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W. Christopher Browder
Vice President & General Counsel

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June 4, 2010

Kathleen Plajstek
Paralegal

VIA ELECTRONIC FILING
AND HAND DELIVERY

Ms. Ann Cole, Director
Office of Commission Clerk
Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Orlando Utilities Commission's Answers to Staff's First Data
Request
Docket No. 100161-EG

Dear Ms. Cole:

Enclosed please find an original and seven copies of Orlando Utilities
Commission's Notice of Service and Responses to Staff's First Data Request,
propounded and served on May 7, 2010.

Thank you for your assistance in connection with this matter.

Sincerely yours,

W. Christopher Browder
Vice President & General Counsel

WCB:pan
Enclosures

COM _____
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DOCUMENT NUMBER-DATE
04655 JUN-4 2010
FPSC-COMMUNITY COUNCIL

ORLANDO UTILITIES COMMISSION Office of General Counsel

Reliable Plaza at 100 West Anderson St | P O Box 3193 | Orlando, FL 32802 | 407.423.9100 Tel | 407.236.9639 Fax | www.ouc.com

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**In re: Petition for Approval of)
Demand-Side Management Plan)
(Orlando Utilities Commission)**

**Docket No. 100161-EG
Filed: June 4, 2010**

**ORLANDO UTILITIES COMMISSION'S NOTICE OF SERVICE OF RESPONSES
TO STAFF'S FIRST DATA REQUEST**

Orlando Utilities Commission has this 4th day of June, 2010 furnished by electronic and U.S. Mail to Katherine E. Fleming, Senior Attorney, Florida Public Service Commission, 2540 Shumard Oak Blvd., Tallahassee, Florida 32399-0850, its Answers to Staff's First Data Request propounded and served on Orlando Utilities Commission on May 7, 2010.

Respectfully submitted,



W. CHRISTOPHER BROWDER
Office of General Counsel
Orlando Utilities Commission
100 W. Anderson Street
Orlando, FL 32802
(407) 236-9698

DOCUMENT NUMBER DATE

04655 JUN-4 2

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been provided by U.S. Mail or E-mail, this 4th day of June, 2010 to the following persons:

Katherine Fleming, Esq. Florida Public Service Commission 2540 Shumard Oak Boulevard Tallahassee, Florida 32399-0850 keflem@psc.state.fl.us	George Cavros, Esq. 120 E. Oakland Park Blvd., Ste. 105 Oakland Park, FL 33334 george@cavros-law.com
Roy C. Young, Esq. Tasha O. Buford, Esq. Young vanAssenderp, P.A. 225 South Adams Street, Suite 200 Tallahassee, FL 32301 ryoung@yvlaw.net	Southern Alliance for Clean Energy P.O. Box 1842 Knoxville, TN 37901

By: 
W. CHRISTOPHER BROWDER

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**In re: Petition for Approval of)
Demand-Side Management Plan)
(Orlando Utilities Commission)**

**Docket No. 100161-EG
Filed: June 4, 2010**

**ORLANDO UTILITIES COMMISSION RESPONSES TO STAFF'S
FIRST DATA REQUEST**

The Orlando Utilities Commission (OUC), by and through its undersigned counsel, provides the following responses to Staff's First Data Request.

REQUESTS

- 1. Please provide, on an individual program basis, the following tables and forms included in the Company's petition. Please provide an electronic copy in Excel (.xls file format).**
 - a. Program Participation Values**
 - b. Program & Individual Measure Savings @ the Meter**
 - c. Program & Individual Measure Savings @ the Generator**
 - d. PSC Form CE 1.1 (Financial Assumptions)**
 - e. PSC Form CE 2.3 (Total Resource Cost Test)**
 - f. PSC Form CE 2.4 (Participant Costs and Benefits)**
 - g. PSC Form CE 2.5 (Rate Impact Measure Test)**

OUC RESPONSE

Please refer to Attachment 1a through Attachment 1g, which presents the requested information. Each attachment is in Excel (.xls) format. The requested information is included on a disk accompanying these documents and is organized as follows:

- a. Program Participation Values provided in File: Attachment 1a.xls**

DOCUMENT NUMBER DATE

04655 JUN-4 2010

FPSC-COMMISSION CLERK

- Individual Measure Savings @ Meter are also located in this same file
(cell reference = C13)
- Individual Measure Savings @ Generator are also located in this same file
(cell reference = C9)
- b. Program Measure Savings @ Meter are located in File: Attachment 1b.xls
(cell reference = C14)
- c. Program Measure Savings @ Generator are located in File: Attachment 1c.xls
(cell reference = B14)
- d. PSC Form CE 1.1 (Financial Assumptions) is in File: Attachment 1d.xls
- e. PSC Form CE 2.3 (Total Resource Cost Test) is in File: Attachment 1e.xls
- f. PSC Form CE 2.4 (Participant Costs and Benefits) is in File: Attachment 1f.xls
- g. PSC Form CE 2.5 (Rate Impact Measure Test) is in File: Attachment 1g.xls

For the following questions (2-5), please provide the name of each program, indicate the customer category of the program, and whether it represents an energy efficiency, demand response, or renewable program. Please include all programs on a single table, adding columns as necessary.

- 2. Please provide, on an individual program basis, the cumulative projected savings over the period 2010 through 2019. As part of this response, please also provide the percentage of the Commission's Authorized Goals and the Company's proposed demand and energy savings met by the program. Please complete the table below and provide an electronic copy in Excel (.xls file format) with the hard copy response.**

Program Information - Savings		
Program Name	-	
Customer Category	(Res/Com/Ind)	
Program Type	(EE / DR / RE)	
Program Estimate		
Summer Demand	(MW)	
Winter Demand	(MW)	
Annual Energy	(GWh)	
% of Commission Authorized Goal		
Summer Demand	(%)	
Winter Demand	(%)	
Annual Energy	(%)	

OUC RESPONSE

Please refer to Table 2a and Table 2b, which present the requested information for residential and commercial/industrial customers, respectively. Electronic versions (in Excel .xls format) are provided on the disk accompanying these documents on the worksheet labeled "Response to 2" in Attachment 2.

Table 2a
Residential Program Information - Savings

Program Name		Single Family Energy Surveys – Walk-Through	Single Family Energy Surveys – Video / DVD	Single Family Energy Surveys – Online	Multi Family Energy Surveys – Walk-Through	Multi Family Energy Surveys – Video / DVD	Multi Family Energy Surveys – Online	Duct Repair Rebates	Ceiling Insulation Rebates	Window Film / Solar Screen Rebates	High Performance Window Rebates	Caulking / Weather Stripping Rebates	Wall Insulation Rebates	Cool / Reflective Roof Rebates	Home Energy Fix-Up	Billed Solution Insulation	Efficient Electric Heat Pump Rebates	Gold Ring Home	Compact Fluorescent Lighting
Customer Category	(RES / COM / IND)	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res
Program Type	(EE / DR/ RE)	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE
Program Estimate⁽¹⁾																			
Summer Demand	(MW)	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.41	0.03	0.40	0.00	0.00	0.04	0.15	0.08	2.98	0.06	1.20
Winter Demand	(MW)	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.75	-0.01	0.24	0.00	0.01	0.00	0.03	0.14	1.66	0.06	1.20
Annual Energy	(GWh)	5.50	2.47	1.80	1.79	0.81	0.59	0.43	1.07	0.10	0.85	0.01	0.00	0.09	0.14	0.21	6.07	0.08	1.75
% of Commission Authorized Goal																			
Summer Demand	(%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.2%	8.2%	0.6%	8.0%	0.0%	0.0%	0.8%	2.9%	1.6%	59.6%	1.1%	24.0%
Winter Demand	(%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.5%	37.5%	-0.5%	12.0%	0.0%	0.3%	0.0%	1.6%	7.2%	83.0%	3.2%	60.0%
Annual Energy	(%)	30.6%	13.7%	10.0%	10.0%	4.5%	3.3%	2.4%	6.0%	0.6%	4.7%	0.0%	0.0%	0.5%	0.8%	1.1%	33.7%	0.5%	9.7%

⁽¹⁾ Represents cumulative projected savings over the 2010 through 2019 period.

Table 2b
Commercial Program Information - Savings

Program Name		Energy Audits	Indoor lighting Retrofit	Efficient Electric Heat Pump Rebates	Duct Repair Rebates	Window Film / Solar Screen Rebates	Ceiling Insulation Rebates	Cool / Reflective Roof Rebates
Customer Category	(RES / COM / IND)	C/I	C/I	C/I	C/I	C/I	C/I	C/I
Program Type	(EE / DR/ RE)	EE	EE	EE	EE	EE	EE	EE
Program Estimate⁽¹⁾								
Summer Demand	(MW)	0.38	6.73	0.10	0.02	0.00	0.01	See Note (2)
Winter Demand	(MW)	0.38	6.73	0.06	0.03	0.00	0.02	See Note (2)
Annual Energy	(GWh)	2.19	30.24	0.19	0.04	0.01	0.04	See Note (2)
% of Commission Authorized Goal								
Summer Demand	(%)	5.5%	96.2%	1.4%	0.3%	0.0%	0.2%	See Note (2)
Winter Demand	(%)	5.5%	96.2%	0.8%	0.4%	0.0%	0.3%	See Note (2)
Annual Energy	(%)	12.1%	168.0%	1.1%	0.2%	0.0%	0.2%	See Note (2)

⁽¹⁾ Represents cumulative projected savings over the 2010 through 2019 period.

⁽²⁾ In the initial offering of the commercial cool/reflective roof program in 2009, OUC had 7 customers participate. One of the participants accounted for more than two thirds of the total square footage of the cool roof/reflective program. Due to uncertainty regarding the likelihood of similar participation in future years, peak demand and energy reductions associated with commercial cool/reflective roof program have not been included in OUC's projected reductions.

3. Please provide, on an individual program basis, the cumulative net present value of expenditures required over the period 2010 through 2019. Please indicate the type of expenditure, separating them into categories including administrative, marketing, equipment, operations & maintenance, and incentives/rebates to customers. As part of this response, please also provide the percentage that each category represents of the total program expenditures. Indicate the first year rate impact of these expenditures, percentage of the total Energy Conservation Cost Recovery Clause for the first year of these expenditures, and any lost revenues associated with the program. Please complete the table below and provide an electronic copy in Excel (.xls file format) with the hard copy response.

Program Information - Total Cost		
Program Name	-	
Customer Category	(Res/Com/Ind)	
Program Type	(EE / DR / RE)	
Program Cost (Cumulative NPV)		
Administrative	(\$)	
Education, Surveys, Marketing	(\$)	
Equipment, Installation, O&M	(\$)	
Incentives / Rebates	(\$)	
Total Cost	(\$)	
Program Cost (% of Program)		
Administrative	(%)	
Education, Surveys, Marketing	(%)	
Equipment, Installation, O&M	(%)	
Incentives / Rebates	(%)	
Program Rate Impact		
Residential Rate Impact	(\$/mo)	
Percentage of Total ECCR Rate	(%)	
Lost Revenues	(\$)	

OUC RESPONSE

Please refer to Table 3a and Table 3b, which present the requested information for residential and commercial/industrial customers, respectively. Electronic versions (in Excel .xls format) are provided on the disk accompanying these documents on the worksheet labeled "Response to 3" in Attachment 2.

Table 3a
Residential Program Information – Total Cost

Program Name		Single Family Energy Surveys – Walk-Through	Single Family Energy Surveys – Video / DVD	Single Family Energy Surveys – Online	Multi Family Energy Surveys – Walk-Through	Multi Family Energy Surveys – Video / DVD	Multi Family Energy Surveys – Online	Duct Repair Rebates	Ceiling Insulation Rebates	Window Film / Solar Screen Rebates	High Performance Window Rebates	Caulking / Weather Stripping Rebates	Wall Insulation Rebates	Cool / Reflective Roof Rebates	Home Energy Fix-Up	Billed Solution Insulation	Efficient Electric Heat Pump Rebates	Gold Ring Home	Compact Fluorescent Lighting
Customer Category	(RES / COM / IND)	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res
Program Type	(EE / DR / RE)	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE
Program Cost (Cumulative NPV)																			
Administrative	(\$)	\$2,586,595	\$243,345	\$176,927	\$1,052,933	\$79,611	\$57,882	\$47,397	\$113,378	\$9,818	\$83,791	\$870	\$368	\$9,139	\$13,299	\$21,668	\$557,864	\$8,062	\$133,529
Education, Surveys, Marketing	(\$)	\$685,856	\$308,127	\$224,028	\$223,527	\$100,805	\$73,291	\$60,014	\$143,560	\$12,432	\$106,098	\$1,101	\$466	\$11,571	\$16,840	\$27,436	\$706,375	\$10,209	\$169,076
Equipment, Installation, O&M	(\$)	\$0	\$4,860	\$159,314	\$0	\$12,044	\$68,277	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$50,867
Incentives/Rebates	(\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$153,624	\$170,693	\$68,277	\$199,142	\$12,897	\$15,931	\$14,793	\$218,548	\$32,621	\$1,131,885	\$31,863	\$0
Total Cost	(\$)	\$3,272,451	\$556,333	\$560,269	\$1,276,460	\$192,460	\$199,451	\$261,035	\$427,631	\$90,527	\$389,031	\$14,867	\$16,766	\$35,503	\$248,687	\$81,725	\$2,396,124	\$50,134	\$353,471
Program Cost (% of Program)																			
Administrative	(%)	79%	44%	32%	82%	41%	29%	18%	27%	11%	22%	6%	2%	26%	5%	27%	23%	16%	38%
Education, Surveys, Marketing	(%)	21%	55%	40%	18%	52%	37%	23%	34%	14%	27%	7%	3%	33%	7%	34%	29%	20%	48%
Equipment, Installation, O&M	(%)	0%	1%	28%	0%	6%	34%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%
Incentives/Rebates	(%)	0%	0%	0%	0%	0%	0%	59%	40%	75%	51%	87%	95%	42%	88%	40%	47%	64%	0%
Program Rate Impact																			
Residential Rate Impact	(\$/mo)	\$0.14	\$0.03	\$0.03	\$0.05	\$0.01	\$0.01	\$0.01	\$0.02	\$0.00	\$0.02	\$0.00	\$0.00	\$0.00	\$0.01	\$0.00	\$0.11	\$0.00	\$0.02
Percentage of Total ECCR Rate	(%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lost Revenues	(\$)	\$38,397	\$17,250	\$12,542	\$12,514	\$5,644	\$4,103	\$3,360	\$8,037	\$696	\$5,940	\$62	\$26	\$648	\$943	\$1,536	\$39,546	\$572	\$9,466

Table 3b
Commercial Program Information – Total Cost

Program Name		Energy Audits	Indoor lighting Retrofit	Efficient Electric Heat Pump Rebates	Duct Repair Rebates	Window Film / Solar Screen Rebates	Ceiling Insulation Rebates	Cool / Reflective Roof Rebates
Customer Category	(RES / COM / IND)	C/I	C/I	C/I	C/I	C/I	C/I	C/I
Program Type	(EE / DR/ RE)	EE	EE	EE	EE	EE	EE	EE
Program Cost (Cumulative NPV)								
Administrative	(\$)	\$930,841	\$788,020	\$5,768	\$106	\$161	\$1,067	\$281,770
Education, Surveys, Marketing	(\$)	\$127,339	\$1,706,265	\$12,490	\$230	\$349	\$2,310	\$610,104
Equipment, Installation, O&M	(\$)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Incentives/Rebates	(\$)	\$0	\$0	\$38,690	\$1,138	\$7,086	\$5,310	\$229,237
Total Cost	(\$)	\$1,058,180	\$2,494,284	\$56,948	\$1,474	\$7,596	\$8,687	\$1,121,111
Program Cost (% of Program)								
Administrative	(%)	88%	32%	10%	7%	2%	12%	25%
Education, Surveys, Marketing	(%)	12%	68%	22%	16%	5%	27%	54%
Equipment, Installation, O&M	(%)	0%	0%	0%	0%	0%	0%	0%
Incentives/Rebates	(%)	0%	0%	68%	77%	93%	61%	20%
Program Rate Impact								
Residential Rate Impact	(\$/mo)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Percentage of Total ECCR Rate	(%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lost Revenues	(\$)	\$13,785	\$184,711	\$1,352	\$25	\$38	\$250	\$66,047

4. Please provide, on an individual program basis, the results of the E-TRC, E-RIM, and Participants Tests. Include the cumulative net present values of all benefits and costs. As part of this response, please provide the payback period for each program. Please complete the table below and provide an electronic copy in Excel (.xls file format) with the hard copy response.

Program Information - Cost Effectiveness		
Program Name	-	
Customer Category	(Res/Com/Ind)	
Program Type	(EE / DR / RE)	
E-TRC Test Results		
Total Benefits	(\$)	
Total Costs	(\$)	
Ratio	-	
E-RIM Test Results		
Total Benefits	(\$)	
Total Costs	(\$)	
Ratio	-	
Participants Test Results		
Total Benefits	(\$)	
Total Costs	(\$)	
Ratio	-	
Payback Period		
E-TRC Test	(Yrs)	
E-RIM Test	(Yrs)	
Participants Test	(Yrs)	

OUC RESPONSE

Please refer to Table 4a and Table 4b, which present the requested information for residential and commercial/industrial customers, respectively. Electronic versions (in Excel .xls format) are provided on the disk accompanying these documents on the worksheet labeled "Response to 4" in Attachment 2.

OUC's Commission-approved DSM goals, as set forth in Docket No. 080412-EG, were based on historical accomplishments related to OUC's existing DSM programs. For purposes of the DSM Plan, OUC performed cost-effectiveness evaluations using TRC and RIM, and did not perform economic analysis using E-TRC or E-RIM. Therefore, information presented in response to this request reflects TRC and RIM.

Table 4a
Residential Program Information – Cost Effectiveness

Program Name		Single Family Energy Surveys – Walk-Through	Single Family Energy Surveys – Video / DVD	Single Family Energy Surveys – Online	Multi Family Energy Surveys – Walk-Through	Multi Family Energy Surveys – Video / DVD	Multi Family Energy Surveys – Online	Duct Repair Rebates	Ceiling Insulation Rebates	Window Film / Solar Screen Rebates	High Performance Window Rebates	Caulking / Weather Stripping Rebates	Wall Insulation Rebates	Cool / Reflective Roof Rebates	Home Energy Fix-Up	Billed Solution Insulation	Efficient Electric Heat Pump Rebates	Gold Ring Home	Compact Fluorescent Lighting
Customer Category	(RES / COM / IND)	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res
Program Type	(EE / DR/ RE)	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE
TRC Test Results																			
Total Benefits	(2010 NPV \$)	\$877,583	\$394,345	\$286,638	\$286,108	\$128,964	\$93,822	\$107,225	\$221,937	\$19,946	\$186,130	\$1,409	\$786	\$20,039	\$39,747	N/A ⁽¹⁾	\$1,250,465	\$19,985	\$12,781
Total Costs	(2010 NPV \$)	\$3,533,968	\$625,959	\$604,998	\$1,378,876	\$207,804	\$215,500	\$601,608	\$1,314,259	\$167,914	\$1,517,566	\$26,768	\$124,871	\$90,009	\$73,185	N/A ⁽¹⁾	\$18,058,428	\$19,733	\$5,606
Ratio		0.25	0.63	0.47	0.21	0.62	0.44	0.18	0.17	0.12	0.12	0.05	0.01	0.22	0.54	0.17 ⁽¹⁾	0.07	1.01	2.28
RIM Test Results																			
Total Benefits	(2010 NPV \$)	\$877,583	\$394,345	\$286,638	\$286,108	\$128,964	\$93,822	\$107,225	\$221,937	\$19,946	\$186,130	\$1,409	\$786	\$20,039	\$39,747	N/A ⁽¹⁾	\$1,250,465	\$19,985	\$12,781
Total Costs	(2010 NPV \$)	\$5,889,952	\$1,684,627	\$1,374,515	\$2,146,968	\$554,025	\$467,377	\$446,591	\$900,142	\$131,963	\$759,800	\$18,231	\$17,722	\$76,251	\$320,677	N/A ⁽¹⁾	\$4,873,951	\$85,241	\$44,417
Ratio		0.15	0.23	0.21	0.13	0.23	0.20	0.24	0.25	0.15	0.24	0.08	0.04	0.26	0.12	0.25 ⁽¹⁾	0.26	0.23	0.29
Participants Test Results⁽²⁾																			
Total Benefits	(2010 NPV \$)	\$2,355,984	\$1,058,669	\$769,517	\$768,093	\$346,220	\$251,877	\$330,584	\$1,108,244	\$147,064	\$1,696,108	\$23,494	\$54,011	\$195,199	\$286,797	N/A ⁽¹⁾	\$9,976,416	\$65,508	\$747,437
Total Costs	(2010 NPV \$)	\$0	\$0	\$0	\$0	\$0	\$0	\$485,601	\$1,036,759	\$143,882	\$1,312,489	\$24,639	\$123,969	\$67,642	\$40,635	N/A ⁽¹⁾	\$16,693,046	\$0	\$0
Ratio		1.00	1.00	1.00	1.00	1.00	1.00	0.68	1.07	1.02	1.29	0.95	0.44	2.89	7.06	1.00 ⁽¹⁾	0.60	1.00	1.00
Payback Period⁽³⁾																			
TRC Test	(Yrs)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A ⁽¹⁾	N/A	10	1
RIM Test	(Yrs)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A ⁽¹⁾	N/A	N/A	N/A
Participants Test	(Yrs)	1	1	1	1	1	1	N/A	9	9	1	N/A	N/A	1	1	N/A ⁽¹⁾	N/A	1	1

⁽¹⁾ OUC's Billed Solutions Insulation program is essentially identical to the Ceiling Insulation Rebates program, except that customer's participating in Billed Solutions Insulation may pay for the insulation on their monthly utility bills for up to 1 year (for amounts less than \$500) or up to 2 years (for any amount above \$500) interest-free with no money down. In addition, the customer will receive a \$100 rebate to be deducted from the financed amount. For purposes of OUC's 2010 DSM Plan, it has been assumed that the cost-effectiveness results for Billed Solutions Insulation would be similar to those for the Ceiling Insulation Rebates program.

