	1.19	\$439,193	\$522,996	1.19	\$2,187,832	\$2,599,267	1.19
Rate Impact Test (RIM)	\$3,805,102	\$2,076,271	0.55	\$957,272	\$522,996	0.55	\$4,762,375	\$2,599,267	0.55
Participant Cost Test (PCT)	\$1,480,342	\$3,243,571	2.19	\$655,013	\$824,573	1.26	\$2,135,354	\$4,068,144	1.91
Levelized Cost (\$/kWh)	\$3,228,981	\$21,676,365	0.15	\$1,094,206	\$5,460,180	0.20	\$4,323,187	\$27,136,545	0.16

Table 20: Benefit-Cost Test Results for Program Year 2013 with High Participation - Medium Carbon

Benefit/Cost Test Performed	Single Family 2013			Multi-Family 2013			Total Program 2013		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$3,444,314	\$2,512,288	0.73	\$1,177,404	\$632,826	0.54	\$4,621,719	\$3,145,114	0.68
Total Resource Cost Test (TRC)	\$3,444,314	\$2,283,898	0.66	\$1,177,404	\$575,296	0.49	\$4,621,719	\$2,859,194	0.62
Utility Cost Test (UCT)	\$1,815,939	\$2,283,898	1.26	\$456,890	\$575,296	1.26	\$2,272,829	\$2,859,194	1.26
Rate Impact Test (RIM)	\$4,078,048	\$2,283,898	0.56	\$1,026,778	\$575,296	0.56	\$5,104,825	\$2,859,194	0.56
Participant Cost Test (PCT)	\$1,628,376	\$3,567,928	2.19	\$720,514	\$907,031	1.26	\$2,348,890	\$4,474,959	1.91
Levelized Cost (\$/kWh)	\$3,444,314	\$23,844,001	0.14	\$1,177,404	\$6,006,198	0.20	\$4,621,719	\$29,850,199	0.15

Table 21: Benefit-Cost Test Results for Program Year 2013 with Low Participation - Medium Carbon

Benefit/Cost Test Performed	Single Family 2013			Multi-Family 2013			Total Program 2013		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$3,013,648	\$2,055,508	0.68	\$1,011,007	\$517,766	0.51	\$4,024,655	\$2,573,275	0.64
Total Resource Cost Test (TRC)	\$3,013,648	\$1,868,644	0.62	\$1,011,007	\$470,697	0.47	\$4,024,655	\$2,339,341	0.58
Utility Cost Test (UCT)	\$1,681,340	\$1,868,644	1.11	\$421,496	\$470,697	1.12	\$2,102,836	\$2,339,341	1.11
Rate Impact Test (RIM)	\$3,532,157	\$1,868,644	0.53	\$887,767	\$470,697	0.53	\$4,419,924	\$2,339,341	0.53
Participant Cost Test (PCT)	\$1,332,307	\$2,919,214	2.19	\$589,511	\$742,116	1.26	\$1,921,819	\$3,661,330	1.91
Levelized Cost (\$/kWh)	\$3,013,648	\$19,508,728	0.15	\$1,011,007	\$4,914,162	0.21	\$4,024,655	\$24,422,890	0.16

Table 22: Benefit-Cost Test Results for Program Year 2013 with Expected Participation - None Carbon

Benefit/Cost Test Performed	Single Family 2013			Multi-Family 2013			Total Program 2013		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$3,228,981	\$1,973,413	0.61	\$1,094,206	\$495,375	0.45	\$4,323,187	\$2,468,788	0.57
Total Resource Cost Test (TRC)	\$3,228,981	\$1,794,012	0.56	\$1,094,206	\$450,341	0.41	\$4,323,187	\$2,244,353	0.52
Utility Cost Test (UCT)	\$1,748,639	\$1,794,012	1.03	\$439,193	\$450,341	1.03	\$2,187,832	\$2,244,353	1.03
Rate Impact Test (RIM)	\$3,805,102	\$1,794,012	0.47	\$957,272	\$450,341	0.47	\$4,762,375	\$2,244,353	0.47
Participant Cost Test (PCT)	\$1,480,342	\$3,243,571	2.19	\$655,013	\$824,573	1.26	\$2,135,354	\$4,068,144	1.91
Levelized Cost (\$/kWh)	\$3,228,981	\$21,676,365	0.15	\$1,094,206	\$5,460,180	0.20	\$4,323,187	\$27,136,545	0.16

Table 23: Benefit-Cost Test Results for Program Year 2013 with High Participation - None Carbon

