



Date: December 12, 2011
To: Don Jones, Jr. and Jeff Bumgarner
From: Elizabeth Daykin and Niko Drake-McLaughlin
Re: Utah FinAnswer Express 2012-2014 Cost-Effectiveness, Medium Carbon Scenario

The tables below present the cost-effectiveness findings of the Utah FinAnswer Express program based on projected 2012, 2013, and 2014 costs and savings estimates provided by PacifiCorp in a spreadsheet entitled “Exec Summary 120211”. The Utility discount rate is from the 2011 PacifiCorp Integrated Resource Plan.

Cost-effectiveness was tested using the 2011 IRP 69% east system load factor decrement. Table 1 lists modeling inputs, and Table 2 shows the annual cost and savings information provided by PacifiCorp. Table 3 provides measure lives for each bundle, provided by PacifiCorp, as well as realization rates for each bundle’s savings values, taken from the 2005-2008 program evaluation. Table 4 outlines the administrative costs.

Overall, the FinAnswer Express program is cost-effective, passing all five of the standard cost-benefit tests. Cost-effectiveness results for the entire program and each measure group are provided starting in Table 5. Results are shown for the 2012, 2013, and 2014 program years combined.

Table 1: FinAnswer Express Inputs

Parameter	Value
Discount Rate	7.17%
Commercial line loss	9.379 %
Industrial line Loss	5.726 %
Commercial energy rate (\$/kWh)	
2012	\$0.0745
2013	\$0.0764
2014	\$0.0783
Industrial energy rate (\$/kWh)	
2012	\$0.0499
2013	\$0.0512
2014	\$0.0524

Table 2: FinAnswer Express Annual Costs and Savings by Year and Measure Type

FinAnswer Express	End Use	Gross kWh Savings	Gross Savings	Incentives	Participant Incremental
2012	Appliances	85,690	4	\$13,750	\$32,335
	Compressed Air	750,000	40	\$113,077	\$277,728
	Envelope	87,577	18	\$34,220	\$84,664
	Farm Equipment	225,000	32	\$27,846	\$95,045
	Food Service	874,934	229	\$128,680	\$312,586
	HVAC	1,329,145	356	\$222,416	\$838,593
	Irrigation	525,000	282	\$41,660	\$201,584
	Lighting Equipment	28,926,774	5,469	\$1,293,112	\$7,358,896
	Motors	1,814,863	47	\$115,248	\$334,615
	Office Equipment	57,138	5	\$5,128	\$7,368
	Non Trade-Ally	3,467,612	719	\$277,409	\$1,151,004
	2012 Total	38,143,733	7,202	\$2,272,546	\$10,694,416
2013	Appliances	86,510	4	\$14,125	\$34,105
	Compressed Air	975,000	52	\$147,000	\$361,046
	Envelope	99,034	21	\$38,380	\$95,779
	Farm Equipment	292,500	41	\$36,200	\$123,558
	Food Service	938,688	244	\$139,840	\$332,972
	HVAC	1,485,840	398	\$247,790	\$936,655
	Irrigation	682,500	367	\$54,158	\$262,060
	Lighting Equipment	30,730,522	5,810	\$1,373,745	\$7,817,764
	Motors	1,970,634	60	\$126,125	\$363,876
	Office Equipment	65,238	6	\$5,478	\$7,968
	Non Trade-Ally	3,732,647	774	\$298,612	\$1,238,976
	2013 Total	41,059,113	7,777	\$2,481,453	\$11,574,760
2014	Appliances	104,330	5	\$17,375	\$41,245
	Compressed Air	987,500	53	\$148,884	\$365,675
	Envelope	111,441	23	\$43,890	\$107,570
	Farm Equipment	296,250	41	\$36,664	\$125,142
	Food Service	960,448	249	\$144,960	\$329,244
	HVAC	1,708,948	476	\$303,788	\$1,116,405
	Irrigation	691,250	371	\$54,852	\$265,419
	Lighting Equipment	23,381,919	4,421	\$1,045,241	\$5,948,299
	Motors	2,133,937	74	\$137,747	\$394,748
	Office Equipment	73,176	7	\$5,821	\$8,556
	Non Trade-Ally	3,044,920	632	\$243,594	\$1,010,700
	2014 Total	33,494,119	6,354	\$2,182,817	\$9,713,003
All Years	Appliances	276,530	14	\$45,250	\$107,685
	Compressed Air	2,712,500	146	\$408,961	\$1,004,449
	Envelope	298,052	62	\$116,490	\$288,013
	Farm Equipment	813,750	114	\$100,711	\$343,745
	Food Service	2,774,070	722	\$413,480	\$974,802
	HVAC	4,523,932	1,230	\$773,994	\$2,891,653
	Irrigation	1,898,750	1,020	\$150,671	\$729,063
	Lighting Equipment	83,039,216	15,701	\$3,712,098	\$21,124,959
	Motors	5,919,434	181	\$379,121	\$1,093,238
	Office Equipment	195,552	18	\$16,427	\$23,892
	Non Trade-Ally	10,245,179	2,125	\$819,614	\$3,400,680
	All Years Total	112,696,965	21,333	\$6,936,817	\$31,982,179