⁽²⁾ Analysis of Tables A-1 and A-2 of OUC's 2010 DSM plan indicate that there are programs for which Participant Test results are indicated as "1.0 (Infinite)." Such results indicate that there are either no costs for the participating customer (i.e. residential energy surveys, commercial energy audits, residential Gold Ring, and residential compact fluorescent lighting), or all costs are carried on the participating customers' utility bills such that benefits from participating in the program are used to offset the upfront costs that OUC pays, resulting in no out-of-pocket costs to the participating customer (i.e. commercial indoor lighting retrofits). For purposes of this table, results for these programs are presented as "1.00."

⁽³⁾ Payback period for each program represents the year in which program cumulative discounted net benefits first become positive. If this does not occur during the 10-year evaluation period, payback period is indicated as "N/A."

Table 4b

Commercial Program Information – Cost Effectiveness

Program Name	Energy Audits	Indoor Lighting Retrofit	Efficient Electric Heat Pump Rebates	Duct Repair Rebates	Window Film / Solar Screen Rebates	Ceiling Insulation Rebates	Cool / Reflective Roof Rebates
Customer Category	(RES / COM / IND)	C/I	C/I	C/I	C/I	C/I	C/I
Program Type	(EE / DR / RE)	EE	EE	EE	EE	EE	EE
TRC Test Results							
Total Benefits	\$396,760	\$5,665,122	\$42,738	\$9,103	\$1,046	\$8,123	\$2,012,047
Total Costs	\$1,142,840	\$3,078,660	\$623,647	\$39,576	\$20,471	\$35,901	\$4,249,779
Ratio	0.35	1.84	0.07	0.23	0.05	0.23	0.47
RIM Test Results							
Total Benefits	\$396,760	\$8,305,881	\$42,738	\$9,103	\$1,046	\$8,123	\$2,012,047
Total Costs	\$1,838,854	\$13,184,430	\$138,835	\$32,350	\$9,215	\$23,613	\$4,091,037
Ratio	0.22	0.63	0.31	0.28	0.11	0.34	0.40
Participants Test ⁽¹⁾							
Total Benefits	\$696,014	\$10,105,771	\$325,653	\$28,745	\$14,081	\$35,074	\$3,286,555
Total Costs	\$0	\$0	\$603,929	\$35,970	\$19,920	\$32,255	\$4,103,905
Ratio	1.00	1.00	0.54	0.80	0.71	1.09	0.80
Payback Period ⁽²⁾							
TRC Test	(Yrs)	N/A	N/A	N/A	N/A	N/A	N/A
RIM Test	(Yrs)	N/A	N/A	N/A	N/A	N/A	N/A
Participants Test	(Yrs)	1	1	N/A	N/A	N/A	8

⁽¹⁾ Analysis of Tables A-1 and A-2 of OUC's 2010 DSM plan indicate that there are programs for which Participant Test results are indicated as "1.0 (Infinite)". Such results indicate that there are either no costs for the participating customer (i.e. residential energy surveys, commercial energy audits, residential Gold Ring, and residential compact fluorescent lighting), or all costs are carried on the participating customers' utility bills such that benefits from participating in the program are used to offset the upfront costs that OUC pays, resulting in no out-of-pocket costs to the participating customer (i.e. commercial indoor lighting retrofits). For purposes of this table, results for these programs are presented as "1.00".

⁽²⁾ Payback period for each program represents the year in which program cumulative discounted net benefits first become positive. If this does not occur during the 10-year evaluation period, payback period is indicated as "N/A".

5. Please provide, for each program, a list of measures associated with that program. For programs with varying incentives by device or installation, please represent each as a separate 'measure' within the program. For Audit Programs, assume that any equipment provided or installed (such as Compact Fluorescent Light Bulbs) are a separate 'measure.'

OUC RESPONSE

The only program included in OUC's 2010 DSM Plan that is described as consisting of multiple measures is the *Home Energy Surveys* program. As presented in OUC's 2010 DSM Plan, the program consists of the following measures: the Residential Energy Walk-Through Survey, the Residential Energy Survey DVD, and the On-Line Energy Survey.

Although the *Home Energy Surveys* program is described as consisting of multiple measures, OUC's 2010 DSM Plan reflects savings and costs associated with each measure individually (the 2010 DSM Plan actually includes analysis of each measure separately for both single- and multi-family homes), rather than embedding the three measures as a single program.

For the following questions (6-9), only consider those programs which feature multiple measures. Please provide the name of each measure, and indicate with which program it is associated. Include all measures on a single table, adding columns as necessary.

OUC RESPONSE TO REQUESTS 6 THROUGH 9

Please see the response to Request No. 5. Requests Nos. 6 through 9 are not applicable to OUC.

6. Please provide, for each measure identified by the criteria above, the cumulative projected savings over the period 2010 through 2019. As part of this response, please also provide the percentage of the Commission's Authorized Goals and the Company's proposed demand and energy savings met by the measure. Please complete the table below and provide an electronic copy in Excel (.xls file format) with the hard copy response.

Measure Information - Savings		
Component Measure Name	-	
Program Name with Measure	-	
Savings Associated with Measure		
Summer Demand	(MW)	
Winter Demand	(MW)	
Annual Energy	(GWh)	
% of Program		
Summer Demand	(%)	
Winter Demand	(%)	
Annual Energy	(%)	
% of Commission Authorized Goal		
Summer Demand	(%)	
Winter Demand	(%)	
Annual Energy	(%)	

7. Please provide, for each measure identified by the criteria above, the cumulative net present value of expenditures required over the period 2010 through 2019. Please indicate the type of expenditure, separating them into categories including administrative, marketing, equipment, operations & maintenance, and incentives/rebates to customers. As part of this response, please also provide the percentage that each category represents of the total measure expenditures. Indicate the first year rate impact of these expenditures, percentage of the total Energy Conservation Cost Recovery Clause for the first year of these expenditures, and the lost revenues associated with the measure. Please complete the table below and provide an electronic copy in Excel (.xls file format) with the hard copy response.

Measure Information - Total Costs		
Component Measure Name	-	
Program Name with Measure	-	
Measure Cost (Cumulative NPV)		
Administrative	(\$)	
Education, Surveys, Marketing	(\$)	
Equipment, Installation, O&M	(\$)	
Incentives / Rebates	(\$)	
Total Cost	(\$)	
Measure Cost (% of Measure)		
Administrative	(%)	
Education, Surveys, Marketing	(%)	
Equipment, Installation, O&M	(%)	
Incentives / Rebates	(%)	
Measure Rate Impact		
Residential Rate Impact	(\$/mo)	
Percentage of Total ECCR Rate	(%)	
Lost Revenues	(\$)	

8. Please provide, for each measure identified by the criteria above, the results of the E-TRC, E-RIM, and Participants Tests. Include the cumulative net present values of all benefits and costs. As part of this response, please also provide the payback period for each measure. Please complete the table below and provide an electronic copy in Excel (.xls file format) with the hard copy response.

Measure Information - Cost Effectiveness		
Component Measure Name	-	
Program Name with Measure	-	
E-TRC Test Results		
Total Benefits	(\$)	
Total Costs	(\$)	
Ratio	-	
E-RIM Test Results		
Total Benefits	(\$)	
Total Costs	(\$)	
Ratio	-	
Participants Test Results		
Total Benefits	(\$)	
Total Costs	(\$)	
Ratio	-	
Payback Period		
E-TRC Test	(Yrs)	
E-RIM Test	(Yrs)	
Participants Test	(Yrs)	

9. Please provide, for each measure identified by the criteria above, the incentive rate provided and the estimated customer equipment cost. Indicate the amount of non-recurring expenses by category, including administrative, equipment, and incentives/rebates to customers. As part of this response, please also provide the rate for recurring expenses by category. Please complete the table below and provide an electronic copy in Excel (.xls file format) with the hard copy response.

Measure Information - Per Customer Costs		
Component Measure Name	-	
Program Name with Measure	-	
Measure Incentives & Duration		
Incentive / Rebate Rate		
Customer Equipment Cost	(\$)	
Estimated Life of Measure	(Years)	
Non-Recurring Measure Expenses		
Administrative	(\$/Customer)	
Equipment	(\$/Customer)	
Incentive / Rebate (Typical)	(\$/Customer)	
Recurring Measure Expenses		
Administrative	(\$/Customer/Year)	
Equipment	(\$/Customer/Year)	
O&M	(\$/Customer/Year)	
Incentive / Rebate (Typical)	(\$/Customer/Year)	

10. Please complete the following table regarding the Company's Avoided Unit selected for purposes of program development and cost-effectiveness testing. Include the unit's seasonal capacity, technology type, primary fuel, and commercial in-service date. Please also provide financial data sufficient to calculate the avoided cost of the unit, including its capital and operations & maintenance cost. In addition, please indicate the avoided energy rate utilized for energy savings in programs. Please complete the

table below and provide an electronic copy in Excel (.xls file format) with the hard copy response.

Avoided Unit Information		
Plant Name		-
Unit #		-
Technical Information		
Capacity	Summer	(MW)
	Winter	(MW)
Technology Type		-
Primary Fuel		-
Commercial In-service Date		-
Performance Data		
Capacity Factor		(%)
Heat Rate		(BTU/kWh)
Financial Data		
Book Life		(Years)
Total Installed Cost		(\$/kW)
Fixed O&M Cost		(\$/kW-year)
Variable O&M		(\$/MWh)
Avoided Fuel		
Avoided Energy Rate		(\$/MWh)

OUC RESPONSE

The cost-effectiveness evaluations included in OUC's 2010 DSM Plan are based on the period 2010 through 2019, consistent with the period for which the Commission approved DSM goals for OUC (Docket No. 080412-EG). During this time frame, OUC's only avoided unit is a simple cycle combustion turbine in 2018. Table 10 presents the requested avoided unit information for this avoided unit. An electronic version (in Excel .xls format) is provided on the disk accompanying these documents on the worksheet labeled "Response to 10" in Attachment 2.

Table 10 Avoided Unit Information			
Plant Name			7FA Combustion Turbine
Unit No.			--
Technical Information			
Capacity	Summer	(MW)	142.1
	Winter	(MW)	187.9
	Average	(MW)	157.6
Technology Type			Simple Cycle Combustion Turbine
Primary Fuel			Natural Gas
Commercial In-Service Date			06/2018
Performance Data			
Capacity Factor		(%) ⁽¹⁾	3
Heat Rate		(Btu/kWh) ⁽²⁾	10,888
Financial Data			
Book Life		(years)	20
Total Installed Cost		(\$/kW) ⁽³⁾	\$1,130
Fixed O&M Cost		(2009 \$/kW-year) ⁽³⁾	8.60
Variable O&M		(2009 \$/MWh) ⁽³⁾	15.90
Avoided Fuel			
Avoided Energy Rate		(\$/MWh) ⁽⁴⁾	126
⁽¹⁾ Capacity factor shown is average capacity factor for 2018 and 2019, which are the years in which the avoided unit is in service.			
⁽²⁾ Heat rate represents full load, net plant heat rate (higher heating value) at average ambient conditions.			
⁽³⁾ Costs per kW, kW-year, and MWh correspond to unit's average ambient rating.			
⁽⁴⁾ Avoided energy rate is calculated as the average fuel cost per MWh for the avoided unit during 2018 and 2019, plus the variable O&M cost. Value is expressed in 2009 dollars.			

11. Please complete the following table regarding the Company's projected customer rates for non-fuel energy rates and demand, that are utilized in the Company's cost-effectiveness tests. Please complete the table below and provide an electronic copy in Excel (.xls file format) with the hard copy response.

Projected Rate Information		
Residential		
Non-Fuel Energy Rate (cents/kWh)		
Escalation Rate (%)		
Commercial		
Non-Fuel Energy Rate (cents/kWh)		
Escalation Rate (%)		
Demand Rate (\$/kW-mo)		
Escalation Rate (%)		

OUC RESPONSE

Please refer to Table 11, which presents the requested information. An electronic version (in Excel .xls format) is provided on the disk accompanying these documents on the worksheet labeled "Response to 11" in Attachment 2.

Table 11 Projected Rate Information		
Residential		
Non-Fuel Energy Rate	(cents/kWh)	8.536
Escalation Rate	(%)	2.0
Commercial		
Non-Fuel Energy Rate	(cents/kWh)	3.586
Escalation Rate	(%)	2.0
Demand Rate	(\$/kW-mo)	7.98
Escalation Rate	(%)	2.5

12. Please complete the following table regarding the Company's estimations of line loss utilized in the estimation of generator savings. As part of this response, please indicate the values used for residential and commercial customers separately. Please complete the table below and provide an electronic copy in Excel (.xls file format) with the hard copy response.

Line Loss Values		
Residential		
Energy Percentage	(%)	
Demand Percentage	(%)	
Commercial		
Energy Percentage	(%)	
Demand Percentage	(%)	

OUC RESPONSE

Please refer to Table 12, which presents the requested information. An electronic version (in Excel .xls format) is provided on the disk accompanying these documents on the worksheet labeled "Response to 12" in Attachment 2.

Table 12 Line Loss Values		
Residential		
Energy Percentage	(%)	3.9
Energy Percentage	(%)	3.9
Commercial		
Energy Percentage	(%)	3.9
Energy Percentage	(%)	3.9

- 13. Please describe how costs associated with CO₂ Emissions are included in the Company's cost-effectiveness tests. As part of this response, please provide the annual cost assumed per ton of carbon dioxide equivalent, and the projected emission rate per megawatt-hour. Please indicate if there is any difference between these values and the values provided in the Commission's review of numeric conservation goals dockets.**

OUC RESPONSE

OUC's Commission-approved DSM goals, as set forth in Docket No. 080412-EG, were based on historical accomplishments related to OUC's existing DSM programs. The cost-effectiveness evaluations presented in OUC's 2010 DSM Plan do not reflect costs associated with CO₂ emissions.

- 14. Please describe how the savings from conducting energy audits are calculated. As part of this response, please provide the percentage difference between savings associated with any equipment provided or installed (such as Compact Fluorescent Light Bulbs), and other sources.**

OUC RESPONSE

The savings for Energy Surveys are based on the methodology used in the Annual Conservation Reports OUC submits to the PSC every year. The main assumption is half of the single family home (SFH) customers that participate in OUC's walk-through energy survey will adjust their thermostat 1 degree to conserve. It is estimated that a 1 degree adjustment will reduce a customer's heating and cooling consumption by 8 percent. Furthermore, it is estimated that a customer's heating and cooling cost are about 50 percent of their electric use. The typical residential electric consumption was estimated based on 2006 OUC and St. Cloud FRCC Form 4. This level of consumption for a SFH is conservative due to the fact that OUC's residential class is comprised of more than 45 percent multi-family dwellings.

The savings from a video or on-line conservation survey were estimated to produce half of the savings of a walk-through energy survey.

The savings from a walk-through energy survey in a multi-family dwelling used a similar methodology as the Single Family Home except for the overall consumption was reduced to 10,000 kWh/yr. Again, half of the savings were assumed for the multi-family video or on-line energy surveys.

The methodology is demonstrated below, with calculated values representative of energy savings at the customers' meter:

Savings Estimate for SFH

kWh/yr usage	13,135	Based on 2006 OUC & STC FRCC Form 4
A/C & heat portion	50%	50% of the annual usage is related to a/c and heating.
Savings per degree	8%	Assume a 1 degree savings.
Penetration rate	50%	Half of the people will adjust their thermostat 1 degree to conserve after receiving this survey.
kWh Savings/yr	263	
R Survey Video and DVDs	131	Estimated 1/2 of the value of a Walk-Through
R Survey On-line	131	Estimated 1/2 of the value of a Walk-Through

Savings Estimate for Multi-family

kWh/yr usage	10,000	
A/C & heat portion	50%	50% of the annual usage is related to a/c and heating.
Savings per degree	8%	Assume a 1 degree savings.
Penetration rate	50%	Half of the people will adjust their thermostat 1 degree to conserve after receiving this survey.
kWh Savings/yr	200	
R Survey Video and DVDs	100	Estimated 1/2 of the value of a Walk-Through
R Survey On-line	100	Estimated 1/2 of the value of a Walk-Through

15. Please explain or describe any tax rebates that may be available to customers during the 2010 through 2019 period for installation of any measures discussed in response to questions 6-9 above, including energy efficiency and customer-owned renewable generation. As part of this response, please include the associated program name, specific measure, and expiration dates as appropriate for each tax rebate, and whether the rebate was included in cost-effectiveness tests.

OUC RESPONSE

OUC has no measures discussed in response to Request Nos. 6 through 9. However, tax credits were considered in the cost-effectiveness evaluations presented in OUC's 2010 DSM plan. The types of energy efficiency improvements for which tax credits were considered were based on the US Environmental Protection Agency's / US Department of Energy's Energy Star program website, which provided guidance on consumer energy efficiency improvements that may qualify for tax rebates (http://www.energystar.gov/index.cfm?c=tax_credits.tx_index). Information from this website has been printed and included as Attachment 3 on the disk provided. It has been assumed that the tax credits listed as available at the time the analyses was performed will be available for all years of the study period (2010 through 2019). Table 15 provides a summary of the programs for which tax credits were considered in the cost-effectiveness analysis, and the amount of tax credit reflected.

Table 15 Tax Credits Considered in Cost-Effectiveness Analysis	
Program Name	Tax Credit Amount (per Participant)
Residential Ceiling Insulation Rebates	\$270
Residential Window Film / Solar Screen Rebates	\$60
Residential High Performance Windows Rebates	\$1,500
Residential Caulking and Weather Stripping Rebates	\$30
Residential Wall Insulation Rebates	\$665
Residential Billed Solution Insulation Program	\$270
Residential Cool / Reflective Roof Rebates	\$1,500
Residential Efficient Electric Heat Pump Rebates – SEER 15	\$1,500
Residential Efficient Electric Heat Pump Rebates – SEER 16	\$1,500
Residential Efficient Electric Heat Pump Rebates – SEER 17	\$1,500
Residential Efficient Electric Heat Pump Rebates – SEER 18	\$1,500
Commercial Efficient Electric Heat Pump Rebates – SEER 14	\$1,500
Commercial Efficient Electric Heat Pump Rebates – SEER 15	\$1,500
Commercial Efficient Electric Heat Pump Rebates – SEER 16	\$1,500
Commercial Efficient Electric Heat Pump Rebates – SEER 17	\$1,500
Commercial Efficient Electric Heat Pump Rebates – SEER 18	\$1,500
Commercial Window Film / Solar Screen Rebates	\$107
Commercial Ceiling Insulation Rebates	\$270
Commercial Cool / Reflective Roof Rebates	\$1,500

- 16. Regarding photovoltaic panels for schools, please explain or describe the difference in ownership of the solar facility between this program and other customer-side renewable energy installations. Please indicate when ownership would be transferred to the school. Also, please discuss anticipated maintenance costs over the life of the photovoltaic panels.**

OUC RESPONSE

While photovoltaic panels for schools are not included in OUC's 2010 DSM Plan, they are part of OUC's renewable energy portfolio. OUC currently has six photovoltaic panels on schools, and is transferring ownership of these systems to the schools in return for the full rights to the renewable energy credits (RECs). OUC is in the process of performing inverter replacements. OUC is taking on this initial repair expense. Future maintenance will be the responsibility of the schools and annual maintenance is estimated to be 1 percent of the initial installed cost.

- 17. Please explain or describe the impact of other state or local programs that provide renewable generation to emergency shelters or other facilities that may offset, reduce the cost, or be an alternate source of funding for photovoltaic systems for schools designated as an emergency shelter.**

OUC RESPONSE

While providing renewable generation for emergency shelters is not included in OUC's 2010 DSM Plan, OUC has committed to sponsor up to three emergency shelter sites this year through

the SunSmart Schools program operated by the Florida Solar Energy Center. OUC is providing a total of \$300,000 for these sites to increase the size of the systems from 10 kW to 25 kW.

18. For each program for which modifications have been proposed in 2010, please describe the specific modification(s) made to the program and the reason for each modification. As part of this response, please provide the savings estimates associated with the program prior to the proposed modifications.