Benefit/Cost Test Performed	Single Family 2013			Multi-Family 2013			Total Program 2013		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$3,444,314	\$2,170,754	0.63	\$1,177,404	\$544,913	0.46	\$4,621,719	\$2,715,667	0.59
Total Resource Cost Test (TRC)	\$3,444,314	\$1,973,413	0.57	\$1,177,404	\$495,375	0.42	\$4,621,719	\$2,468,788	0.53
Utility Cost Test (UCT)	\$1,815,939	\$1,973,413	1.09	\$456,890	\$495,375	1.08	\$2,272,829	\$2,468,788	1.09
Rate Impact Test (RIM)	\$4,078,048	\$1,973,413	0.48	\$1,026,778	\$495,375	0.48	\$5,104,825	\$2,468,788	0.48
Participant Cost Test (PCT)	\$1,628,376	\$3,567,928	2.19	\$720,514	\$907,031	1.26	\$2,348,890	\$4,474,959	1.91
Levelized Cost (\$/kWh)	\$3,444,314	\$23,844,001	0.14	\$1,177,404	\$6,006,198	0.20	\$4,621,719	\$29,850,199	0.15

Table 24: Benefit-Cost Test Results for Program Year 2013 with Low Participation - None Carbon

Benefit/Cost Test Performed	Single Family 2013			Multi-Family 2013			Total Program 2013		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$3,013,648	\$1,776,072	0.59	\$1,011,007	\$445,838	0.44	\$4,024,655	\$2,221,910	0.55
Total Resource Cost Test (TRC)	\$3,013,648	\$1,614,611	0.54	\$1,011,007	\$405,307	0.40	\$4,024,655	\$2,019,918	0.50
Utility Cost Test (UCT)	\$1,681,340	\$1,614,611	0.96	\$421,496	\$405,307	0.96	\$2,102,836	\$2,019,918	0.96
Rate Impact Test (RIM)	\$3,532,157	\$1,614,611	0.46	\$887,767	\$405,307	0.46	\$4,419,924	\$2,019,918	0.46
Participant Cost Test (PCT)	\$1,332,307	\$2,919,214	2.19	\$589,511	\$742,116	1.26	\$1,921,819	\$3,661,330	1.91
Levelized Cost (\$/kWh)	\$3,013,648	\$19,508,728	0.15	\$1,011,007	\$4,914,162	0.21	\$4,024,655	\$24,422,890	0.16

The benefit-cost results for program year 2014 are as follows:

Table 25: Benefit-Cost Test Results for Program Year 2014 with Expected Participation - Medium Carbon

Benefit/Cost Test Performed	Single Family 2014			Multi-Family 2014			Total Program 2014		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$3,260,851	\$2,199,577	0.67	\$1,164,784	\$587,550	0.50	\$4,425,635	\$2,787,128	0.63
Total Resource Cost Test (TRC)	\$3,260,851	\$1,999,616	0.61	\$1,164,784	\$534,137	0.46	\$4,425,635	\$2,533,753	0.57
Utility Cost Test (UCT)	\$1,559,939	\$1,999,616	1.28	\$412,175	\$534,137	1.30	\$1,972,113	\$2,533,753	1.28
Rate Impact Test (RIM)	\$3,446,497	\$1,999,616	0.58	\$917,395	\$534,137	0.58	\$4,363,892	\$2,533,753	0.58
Participant Cost Test (PCT)	\$1,700,913	\$3,131,466	1.84	\$752,610	\$834,869	1.11	\$2,453,522	\$3,966,335	1.62
Levelized Cost (\$/kWh)	\$3,260,851	\$19,870,794	0.16	\$1,164,784	\$5,321,763	0.22	\$4,425,635	\$25,192,557	0.18

Table 26: Benefit-Cost Test Results for Program Year 2014 with High Participation - Medium Carbon

Benefit/Cost Test Performed	Single Family 2014			Multi-Family 2014			Total Program 2014		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$3,508,270	\$2,419,535	0.69	\$1,260,379	\$646,305	0.51	\$4,768,649	\$3,065,841	0.64
Total Resource Cost Test (TRC)	\$3,508,270	\$2,199,577	0.63	\$1,260,379	\$587,550	0.47	\$4,768,649	\$2,787,128	0.58
Utility Cost Test (UCT)	\$1,637,266	\$2,199,577	1.34	\$432,509	\$587,550	1.36	\$2,069,775	\$2,787,128	1.35
Rate Impact Test (RIM)	\$3,712,480	\$2,199,577	0.59	\$988,251	\$587,550	0.59	\$4,700,731	\$2,787,128	0.59
Participant Cost Test (PCT)	\$1,871,004	\$3,444,612	1.84	\$827,870	\$918,356	1.11	\$2,698,874	\$4,362,968	1.62
Levelized Cost (\$/kWh)	\$3,508,270	\$21,857,874	0.16	\$1,260,379	\$5,853,940	0.22	\$4,768,649	\$27,711,813	0.17

Table 27: Benefit-Cost Test Results for Program Year 2014 with Low Participation - Medium Carbon