Table 3: FinAnswer Express Measure Lives and Realization Rates by Measure Type

End Use	Measure Life	Realization Rate
Appliances	9	0.87
Compressed Air	9	0.87
Envelope	20	1.00
Farm Equipment	10	0.87
Food Service	12	0.87
HVAC	15	0.66
Irrigation	5	0.87
Lighting Equipment	14	0.88
Motors	15	0.82
Other Equipment	5	0.87
Non Trade-Ally	14	0.87

Table 4: Program Costs

Year	Third Party Program Delivery Services	Incentives	Design and Program Development	Evaluation	Marketing	Utility Labor	Engineering & Lighting Inspections	Total
2012	\$1,744,743	\$2,272,546	\$60,803	\$384,713	\$125,000	\$250,000	\$525,000	\$5,362,806
2013	\$1,850,326	\$2,481,453	\$29,603	\$10,000	\$125,000	\$250,000	\$525,000	\$5,271,382
2014	\$1,543,706	\$2,182,817	\$29,603	\$396,895	\$125,000	\$250,000	\$525,000	\$5,053,021
Total	\$5,138,774	\$6,936,817	\$120,010	\$791,608	\$375,000	\$750,000	\$1,575,000	\$15,687,209

Table 5: FinAnswer Express Cost Effectiveness, All Years, Entire Program

FinAnswer Express - Total Program			East System 69% (2011 medium)	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$31,854,308	\$74,210,188	\$42,355,880	2.33
Total Resource Cost Test (TRC) No Adder	\$31,854,308	\$67,463,807	\$35,609,500	2.12
Utility Cost Test (UCT)	\$14,681,029	\$67,463,807	\$52,782,778	4.60
Rate Impact Test (RIM)	\$64,451,313	\$67,463,807	\$3,012,494	1.05
Participant Cost Test (PCT)	\$29,951,612	\$69,488,855	\$39,537,243	2.32

Table 6: FinAnswer Express Cost Effectiveness, All Years, Appliance Measures

FinAnswer Express – Appliances			East System 69% (2011 medium)	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$79,055	\$128,251	\$49,196	1.62
Total Resource Cost Test (TRC) No Adder	\$79,055	\$116,592	\$37,537	1.47
Utility Cost Test (UCT)	\$42,058	\$116,592	\$74,534	2.77
Rate Impact Test (RIM)	\$139,861	\$116,592	(\$23,269)	0.83
Participant Cost Test (PCT)	\$100,069	\$165,859	\$65,790	1.66

Table 7: FinAnswer Express Cost Effectiveness, All Years, Compressed Air Measures

FinAnswer Express – Compressed Air			East System 69% (2011 medium)	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$737,071	\$1,195,409	\$458,338	1.62
Total Resource Cost Test (TRC) No Adder	\$737,071	\$1,086,735	\$349,664	1.47
Utility Cost Test (UCT)	\$379,871	\$1,086,735	\$706,864	2.86
Rate Impact Test (RIM)	\$1,021,890	\$1,086,735	\$64,845	1.06
Participant Cost Test (PCT)	\$933,001	\$1,192,554	\$259,553	1.28

Table 8: FinAnswer Express Cost Effectiveness, All Years, Envelope Measures

FinAnswer Express – Envelope			East System 69% (2011 medium)	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$211,477	\$292,628	\$81,151	1.38
Total Resource Cost Test (TRC) No Adder	\$211,477	\$266,026	\$54,548	1.26
Utility Cost Test (UCT)	\$108,246	\$266,026	\$157,780	2.46
Rate Impact Test (RIM)	\$301,734	\$266,026	(\$35,708)	0.88
Participant Cost Test (PCT)	\$267,693	\$353,167	\$85,474	1.32

Table 9: FinAnswer Express Cost Effectiveness, All Years, Farm Equipment Measures

FinAnswer Express – Farm Equipment			East System 69% (2011 medium)	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$252,243	\$408,773	\$156,530	1.62
Total Resource Cost Test (TRC) No Adder	\$252,243	\$371,612	\$119,369	1.47
Utility Cost Test (UCT)	\$93,548	\$371,612	\$278,064	3.97
Rate Impact Test (RIM)	\$302,559	\$371,612	\$69,053	1.23
Participant Cost Test (PCT)	\$319,294	\$358,118	\$38,824	1.12