OUC RESPONSE

There are no modifications to OUC's existing programs that have been proposed for 2010. As discussed in Section 1.5 of OUC's 2010 DSM Plan, OUC plans to explore the inclusion of the following enhancements to its DSM programs:

- OUC is currently evaluating plans to double the rebates to \$200, \$400, and \$600 respectively in order to increase participation in both the Residential and Commercial Heat Pump rebate programs.
- To encourage proper sizing of heat pumps, OUC is also evaluating a plan to offer an incentive to the contractor of \$50 for a Manual J calculation based on R-30 or higher attic insulation. Future evaluation will be conducted to determine the effectiveness of this offering and possible inclusion as a requirement of the program. This enhancement would directly address the issue relating to including provisions that help avoid "lost opportunities" and achieve a combined savings that is greater than the separate individual measures.
- OUC is considering a process that would promote a working relationship with the HVAC contractors to gain their buy-in and cooperation to better communicate the benefits of higher efficiency heat pumps to its customers.
- Maximizing and leveraging the above working relationship with contractors participating in OUC's Preferred Contractor Network should expand customer participation within the heat pump program.
- In order to promote additional lighting retrofits within the marketplace, OUC is considering offering a rebate of \$250/kW for those customers that elect not to choose OUC's Commercial Indoor Lighting program's funding solution.

Respectfully submitted,



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PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev.1

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.03	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.04	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	111.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	106.6	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	33.40	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	200.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	60.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	90	90	3.36	3.73	3.87	3.36	1	1
2011	180	180	3.65	3.92	3.99	3.65	1	1
2012	270	270	3.93	4.21	4.24	3.93	1	1
2013	360	360	4.05	4.40	4.47	4.05	1	1
2014	450	450	4.14	4.59	4.65	4.14	1	1
2015	540	540	4.34	4.83	4.96	4.34	1	1
2016	630	630	4.48	5.04	5.20	4.48	1	1
2017	720	720	4.67	5.34	5.60	4.67	1	1
2018	810	810	4.86	5.53	5.91	4.85	1	1
2019	900	900	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency Wall InsulationI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.02	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.02	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	53.5	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	51.4	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	16.11	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	2,215.55	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	664.67	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

•SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Wall Insulation

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	7	7	3.36	3.73	3.87	3.36	1	1
2011	14	14	3.65	3.92	3.99	3.65	1	1
2012	21	21	3.93	4.21	4.24	3.93	1	1
2013	28	28	4.05	4.40	4.47	4.05	1	1
2014	35	35	4.14	4.59	4.65	4.14	1	1
2015	42	42	4.34	4.83	4.96	4.34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4.67	1	1
2018	63	63	4.86	5.53	5.91	4.85	1	1
2019	70	70	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Single Family Survey Walk Through

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	273.7	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	263.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	219.63	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

*SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Single Family Survey Walk Through

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	2013	2013	3.36	3.73	3.87	3.36	1	1
2011	4026	4026	3.65	3.92	3.99	3.65	1	1
2012	6039	6039	3.93	4.21	4.24	3.93	1	1
2013	8052	8052	4.05	4.40	4.47	4.05	1	1
2014	10065	10065	4.14	4.59	4.65	4.14	1	1
2015	12078	12078	4.34	4.83	4.96	4.34	1	1
2016	14091	14091	4.48	5.04	5.20	4.48	1	1
2017	16104	16104	4.67	5.34	5.60	4.67	1	1
2018	18117	18117	4.86	5.53	5.91	4.85	1	1
2019	20130	20130	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Single Family Survey Video & DVDs

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	136.3	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	131.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	43.12	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Single Family Survey Video & DVDs

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	1816	1816	3.36	3.73	3.87	3.36	1	1
2011	3632	3632	3.65	3.92	3.99	3.65	1	1
2012	5448	5448	3.93	4.21	4.24	3.93	1	1
2013	7264	7264	4.05	4.40	4.47	4.05	1	1
2014	9080	9080	4.14	4.59	4.65	4.14	1	1
2015	10896	10896	4.34	4.83	4.96	4.34	1	1
2016	12712	12712	4.48	5.04	5.20	4.48	1	1
2017	14528	14528	4.67	5.34	5.60	4.67	1	1
2018	16344	16344	4.86	5.53	5.91	4.85	1	1
2019	18160	18160	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Single Family Survey On LineI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	136.3	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	131.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	57.34	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Single Family Survey On Line

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	1320	1320	3.36	3.73	3.87	3.36	1	1
2011	2640	2640	3.65	3.92	3.99	3.65	1	1
2012	3960	3960	3.93	4.21	4.24	3.93	1	1
2013	5280	5280	4.05	4.40	4.47	4.05	1	1
2014	6600	6600	4.14	4.59	4.65	4.14	1	1
2015	7920	7920	4.34	4.83	4.96	4.34	1	1
2016	9240	9240	4.48	5.04	5.20	4.48	1	1
2017	10560	10560	4.67	5.34	5.60	4.67	1	1
2018	11880	11880	4.86	5.53	5.91	4.85	1	1
2019	13200	13200	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.65	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.68	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,423.5	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,368.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	249.36	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	6,022.82	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	30	30	3.36	3.73	3.87	3.36	1	1
2011	60	60	3.65	3.92	3.99	3.65	1	1
2012	90	90	3.93	4.21	4.24	3.93	1	1
2013	120	120	4.05	4.40	4.47	4.05	1	1
2014	150	150	4.14	4.59	4.65	4.14	1	1
2015	180	180	4.34	4.83	4.96	4.34	1	1
2016	210	210	4.48	5.04	5.20	4.48	1	1
2017	240	240	4.67	5.34	5.60	4.67	1	1
2018	270	270	4.86	5.53	5.91	4.85	1	1
2019	300	300	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.60	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.62	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,215.4	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,168.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	249.36	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	4,844.82	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	72	72	3.36	3.73	3.87	3.36	1	1
2011	144	144	3.65	3.92	3.99	3.65	1	1
2012	216	216	3.93	4.21	4.24	3.93	1	1
2013	288	288	4.05	4.40	4.47	4.05	1	1
2014	360	360	4.14	4.59	4.65	4.14	1	1
2015	432	432	4.34	4.83	4.96	4.34	1	1
2016	504	504	4.48	5.04	5.20	4.48	1	1
2017	576	576	4.67	5.34	5.60	4.67	1	1
2018	648	648	4.86	5.53	5.91	4.85	1	1
2019	720	720	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.45	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.47	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	969.8	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	932.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	249.36	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	3,713.70	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	15 %
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	110	110	3.36	3.73	3.87	3.36	1	1
2011	220	220	3.65	3.92	3.99	3.65	1	1
2012	330	330	3.93	4.21	4.24	3.93	1	1
2013	440	440	4.05	4.40	4.47	4.05	1	1
2014	550	550	4.14	4.59	4.65	4.14	1	1
2015	660	660	4.34	4.83	4.96	4.34	1	1
2016	770	770	4.48	5.04	5.20	4.48	1	1
2017	880	880	4.67	5.34	5.60	4.67	1	1
2018	990	990	4.86	5.53	5.91	4.85	1	1
2019	1100	1100	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.36	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.37	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	761.7	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	732.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	249.36	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	2,629.38	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	200.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	383	383	3.36	3.73	3.87	3.36	1	1
2011	766	766	3.65	3.92	3.99	3.65	1	1
2012	1149	1149	3.93	4.21	4.24	3.93	1	1
2013	1532	1532	4.05	4.40	4.47	4.05	1	1
2014	1915	1915	4.14	4.59	4.65	4.14	1	1
2015	2298	2298	4.34	4.83	4.96	4.34	1	1
2016	2681	2681	4.48	5.04	5.20	4.48	1	1
2017	3064	3064	4.67	5.34	5.60	4.67	1	1
2018	3447	3447	4.86	5.53	5.91	4.85	1	1
2019	3830	3830	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.19	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	432.9	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	416.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	249.36	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	1,591.92	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	15 %
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			UTILITY AVERAGE					
	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
YEAR								
2010	90	90	3.36	3.73	3.87	3.36	1	1
2011	180	180	3.65	3.92	3.99	3.65	1	1
2012	270	270	3.93	4.21	4.24	3.93	1	1
2013	360	360	4.05	4.40	4.47	4.05	1	1
2014	450	450	4.14	4.59	4.65	4.14	1	1
2015	540	540	4.34	4.83	4.96	4.34	1	1
2016	630	630	4.48	5.04	5.20	4.48	1	1
2017	720	720	4.67	5.34	5.60	4.67	1	1
2018	810	810	4.86	5.53	5.91	4.85	1	1
2019	900	900	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Multi Family Survey Walk Through

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	208.1	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	200.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	199.89	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

• SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Multi Family Survey Walk Through

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	863	863	3.36	3.73	3.87	3.36	1	1
2011	1726	1726	3.65	3.92	3.99	3.65	1	1
2012	2589	2589	3.93	4.21	4.24	3.93	1	1
2013	3452	3452	4.05	4.40	4.47	4.05	1	1
2014	4315	4315	4.14	4.59	4.65	4.14	1	1
2015	5178	5178	4.34	4.83	4.96	4.34	1	1
2016	6041	6041	4.48	5.04	5.20	4.48	1	1
2017	6904	6904	4.67	5.34	5.60	4.67	1	1
2018	7767	7767	4.86	5.53	5.91	4.85	1	1
2019	8630	8630	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Multi Family Survey Video & DVDsI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	104.1	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	100.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	33.42	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Multi Family Survey Video & DVDs

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	778	778	3.36	3.73	3.87	3.36	1	1
2011	1556	1556	3.65	3.92	3.99	3.65	1	1
2012	2334	2334	3.93	4.21	4.24	3.93	1	1
2013	3112	3112	4.05	4.40	4.47	4.05	1	1
2014	3890	3890	4.14	4.59	4.65	4.14	1	1
2015	4668	4668	4.34	4.83	4.96	4.34	1	1
2016	5446	5446	4.48	5.04	5.20	4.48	1	1
2017	6224	6224	4.67	5.34	5.60	4.67	1	1
2018	7002	7002	4.86	5.53	5.91	4.85	1	1
2019	7780	7780	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Multi Family Survey On LineI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	104.1	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	100.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	47.63	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Multi Family Survey On Line

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	566	566	3.36	3.73	3.87	3.36	1	1
2011	1132	1132	3.65	3.92	3.99	3.65	1	1
2012	1698	1698	3.93	4.21	4.24	3.93	1	1
2013	2264	2264	4.05	4.40	4.47	4.05	1	1
2014	2830	2830	4.14	4.59	4.65	4.14	1	1
2015	3396	3396	4.34	4.83	4.96	4.34	1	1
2016	3962	3962	4.48	5.04	5.20	4.48	1	1
2017	4528	4528	4.67	5.34	5.60	4.67	1	1
2018	5094	5094	4.86	5.53	5.91	4.85	1	1
2019	5660	5660	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Lighting Program (CFL)

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.04	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.04	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	60.8	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	58.4	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	1.00	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

*FIRE Program Version Number: 1.03

PROGRAM: Residential Lighting Program (CFL)

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
YEAR								
2010	2876	2876	3.36	3.73	3.87	3.36	1	1
2011	5752	5752	3.65	3.92	3.99	3.65	1	1
2012	8628	8628	3.93	4.21	4.24	3.93	1	1
2013	11504	11504	4.05	4.40	4.47	4.05	1	1
2014	14380	14380	4.14	4.59	4.65	4.14	1	1
2015	17256	17256	4.34	4.83	4.96	4.34	1	1
2016	20132	20132	4.48	5.04	5.20	4.48	1	1
2017	23008	23008	4.67	5.34	5.60	4.67	1	1
2018	25884	25884	4.86	5.53	5.91	4.85	1	1
2019	28760	28760	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency InsulationI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.17	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.18	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	477.6	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	459.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	154.29	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	576.45	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	270.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Insulation

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	225	225	3.36	3.73	3.87	3.36	1	1
2011	450	450	3.65	3.92	3.99	3.65	1	1
2012	675	675	3.93	4.21	4.24	3.93	1	1
2013	900	900	4.05	4.40	4.47	4.05	1	1
2014	1125	1125	4.14	4.59	4.65	4.14	1	1
2015	1350	1350	4.34	4.83	4.96	4.34	1	1
2016	1575	1575	4.48	5.04	5.20	4.48	1	1
2017	1800	1800	4.67	5.34	5.60	4.67	1	1
2018	2025	2025	4.86	5.53	5.91	4.85	1	1
2019	2250	2250	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency High Performance WindowsI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.37	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.39	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	811.7	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	780.1	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	244.34	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	1,563.77	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	250.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8,536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency High Performance Windows

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	105	105	3.36	3.73	3.87	3.36	1	1
2011	210	210	3.65	3.92	3.99	3.65	1	1
2012	315	315	3.93	4.21	4.24	3.93	1	1
2013	420	420	4.05	4.40	4.47	4.05	1	1
2014	525	525	4.14	4.59	4.65	4.14	1	1
2015	630	630	4.34	4.83	4.96	4.34	1	1
2016	735	735	4.48	5.04	5.20	4.48	1	1
2017	840	840	4.67	5.34	5.60	4.67	1	1
2018	945	945	4.86	5.53	5.91	4.85	1	1
2019	1050	1050	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency Gold Ring**I. PROGRAM DEMAND SAVINGS AND LINE LOSSES**

(1) CUSTOMER KW REDUCTION AT THE METER	0.89	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.93	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,366.8	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,313.5	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	411.44	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	700.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Gold Ring

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	6	6	3.36	3.73	3.87	3.36	1	1
2011	12	12	3.65	3.92	3.99	3.65	1	1
2012	18	18	3.93	4.21	4.24	3.93	1	1
2013	24	24	4.05	4.40	4.47	4.05	1	1
2014	30	30	4.14	4.59	4.65	4.14	1	1
2015	36	36	4.34	4.83	4.96	4.34	1	1
2016	42	42	4.48	5.04	5.20	4.48	1	1
2017	48	48	4.67	5.34	5.60	4.67	1	1
2018	54	54	4.86	5.53	5.91	4.85	1	1
2019	60	60	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Home Energy Fix UpI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.27	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.28	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	260.1	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	250.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	78.31	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	97.76	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	554.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	2.5	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Home Energy Fix Up

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	52	52	3.36	3.73	3.87	3.36	1	1
2011	104	104	3.65	3.92	3.99	3.65	1	1
2012	156	156	3.93	4.21	4.24	3.93	1	1
2013	208	208	4.05	4.40	4.47	4.05	1	1
2014	260	260	4.14	4.59	4.65	4.14	1	1
2015	312	312	4.34	4.83	4.96	4.34	1	1
2016	364	364	4.48	5.04	5.20	4.48	1	1
2017	416	416	4.67	5.34	5.60	4.67	1	1
2018	468	468	4.86	5.53	5.91	4.85	1	1
2019	520	520	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency Duct RepairI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.22	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.23	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	318.4	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	306.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	107.50	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	450.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	150.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

*SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Duct Repair

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW/ EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	135	135	3.36	3.73	3.87	3.36	1	1
2011	270	270	3.65	3.92	3.99	3.65	1	1
2012	405	405	3.93	4.21	4.24	3.93	1	1
2013	540	540	4.05	4.40	4.47	4.05	1	1
2014	675	675	4.14	4.59	4.65	4.14	1	1
2015	810	810	4.34	4.83	4.96	4.34	1	1
2016	945	945	4.48	5.04	5.20	4.48	1	1
2017	1080	1080	4.67	5.34	5.60	4.67	1	1
2018	1215	1215	4.86	5.53	5.91	4.85	1	1
2019	1350	1350	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency Cool Reflective Roof

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.31	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.32	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	715.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	687.2	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	215.24	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	650.94	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	150.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Cool Reflective Roof

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	13	13	3.36	3.73	3.87	3.36	1	1
2011	26	26	3.65	3.92	3.99	3.65	1	1
2012	39	39	3.93	4.21	4.24	3.93	1	1
2013	52	52	4.05	4.40	4.47	4.05	1	1
2014	65	65	4.14	4.59	4.65	4.14	1	1
2015	78	78	4.34	4.83	4.96	4.34	1	1
2016	91	91	4.48	5.04	5.20	4.48	1	1
2017	104	104	4.67	5.34	5.60	4.67	1	1
2018	117	117	4.86	5.53	5.91	4.85	1	1
2019	130	130	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	26.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	25.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	7.83	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	100.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	0.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	30.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	50.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	34	34	3.36	3.73	3.87	3.36	1	1
2011	68	68	3.65	3.92	3.99	3.65	1	1
2012	102	102	3.93	4.21	4.24	3.93	1	1
2013	136	136	4.05	4.40	4.47	4.05	1	1
2014	170	170	4.14	4.59	4.65	4.14	1	1
2015	204	204	4.34	4.83	4.96	4.34	1	1
2016	238	238	4.48	5.04	5.20	4.48	1	1
2017	272	272	4.67	5.34	5.60	4.67	1	1
2018	306	306	4.86	5.53	5.91	4.85	1	1
2019	340	340	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Heat Pump SEER 18I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.65	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.68	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,423.5	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,368.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	129.84	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	6,022.82	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 18

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	3	3	3.36	3.73	3.87	3.36	1	1
2011	6	6	3.65	3.92	3.99	3.65	1	1
2012	9	9	3.93	4.21	4.24	3.93	1	1
2013	12	12	4.05	4.40	4.47	4.05	1	1
2014	15	15	4.14	4.59	4.65	4.14	1	1
2015	18	18	4.34	4.83	4.96	4.34	1	1
2016	21	21	4.48	5.04	5.20	4.48	1	1
2017	24	24	4.67	5.34	5.60	4.67	1	1
2018	27	27	4.86	5.53	5.91	4.85	1	1
2019	30	30	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Heat Pump SEER 17**I. PROGRAM DEMAND SAVINGS AND LINE LOSSES**

(1) CUSTOMER KW REDUCTION AT THE METER	0.60	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.62	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,215.4	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,168.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	129.84	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	4,844.82	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

*SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 17

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	4	4	3.36	3.73	3.87	3.36	1	1
2011	8	8	3.65	3.92	3.99	3.65	1	1
2012	12	12	3.93	4.21	4.24	3.93	1	1
2013	16	16	4.05	4.40	4.47	4.05	1	1
2014	20	20	4.14	4.59	4.65	4.14	1	1
2015	24	24	4.34	4.83	4.96	4.34	1	1
2016	28	28	4.48	5.04	5.20	4.48	1	1
2017	32	32	4.67	5.34	5.60	4.67	1	1
2018	36	36	4.86	5.53	5.91	4.85	1	1
2019	40	40	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Heat Pump SEER 16I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.45	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.47	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	969.8	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	932.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	129.84	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	3,713.70	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 16

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	7	7	3.36	3.73	3.87	3.36	1	1
2011	14	14	3.65	3.92	3.99	3.65	1	1
2012	21	21	3.93	4.21	4.24	3.93	1	1
2013	28	28	4.05	4.40	4.47	4.05	1	1
2014	35	35	4.14	4.59	4.65	4.14	1	1
2015	42	42	4.34	4.83	4.96	4.34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4.67	1	1
2018	63	63	4.86	5.53	5.91	4.85	1	1
2019	70	70	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Heat Pump SEER 15I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.36	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.37	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	761.7	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	732.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	129.84	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	2,629.38	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	200.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 15

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	4	4	3.36	3.73	3.87	3.36	1	1
2011	8	8	3.65	3.92	3.99	3.65	1	1
2012	12	12	3.93	4.21	4.24	3.93	1	1
2013	16	16	4.05	4.40	4.47	4.05	1	1
2014	20	20	4.14	4.59	4.65	4.14	1	1
2015	24	24	4.34	4.83	4.96	4.34	1	1
2016	28	28	4.48	5.04	5.20	4.48	1	1
2017	32	32	4.67	5.34	5.60	4.67	1	1
2018	36	36	4.86	5.53	5.91	4.85	1	1
2019	40	40	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Heat Pump SEER 14I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.19	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	432.9	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	416.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	129.84	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	1,591.92	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 14

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	1	1	3.36	3.73	3.87	3.36	1	1
2011	2	2	3.65	3.92	3.99	3.65	1	1
2012	3	3	3.93	4.21	4.24	3.93	1	1
2013	4	4	4.05	4.40	4.47	4.05	1	1
2014	5	5	4.14	4.59	4.65	4.14	1	1
2015	6	6	4.34	4.83	4.96	4.34	1	1
2016	7	7	4.48	5.04	5.20	4.48	1	1
2017	8	8	4.67	5.34	5.60	4.67	1	1
2018	9	9	4.86	5.53	5.91	4.85	1	1
2019	10	10	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Indoor LightingI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	81.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	84.29	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	378,629.6	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	363,863.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	48,143.55	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Indoor Lighting