Benefit/Cost Test Performed	Single Family 2014			Multi-Family 2014			Total Program 2014		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$3,013,433	\$1,979,620	0.66	\$1,069,189	\$528,795	0.49	\$4,082,622	\$2,508,415	0.61
Total Resource Cost Test (TRC)	\$3,013,433	\$1,799,654	0.60	\$1,069,189	\$480,723	0.45	\$4,082,622	\$2,280,377	0.56
Utility Cost Test (UCT)	\$1,482,612	\$1,799,654	1.21	\$391,840	\$480,723	1.23	\$1,874,452	\$2,280,377	1.22
Rate Impact Test (RIM)	\$3,180,514	\$1,799,654	0.57	\$846,539	\$480,723	0.57	\$4,027,053	\$2,280,377	0.57
Participant Cost Test (PCT)	\$1,530,821	\$2,818,319	1.84	\$677,349	\$751,382	1.11	\$2,208,170	\$3,569,701	1.62
Levelized Cost (\$/kWh)	\$3,013,433	\$17,883,715	0.17	\$1,069,189	\$4,789,587	0.22	\$4,082,622	\$22,673,302	0.18

Table 28: Benefit-Cost Test Results for Program Year 2014 with Expected Participation - None Carbon

Benefit/Cost Test Performed	Single Family 2014			Multi-Family 2014			Total Program 2014		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$3,260,851	\$1,822,653	0.56	\$1,164,784	\$486,613	0.42	\$4,425,635	\$2,309,266	0.52
Total Resource Cost Test (TRC)	\$3,260,851	\$1,656,957	0.51	\$1,164,784	\$442,375	0.38	\$4,425,635	\$2,099,333	0.47
Utility Cost Test (UCT)	\$1,559,939	\$1,656,957	1.06	\$412,175	\$442,375	1.07	\$1,972,113	\$2,099,333	1.06
Rate Impact Test (RIM)	\$3,446,497	\$1,656,957	0.48	\$917,395	\$442,375	0.48	\$4,363,892	\$2,099,333	0.48
Participant Cost Test (PCT)	\$1,700,913	\$3,131,466	1.84	\$752,610	\$834,869	1.11	\$2,453,522	\$3,966,335	1.62
Levelized Cost (\$/kWh)	\$3,260,851	\$19,870,794	0.16	\$1,164,784	\$5,321,763	0.22	\$4,425,635	\$25,192,557	0.18

Table 29: Benefit-Cost Test Results for Program Year 2014 with High Participation - None Carbon

Benefit/Cost Test Performed	Single Family 2014			Multi-Family 2014			Total Program 2014		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$3,508,270	\$2,004,918	0.57	\$1,260,379	\$535,274	0.42	\$4,768,649	\$2,540,192	0.53
Total Resource Cost Test (TRC)	\$3,508,270	\$1,822,653	0.52	\$1,260,379	\$486,613	0.39	\$4,768,649	\$2,309,266	0.48
Utility Cost Test (UCT)	\$1,637,266	\$1,822,653	1.11	\$432,509	\$486,613	1.13	\$2,069,775	\$2,309,266	1.12
Rate Impact Test (RIM)	\$3,712,480	\$1,822,653	0.49	\$988,251	\$486,613	0.49	\$4,700,731	\$2,309,266	0.49
Participant Cost Test (PCT)	\$1,871,004	\$3,444,612	1.84	\$827,870	\$918,356	1.11	\$2,698,874	\$4,362,968	1.62
Levelized Cost (\$/kWh)	\$3,508,270	\$21,857,874	0.16	\$1,260,379	\$5,853,940	0.22	\$4,768,649	\$27,711,813	0.17

Table 30: Benefit-Cost Test Results for Program Year 2014 with Low Participation - None Carbon

Benefit/Cost Test Performed	Single Family 2014			Multi-Family 2014			Total Program 2014		
	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio	Costs	Benefits	B/C Ratio
Total Resource Cost Test (PTRC)	\$3,013,433	\$1,640,388	0.54	\$1,069,189	\$437,952	0.41	\$4,082,622	\$2,078,339	0.51
Total Resource Cost Test (TRC)	\$3,013,433	\$1,491,261	0.49	\$1,069,189	\$398,138	0.37	\$4,082,622	\$1,889,399	0.46
Utility Cost Test (UCT)	\$1,482,612	\$1,491,261	1.01	\$391,840	\$398,138	1.02	\$1,874,452	\$1,889,399	1.01
Rate Impact Test (RIM)	\$3,180,514	\$1,491,261	0.47	\$846,539	\$398,138	0.47	\$4,027,053	\$1,889,399	0.47
Participant Cost Test (PCT)	\$1,530,821	\$2,818,319	1.84	\$677,349	\$751,382	1.11	\$2,208,170	\$3,569,701	1.62
Levelized Cost (\$/kWh)	\$3,013,433	\$17,883,715	0.17	\$1,069,189	\$4,789,587	0.22	\$4,082,622	\$22,673,302	0.18