Table 10: FinAnswer Express Cost Effectiveness, All Years, Food Service Measures

FinAnswer Express – Food Service			East System 69% (2011 medium)	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$718,856	\$1,561,737	\$842,881	2.17
Total Resource Cost Test (TRC) No Adder	\$718,856	\$1,419,761	\$700,905	1.98
Utility Cost Test (UCT)	\$385,377	\$1,419,761	\$1,034,385	3.68
Rate Impact Test (RIM)	\$1,607,117	\$1,419,761	(\$187,356)	0.88
Participant Cost Test (PCT)	\$909,944	\$1,931,884	\$1,021,939	2.12

Table 11: FinAnswer Express Cost Effectiveness, All Years, HVAC Measures

FinAnswer Express – HVAC			East System 69% (2011 medium)	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$2,120,837	\$2,401,564	\$280,727	1.13
Total Resource Cost Test (TRC) No Adder	\$2,120,837	\$2,183,240	\$62,403	1.03
Utility Cost Test (UCT)	\$718,126	\$2,183,240	\$1,465,114	3.04
Rate Impact Test (RIM)	\$2,339,772	\$2,183,240	(\$156,532)	0.93
Participant Cost Test (PCT)	\$2,684,604	\$2,770,842	\$86,238	1.03

Table 12: FinAnswer Express Cost Effectiveness, All Years, Irrigation Measures

FinAnswer Express – Irrigation			East System 69% (2011 medium)	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$534,991	\$519,034	(\$15,957)	0.97
Total Resource Cost Test (TRC) No Adder	\$534,991	\$471,849	(\$63,142)	0.88
Utility Cost Test (UCT)	\$139,953	\$471,849	\$331,896	3.37
Rate Impact Test (RIM)	\$414,966	\$471,849	\$56,883	1.14
Participant Cost Test (PCT)	\$677,204	\$488,071	(\$189,133)	0.72

Table 13: FinAnswer Express Cost Effectiveness, All Years, Lighting Measures

FinAnswer Express – Lighting			East System 69% (2011 medium)	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$15,667,780	\$56,817,218	\$41,149,438	3.63
Total Resource Cost Test (TRC) No Adder	\$15,667,780	\$51,652,016	\$35,984,237	3.30
Utility Cost Test (UCT)	\$3,485,011	\$51,652,016	\$48,167,006	14.82
Rate Impact Test (RIM)	\$41,664,364	\$51,652,016	\$9,987,652	1.24
Participant Cost Test (PCT)	\$19,832,633	\$51,813,306	\$31,980,674	2.61

Table 14: FinAnswer Express Cost Effectiveness, All Years, Motors Measures

FinAnswer Express – Motors			East System 69% (2011 medium)	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$804,095	\$3,908,061	\$3,103,966	4.86
Total Resource Cost Test (TRC) No Adder	\$804,095	\$3,552,783	\$2,748,688	4.42
Utility Cost Test (UCT)	\$352,868	\$3,552,783	\$3,199,915	10.07
Rate Impact Test (RIM)	\$2,993,211	\$3,552,783	\$559,572	1.19
Participant Cost Test (PCT)	\$1,017,842	\$3,695,074	\$2,677,232	3.63

Table 15: FinAnswer Express Cost Effectiveness, All Years, Office Equipment Measures

FinAnswer Express – Office Equipment			East System 69% (2011 medium)	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$17,579	\$53,218	\$35,639	3.03
Total Resource Cost Test (TRC) No Adder	\$17,579	\$48,380	\$30,801	2.75
Utility Cost Test (UCT)	\$15,308	\$48,380	\$33,072	3.16
Rate Impact Test (RIM)	\$54,276	\$48,380	(\$5,896)	0.89
Participant Cost Test (PCT)	\$22,252	\$64,635	\$42,382	2.90

Table 16: FinAnswer Express Cost Effectiveness, All Years, Non Trade-Ally Measures

FinAnswer Express – Non Trade-Ally			East System 69% (2011 medium)	
	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$2,517,790	\$6,924,295	\$4,406,505	2.75
Total Resource Cost Test (TRC) No Adder	\$2,517,790	\$6,294,813	\$3,777,023	2.50
Utility Cost Test (UCT)	\$768,131	\$6,294,813	\$5,526,682	8.19
Rate Impact Test (RIM)	\$5,419,030	\$6,294,813	\$875,784	1.16
Participant Cost Test (PCT)	\$3,187,076	\$6,655,344	\$3,468,269	2.09