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	8	8	3.36	3.73	3.87	3.36	1	1
2011	16	16	3.65	3.92	3.99	3.65	1	1
2012	24	24	3.93	4.21	4.24	3.93	1	1
2013	32	32	4.05	4.40	4.47	4.05	1	1
2014	40	40	4.14	4.59	4.65	4.14	1	1
2015	48	48	4.34	4.83	4.96	4.34	1	1
2016	56	56	4.48	5.04	5.20	4.48	1	1
2017	64	64	4.67	5.34	5.60	4.67	1	1
2018	72	72	4.86	5.53	5.91	4.85	1	1
2019	80	80	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Energy Efficiency Window Film & Solar ScreenI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	77.5	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	74.5	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	9.86	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	356.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	106.80	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	133.43	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW/ EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	7	7	3.36	3.73	3.87	3.36	1	1
2011	14	14	3.65	3.92	3.99	3.65	1	1
2012	21	21	3.93	4.21	4.24	3.93	1	1
2013	28	28	4.05	4.40	4.47	4.05	1	1
2014	35	35	4.14	4.59	4.65	4.14	1	1
2015	42	42	4.34	4.83	4.96	4.34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4.67	1	1
2018	63	63	4.86	5.53	5.91	4.85	1	1
2019	70	70	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Energy AuditI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.15	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.16	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	883.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	848.6	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	576.50	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

*SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Audit

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			UTILITY AVERAGE					
	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
YEAR								
2010	248	248	3.36	3.73	3.87	3.36	1	1
2011	496	496	3.65	3.92	3.99	3.65	1	1
2012	744	744	3.93	4.21	4.24	3.93	1	1
2013	992	992	4.05	4.40	4.47	4.05	1	1
2014	1240	1240	4.14	4.59	4.65	4.14	1	1
2015	1488	1488	4.34	4.83	4.96	4.34	1	1
2016	1736	1736	4.48	5.04	5.20	4.48	1	1
2017	1984	1984	4.67	5.34	5.60	4.67	1	1
2018	2232	2232	4.86	5.53	5.91	4.85	1	1
2019	2480	2480	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Energy Efficiency DuctI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.22	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.23	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	391.3	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	376.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	45.10	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	450.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	150.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Efficiency Duct

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	10	10	3.36	3.73	3.87	3.36	1	1
2011	20	20	3.65	3.92	3.99	3.65	1	1
2012	30	30	3.93	4.21	4.24	3.93	1	1
2013	40	40	4.05	4.40	4.47	4.05	1	1
2014	50	50	4.14	4.59	4.65	4.14	1	1
2015	60	60	4.34	4.83	4.96	4.34	1	1
2016	70	70	4.48	5.04	5.20	4.48	1	1
2017	80	80	4.67	5.34	5.60	4.67	1	1
2018	90	90	4.86	5.53	5.91	4.85	1	1
2019	100	100	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Energy Efficiency Cool Roof

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	135,385.5	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	130,105.5	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	17,214.55	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	58,736.67	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	4,316.71	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Efficiency Cool Roof

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	7	7	3.36	3.73	3.87	3.36	1	1
2011	14	14	3.65	3.92	3.99	3.65	1	1
2012	21	21	3.93	4.21	4.24	3.93	1	1
2013	28	28	4.05	4.40	4.47	4.05	1	1
2014	35	35	4.14	4.59	4.65	4.14	1	1
2015	42	42	4.34	4.83	4.96	4.34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4.67	1	1
2018	63	63	4.86	5.53	5.91	4.85	1	1
2019	70	70	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Energy Efficiency Ceiling InsulationI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.17	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.18	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	586.9	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	564.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	65.17	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	576.45	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	270.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Efficiency Ceiling Insulation

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	7	7	3.36	3.73	3.87	3.36	1	1
2011	14	14	3.65	3.92	3.99	3.65	1	1
2012	21	21	3.93	4.21	4.24	3.93	1	1
2013	28	28	4.05	4.40	4.47	4.05	1	1
2014	35	35	4.14	4.59	4.65	4.14	1	1
2015	42	42	4.34	4.83	4.96	4.34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4.67	1	1
2018	63	63	4.86	5.53	5.91	4.85	1	1
2019	70	70	5.14	5.91	5.58	5.06	1	1

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN

PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	3.0064	0.0000	3.0064	9.0000	0.0000	9.0000	18.0000	0.0000	18.0000	4.7986	0.1614	0.4096	0.5710	0.0000	0.0000	0.0000	0.0000
2011	3.0816	0.0000	3.0816	9.0000	0.0000	9.0000	18.4500	0.0000	18.4500	14.3959	0.5251	1.2534	1.7785	0.0000	0.0000	0.0000	0.0000
2012	3.1586	0.0000	3.1586	9.0000	0.0000	9.0000	18.9113	0.0000	18.9113	23.9931	0.9434	2.1308	3.0742	0.0000	0.0000	0.0000	0.0000
2013	3.2376	0.0000	3.2376	9.0000	0.0000	9.0000	19.3840	0.0000	19.3840	33.5904	1.3619	3.0428	4.4047	0.0000	0.0000	0.0000	0.0000
2014	3.3185	0.0000	3.3185	9.0000	0.0000	9.0000	19.8686	0.0000	19.8686	43.1876	1.7900	3.9904	5.7804	0.0000	0.0000	0.0000	0.0000
2015	3.4015	0.0000	3.4015	9.0000	0.0000	9.0000	20.3653	0.0000	20.3653	52.7849	2.2895	4.9747	7.2641	0.0000	0.0000	0.0000	0.0000
2016	3.4865	0.0000	3.4865	9.0000	0.0000	9.0000	20.8745	0.0000	20.8745	62.3821	2.7958	5.9967	8.7926	0.0000	0.0000	0.0000	0.0000
2017	3.5737	0.0000	3.5737	9.0000	0.0000	9.0000	21.3963	0.0000	21.3963	71.9794	3.3629	7.0577	10.4206	0.0000	0.0000	0.0000	0.0000
2018	3.6630	0.0000	3.6630	9.0000	0.0000	9.0000	21.9313	0.0000	21.9313	81.5766	3.9641	8.1587	12.1228	0.0000	0.0000	0.0000	0.0000
2019	3.7546	0.0000	3.7546	9.0000	0.0000	9.0000	22.4795	0.0000	22.4795	91.1739	4.6837	9.3009	13.9846	0.0000	0.0000	0.0000	0.0000
NOMINAL	33.6822	0.0000	33.6822	90.0000	0.0000	90.0000	201.6609	0.0000	201.6609	479.8625	21.8777	46.3157	68.1935	0.0000	0.0000	0.0000	0.0000
NPV	24.0317	0.0000	24.0317	65.2220	0.0000	65.2220	143.8819	0.0000	143.8819		13.6201	29.0889	42.7090		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN

PROGRAM: Residential Energy Efficiency Wall Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	0.1128	0.0000	0.1128	2.1000	0.0000	2.1000	15.5089	0.0000	15.5089	0.1800	0.0061	0.0154	0.0214	0.0000	0.0000	0.0000	0.0000
2011	0.1156	0.0000	0.1156	2.1000	0.0000	2.1000	15.8966	0.0000	15.8966	0.5400	0.0197	0.0470	0.0667	0.0000	0.0000	0.0000	0.0000
2012	0.1185	0.0000	0.1185	2.1000	0.0000	2.1000	16.2940	0.0000	16.2940	0.9001	0.0354	0.0799	0.1153	0.0000	0.0000	0.0000	0.0000
2013	0.1215	0.0000	0.1215	2.1000	0.0000	2.1000	16.7013	0.0000	16.7013	1.2601	0.0511	0.1141	0.1652	0.0000	0.0000	0.0000	0.0000
2014	0.1245	0.0000	0.1245	2.1000	0.0000	2.1000	17.1189	0.0000	17.1189	1.6201	0.0671	0.1497	0.2168	0.0000	0.0000	0.0000	0.0000
2015	0.1276	0.0000	0.1276	2.1000	0.0000	2.1000	17.5468	0.0000	17.5468	1.9801	0.0859	0.1866	0.2725	0.0000	0.0000	0.0000	0.0000
2016	0.1308	0.0000	0.1308	2.1000	0.0000	2.1000	17.9855	0.0000	17.9855	2.3401	0.1049	0.2250	0.3298	0.0000	0.0000	0.0000	0.0000
2017	0.1341	0.0000	0.1341	2.1000	0.0000	2.1000	18.4351	0.0000	18.4351	2.7002	0.1262	0.2648	0.3909	0.0000	0.0000	0.0000	0.0000
2018	0.1374	0.0000	0.1374	2.1000	0.0000	2.1000	18.8960	0.0000	18.8960	3.0602	0.1487	0.3061	0.4548	0.0000	0.0000	0.0000	0.0000
2019	0.1409	0.0000	0.1409	2.1000	0.0000	2.1000	19.3684	0.0000	19.3684	3.4202	0.1757	0.3489	0.5246	0.0000	0.0000	0.0000	0.0000
NOMINAL	1.2636	0.0000	1.2636	21.0000	0.0000	21.0000	173.7516	0.0000	173.7516	18.0010	0.8207	1.7374	2.5581	0.0000	0.0000	0.0000	0.0000
NPV	0.9016	0.0000	0.9016	15.2185	0.0000	15.2185	123.9690	0.0000	123.9690		0.5109	1.0912	1.6021		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Residential Single Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS ----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	442.1086	0.0000	442.1086	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	264.7095	8.9026	22.5956	31.4982	0.0000	0.0000	0.0000	0.0000
2011	453.1614	0.0000	453.1614	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	794.1285	28.9643	69.1425	98.1069	0.0000	0.0000	0.0000	0.0000
2012	464.4904	0.0000	464.4904	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,323.5475	52.0415	117.5423	169.5839	0.0000	0.0000	0.0000	0.0000
2013	476.1027	0.0000	476.1027	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,852.9665	75.1261	167.8504	242.9765	0.0000	0.0000	0.0000	0.0000
2014	488.0052	0.0000	488.0052	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,382.3855	98.7447	220.1239	318.8685	0.0000	0.0000	0.0000	0.0000
2015	500.2054	0.0000	500.2054	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,911.8045	126.2952	274.4211	400.7162	0.0000	0.0000	0.0000	0.0000
2016	512.7105	0.0000	512.7105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3,441.2235	154.2270	330.8021	485.0292	0.0000	0.0000	0.0000	0.0000
2017	525.5283	0.0000	525.5283	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3,970.6425	185.5095	389.3287	574.8381	0.0000	0.0000	0.0000	0.0000
2018	538.6665	0.0000	538.6665	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4,500.0615	218.6753	450.0640	668.7393	0.0000	0.0000	0.0000	0.0000
2019	552.1331	0.0000	552.1331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5,029.4805	258.3676	513.0729	771.4405	0.0000	0.0000	0.0000	0.0000
NOMINAL	4,953.1120	0.0000	4,953.1120	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	26,470.9500	1,206.8537	2,554.9435	3,761.7973	0.0000	0.0000	0.0000	0.0000
NPV	3,533.9676	0.0000	3,533.9676	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		751.3345	1,604.6499	2,355.9844		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Residential Single Family Survey Video & DVDs

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	UTILITY PROGRAM COSTS & REBATES						PARTICIPATING CUSTOMER COSTS & BENEFITS										
	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
YEAR																	
2010	78.3091	0.0000	78.3091	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	118.9480	4.0004	10.1534	14.1538	0.0000	0.0000	0.0000	0.0000
2011	80.2668	0.0000	80.2668	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	356.8440	13.0152	31.0694	44.0846	0.0000	0.0000	0.0000	0.0000
2012	82.2735	0.0000	82.2735	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	594.7400	23.3850	52.8180	76.2030	0.0000	0.0000	0.0000	0.0000
2013	84.3303	0.0000	84.3303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	832.6360	33.7581	75.4241	109.1822	0.0000	0.0000	0.0000	0.0000
2014	86.4386	0.0000	86.4386	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,070.5320	44.3712	98.9133	143.2845	0.0000	0.0000	0.0000	0.0000
2015	88.5996	0.0000	88.5996	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,308.4280	56.7511	123.3119	180.0630	0.0000	0.0000	0.0000	0.0000
2016	90.8145	0.0000	90.8145	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,546.3240	69.3024	148.6469	217.9493	0.0000	0.0000	0.0000	0.0000
2017	93.0849	0.0000	93.0849	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,784.2200	83.3592	174.9460	258.3052	0.0000	0.0000	0.0000	0.0000
2018	95.4120	0.0000	95.4120	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,022.1160	98.2624	202.2376	300.5000	0.0000	0.0000	0.0000	0.0000
2019	97.7973	0.0000	97.7973	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,260.0120	116.0982	230.5508	346.6491	0.0000	0.0000	0.0000	0.0000
NOMINAL	877.3267	0.0000	877.3267	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	11,894.8000	542.3033	1,148.0715	1,690.3748	0.0000	0.0000	0.0000	0.0000
NPV	625.9588	0.0000	625.9588	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		337.6144	721.0542	1,058.6686		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Residential Single Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
←----- UTILITY PROGRAM COSTS & REBATES ----->							----- PARTICIPATING CUSTOMER COSTS & BENEFITS ----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	75.6868	0.0000	75.6868	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	86.4600	2.9078	7.3802	10.2880	0.0000	0.0000	0.0000	0.0000
2011	77.5790	0.0000	77.5790	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	259.3800	9.4604	22.5835	32.0439	0.0000	0.0000	0.0000	0.0000
2012	79.5185	0.0000	79.5185	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	432.3000	16.9979	38.3919	55.3899	0.0000	0.0000	0.0000	0.0000
2013	81.5064	0.0000	81.5064	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	605.2200	24.5378	54.8237	79.3615	0.0000	0.0000	0.0000	0.0000
2014	83.5441	0.0000	83.5441	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	778.1400	32.2522	71.8973	104.1495	0.0000	0.0000	0.0000	0.0000
2015	85.6327	0.0000	85.6327	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	951.0600	41.2508	89.6320	130.8828	0.0000	0.0000	0.0000	0.0000
2016	87.7735	0.0000	87.7735	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,123.9800	50.3740	108.0473	158.4213	0.0000	0.0000	0.0000	0.0000
2017	89.9678	0.0000	89.9678	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,296.9000	60.5915	127.1634	187.7549	0.0000	0.0000	0.0000	0.0000
2018	92.2170	0.0000	92.2170	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,469.8200	71.4242	147.0009	218.4251	0.0000	0.0000	0.0000	0.0000
2019	94.5225	0.0000	94.5225	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,642.7400	84.3886	167.5810	251.9696	0.0000	0.0000	0.0000	0.0000
NOMINAL	847.9483	0.0000	847.9483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	8,646.0000	394.1852	834.5013	1,228.6865	0.0000	0.0000	0.0000	0.0000
NPV	604.9978	0.0000	604.9978	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		245.4025	524.1143	769.5168		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	7.4809	0.0000	7.4809	9.0000	0.0000	9.0000	180.6846	0.0000	180.6846	20.5200	0.6901	1.7516	2.4417	0.0000	0.0000	0.0000	0.0000
2011	7.6679	0.0000	7.6679	9.0000	0.0000	9.0000	185.2017	0.0000	185.2017	61.5600	2.2453	5.3599	7.6051	0.0000	0.0000	0.0000	0.0000
2012	7.8596	0.0000	7.8596	9.0000	0.0000	9.0000	189.8318	0.0000	189.8318	102.6000	4.0342	9.1118	13.1460	0.0000	0.0000	0.0000	0.0000
2013	8.0561	0.0000	8.0561	9.0000	0.0000	9.0000	194.5776	0.0000	194.5776	143.6400	5.8237	13.0116	18.8353	0.0000	0.0000	0.0000	0.0000
2014	8.2575	0.0000	8.2575	9.0000	0.0000	9.0000	199.4420	0.0000	199.4420	184.6800	7.6546	17.0638	24.7183	0.0000	0.0000	0.0000	0.0000
2015	8.4639	0.0000	8.4639	9.0000	0.0000	9.0000	204.4280	0.0000	204.4280	225.7200	9.7903	21.2728	31.0631	0.0000	0.0000	0.0000	0.0000
2016	8.6755	0.0000	8.6755	9.0000	0.0000	9.0000	209.5387	0.0000	209.5387	266.7600	11.9555	25.6434	37.5989	0.0000	0.0000	0.0000	0.0000
2017	8.8924	0.0000	8.8924	9.0000	0.0000	9.0000	214.7772	0.0000	214.7772	307.8000	14.3805	30.1803	44.5608	0.0000	0.0000	0.0000	0.0000
2018	9.1147	0.0000	9.1147	9.0000	0.0000	9.0000	220.1466	0.0000	220.1466	348.8400	16.9515	34.8885	51.8400	0.0000	0.0000	0.0000	0.0000
2019	9.3426	0.0000	9.3426	9.0000	0.0000	9.0000	225.6503	0.0000	225.6503	389.8800	20.0284	39.7729	59.8012	0.0000	0.0000	0.0000	0.0000
NOMINAL	83.8109	0.0000	83.8109	90.0000	0.0000	90.0000	2,024.2786	0.0000	2,024.2786	2,052.0000	93.5540	198.0565	291.6105	0.0000	0.0000	0.0000	0.0000
NPV	59.7978	0.0000	59.7978	65.2220	0.0000	65.2220	1,444.2909	0.0000	1,444.2909		58.2427	124.3908	182.6334		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES -----							----- PARTICIPATING CUSTOMER COSTS & BENEFITS -----										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	17.9541	0.0000	17.9541	21.6000	0.0000	21.6000	348.8270	0.0000	348.8270	42.0480	1.4141	3.5892	5.0034	0.0000	0.0000	0.0000	0.0000
2011	18.4029	0.0000	18.4029	21.6000	0.0000	21.6000	357.5477	0.0000	357.5477	126.1440	4.6009	10.9830	15.5839	0.0000	0.0000	0.0000	0.0000
2012	18.8630	0.0000	18.8630	21.6000	0.0000	21.6000	366.4864	0.0000	366.4864	210.2400	8.2666	18.6711	26.9377	0.0000	0.0000	0.0000	0.0000
2013	19.3346	0.0000	19.3346	21.6000	0.0000	21.6000	375.6486	0.0000	375.6486	294.3360	11.9335	26.6623	38.5958	0.0000	0.0000	0.0000	0.0000
2014	19.8179	0.0000	19.8179	21.6000	0.0000	21.6000	385.0398	0.0000	385.0398	378.4320	15.6852	34.9658	50.6509	0.0000	0.0000	0.0000	0.0000
2015	20.3134	0.0000	20.3134	21.6000	0.0000	21.6000	394.6658	0.0000	394.6658	462.5280	20.0615	43.5906	63.6521	0.0000	0.0000	0.0000	0.0000
2016	20.8212	0.0000	20.8212	21.6000	0.0000	21.6000	404.5324	0.0000	404.5324	546.6240	24.4983	52.5465	77.0449	0.0000	0.0000	0.0000	0.0000
2017	21.3417	0.0000	21.3417	21.6000	0.0000	21.6000	414.6457	0.0000	414.6457	630.7200	29.4674	61.8432	91.3106	0.0000	0.0000	0.0000	0.0000
2018	21.8753	0.0000	21.8753	21.6000	0.0000	21.6000	425.0119	0.0000	425.0119	714.8160	34.7357	71.4908	106.2264	0.0000	0.0000	0.0000	0.0000
2019	22.4222	0.0000	22.4222	21.6000	0.0000	21.6000	435.6372	0.0000	435.6372	798.9120	41.0406	81.4995	122.5401	0.0000	0.0000	0.0000	0.0000
NOMINAL	201.1462	0.0000	201.1462	216.0000	0.0000	216.0000	3,908.0425	0.0000	3,908.0425	4,204.8000	191.7037	405.8421	597.5458	0.0000	0.0000	0.0000	0.0000
NPV	143.5147	0.0000	143.5147	156.5328	0.0000	156.5328	2,788.3269	0.0000	2,788.3269		119.3464	254.8919	374.2383		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	27.4298	0.0000	27.4298	33.0000	0.0000	33.0000	408.5070	0.0000	408.5070	51.2600	1.7240	4.3756	6.0995	0.0000	0.0000	0.0000	0.0000
2011	28.1156	0.0000	28.1156	33.0000	0.0000	33.0000	418.7197	0.0000	418.7197	153.7800	5.6088	13.3892	18.9980	0.0000	0.0000	0.0000	0.0000
2012	28.8185	0.0000	28.8185	33.0000	0.0000	33.0000	429.1877	0.0000	429.1877	256.3000	10.0776	22.7616	32.8393	0.0000	0.0000	0.0000	0.0000
2013	29.5389	0.0000	29.5389	33.0000	0.0000	33.0000	439.9174	0.0000	439.9174	358.8200	14.5479	32.5036	47.0515	0.0000	0.0000	0.0000	0.0000
2014	30.2774	0.0000	30.2774	33.0000	0.0000	33.0000	450.9153	0.0000	450.9153	461.3400	19.1215	42.6262	61.7477	0.0000	0.0000	0.0000	0.0000
2015	31.0343	0.0000	31.0343	33.0000	0.0000	33.0000	462.1882	0.0000	462.1882	563.8600	24.4566	53.1406	77.5972	0.0000	0.0000	0.0000	0.0000
2016	31.8102	0.0000	31.8102	33.0000	0.0000	33.0000	473.7429	0.0000	473.7429	666.3800	29.8655	64.0586	93.9241	0.0000	0.0000	0.0000	0.0000
2017	32.6054	0.0000	32.6054	33.0000	0.0000	33.0000	485.5865	0.0000	485.5865	768.9000	35.9232	75.3920	111.3152	0.0000	0.0000	0.0000	0.0000
2018	33.4206	0.0000	33.4206	33.0000	0.0000	33.0000	497.7261	0.0000	497.7261	871.4200	42.3457	87.1532	129.4989	0.0000	0.0000	0.0000	0.0000
2019	34.2561	0.0000	34.2561	33.0000	0.0000	33.0000	510.1693	0.0000	510.1693	973.9400	50.0319	99.3546	149.3865	0.0000	0.0000	0.0000	0.0000
NOMINAL	307.3067	0.0000	307.3067	330.0000	0.0000	330.0000	4,576.6599	0.0000	4,576.6599	5,126.0000	233.7027	494.7552	728.4579	0.0000	0.0000	0.0000	0.0000
NPV	219.2585	0.0000	219.2585	239.1473	0.0000	239.1473	3,265.3749	0.0000	3,265.3749		145.4931	310.7344	456.2275		0.0000	0.0000	0.0000

