

MEMORANDUM

To: Eli Morris
 From: Brian Hedman and Byron Boyle
 Subject: 2016-2018 UT Wattsmart Business Portfolio – Cost-Effectiveness
 Date: July 12, 2016

The tables below present the cost-effectiveness findings for the 2016-2018 UT Wattsmart Business Portfolio, based on costs and savings estimates provided by PacifiCorp in the spreadsheet entitled “wSB C-E Inputs.xlsx”; and in an email from Eli Morris on June 20 and June 30, 2016. The utility discount rate is from the 2015 PacifiCorp Integrated Resource Plan.

For all Wattsmart Business Portfolio scenarios, cost-effectiveness was tested using the 2015 IRP *East Commercial Lighting 53%, the East Commercial Cooling 14%, and East Industrial 40% Load Factor Decrements* depending on delivery channel. Table 1 lists modeling inputs. Table 2 lists the costs and incentives and Table 3 lists the annual energy savings for each year and scenario. Table 4 to Table 6 shows the complete cost-effectiveness results for each of the Wattsmart Business Portfolio scenarios. All the Wattsmart Business Portfolio scenarios are cost-effective from all test perspectives except the RIM.

Table 1. 2016-18 UT Wattsmart Business Portfolio Financial Inputs

Parameter	Value
Discount Rate	6.66%
Commercial Line Loss	8.71%
Industrial Line Loss	5.85%
Commercial Energy Rate (\$/kWh) - 2014 base rate	\$0.0838
Industrial Energy Rate (\$/kWh) - 2014 base rate	\$0.0583
Inflation Rate	1.90%

Table 2. 2016-18 UT Wattsmart Business Portfolio Program Costs

Program	Year	Admin	Delivery	Incentives	Total Utility Costs	Participant Incremental Cost
Wattsmart Portfolio	2016	\$784,314	\$8,810,230	\$34,790,640	\$44,385,184	\$90,804,167
Wattsmart Portfolio	2017	\$800,000	\$11,354,176	\$35,026,580	\$47,180,756	\$89,119,435
Wattsmart Portfolio	2018	\$816,000	\$12,529,031	\$37,966,234	\$51,311,265	\$94,877,114
Wattsmart Portfolio -10%	2016	\$784,314	\$8,810,230	\$31,311,576	\$40,906,120	\$81,723,750
Wattsmart Portfolio -10%	2017	\$800,000	\$11,354,176	\$31,523,922	\$43,678,098	\$80,207,491
Wattsmart Portfolio -10%	2018	\$816,000	\$12,529,031	\$34,169,611	\$47,514,642	\$85,389,403
Wattsmart Portfolio +10%	2016	\$784,314	\$8,810,230	\$38,269,704	\$47,864,248	\$99,884,584
Wattsmart Portfolio +10%	2017	\$800,000	\$11,354,176	\$38,529,238	\$50,683,414	\$98,031,378
Wattsmart Portfolio +10%	2018	\$816,000	\$12,529,031	\$41,762,858	\$55,107,889	\$104,364,826

Table 3. 2016-18 UT Wattsmart Business Portfolio Annual Savings

Program	Year	Gross KWh Savings	Realization Rate	Adjusted KWh Savings	Net-to-Gross Percentage	Net KWh Savings	Measure Life
Wattsmart Portfolio	2016	242,442,135	94%	229,008,784	85.1%	194,852,412	12.0
Wattsmart Portfolio	2017	239,279,352	95%	228,040,293	86.0%	196,017,715	12.0
Wattsmart Portfolio	2018	250,909,971	95%	239,512,962	86.1%	206,327,031	12.0
Wattsmart Portfolio -10%	2016	218,197,922	94%	206,107,906	85.1%	175,367,171	12.0
Wattsmart Portfolio -10%	2017	215,351,417	95%	205,236,263	86.0%	176,415,943	12.0
Wattsmart Portfolio -10%	2018	225,818,974	95%	215,561,666	86.1%	185,694,328	12.0
Wattsmart Portfolio +10%	2016	266,686,349	94%	251,909,662	85.1%	214,337,654	12.0
Wattsmart Portfolio +10%	2017	263,207,287	95%	250,844,322	86.0%	215,619,486	12.0
Wattsmart Portfolio +10%	2018	276,000,968	95%	263,464,258	86.1%	226,959,734	12.0

Table 4. 2016-18 UT Wattsmart Business Portfolio Base Case – Cost-Effectiveness

Cost-Effectiveness Test	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.049	\$253,227,129	\$379,039,109	\$125,811,980	1.50
Total Resource Cost Test (TRC) No Adder	\$0.049	\$253,227,129	\$344,581,009	\$91,353,879	1.36
Utility Cost Test (UCT)	\$0.026	\$133,723,337	\$344,581,009	\$210,857,672	2.58
Rate Impact Test (RIM)		\$511,475,399	\$344,581,009	(\$166,894,391)	0.67
Participant Cost Test (PCT)		\$257,757,373	\$545,427,448	\$287,670,076	2.12
Discounted Participant Payback (years)					4.27
Lifecycle Revenue Impact (\$/KWh)					\$0.00062203

Table 5. 2016-18 UT Wattsmart Business Portfolio -10% Participation – Cost-Effectiveness

Cost-Effectiveness Test	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.050	\$231,176,446	\$341,135,199	\$109,958,753	1.48
Total Resource Cost Test (TRC) No Adder	\$0.050	\$231,176,446	\$310,122,908	\$78,946,462	1.34
Utility Cost Test (UCT)	\$0.027	\$123,623,033	\$310,122,908	\$186,499,875	2.51
Rate Impact Test (RIM)		\$463,599,889	\$310,122,908	(\$153,476,981)	0.67
Participant Cost Test (PCT)		\$231,981,635	\$490,884,704	\$258,903,068	2.12
Discounted Participant Payback (years)					4.27
Lifecycle Revenue Impact (\$/KWh)					\$0.00057202

Table 6. 2016-18 UT Wattsmart Business Portfolio +10% Participation – Cost-Effectiveness

Cost-Effectiveness Test	Levelized \$/kWh	Costs	Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.048	\$275,277,813	\$416,943,020	\$141,665,208	1.51
Total Resource Cost Test (TRC) No Adder	\$0.048	\$275,277,813	\$379,039,109	\$103,761,297	1.38
Utility Cost Test (UCT)	\$0.025	\$143,823,641	\$379,039,109	\$235,215,468	2.64
Rate Impact Test (RIM)		\$559,350,910	\$379,039,109	(\$180,311,801)	0.68
Participant Cost Test (PCT)		\$283,533,110	\$599,970,193	\$316,437,083	2.12
Discounted Participant Payback (years)					4.27
Lifecycle Revenue Impact (\$/KWh)					\$0.00067204