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* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	95.5056	0.0000	95.5056	76.6000	0.0000	76.6000	1,007.0525	0.0000	1,007.0525	140.1780	4.7144	11.9656	16.6800	0.0000	0.0000	0.0000	0.0000
2011	97.8933	0.0000	97.8933	76.6000	0.0000	76.6000	1,032.2289	0.0000	1,032.2289	420.5340	15.3382	36.6147	51.9529	0.0000	0.0000	0.0000	0.0000
2012	100.3406	0.0000	100.3406	76.6000	0.0000	76.6000	1,058.0346	0.0000	1,058.0346	700.8900	27.5588	62.2450	89.8038	0.0000	0.0000	0.0000	0.0000
2013	102.8491	0.0000	102.8491	76.6000	0.0000	76.6000	1,084.4854	0.0000	1,084.4854	981.2460	39.7833	88.8859	128.6692	0.0000	0.0000	0.0000	0.0000
2014	105.4204	0.0000	105.4204	76.6000	0.0000	76.6000	1,111.5976	0.0000	1,111.5976	1,261.6020	52.2906	116.5675	168.8581	0.0000	0.0000	0.0000	0.0000
2015	108.0559	0.0000	108.0559	76.6000	0.0000	76.6000	1,139.3875	0.0000	1,139.3875	1,541.9580	66.8801	145.3208	212.2009	0.0000	0.0000	0.0000	0.0000
2016	110.7573	0.0000	110.7573	76.6000	0.0000	76.6000	1,167.8722	0.0000	1,167.8722	1,822.3140	81.6716	175.1776	256.8492	0.0000	0.0000	0.0000	0.0000
2017	113.5262	0.0000	113.5262	76.6000	0.0000	76.6000	1,197.0690	0.0000	1,197.0690	2,102.6700	98.2373	206.1706	304.4079	0.0000	0.0000	0.0000	0.0000
2018	116.3644	0.0000	116.3644	76.6000	0.0000	76.6000	1,226.9957	0.0000	1,226.9957	2,383.0260	115.8004	238.3332	354.1336	0.0000	0.0000	0.0000	0.0000
2019	119.2735	0.0000	119.2735	76.6000	0.0000	76.6000	1,257.6706	0.0000	1,257.6706	2,663.3820	136.8196	271.6999	408.5195	0.0000	0.0000	0.0000	0.0000
NOMINAL	1,069.9862	0.0000	1,069.9862	766.0000	0.0000	766.0000	#####	0.0000	#####	14,017.8000	639.0943	1,352.9808	1,992.0751	0.0000	0.0000	0.0000	0.0000
NPV	763.4184	0.0000	763.4184	555.1116	0.0000	555.1116	8,049.8109	0.0000	8,049.8109		397.8723	849.7489	1,247.6212		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
UTILITY PROGRAM COSTS & REBATES							PARTICIPATING CUSTOMER COSTS & BENEFITS										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	22.4426	0.0000	22.4426	9.0000	0.0000	9.0000	143.2728	0.0000	143.2728	18.7200	0.6296	1.5979	2.2275	0.0000	0.0000	0.0000	0.0000
2011	23.0036	0.0000	23.0036	9.0000	0.0000	9.0000	146.8546	0.0000	146.8546	56.1600	2.0483	4.8897	6.9380	0.0000	0.0000	0.0000	0.0000
2012	23.5787	0.0000	23.5787	9.0000	0.0000	9.0000	150.5260	0.0000	150.5260	93.6000	3.6803	8.3125	11.9928	0.0000	0.0000	0.0000	0.0000
2013	24.1682	0.0000	24.1682	9.0000	0.0000	9.0000	154.2891	0.0000	154.2891	131.0400	5.3128	11.8702	17.1831	0.0000	0.0000	0.0000	0.0000
2014	24.7724	0.0000	24.7724	9.0000	0.0000	9.0000	158.1464	0.0000	158.1464	168.4800	6.9831	15.5669	22.5501	0.0000	0.0000	0.0000	0.0000
2015	25.3917	0.0000	25.3917	9.0000	0.0000	9.0000	162.1000	0.0000	162.1000	205.9200	8.9315	19.4068	28.3383	0.0000	0.0000	0.0000	0.0000
2016	26.0265	0.0000	26.0265	9.0000	0.0000	9.0000	166.1525	0.0000	166.1525	243.3600	10.9068	23.3940	34.3008	0.0000	0.0000	0.0000	0.0000
2017	26.6772	0.0000	26.6772	9.0000	0.0000	9.0000	170.3063	0.0000	170.3063	280.8000	13.1191	27.5329	40.6520	0.0000	0.0000	0.0000	0.0000
2018	27.3441	0.0000	27.3441	9.0000	0.0000	9.0000	174.5640	0.0000	174.5640	318.2400	15.4645	31.8281	47.2926	0.0000	0.0000	0.0000	0.0000
2019	28.0277	0.0000	28.0277	9.0000	0.0000	9.0000	178.9281	0.0000	178.9281	355.6800	18.2715	36.2840	54.5555	0.0000	0.0000	0.0000	0.0000
NOMINAL	251.4328	0.0000	251.4328	90.0000	0.0000	90.0000	1,605.1399	0.0000	1,605.1399	1,872.0000	85.3475	180.6831	266.0307	0.0000	0.0000	0.0000	0.0000
NPV	179.3933	0.0000	179.3933	65.2220	0.0000	65.2220	1,145.2421	0.0000	1,145.2421		53.1337	113.4793	166.6129		0.0000	0.0000	0.0000

*SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Residential Multi Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	UTILITY PROGRAM COSTS & REBATES						PARTICIPATING CUSTOMER COSTS & BENEFITS										
	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
YEAR																	
2010	172.5010	0.0000	172.5010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	86.3000	2.9024	7.3666	10.2690	0.0000	0.0000	0.0000	0.0000
2011	176.8135	0.0000	176.8135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	258.9000	9.4429	22.5417	31.9846	0.0000	0.0000	0.0000	0.0000
2012	181.2338	0.0000	181.2338	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	431.5000	16.9665	38.3209	55.2874	0.0000	0.0000	0.0000	0.0000
2013	185.7647	0.0000	185.7647	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	604.1000	24.4924	54.7222	79.2147	0.0000	0.0000	0.0000	0.0000
2014	190.4088	0.0000	190.4088	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	776.7000	32.1925	71.7643	103.9568	0.0000	0.0000	0.0000	0.0000
2015	195.1690	0.0000	195.1690	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	949.3000	41.1745	89.4661	130.6406	0.0000	0.0000	0.0000	0.0000
2016	200.0482	0.0000	200.0482	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,121.9000	50.2808	107.8474	158.1281	0.0000	0.0000	0.0000	0.0000
2017	205.0494	0.0000	205.0494	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,294.5000	60.4794	126.9281	187.4074	0.0000	0.0000	0.0000	0.0000
2018	210.1757	0.0000	210.1757	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,467.1000	71.2920	146.7288	218.0209	0.0000	0.0000	0.0000	0.0000
2019	215.4301	0.0000	215.4301	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,639.7000	84.2324	167.2709	251.5033	0.0000	0.0000	0.0000	0.0000
NOMINAL	1,932.5942	0.0000	1,932.5942	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	8,630.0000	393.4557	832.9570	1,226.4127	0.0000	0.0000	0.0000	0.0000
NPV	1,378.8756	0.0000	1,378.8756	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		244.9484	523.1444	768.0928		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Residential Multi Family Survey Video & DVDs

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	25.9969	0.0000	25.9969	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	38.9000	1.3083	3.3205	4.6288	0.0000	0.0000	0.0000	0.0000
2011	26.6468	0.0000	26.6468	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	116.7000	4.2564	10.1607	14.4172	0.0000	0.0000	0.0000	0.0000
2012	27.3130	0.0000	27.3130	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	194.5000	7.6477	17.2733	24.9210	0.0000	0.0000	0.0000	0.0000
2013	27.9958	0.0000	27.9958	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	272.3000	11.0400	24.6662	35.7063	0.0000	0.0000	0.0000	0.0000
2014	28.6957	0.0000	28.6957	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	350.1000	14.5109	32.3480	46.8589	0.0000	0.0000	0.0000	0.0000
2015	29.4131	0.0000	29.4131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	427.9000	18.5595	40.3272	58.8867	0.0000	0.0000	0.0000	0.0000
2016	30.1484	0.0000	30.1484	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	505.7000	22.6642	48.6125	71.2768	0.0000	0.0000	0.0000	0.0000
2017	30.9021	0.0000	30.9021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	583.5000	27.2613	57.2132	84.4745	0.0000	0.0000	0.0000	0.0000
2018	31.6747	0.0000	31.6747	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	661.3000	32.1351	66.1385	98.2736	0.0000	0.0000	0.0000	0.0000
2019	32.4665	0.0000	32.4665	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	739.1000	37.9680	75.3979	113.3659	0.0000	0.0000	0.0000	0.0000
NOMINAL	291.2529	0.0000	291.2529	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3,890.0000	177.3514	375.4580	552.8094	0.0000	0.0000	0.0000	0.0000
NPV	207.8043	0.0000	207.8043	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		110.4113	235.8090	346.2203		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Residential Multi Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	26.9596	0.0000	26.9596	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	28.3000	0.9518	2.4157	3.3675	0.0000	0.0000	0.0000	0.0000
2011	27.6336	0.0000	27.6336	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	84.9000	3.0966	7.3920	10.4886	0.0000	0.0000	0.0000	0.0000
2012	28.3244	0.0000	28.3244	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	141.5000	5.5637	12.5664	18.1302	0.0000	0.0000	0.0000	0.0000
2013	29.0325	0.0000	29.0325	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	198.1000	8.0317	17.9448	25.9765	0.0000	0.0000	0.0000	0.0000
2014	29.7583	0.0000	29.7583	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	254.7000	10.5568	23.5334	34.0901	0.0000	0.0000	0.0000	0.0000
2015	30.5023	0.0000	30.5023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	311.3000	13.5022	29.3383	42.8404	0.0000	0.0000	0.0000	0.0000
2016	31.2648	0.0000	31.2648	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	367.9000	16.4884	35.3659	51.8543	0.0000	0.0000	0.0000	0.0000
2017	32.0465	0.0000	32.0465	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	424.5000	19.8328	41.6230	61.4557	0.0000	0.0000	0.0000	0.0000
2018	32.8476	0.0000	32.8476	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	481.1000	23.3785	48.1162	71.4947	0.0000	0.0000	0.0000	0.0000
2019	33.6688	0.0000	33.6688	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	537.7000	27.6220	54.8524	82.4744	0.0000	0.0000	0.0000	0.0000
NOMINAL	302.0384	0.0000	302.0384	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,830.0000	129.0243	273.1481	402.1724	0.0000	0.0000	0.0000	0.0000
NPV	215.4996	0.0000	215.4996	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		80.3249	171.5526	251.8775		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Residential Lighting Program (CFL)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	2.8760	0.0000	2.8760	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	83.9792	2.8243	7.1685	9.9928	0.0000	0.0000	0.0000	0.0000
2011	2.9479	0.0000	2.9479	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	251.9376	9.1889	21.9355	31.1244	0.0000	0.0000	0.0000	0.0000
2012	3.0216	0.0000	3.0216	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	419.8960	16.5102	37.2904	53.8006	0.0000	0.0000	0.0000	0.0000
2013	3.0971	0.0000	3.0971	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	587.8544	23.8338	53.2506	77.0844	0.0000	0.0000	0.0000	0.0000
2014	3.1746	0.0000	3.1746	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	755.8128	31.3268	69.8344	101.1612	0.0000	0.0000	0.0000	0.0000
2015	3.2539	0.0000	3.2539	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	923.7712	40.0672	87.0602	127.1274	0.0000	0.0000	0.0000	0.0000
2016	3.3353	0.0000	3.3353	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,091.7296	48.9286	104.9471	153.8757	0.0000	0.0000	0.0000	0.0000
2017	3.4187	0.0000	3.4187	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,259.6880	58.8530	123.5147	182.3676	0.0000	0.0000	0.0000	0.0000
2018	3.5041	0.0000	3.5041	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,427.6464	69.3748	142.7830	212.1578	0.0000	0.0000	0.0000	0.0000
2019	3.5917	0.0000	3.5917	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,595.6048	81.9672	162.7726	244.7398	0.0000	0.0000	0.0000	0.0000
NOMINAL	32.2209	0.0000	32.2209	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	8,397.9200	382.8748	810.5569	1,193.4318	0.0000	0.0000	0.0000	0.0000
NPV	22.9891	0.0000	22.9891	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		238.3612	509.0759	747.4370		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Residential Energy Efficiency Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	34.7160	0.0000	34.7160	22.5000	0.0000	22.5000	129.7013	0.0000	129.7013	51.6375	1.7366	4.4078	6.1444	0.0000	0.0000	0.0000	0.0000
2011	35.5839	0.0000	35.5839	22.5000	0.0000	22.5000	132.9438	0.0000	132.9438	154.9125	5.6501	13.4878	19.1379	0.0000	0.0000	0.0000	0.0000
2012	36.4735	0.0000	36.4735	22.5000	0.0000	22.5000	136.2674	0.0000	136.2674	258.1875	10.1519	22.9293	33.0811	0.0000	0.0000	0.0000	0.0000
2013	37.3853	0.0000	37.3853	22.5000	0.0000	22.5000	139.6741	0.0000	139.6741	361.4625	14.6550	32.7430	47.3980	0.0000	0.0000	0.0000	0.0000
2014	38.3199	0.0000	38.3199	22.5000	0.0000	22.5000	143.1659	0.0000	143.1659	464.7375	19.2623	42.9401	62.2024	0.0000	0.0000	0.0000	0.0000
2015	39.2779	0.0000	39.2779	22.5000	0.0000	22.5000	146.7451	0.0000	146.7451	568.0125	24.6367	53.5320	78.1687	0.0000	0.0000	0.0000	0.0000
2016	40.2599	0.0000	40.2599	22.5000	0.0000	22.5000	150.4137	0.0000	150.4137	671.2875	30.0854	64.5303	94.6158	0.0000	0.0000	0.0000	0.0000
2017	41.2664	0.0000	41.2664	22.5000	0.0000	22.5000	154.1740	0.0000	154.1740	774.5625	36.1878	75.9473	112.1350	0.0000	0.0000	0.0000	0.0000
2018	42.2981	0.0000	42.2981	22.5000	0.0000	22.5000	158.0284	0.0000	158.0284	877.8375	42.6575	87.7950	130.4525	0.0000	0.0000	0.0000	0.0000
2019	43.3555	0.0000	43.3555	22.5000	0.0000	22.5000	161.9791	0.0000	161.9791	981.1125	50.4004	100.0863	150.4867	0.0000	0.0000	0.0000	0.0000
NOMINAL	388.9364	0.0000	388.9364	225.0000	0.0000	225.0000	1,453.0926	0.0000	1,453.0926	5,163.7500	235.4238	498.3988	733.8226	0.0000	0.0000	0.0000	0.0000
NPV	277.5000	0.0000	277.5000	163.0550	0.0000	163.0550	1,036.7588	0.0000	1,036.7588		146.5646	313.0228	459.5874		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Residential Energy Efficiency High Performance Windows

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	25.6556	0.0000	25.6556	26.2500	0.0000	26.2500	164.1959	0.0000	164.1959	40.9530	1.3773	3.4957	4.8731	0.0000	0.0000	0.0000	0.0000
2011	26.2970	0.0000	26.2970	26.2500	0.0000	26.2500	168.3007	0.0000	168.3007	122.8589	4.4810	10.6970	15.1780	0.0000	0.0000	0.0000	0.0000
2012	26.9545	0.0000	26.9545	26.2500	0.0000	26.2500	172.5083	0.0000	172.5083	204.7649	8.0513	18.1849	26.2362	0.0000	0.0000	0.0000	0.0000
2013	27.6283	0.0000	27.6283	26.2500	0.0000	26.2500	176.8210	0.0000	176.8210	286.6708	11.6227	25.9680	37.5907	0.0000	0.0000	0.0000	0.0000
2014	28.3190	0.0000	28.3190	26.2500	0.0000	26.2500	181.2415	0.0000	181.2415	368.5767	15.2767	34.0552	49.3319	0.0000	0.0000	0.0000	0.0000
2015	29.0270	0.0000	29.0270	26.2500	0.0000	26.2500	185.7725	0.0000	185.7725	450.4827	19.5390	42.4554	61.9945	0.0000	0.0000	0.0000	0.0000
2016	29.7527	0.0000	29.7527	26.2500	0.0000	26.2500	190.4168	0.0000	190.4168	532.3886	23.8603	51.1781	75.0384	0.0000	0.0000	0.0000	0.0000
2017	30.4965	0.0000	30.4965	26.2500	0.0000	26.2500	195.1773	0.0000	195.1773	614.2946	28.7000	60.2327	88.9327	0.0000	0.0000	0.0000	0.0000
2018	31.2589	0.0000	31.2589	26.2500	0.0000	26.2500	200.0567	0.0000	200.0567	696.2005	33.8311	69.6290	103.4601	0.0000	0.0000	0.0000	0.0000
2019	32.0404	0.0000	32.0404	26.2500	0.0000	26.2500	205.0581	0.0000	205.0581	778.1065	39.9718	79.3771	119.3489	0.0000	0.0000	0.0000	0.0000
NOMINAL	287.4300	0.0000	287.4300	262.5000	0.0000	262.5000	1,839.5488	0.0000	1,839.5488	4,095.2971	186.7113	395.2730	581.9843	0.0000	0.0000	0.0000	0.0000
NPV	205.0768	0.0000	205.0768	190.2308	0.0000	190.2308	1,312.4892	0.0000	1,312.4892		116.2383	248.2540	364.4923		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Residential Energy Efficiency Gold Ring

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS ----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL \$(000)	RED. REV. NONFUEL \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL \$(000)	INC. REV. NONFUEL \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	2.4686	0.0000	2.4686	4.2000	0.0000	4.2000	0.0000	0.0000	0.0000	3.9405	0.1325	0.3364	0.4689	0.0000	0.0000	0.0000	0.0000
2011	2.5303	0.0000	2.5303	4.2000	0.0000	4.2000	0.0000	0.0000	0.0000	11.8215	0.4312	1.0293	1.4604	0.0000	0.0000	0.0000	0.0000
2012	2.5936	0.0000	2.5936	4.2000	0.0000	4.2000	0.0000	0.0000	0.0000	19.7025	0.7747	1.7498	2.5244	0.0000	0.0000	0.0000	0.0000
2013	2.6584	0.0000	2.6584	4.2000	0.0000	4.2000	0.0000	0.0000	0.0000	27.5835	1.1183	2.4986	3.6170	0.0000	0.0000	0.0000	0.0000
2014	2.7249	0.0000	2.7249	4.2000	0.0000	4.2000	0.0000	0.0000	0.0000	35.4645	1.4699	3.2768	4.7467	0.0000	0.0000	0.0000	0.0000
2015	2.7930	0.0000	2.7930	4.2000	0.0000	4.2000	0.0000	0.0000	0.0000	43.3455	1.8800	4.0851	5.9651	0.0000	0.0000	0.0000	0.0000
2016	2.8628	0.0000	2.8628	4.2000	0.0000	4.2000	0.0000	0.0000	0.0000	51.2265	2.2958	4.9244	7.2202	0.0000	0.0000	0.0000	0.0000
2017	2.9344	0.0000	2.9344	4.2000	0.0000	4.2000	0.0000	0.0000	0.0000	59.1075	2.7615	5.7956	8.5571	0.0000	0.0000	0.0000	0.0000
2018	3.0078	0.0000	3.0078	4.2000	0.0000	4.2000	0.0000	0.0000	0.0000	66.9885	3.2552	6.6997	9.9549	0.0000	0.0000	0.0000	0.0000
2019	3.0830	0.0000	3.0830	4.2000	0.0000	4.2000	0.0000	0.0000	0.0000	74.8695	3.8461	7.6377	11.4838	0.0000	0.0000	0.0000	0.0000
NOMINAL	27.6568	0.0000	27.6568	42.0000	0.0000	42.0000	0.0000	0.0000	0.0000	394.0500	17.9654	38.0332	55.9986	0.0000	0.0000	0.0000	0.0000
NPV	19.7327	0.0000	19.7327	30.4369	0.0000	30.4369	0.0000	0.0000	0.0000		11.1845	23.8870	35.0715		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN

PROGRAM: Residential Home Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	4.0721	0.0000	4.0721	28.8080	0.0000	28.8080	5.0835	0.0000	5.0835	6.5000	0.2186	0.5548	0.7734	0.0000	0.0000	0.0000	0.0000
2011	4.1739	0.0000	4.1739	29.5282	0.0000	29.5282	5.2106	0.0000	5.2106	19.5000	0.7112	1.6978	2.4090	0.0000	0.0000	0.0000	0.0000
2012	4.2783	0.0000	4.2783	30.2664	0.0000	30.2664	5.3409	0.0000	5.3409	32.5000	1.2779	2.8863	4.1642	0.0000	0.0000	0.0000	0.0000
2013	4.3852	0.0000	4.3852	31.0231	0.0000	31.0231	5.4744	0.0000	5.4744	45.5000	1.8447	4.1216	5.9663	0.0000	0.0000	0.0000	0.0000
2014	4.4949	0.0000	4.4949	31.7986	0.0000	31.7986	5.6113	0.0000	5.6113	58.5000	2.4247	5.4052	7.8299	0.0000	0.0000	0.0000	0.0000
2015	4.6072	0.0000	4.6072	32.5936	0.0000	32.5936	5.7515	0.0000	5.7515	71.5000	3.1012	6.7385	9.8397	0.0000	0.0000	0.0000	0.0000
2016	4.7224	0.0000	4.7224	33.4084	0.0000	33.4084	5.8953	0.0000	5.8953	84.5000	3.7871	8.1229	11.9100	0.0000	0.0000	0.0000	0.0000
2017	4.8405	0.0000	4.8405	34.2437	0.0000	34.2437	6.0427	0.0000	6.0427	97.5000	4.5552	9.5601	14.1153	0.0000	0.0000	0.0000	0.0000
2018	4.9615	0.0000	4.9615	35.0998	0.0000	35.0998	6.1938	0.0000	6.1938	110.5000	5.3696	11.0514	16.4210	0.0000	0.0000	0.0000	0.0000
2019	5.0855	0.0000	5.0855	35.9772	0.0000	35.9772	6.3486	0.0000	6.3486	123.5000	6.3443	12.5986	18.9429	0.0000	0.0000	0.0000	0.0000
NOMINAL	45.6215	0.0000	45.6215	322.7470	0.0000	322.7470	56.9526	0.0000	56.9526	650.0000	29.6346	62.7372	92.3718	0.0000	0.0000	0.0000	0.0000
NPV	32.5502	0.0000	32.5502	230.2749	0.0000	230.2749	40.6348	0.0000	40.6348		18.4492	39.4025	57.8517		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN

PROGRAM: Residential Energy Efficiency Duct Repair

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	14.5128	0.0000	14.5128	20.2500	0.0000	20.2500	60.7500	0.0000	60.7500	20.6550	0.6947	1.7631	2.4578	0.0000	0.0000	0.0000	0.0000
2011	14.8756	0.0000	14.8756	20.2500	0.0000	20.2500	62.2688	0.0000	62.2688	61.9650	2.2601	5.3951	7.6552	0.0000	0.0000	0.0000	0.0000
2012	15.2475	0.0000	15.2475	20.2500	0.0000	20.2500	63.8255	0.0000	63.8255	103.2750	4.0607	9.1717	13.2324	0.0000	0.0000	0.0000	0.0000
2013	15.6287	0.0000	15.6287	20.2500	0.0000	20.2500	65.4211	0.0000	65.4211	144.5850	5.8620	13.0972	18.9592	0.0000	0.0000	0.0000	0.0000
2014	16.0194	0.0000	16.0194	20.2500	0.0000	20.2500	67.0566	0.0000	67.0566	185.8950	7.7049	17.1760	24.8810	0.0000	0.0000	0.0000	0.0000
2015	16.4199	0.0000	16.4199	20.2500	0.0000	20.2500	68.7330	0.0000	68.7330	227.2050	9.8547	21.4128	31.2675	0.0000	0.0000	0.0000	0.0000
2016	16.8304	0.0000	16.8304	20.2500	0.0000	20.2500	70.4514	0.0000	70.4514	268.5150	12.0342	25.8121	37.8463	0.0000	0.0000	0.0000	0.0000
2017	17.2511	0.0000	17.2511	20.2500	0.0000	20.2500	72.2127	0.0000	72.2127	309.8250	14.4751	30.3789	44.8540	0.0000	0.0000	0.0000	0.0000
2018	17.6824	0.0000	17.6824	20.2500	0.0000	20.2500	74.0180	0.0000	74.0180	351.1350	17.0630	35.1180	52.1810	0.0000	0.0000	0.0000	0.0000
2019	18.1245	0.0000	18.1245	20.2500	0.0000	20.2500	75.8684	0.0000	75.8684	392.4450	20.1601	40.0345	60.1947	0.0000	0.0000	0.0000	0.0000
NOMINAL	162.5921	0.0000	162.5921	202.5000	0.0000	202.5000	680.6054	0.0000	680.6054	2,065.5000	94.1695	199.3595	293.5290	0.0000	0.0000	0.0000	0.0000
NPV	116.0069	0.0000	116.0069	146.7495	0.0000	146.7495	485.6013	0.0000	485.6013		58.6258	125.2091	183.8350		0.0000	0.0000	0.0000

• SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Residential Energy Efficiency Cool Reflective Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
UTILITY PROGRAM COSTS & REBATES							PARTICIPATING CUSTOMER COSTS & BENEFITS										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	2.7981	0.0000	2.7981	1.9500	0.0000	1.9500	8.4622	0.0000	8.4622	4.4665	0.1502	0.3813	0.5315	0.0000	0.0000	0.0000	0.0000
2011	2.8681	0.0000	2.8681	1.9500	0.0000	1.9500	8.6738	0.0000	8.6738	13.3994	0.4887	1.1667	1.6554	0.0000	0.0000	0.0000	0.0000
2012	2.9398	0.0000	2.9398	1.9500	0.0000	1.9500	8.8906	0.0000	8.8906	22.3324	0.8781	1.9833	2.8614	0.0000	0.0000	0.0000	0.0000
2013	3.0133	0.0000	3.0133	1.9500	0.0000	1.9500	9.1129	0.0000	9.1129	31.2654	1.2676	2.8322	4.0998	0.0000	0.0000	0.0000	0.0000
2014	3.0886	0.0000	3.0886	1.9500	0.0000	1.9500	9.3407	0.0000	9.3407	40.1983	1.6661	3.7142	5.3803	0.0000	0.0000	0.0000	0.0000
2015	3.1658	0.0000	3.1658	1.9500	0.0000	1.9500	9.5742	0.0000	9.5742	49.1313	2.1310	4.6303	6.7613	0.0000	0.0000	0.0000	0.0000
2016	3.2450	0.0000	3.2450	1.9500	0.0000	1.9500	9.8136	0.0000	9.8136	58.0642	2.6023	5.5817	8.1840	0.0000	0.0000	0.0000	0.0000
2017	3.3261	0.0000	3.3261	1.9500	0.0000	1.9500	10.0589	0.0000	10.0589	66.9972	3.1301	6.5692	9.6993	0.0000	0.0000	0.0000	0.0000
2018	3.4092	0.0000	3.4092	1.9500	0.0000	1.9500	10.3104	0.0000	10.3104	75.9302	3.6897	7.5940	11.2837	0.0000	0.0000	0.0000	0.0000
2019	3.4945	0.0000	3.4945	1.9500	0.0000	1.9500	10.5682	0.0000	10.5682	84.8631	4.3595	8.6571	13.0166	0.0000	0.0000	0.0000	0.0000
NOMINAL	31.3484	0.0000	31.3484	19.5000	0.0000	19.5000	94.8055	0.0000	94.8055	446.6480	20.3634	43.1099	63.4733	0.0000	0.0000	0.0000	0.0000
NPV	22.3666	0.0000	22.3666	14.1314	0.0000	14.1314	67.6422	0.0000	67.6422		12.6774	27.0755	39.7528		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	0.2663	0.0000	0.2663	1.7000	0.0000	1.7000	3.4000	0.0000	3.4000	0.4250	0.0143	0.0363	0.0506	0.0000	0.0000	0.0000	0.0000
2011	0.2729	0.0000	0.2729	1.7000	0.0000	1.7000	3.4000	0.0000	3.4000	1.2750	0.0465	0.1110	0.1575	0.0000	0.0000	0.0000	0.0000
2012	0.2797	0.0000	0.2797	1.7000	0.0000	1.7000	3.4000	0.0000	3.4000	2.1250	0.0836	0.1887	0.2723	0.0000	0.0000	0.0000	0.0000
2013	0.2867	0.0000	0.2867	1.7000	0.0000	1.7000	3.4000	0.0000	3.4000	2.9750	0.1206	0.2695	0.3901	0.0000	0.0000	0.0000	0.0000
2014	0.2939	0.0000	0.2939	1.7000	0.0000	1.7000	3.4000	0.0000	3.4000	3.8250	0.1585	0.3534	0.5120	0.0000	0.0000	0.0000	0.0000
2015	0.3012	0.0000	0.3012	1.7000	0.0000	1.7000	3.4000	0.0000	3.4000	4.6750	0.2028	0.4406	0.6434	0.0000	0.0000	0.0000	0.0000
2016	0.3088	0.0000	0.3088	1.7000	0.0000	1.7000	3.4000	0.0000	3.4000	5.5250	0.2476	0.5311	0.7787	0.0000	0.0000	0.0000	0.0000
2017	0.3165	0.0000	0.3165	1.7000	0.0000	1.7000	3.4000	0.0000	3.4000	6.3750	0.2978	0.6251	0.9229	0.0000	0.0000	0.0000	0.0000
2018	0.3244	0.0000	0.3244	1.7000	0.0000	1.7000	3.4000	0.0000	3.4000	7.2250	0.3511	0.7226	1.0737	0.0000	0.0000	0.0000	0.0000
2019	0.3325	0.0000	0.3325	1.7000	0.0000	1.7000	3.4000	0.0000	3.4000	8.0750	0.4148	0.8238	1.2386	0.0000	0.0000	0.0000	0.0000
NOMINAL	2.9829	0.0000	2.9829	17.0000	0.0000	17.0000	34.0000	0.0000	34.0000	42.5000	1.9376	4.1020	6.0397	0.0000	0.0000	0.0000	0.0000
NPV	2.1283	0.0000	2.1283	12.3197	0.0000	12.3197	24.6394	0.0000	24.6394		1.2063	2.5763	3.7826		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

*** WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN**
PROGRAM: Commercial Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REVENUE INC. IN BILL \$(000)
2010	0.3895	0.0000	0.3895	0.9000	0.0000	0.9000	18.0685	0.0000	18.0685	2.0520	0.0690	0.1670	0.2360	0.0000	0.0000	0.0000	0.0000
2011	0.3992	0.0000	0.3992	0.9000	0.0000	0.9000	18.5202	0.0000	18.5202	6.1560	0.2245	0.5124	0.7369	0.0000	0.0000	0.0000	0.0000
2012	0.4092	0.0000	0.4092	0.9000	0.0000	0.9000	18.9832	0.0000	18.9832	10.2600	0.4034	0.8735	1.2769	0.0000	0.0000	0.0000	0.0000
2013	0.4195	0.0000	0.4195	0.9000	0.0000	0.9000	19.4578	0.0000	19.4578	14.3640	0.5824	1.2508	1.8331	0.0000	0.0000	0.0000	0.0000
2014	0.4299	0.0000	0.4299	0.9000	0.0000	0.9000	19.9442	0.0000	19.9442	18.4680	0.7655	1.6448	2.4103	0.0000	0.0000	0.0000	0.0000
2015	0.4407	0.0000	0.4407	0.9000	0.0000	0.9000	20.4428	0.0000	20.4428	22.5720	0.9790	2.0562	3.0352	0.0000	0.0000	0.0000	0.0000
2016	0.4517	0.0000	0.4517	0.9000	0.0000	0.9000	20.9539	0.0000	20.9539	26.6760	1.1956	2.4855	3.6811	0.0000	0.0000	0.0000	0.0000
2017	0.4630	0.0000	0.4630	0.9000	0.0000	0.9000	21.4777	0.0000	21.4777	30.7800	1.4380	2.9334	4.3714	0.0000	0.0000	0.0000	0.0000
2018	0.4746	0.0000	0.4746	0.9000	0.0000	0.9000	22.0147	0.0000	22.0147	34.8840	1.6951	3.4004	5.0956	0.0000	0.0000	0.0000	0.0000
2019	0.4864	0.0000	0.4864	0.9000	0.0000	0.9000	22.5650	0.0000	22.5650	38.9880	2.0028	3.8873	5.8902	0.0000	0.0000	0.0000	0.0000
NOMINAL	4.3638	0.0000	4.3638	9.0000	0.0000	9.0000	202.4279	0.0000	202.4279	205.2000	9.3554	19.2113	28.5667	0.0000	0.0000	0.0000	0.0000
NPV	3.1135	0.0000	3.1135	6.5222	0.0000	6.5222	144.4291	0.0000	144.4291		5.8243	12.0513	17.8756		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Commercial Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
UTILITY PROGRAM COSTS & REBATES							PARTICIPATING CUSTOMER COSTS & BENEFITS										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	0.5193	0.0000	0.5193	1.2000	0.0000	1.2000	19.3793	0.0000	19.3793	2.3360	0.0786	0.1987	0.2773	0.0000	0.0000	0.0000	0.0000
2011	0.5323	0.0000	0.5323	1.2000	0.0000	1.2000	19.8638	0.0000	19.8638	7.0080	0.2556	0.6099	0.8655	0.0000	0.0000	0.0000	0.0000
2012	0.5456	0.0000	0.5456	1.2000	0.0000	1.2000	20.3604	0.0000	20.3604	11.6800	0.4593	1.0397	1.4989	0.0000	0.0000	0.0000	0.0000
2013	0.5593	0.0000	0.5593	1.2000	0.0000	1.2000	20.8694	0.0000	20.8694	16.3520	0.6630	1.4889	2.1519	0.0000	0.0000	0.0000	0.0000
2014	0.5733	0.0000	0.5733	1.2000	0.0000	1.2000	21.3911	0.0000	21.3911	21.0240	0.8714	1.9582	2.8296	0.0000	0.0000	0.0000	0.0000
2015	0.5876	0.0000	0.5876	1.2000	0.0000	1.2000	21.9259	0.0000	21.9259	25.6960	1.1145	2.4482	3.5627	0.0000	0.0000	0.0000	0.0000
2016	0.6023	0.0000	0.6023	1.2000	0.0000	1.2000	22.4740	0.0000	22.4740	30.3680	1.3610	2.9596	4.3206	0.0000	0.0000	0.0000	0.0000
2017	0.6173	0.0000	0.6173	1.2000	0.0000	1.2000	23.0359	0.0000	23.0359	35.0400	1.6371	3.4932	5.1303	0.0000	0.0000	0.0000	0.0000
2018	0.6328	0.0000	0.6328	1.2000	0.0000	1.2000	23.6118	0.0000	23.6118	39.7120	1.9298	4.0498	5.9795	0.0000	0.0000	0.0000	0.0000
2019	0.6486	0.0000	0.6486	1.2000	0.0000	1.2000	24.2021	0.0000	24.2021	44.3840	2.2800	4.6301	6.9101	0.0000	0.0000	0.0000	0.0000
NOMINAL	5.8184	0.0000	5.8184	12.0000	0.0000	12.0000	217.1135	0.0000	217.1135	233.6000	10.6502	22.8762	33.5264	0.0000	0.0000	0.0000	0.0000
NPV	4.1514	0.0000	4.1514	8.6963	0.0000	8.6963	154.9071	0.0000	154.9071		6.6304	14.3497	20.9800		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN

PROGRAM: Commercial Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
UTILITY PROGRAM COSTS & REBATES							PARTICIPATING CUSTOMER COSTS & BENEFITS										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	0.9089	0.0000	0.9089	2.1000	0.0000	2.1000	25.9959	0.0000	25.9959	3.2620	0.1097	0.2679	0.3776	0.0000	0.0000	0.0000	0.0000
2011	0.9316	0.0000	0.9316	2.1000	0.0000	2.1000	26.6458	0.0000	26.6458	9.7860	0.3569	0.8219	1.1789	0.0000	0.0000	0.0000	0.0000
2012	0.9549	0.0000	0.9549	2.1000	0.0000	2.1000	27.3119	0.0000	27.3119	16.3100	0.6413	1.4012	2.0425	0.0000	0.0000	0.0000	0.0000
2013	0.9787	0.0000	0.9787	2.1000	0.0000	2.1000	27.9947	0.0000	27.9947	22.8340	0.9258	2.0064	2.9322	0.0000	0.0000	0.0000	0.0000
2014	1.0032	0.0000	1.0032	2.1000	0.0000	2.1000	28.6946	0.0000	28.6946	29.3580	1.2168	2.6386	3.8554	0.0000	0.0000	0.0000	0.0000
2015	1.0283	0.0000	1.0283	2.1000	0.0000	2.1000	29.4120	0.0000	29.4120	35.8820	1.5563	3.2986	4.8549	0.0000	0.0000	0.0000	0.0000
2016	1.0540	0.0000	1.0540	2.1000	0.0000	2.1000	30.1473	0.0000	30.1473	42.4060	1.9005	3.9874	5.8879	0.0000	0.0000	0.0000	0.0000
2017	1.0803	0.0000	1.0803	2.1000	0.0000	2.1000	30.9010	0.0000	30.9010	48.9300	2.2860	4.7060	6.9920	0.0000	0.0000	0.0000	0.0000
2018	1.1074	0.0000	1.1074	2.1000	0.0000	2.1000	31.6735	0.0000	31.6735	55.4540	2.6947	5.4553	8.1501	0.0000	0.0000	0.0000	0.0000
2019	1.1350	0.0000	1.1350	2.1000	0.0000	2.1000	32.4653	0.0000	32.4653	61.9780	3.1838	6.2365	9.4204	0.0000	0.0000	0.0000	0.0000
NOMINAL	10.1823	0.0000	10.1823	21.0000	0.0000	21.0000	291.2420	0.0000	291.2420	326.2000	14.8720	30.8197	45.6917	0.0000	0.0000	0.0000	0.0000
NPV	7.2649	0.0000	7.2649	15.2185	0.0000	15.2185	207.7966	0.0000	207.7966		9.2587	19.3331	28.5917		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Commercial Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS ----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	0.5193	0.0000	0.5193	0.8000	0.0000	0.8000	10.5175	0.0000	10.5175	1.4640	0.0492	0.1215	0.1707	0.0000	0.0000	0.0000	0.0000
2011	0.5323	0.0000	0.5323	0.8000	0.0000	0.8000	10.7805	0.0000	10.7805	4.3920	0.1602	0.3728	0.5329	0.0000	0.0000	0.0000	0.0000
2012	0.5456	0.0000	0.5456	0.8000	0.0000	0.8000	11.0500	0.0000	11.0500	7.3200	0.2878	0.6355	0.9233	0.0000	0.0000	0.0000	0.0000
2013	0.5593	0.0000	0.5593	0.8000	0.0000	0.8000	11.3262	0.0000	11.3262	10.2480	0.4155	0.9100	1.3255	0.0000	0.0000	0.0000	0.0000
2014	0.5733	0.0000	0.5733	0.8000	0.0000	0.8000	11.6094	0.0000	11.6094	13.1760	0.5461	1.1967	1.7428	0.0000	0.0000	0.0000	0.0000
2015	0.5876	0.0000	0.5876	0.8000	0.0000	0.8000	11.8996	0.0000	11.8996	16.1040	0.6985	1.4961	2.1946	0.0000	0.0000	0.0000	0.0000
2016	0.6023	0.0000	0.6023	0.8000	0.0000	0.8000	12.1971	0.0000	12.1971	19.0320	0.8530	1.8085	2.6615	0.0000	0.0000	0.0000	0.0000
2017	0.6173	0.0000	0.6173	0.8000	0.0000	0.8000	12.5020	0.0000	12.5020	21.9600	1.0260	2.1345	3.1605	0.0000	0.0000	0.0000	0.0000
2018	0.6328	0.0000	0.6328	0.8000	0.0000	0.8000	12.8146	0.0000	12.8146	24.8880	1.2094	2.4744	3.6838	0.0000	0.0000	0.0000	0.0000
2019	0.6486	0.0000	0.6486	0.8000	0.0000	0.8000	13.1349	0.0000	13.1349	27.8160	1.4289	2.8288	4.2578	0.0000	0.0000	0.0000	0.0000
NOMINAL	5.8184	0.0000	5.8184	8.0000	0.0000	8.0000	117.8318	0.0000	117.8318	146.4000	6.6746	13.9787	20.6533	0.0000	0.0000	0.0000	0.0000
NPV	4.1514	0.0000	4.1514	5.7975	0.0000	5.7975	84.0711	0.0000	84.0711		4.1553	8.7687	12.9240		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Commercial Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	0.1298	0.0000	0.1298	0.1000	0.0000	0.1000	1.5919	0.0000	1.5919	0.2080	0.0070	0.0166	0.0236	0.0000	0.0000	0.0000	0.0000
2011	0.1331	0.0000	0.1331	0.1000	0.0000	0.1000	1.6317	0.0000	1.6317	0.6240	0.0228	0.0508	0.0736	0.0000	0.0000	0.0000	0.0000
2012	0.1364	0.0000	0.1364	0.1000	0.0000	0.1000	1.6725	0.0000	1.6725	1.0400	0.0409	0.0866	0.1275	0.0000	0.0000	0.0000	0.0000
2013	0.1398	0.0000	0.1398	0.1000	0.0000	0.1000	1.7143	0.0000	1.7143	1.4560	0.0590	0.1240	0.1830	0.0000	0.0000	0.0000	0.0000
2014	0.1433	0.0000	0.1433	0.1000	0.0000	0.1000	1.7572	0.0000	1.7572	1.8720	0.0776	0.1631	0.2407	0.0000	0.0000	0.0000	0.0000
2015	0.1469	0.0000	0.1469	0.1000	0.0000	0.1000	1.8011	0.0000	1.8011	2.2880	0.0992	0.2039	0.3031	0.0000	0.0000	0.0000	0.0000
2016	0.1506	0.0000	0.1506	0.1000	0.0000	0.1000	1.8461	0.0000	1.8461	2.7040	0.1212	0.2464	0.3676	0.0000	0.0000	0.0000	0.0000
2017	0.1543	0.0000	0.1543	0.1000	0.0000	0.1000	1.8923	0.0000	1.8923	3.1200	0.1458	0.2908	0.4366	0.0000	0.0000	0.0000	0.0000
2018	0.1582	0.0000	0.1582	0.1000	0.0000	0.1000	1.9396	0.0000	1.9396	3.5360	0.1718	0.3371	0.5089	0.0000	0.0000	0.0000	0.0000
2019	0.1621	0.0000	0.1621	0.1000	0.0000	0.1000	1.9881	0.0000	1.9881	3.9520	0.2030	0.3853	0.5883	0.0000	0.0000	0.0000	0.0000
NOMINAL	1.4546	0.0000	1.4546	1.0000	0.0000	1.0000	17.8349	0.0000	17.8349	20.8000	0.9483	1.9046	2.8529	0.0000	0.0000	0.0000	0.0000
NPV	1.0378	0.0000	1.0378	0.7247	0.0000	0.7247	12.7249	0.0000	12.7249		0.5904	1.1948	1.7851		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Commercial Indoor Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES -----							----- PARTICIPATING CUSTOMER COSTS & BENEFITS -----										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	385.1484	0.0000	385.1484	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,455.4520	48.9490	83.2331	132.1822	0.0000	0.0000	0.0000	0.0000
2011	394.7771	0.0000	394.7771	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4,366.3560	159.2545	255.1590	414.4135	0.0000	0.0000	0.0000	0.0000
2012	404.6466	0.0000	404.6466	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	7,277.2600	286.1400	434.5658	720.7058	0.0000	0.0000	0.0000	0.0000
2013	414.7627	0.0000	414.7627	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	10,188.1640	413.0655	621.7014	1,034.7669	0.0000	0.0000	0.0000	0.0000
2014	425.1318	0.0000	425.1318	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	13,099.0680	542.9276	816.8211	1,359.7488	0.0000	0.0000	0.0000	0.0000
2015	435.7601	0.0000	435.7601	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	16,009.9720	694.4085	1,020.1882	1,714.5967	0.0000	0.0000	0.0000	0.0000
2016	446.6541	0.0000	446.6541	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	18,920.8760	847.9864	1,232.0732	2,080.0596	0.0000	0.0000	0.0000	0.0000
2017	457.8204	0.0000	457.8204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	21,831.7800	1,019.9865	1,452.7552	2,472.7417	0.0000	0.0000	0.0000	0.0000
2018	469.2660	0.0000	469.2660	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	24,742.6840	1,202.3424	1,682.5213	2,884.8637	0.0000	0.0000	0.0000	0.0000
2019	480.9976	0.0000	480.9976	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	27,653.5880	1,420.5822	1,921.6672	3,342.2493	0.0000	0.0000	0.0000	0.0000
NOMINAL	4,314.9648	0.0000	4,314.9648	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	#####	6,635.6426	9,520.6855	#####	0.0000	0.0000	0.0000	0.0000
NPV	3,078.6596	0.0000	3,078.6596	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		4,131.0618	5,974.7088	#####		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	0.0690	0.0000	0.0690	0.9340	0.0000	0.9340	2.4920	0.0000	2.4920	0.2608	0.0088	0.0094	0.0181	0.0000	0.0000	0.0000	0.0000
2011	0.0707	0.0000	0.0707	0.9340	0.0000	0.9340	2.5543	0.0000	2.5543	0.7824	0.0285	0.0286	0.0572	0.0000	0.0000	0.0000	0.0000
2012	0.0725	0.0000	0.0725	0.9340	0.0000	0.9340	2.6182	0.0000	2.6182	1.3040	0.0513	0.0486	0.0999	0.0000	0.0000	0.0000	0.0000
2013	0.0743	0.0000	0.0743	0.9340	0.0000	0.9340	2.6836	0.0000	2.6836	1.8255	0.0740	0.0695	0.1435	0.0000	0.0000	0.0000	0.0000
2014	0.0762	0.0000	0.0762	0.9340	0.0000	0.9340	2.7507	0.0000	2.7507	2.3471	0.0973	0.0911	0.1884	0.0000	0.0000	0.0000	0.0000
2015	0.0781	0.0000	0.0781	0.9340	0.0000	0.9340	2.8195	0.0000	2.8195	2.8687	0.1244	0.1136	0.2380	0.0000	0.0000	0.0000	0.0000
2016	0.0800	0.0000	0.0800	0.9340	0.0000	0.9340	2.8900	0.0000	2.8900	3.3903	0.1519	0.1369	0.2889	0.0000	0.0000	0.0000	0.0000
2017	0.0820	0.0000	0.0820	0.9340	0.0000	0.9340	2.9622	0.0000	2.9622	3.9119	0.1828	0.1611	0.3439	0.0000	0.0000	0.0000	0.0000
2018	0.0841	0.0000	0.0841	0.9340	0.0000	0.9340	3.0363	0.0000	3.0363	4.4335	0.2154	0.1863	0.4017	0.0000	0.0000	0.0000	0.0000
2019	0.0862	0.0000	0.0862	0.9340	0.0000	0.9340	3.1122	0.0000	3.1122	4.9550	0.2545	0.2124	0.4669	0.0000	0.0000	0.0000	0.0000
NOMINAL	0.7733	0.0000	0.7733	9.3401	0.0000	9.3401	27.9188	0.0000	27.9188	26.0792	1.1890	1.0575	2.2465	0.0000	0.0000	0.0000	0.0000
NPV	0.5517	0.0000	0.5517	6.7687	0.0000	6.7687	19.9196	0.0000	19.9196		0.7402	0.6641	1.4044		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Commercial Energy Audit

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	142.9722	0.0000	142.9722	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	105.2264	3.5389	5.5439	9.0828	0.0000	0.0000	0.0000	0.0000
2011	146.5466	0.0000	146.5466	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	315.6792	11.5138	16.9909	28.5047	0.0000	0.0000	0.0000	0.0000
2012	150.2102	0.0000	150.2102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	526.1320	20.6874	28.9299	49.6173	0.0000	0.0000	0.0000	0.0000
2013	153.9655	0.0000	153.9655	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	736.5848	29.8638	41.3770	71.2409	0.0000	0.0000	0.0000	0.0000
2014	157.8146	0.0000	157.8146	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	947.0376	39.2526	54.3488	93.6015	0.0000	0.0000	0.0000	0.0000
2015	161.7600	0.0000	161.7600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,157.4904	50.2044	67.8624	118.0668	0.0000	0.0000	0.0000	0.0000
2016	165.8040	0.0000	165.8040	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,367.9432	61.3078	81.9352	143.2430	0.0000	0.0000	0.0000	0.0000
2017	169.9491	0.0000	169.9491	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,578.3960	73.7431	96.5854	170.3285	0.0000	0.0000	0.0000	0.0000
2018	174.1978	0.0000	174.1978	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,788.8488	86.9271	111.8316	198.7587	0.0000	0.0000	0.0000	0.0000
2019	178.5527	0.0000	178.5527	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,999.3016	102.7054	127.6930	230.3984	0.0000	0.0000	0.0000	0.0000
NOMINAL	1,601.7727	0.0000	1,601.7727	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	10,522.6400	479.7443	633.0982	1,112.8425	0.0000	0.0000	0.0000	0.0000
NPV	1,142.8396	0.0000	1,142.8396	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		298.6679	397.3466	696.0145		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Commercial Energy Efficiency Duct

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	0.4510	0.0000	0.4510	1.5000	0.0000	1.5000	4.5000	0.0000	4.5000	1.8800	0.0632	0.1735	0.2367	0.0000	0.0000	0.0000	0.0000
2011	0.4623	0.0000	0.4623	1.5000	0.0000	1.5000	4.6125	0.0000	4.6125	5.6400	0.2057	0.5325	0.7382	0.0000	0.0000	0.0000	0.0000
2012	0.4738	0.0000	0.4738	1.5000	0.0000	1.5000	4.7278	0.0000	4.7278	9.4000	0.3696	0.9079	1.2775	0.0000	0.0000	0.0000	0.0000
2013	0.4857	0.0000	0.4857	1.5000	0.0000	1.5000	4.8460	0.0000	4.8460	13.1600	0.5336	1.3004	1.8340	0.0000	0.0000	0.0000	0.0000
2014	0.4978	0.0000	0.4978	1.5000	0.0000	1.5000	4.9672	0.0000	4.9672	16.9200	0.7013	1.7106	2.4119	0.0000	0.0000	0.0000	0.0000
2015	0.5103	0.0000	0.5103	1.5000	0.0000	1.5000	5.0913	0.0000	5.0913	20.6800	0.8970	2.1389	3.0359	0.0000	0.0000	0.0000	0.0000
2016	0.5230	0.0000	0.5230	1.5000	0.0000	1.5000	5.2186	0.0000	5.2186	24.4400	1.0953	2.5862	3.6815	0.0000	0.0000	0.0000	0.0000
2017	0.5361	0.0000	0.5361	1.5000	0.0000	1.5000	5.3491	0.0000	5.3491	28.2000	1.3175	3.0530	4.3705	0.0000	0.0000	0.0000	0.0000
2018	0.5495	0.0000	0.5495	1.5000	0.0000	1.5000	5.4828	0.0000	5.4828	31.9600	1.5531	3.5400	5.0930	0.0000	0.0000	0.0000	0.0000
2019	0.5632	0.0000	0.5632	1.5000	0.0000	1.5000	5.6199	0.0000	5.6199	35.7200	1.8350	4.0478	5.8828	0.0000	0.0000	0.0000	0.0000
NOMINAL	5.0527	0.0000	5.0527	15.0000	0.0000	15.0000	50.4152	0.0000	50.4152	188.0000	8.5712	19.9908	28.5621	0.0000	0.0000	0.0000	0.0000
NPV	3.6050	0.0000	3.6050	10.8703	0.0000	10.8703	35.9705	0.0000	35.9705		5.3361	12.5389	17.8750		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Commercial Energy Efficiency Cool Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS ----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	120.5018	0.0000	120.5018	30.2170	0.0000	30.2170	411.1567	0.0000	411.1567	455.3692	15.3147	16.3300	31.6448	0.0000	0.0000	0.0000	0.0000
2011	123.5144	0.0000	123.5144	30.2170	0.0000	30.2170	421.4356	0.0000	421.4356	1,366.1076	49.8262	49.9699	99.7960	0.0000	0.0000	0.0000	0.0000
2012	126.6022	0.0000	126.6022	30.2170	0.0000	30.2170	431.9715	0.0000	431.9715	2,276.8461	89.5250	84.9488	174.4738	0.0000	0.0000	0.0000	0.0000
2013	129.7673	0.0000	129.7673	30.2170	0.0000	30.2170	442.7708	0.0000	442.7708	3,187.5845	129.2364	121.3069	250.5432	0.0000	0.0000	0.0000	0.0000
2014	133.0115	0.0000	133.0115	30.2170	0.0000	30.2170	453.8401	0.0000	453.8401	4,098.3229	169.8665	159.0853	328.9518	0.0000	0.0000	0.0000	0.0000
2015	136.3368	0.0000	136.3368	30.2170	0.0000	30.2170	465.1861	0.0000	465.1861	5,009.0613	217.2605	198.3264	415.5869	0.0000	0.0000	0.0000	0.0000
2016	139.7452	0.0000	139.7452	30.2170	0.0000	30.2170	476.8157	0.0000	476.8157	5,919.7997	265.3106	239.0735	504.3842	0.0000	0.0000	0.0000	0.0000
2017	143.2388	0.0000	143.2388	30.2170	0.0000	30.2170	488.7361	0.0000	488.7361	6,830.5382	319.1245	281.3712	600.4957	0.0000	0.0000	0.0000	0.0000
2018	146.8198	0.0000	146.8198	30.2170	0.0000	30.2170	500.9545	0.0000	500.9545	7,741.2766	376.1785	325.2651	701.4436	0.0000	0.0000	0.0000	0.0000
2019	150.4903	0.0000	150.4903	30.2170	0.0000	30.2170	513.4784	0.0000	513.4784	8,652.0150	444.4594	370.8023	815.2617	0.0000	0.0000	0.0000	0.0000
NOMINAL	1,350.0280	0.0000	1,350.0280	302.1697	0.0000	302.1697	4,606.3454	0.0000	4,606.3454	45,536.9211	2,076.1024	1,846.4794	3,922.5818	0.0000	0.0000	0.0000	0.0000
NPV	963.2238	0.0000	963.2238	218.9790	0.0000	218.9790	3,286.5551	0.0000	3,286.5551		1,292.4908	1,159.6941	2,452.1849		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN

PROGRAM: Commercial Energy Efficiency Ceiling Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2010	0.4562	0.0000	0.4562	0.7000	0.0000	0.7000	4.0352	0.0000	4.0352	1.9740	0.0664	0.1291	0.1955	0.0000	0.0000	0.0000	0.0000
2011	0.4676	0.0000	0.4676	0.7000	0.0000	0.7000	4.1360	0.0000	4.1360	5.9220	0.2160	0.3960	0.6120	0.0000	0.0000	0.0000	0.0000
2012	0.4793	0.0000	0.4793	0.7000	0.0000	0.7000	4.2394	0.0000	4.2394	9.8700	0.3881	0.6747	1.0628	0.0000	0.0000	0.0000	0.0000
2013	0.4913	0.0000	0.4913	0.7000	0.0000	0.7000	4.3454	0.0000	4.3454	13.8180	0.5602	0.9657	1.5259	0.0000	0.0000	0.0000	0.0000
2014	0.5035	0.0000	0.5035	0.7000	0.0000	0.7000	4.4541	0.0000	4.4541	17.7660	0.7364	1.2692	2.0056	0.0000	0.0000	0.0000	0.0000
2015	0.5161	0.0000	0.5161	0.7000	0.0000	0.7000	4.5654	0.0000	4.5654	21.7140	0.9418	1.5858	2.5277	0.0000	0.0000	0.0000	0.0000
2016	0.5290	0.0000	0.5290	0.7000	0.0000	0.7000	4.6795	0.0000	4.6795	25.6620	1.1501	1.9159	3.0661	0.0000	0.0000	0.0000	0.0000
2017	0.5423	0.0000	0.5423	0.7000	0.0000	0.7000	4.7965	0.0000	4.7965	29.6100	1.3834	2.2600	3.6434	0.0000	0.0000	0.0000	0.0000
2018	0.5558	0.0000	0.5558	0.7000	0.0000	0.7000	4.9164	0.0000	4.9164	33.5580	1.6307	2.6185	4.2492	0.0000	0.0000	0.0000	0.0000
2019	0.5697	0.0000	0.5697	0.7000	0.0000	0.7000	5.0393	0.0000	5.0393	37.5060	1.9267	2.9918	4.9185	0.0000	0.0000	0.0000	0.0000
NOMINAL	5.1108	0.0000	5.1108	7.0000	0.0000	7.0000	45.2073	0.0000	45.2073	197.4000	8.9998	14.8068	23.8066	0.0000	0.0000	0.0000	0.0000
NPV	3.6465	0.0000	3.6465	5.0728	0.0000	5.0728	32.2547	0.0000	32.2547		5.6029	9.2904	14.8933		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	4.9934	0.1862	0.0000	0.0000	0.1862	0.1862
2011	14.9801	0.5877	0.0000	0.0000	0.5877	0.5877
2012	24.9668	1.0516	0.0000	0.0000	1.0516	1.0516
2013	34.9536	1.5376	0.0000	0.0000	1.5376	1.5376
2014	44.9403	2.0605	0.0000	0.0000	2.0605	2.0605
2015	54.9270	2.6519	0.0000	0.0000	2.6519	2.6519
2016	64.9138	3.2723	0.0000	0.0000	3.2723	3.2723
2017	74.9005	4.0004	0.0000	0.0000	4.0004	4.0004
2018	84.8872	4.6960	0.0000	0.0000	4.6960	4.6960
2019	94.8740	5.6042	0.0000	0.0000	5.6042	5.6042
NOMINAL	499.3367	25.6483	0.0000	0.0000	25.6483	25.6483
NPV		15.9087	0.0000	0.0000	15.9087	15.9087

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Energy Efficiency Wall Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	0.1873	0.0070	0.0000	0.0000	0.0070	0.0070
2011	0.5619	0.0220	0.0000	0.0000	0.0220	0.0220
2012	0.9366	0.0394	0.0000	0.0000	0.0394	0.0394
2013	1.3112	0.0577	0.0000	0.0000	0.0577	0.0577
2014	1.6858	0.0773	0.0000	0.0000	0.0773	0.0773
2015	2.0605	0.0995	0.0000	0.0000	0.0995	0.0995
2016	2.4351	0.1228	0.0000	0.0000	0.1228	0.1228
2017	2.8097	0.1501	0.0000	0.0000	0.1501	0.1501
2018	3.1844	0.1762	0.0000	0.0000	0.1762	0.1762
2019	3.5590	0.2102	0.0000	0.0000	0.2102	0.2102
NOMINAL	18.7316	0.9621	0.0000	0.0000	0.9621	0.9621
NPV		0.5968	0.0000	0.0000	0.5968	0.5968

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Single Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	275.4521	10.2689	0.0000	0.0000	10.2689	10.2689
2011	826.3564	32.4180	0.0000	0.0000	32.4180	32.4180
2012	1,377.2607	58.0102	0.0000	0.0000	58.0102	58.0102
2013	1,928.1649	84.8200	0.0000	0.0000	84.8200	84.8200
2014	2,479.0692	113.6653	0.0000	0.0000	113.6653	113.6653
2015	3,029.9735	146.2871	0.0000	0.0000	146.2871	146.2871
2016	3,580.8777	180.5120	0.0000	0.0000	180.5120	180.5120
2017	4,131.7820	220.6785	0.0000	0.0000	220.6785	220.6785
2018	4,682.6863	259.0462	0.0000	0.0000	259.0462	259.0462
2019	5,233.5905	309.1482	0.0000	0.0000	309.1482	309.1482
NOMINAL	27,545.2133	1,414.8544	0.0000	0.0000	1,414.8544	1,414.8544
NPV		877.5833	0.0000	0.0000	877.5833	877.5833

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Single Family Survey Video & DVDs

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	123.7752	4.6143	0.0000	0.0000	4.6143	4.6143
2011	371.3257	14.5671	0.0000	0.0000	14.5671	14.5671
2012	618.8762	26.0671	0.0000	0.0000	26.0671	26.0671
2013	866.4266	38.1141	0.0000	0.0000	38.1141	38.1141
2014	1,113.9771	51.0759	0.0000	0.0000	51.0759	51.0759
2015	1,361.5276	65.7346	0.0000	0.0000	65.7346	65.7346
2016	1,609.0780	81.1136	0.0000	0.0000	81.1136	81.1136
2017	1,856.6285	99.1625	0.0000	0.0000	99.1625	99.1625
2018	2,104.1790	116.4032	0.0000	0.0000	116.4032	116.4032
2019	2,351.7294	138.9167	0.0000	0.0000	138.9167	138.9167
NOMINAL	12,377.5234	635.7690	0.0000	0.0000	635.7690	635.7690
NPV		394.3447	0.0000	0.0000	394.3447	394.3447

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Single Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	89.9688	3.3540	0.0000	0.0000	3.3540	3.3540
2011	269.9063	10.5884	0.0000	0.0000	10.5884	10.5884
2012	449.8439	18.9474	0.0000	0.0000	18.9474	18.9474
2013	629.7815	27.7041	0.0000	0.0000	27.7041	27.7041
2014	809.7190	37.1256	0.0000	0.0000	37.1256	37.1256
2015	989.6566	47.7806	0.0000	0.0000	47.7806	47.7806
2016	1,169.5942	58.9592	0.0000	0.0000	58.9592	58.9592
2017	1,349.5317	72.0785	0.0000	0.0000	72.0785	72.0785
2018	1,529.4693	84.6102	0.0000	0.0000	84.6102	84.6102
2019	1,709.4069	100.9747	0.0000	0.0000	100.9747	100.9747
NOMINAL	8,996.8783	462.1229	0.0000	0.0000	462.1229	462.1229
NPV		286.6382	0.0000	0.0000	286.6382	286.6382

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	21.3528	0.7960	0.0000	0.0000	0.7960	0.7960
2011	64.0583	2.5130	0.0000	0.0000	2.5130	2.5130
2012	106.7638	4.4969	0.0000	0.0000	4.4969	4.4969
2013	149.4693	6.5752	0.0000	0.0000	6.5752	6.5752
2014	192.1748	8.8112	0.0000	0.0000	8.8112	8.8112
2015	234.8803	11.3400	0.0000	0.0000	11.3400	11.3400
2016	277.5858	13.9931	0.0000	0.0000	13.9931	13.9931
2017	320.2914	17.1068	0.0000	0.0000	17.1068	17.1068
2018	362.9969	20.0810	0.0000	0.0000	20.0810	20.0810
2019	405.7024	23.9648	0.0000	0.0000	23.9648	23.9648
NOMINAL	2,135.2758	109.6780	0.0000	0.0000	109.6780	109.6780
NPV		68.0293	0.0000	0.0000	68.0293	68.0293

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 1'

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	43.7544	1.6312	0.0000	0.0000	1.6312	1.6312
2011	131.2633	5.1495	0.0000	0.0000	5.1495	5.1495
2012	218.7721	9.2147	0.0000	0.0000	9.2147	9.2147
2013	306.2810	13.4733	0.0000	0.0000	13.4733	13.4733
2014	393.7898	18.0553	0.0000	0.0000	18.0553	18.0553
2015	481.2986	23.2371	0.0000	0.0000	23.2371	23.2371
2016	568.8075	28.6736	0.0000	0.0000	28.6736	28.6736
2017	656.3163	35.0539	0.0000	0.0000	35.0539	35.0539
2018	743.8252	41.1484	0.0000	0.0000	41.1484	41.1484
2019	831.3340	49.1069	0.0000	0.0000	49.1069	49.1069
NOMINAL	4,375.4422	224.7437	0.0000	0.0000	224.7437	224.7437
NPV		139.4005	0.0000	0.0000	139.4005	139.4005

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH	AVOIDED MARGINAL FUEL COST - REDUCED KWH	INCREASE IN KWH GENERATION NET NEW CUST KWH	INCREASED MARGINAL FUEL COST - INCREASE KWH	NET AVOIDED PROGRAM FUEL SAVINGS	EFFECTIVE PROGRAM FUEL SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	53.3403	1.9885	0.0000	0.0000	1.9885	1.9885
2011	160.0208	6.2776	0.0000	0.0000	6.2776	6.2776
2012	266.7014	11.2335	0.0000	0.0000	11.2335	11.2335
2013	373.3819	16.4251	0.0000	0.0000	16.4251	16.4251
2014	480.0624	22.0109	0.0000	0.0000	22.0109	22.0109
2015	586.7430	28.3280	0.0000	0.0000	28.3280	28.3280
2016	693.4235	34.9555	0.0000	0.0000	34.9555	34.9555
2017	800.1041	42.7336	0.0000	0.0000	42.7336	42.7336
2018	906.7846	50.1633	0.0000	0.0000	50.1633	50.1633
2019	1,013.4651	59.8654	0.0000	0.0000	59.8654	59.8654
NOMINAL	5,334.0271	273.9812	0.0000	0.0000	273.9812	273.9812
NPV		169.9407	0.0000	0.0000	169.9407	169.9407

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	145.8668	5.4379	0.0000	0.0000	5.4379	5.4379
2011	437.6004	17.1671	0.0000	0.0000	17.1671	17.1671
2012	729.3340	30.7195	0.0000	0.0000	30.7195	30.7195
2013	1,021.0676	44.9168	0.0000	0.0000	44.9168	44.9168
2014	1,312.8012	60.1919	0.0000	0.0000	60.1919	60.1919
2015	1,604.5349	77.4669	0.0000	0.0000	77.4669	77.4669
2016	1,896.2685	95.5909	0.0000	0.0000	95.5909	95.5909
2017	2,188.0021	116.8612	0.0000	0.0000	116.8612	116.8612
2018	2,479.7357	137.1790	0.0000	0.0000	137.1790	137.1790
2019	2,771.4693	163.7107	0.0000	0.0000	163.7107	163.7107
NOMINAL	14,586.6805	749.2419	0.0000	0.0000	749.2419	749.2419
NPV		464.7279	0.0000	0.0000	464.7279	464.7279

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	19.4797	0.7262	0.0000	0.0000	0.7262	0.7262
2011	58.4391	2.2926	0.0000	0.0000	2.2926	2.2926
2012	97.3985	4.1024	0.0000	0.0000	4.1024	4.1024
2013	136.3580	5.9984	0.0000	0.0000	5.9984	5.9984
2014	175.3174	8.0383	0.0000	0.0000	8.0383	8.0383
2015	214.2768	10.3453	0.0000	0.0000	10.3453	10.3453
2016	253.2362	12.7656	0.0000	0.0000	12.7656	12.7656
2017	292.1956	15.6062	0.0000	0.0000	15.6062	15.6062
2018	331.1550	18.3195	0.0000	0.0000	18.3195	18.3195
2019	370.1145	21.8627	0.0000	0.0000	21.8627	21.8627
NOMINAL	1,947.9709	100.0571	0.0000	0.0000	100.0571	100.0571
NPV		62.0618	0.0000	0.0000	62.0618	62.0618

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Multi Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	89.8023	3.3478	0.0000	0.0000	3.3478	3.3478
2011	269.4069	10.5688	0.0000	0.0000	10.5688	10.5688
2012	449.0114	18.9124	0.0000	0.0000	18.9124	18.9124
2013	628.6160	27.6528	0.0000	0.0000	27.6528	27.6528
2014	808.2206	37.0569	0.0000	0.0000	37.0569	37.0569
2015	987.8252	47.6922	0.0000	0.0000	47.6922	47.6922
2016	1,167.4298	58.8501	0.0000	0.0000	58.8501	58.8501
2017	1,347.0343	71.9451	0.0000	0.0000	71.9451	71.9451
2018	1,526.6389	84.4537	0.0000	0.0000	84.4537	84.4537
2019	1,706.2435	100.7878	0.0000	0.0000	100.7878	100.7878
NOMINAL	8,980.2289	461.2677	0.0000	0.0000	461.2677	461.2677
NPV		286.1078	0.0000	0.0000	286.1078	286.1078

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Multi Family Survey Video & DVDs

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	40.4787	1.5090	0.0000	0.0000	1.5090	1.5090
2011	121.4360	4.7639	0.0000	0.0000	4.7639	4.7639
2012	202.3933	8.5248	0.0000	0.0000	8.5248	8.5248
2013	283.3507	12.4646	0.0000	0.0000	12.4646	12.4646
2014	364.3080	16.7035	0.0000	0.0000	16.7035	16.7035
2015	445.2653	21.4974	0.0000	0.0000	21.4974	21.4974
2016	526.2227	26.5269	0.0000	0.0000	26.5269	26.5269
2017	607.1800	32.4295	0.0000	0.0000	32.4295	32.4295
2018	688.1374	38.0678	0.0000	0.0000	38.0678	38.0678
2019	769.0947	45.4304	0.0000	0.0000	45.4304	45.4304
NOMINAL	4,047.8668	207.9179	0.0000	0.0000	207.9179	207.9179
NPV		128.9640	0.0000	0.0000	128.9640	128.9640

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Multi Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	29.4485	1.0978	0.0000	0.0000	1.0978	1.0978
2011	88.3455	3.4658	0.0000	0.0000	3.4658	3.4658
2012	147.2425	6.2019	0.0000	0.0000	6.2019	6.2019
2013	206.1394	9.0681	0.0000	0.0000	9.0681	9.0681
2014	265.0364	12.1519	0.0000	0.0000	12.1519	12.1519
2015	323.9334	15.6395	0.0000	0.0000	15.6395	15.6395
2016	382.8304	19.2985	0.0000	0.0000	19.2985	19.2985
2017	441.7274	23.5927	0.0000	0.0000	23.5927	23.5927
2018	500.6243	27.6945	0.0000	0.0000	27.6945	27.6945
2019	559.5213	33.0509	0.0000	0.0000	33.0509	33.0509
NOMINAL	2,944.8491	151.2616	0.0000	0.0000	151.2616	151.2616
NPV		93.8221	0.0000	0.0000	93.8221	93.8221

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Lighting Program (CFL)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	87.3873	3.2578	0.0000	0.0000	3.2578	3.2578
2011	262.1619	10.2846	0.0000	0.0000	10.2846	10.2846
2012	436.9365	18.4038	0.0000	0.0000	18.4038	18.4038
2013	611.7111	26.9092	0.0000	0.0000	26.9092	26.9092
2014	786.4857	36.0604	0.0000	0.0000	36.0604	36.0604
2015	961.2604	46.4096	0.0000	0.0000	46.4096	46.4096
2016	1,136.0350	57.2675	0.0000	0.0000	57.2675	57.2675
2017	1,310.8096	70.0103	0.0000	0.0000	70.0103	70.0103
2018	1,485.5842	82.1825	0.0000	0.0000	82.1825	82.1825
2019	1,660.3588	98.0774	0.0000	0.0000	98.0774	98.0774
NOMINAL	8,738.7305	448.8631	0.0000	0.0000	448.8631	448.8631
NPV		278.4137	0.0000	0.0000	278.4137	278.4137

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Energy Efficiency Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	53.7331	2.0032	0.0000	0.0000	2.0032	2.0032
2011	161.1993	6.3238	0.0000	0.0000	6.3238	6.3238
2012	268.6655	11.3162	0.0000	0.0000	11.3162	11.3162
2013	376.1316	16.5460	0.0000	0.0000	16.5460	16.5460
2014	483.5978	22.1730	0.0000	0.0000	22.1730	22.1730
2015	591.0640	28.5366	0.0000	0.0000	28.5366	28.5366
2016	698.5302	35.2129	0.0000	0.0000	35.2129	35.2129
2017	805.9964	43.0483	0.0000	0.0000	43.0483	43.0483
2018	913.4625	50.5327	0.0000	0.0000	50.5327	50.5327
2019	1,020.9287	60.3063	0.0000	0.0000	60.3063	60.3063
NOMINAL	5,373.3091	275.9989	0.0000	0.0000	275.9989	275.9989
NPV		171.1922	0.0000	0.0000	171.1922	171.1922

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency High Performance Windows

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	42.6150	1.5887	0.0000	0.0000	1.5887	1.5887
2011	127.8449	5.0154	0.0000	0.0000	5.0154	5.0154
2012	213.0748	8.9747	0.0000	0.0000	8.9747	8.9747
2013	298.3047	13.1224	0.0000	0.0000	13.1224	13.1224
2014	383.5346	17.5851	0.0000	0.0000	17.5851	17.5851
2015	468.7645	22.6319	0.0000	0.0000	22.6319	22.6319
2016	553.9944	27.9269	0.0000	0.0000	27.9269	27.9269
2017	639.2243	34.1410	0.0000	0.0000	34.1410	34.1410
2018	724.4542	40.0768	0.0000	0.0000	40.0768	40.0768
2019	809.6841	47.8280	0.0000	0.0000	47.8280	47.8280
NOMINAL	4,261.4954	218.8909	0.0000	0.0000	218.8909	218.8909
NPV		135.7701	0.0000	0.0000	135.7701	135.7701

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Energy Efficiency Gold Ring

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	4.1004	0.1529	0.0000	0.0000	0.1529	0.1529
2011	12.3012	0.4826	0.0000	0.0000	0.4826	0.4826
2012	20.5021	0.8635	0.0000	0.0000	0.8635	0.8635
2013	28.7029	1.2626	0.0000	0.0000	1.2626	1.2626
2014	36.9037	1.6920	0.0000	0.0000	1.6920	1.6920
2015	45.1046	2.1776	0.0000	0.0000	2.1776	2.1776
2016	53.3054	2.6871	0.0000	0.0000	2.6871	2.6871
2017	61.5062	3.2850	0.0000	0.0000	3.2850	3.2850
2018	69.7071	3.8562	0.0000	0.0000	3.8562	3.8562
2019	77.9079	4.6020	0.0000	0.0000	4.6020	4.6020
NOMINAL	410.0416	21.0617	0.0000	0.0000	21.0617	21.0617
NPV		13.0638	0.0000	0.0000	13.0638	13.0638

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Home Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	6.7638	0.2522	0.0000	0.0000	0.2522	0.2522
2011	20.2914	0.7960	0.0000	0.0000	0.7960	0.7960
2012	33.8189	1.4245	0.0000	0.0000	1.4245	1.4245
2013	47.3465	2.0828	0.0000	0.0000	2.0828	2.0828
2014	60.8741	2.7911	0.0000	0.0000	2.7911	2.7911
2015	74.4017	3.5921	0.0000	0.0000	3.5921	3.5921
2016	87.9292	4.4325	0.0000	0.0000	4.4325	4.4325
2017	101.4568	5.4188	0.0000	0.0000	5.4188	5.4188
2018	114.9844	6.3609	0.0000	0.0000	6.3609	6.3609
2019	128.5120	7.5912	0.0000	0.0000	7.5912	7.5912
NOMINAL	676.3788	34.7421	0.0000	0.0000	34.7421	34.7421
NPV		21.5493	0.0000	0.0000	21.5493	21.5493

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Energy Efficiency Duct Repair

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	21.4932	0.8013	0.0000	0.0000	0.8013	0.8013
2011	64.4797	2.5295	0.0000	0.0000	2.5295	2.5295
2012	107.4662	4.5265	0.0000	0.0000	4.5265	4.5265
2013	150.4527	6.6184	0.0000	0.0000	6.6184	6.6184
2014	193.4391	8.8692	0.0000	0.0000	8.8692	8.8692
2015	236.4256	11.4146	0.0000	0.0000	11.4146	11.4146
2016	279.4121	14.0852	0.0000	0.0000	14.0852	14.0852
2017	322.3985	17.2193	0.0000	0.0000	17.2193	17.2193
2018	365.3850	20.2131	0.0000	0.0000	20.2131	20.2131
2019	408.3715	24.1225	0.0000	0.0000	24.1225	24.1225
NOMINAL	2,149.3236	110.3996	0.0000	0.0000	110.3996	110.3996
NPV		68.4769	0.0000	0.0000	68.4769	68.4769

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency Cool Reflective Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	4.6477	0.1733	0.0000	0.0000	0.1733	0.1733
2011	13.9432	0.5470	0.0000	0.0000	0.5470	0.5470
2012	23.2387	0.9788	0.0000	0.0000	0.9788	0.9788
2013	32.5342	1.4312	0.0000	0.0000	1.4312	1.4312
2014	41.8297	1.9179	0.0000	0.0000	1.9179	1.9179
2015	51.1252	2.4683	0.0000	0.0000	2.4683	2.4683
2016	60.4206	3.0458	0.0000	0.0000	3.0458	3.0458
2017	69.7161	3.7235	0.0000	0.0000	3.7235	3.7235
2018	79.0116	4.3709	0.0000	0.0000	4.3709	4.3709
2019	88.3071	5.2163	0.0000	0.0000	5.2163	5.2163
NOMINAL	464.7742	23.8730	0.0000	0.0000	23.8730	23.8730
NPV		14.8076	0.0000	0.0000	14.8076	14.8076

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH	AVOIDED MARGINAL FUEL COST - REDUCED KWH	INCREASE IN KWH GENERATION NET NEW CUST KWH	INCREASED MARGINAL FUEL COST - INCREASE KWH	NET AVOIDED PROGRAM FUEL SAVINGS	EFFECTIVE PROGRAM FUEL SAVINGS
YEAR	(000)	\$(000)	(000)	\$(000)	\$(000)	\$(000)
2010	0.4422	0.0165	0.0000	0.0000	0.0165	0.0165
2011	1.3267	0.0520	0.0000	0.0000	0.0520	0.0520
2012	2.2112	0.0931	0.0000	0.0000	0.0931	0.0931
2013	3.0957	0.1362	0.0000	0.0000	0.1362	0.1362
2014	3.9802	0.1825	0.0000	0.0000	0.1825	0.1825
2015	4.8647	0.2349	0.0000	0.0000	0.2349	0.2349
2016	5.7492	0.2898	0.0000	0.0000	0.2898	0.2898
2017	6.6337	0.3543	0.0000	0.0000	0.3543	0.3543
2018	7.5182	0.4159	0.0000	0.0000	0.4159	0.4159
2019	8.4027	0.4963	0.0000	0.0000	0.4963	0.4963
NOMINAL	44.2248	2.2716	0.0000	0.0000	2.2716	2.2716
NPV		1.4090	0.0000	0.0000	1.4090	1.4090

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	2.1353	0.0796	0.0000	0.0000	0.0796	0.0796
2011	6.4058	0.2513	0.0000	0.0000	0.2513	0.2513
2012	10.6764	0.4497	0.0000	0.0000	0.4497	0.4497
2013	14.9469	0.6575	0.0000	0.0000	0.6575	0.6575
2014	19.2175	0.8811	0.0000	0.0000	0.8811	0.8811
2015	23.4880	1.1340	0.0000	0.0000	1.1340	1.1340
2016	27.7586	1.3993	0.0000	0.0000	1.3993	1.3993
2017	32.0291	1.7107	0.0000	0.0000	1.7107	1.7107
2018	36.2997	2.0081	0.0000	0.0000	2.0081	2.0081
2019	40.5702	2.3965	0.0000	0.0000	2.3965	2.3965
NOMINAL	213.5276	10.9678	0.0000	0.0000	10.9678	10.9678
NPV		6.8029	0.0000	0.0000	6.8029	6.8029

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	2.4308	0.0906	0.0000	0.0000	0.0906	0.0906
2011	7.2924	0.2861	0.0000	0.0000	0.2861	0.2861
2012	12.1540	0.5119	0.0000	0.0000	0.5119	0.5119
2013	17.0156	0.7485	0.0000	0.0000	0.7485	0.7485
2014	21.8772	1.0031	0.0000	0.0000	1.0031	1.0031
2015	26.7388	1.2909	0.0000	0.0000	1.2909	1.2909
2016	31.6004	1.5930	0.0000	0.0000	1.5930	1.5930
2017	36.4620	1.9474	0.0000	0.0000	1.9474	1.9474
2018	41.3236	2.2860	0.0000	0.0000	2.2860	2.2860
2019	46.1852	2.7282	0.0000	0.0000	2.7282	2.7282
NOMINAL	243.0801	12.4858	0.0000	0.0000	12.4858	12.4858
NPV		7.7445	0.0000	0.0000	7.7445	7.7445

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	3.3944	0.1265	0.0000	0.0000	0.1265	0.1265
2011	10.1831	0.3995	0.0000	0.0000	0.3995	0.3995
2012	16.9719	0.7149	0.0000	0.0000	0.7149	0.7149
2013	23.7607	1.0452	0.0000	0.0000	1.0452	1.0452
2014	30.5494	1.4007	0.0000	0.0000	1.4007	1.4007
2015	37.3382	1.8027	0.0000	0.0000	1.8027	1.8027
2016	44.1270	2.2244	0.0000	0.0000	2.2244	2.2244
2017	50.9157	2.7194	0.0000	0.0000	2.7194	2.7194
2018	57.7045	3.1922	0.0000	0.0000	3.1922	3.1922
2019	64.4932	3.8096	0.0000	0.0000	3.8096	3.8096
NOMINAL	339.4381	17.4352	0.0000	0.0000	17.4352	17.4352
NPV		10.8144	0.0000	0.0000	10.8144	10.8144

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	1.5234	0.0568	0.0000	0.0000	0.0568	0.0568
2011	4.5702	0.1793	0.0000	0.0000	0.1793	0.1793
2012	7.6171	0.3208	0.0000	0.0000	0.3208	0.3208
2013	10.6639	0.4691	0.0000	0.0000	0.4691	0.4691
2014	13.7107	0.6286	0.0000	0.0000	0.6286	0.6286
2015	16.7575	0.8091	0.0000	0.0000	0.8091	0.8091
2016	19.8044	0.9983	0.0000	0.0000	0.9983	0.9983
2017	22.8512	1.2205	0.0000	0.0000	1.2205	1.2205
2018	25.8980	1.4327	0.0000	0.0000	1.4327	1.4327
2019	28.9448	1.7098	0.0000	0.0000	1.7098	1.7098
NOMINAL	152.3413	7.8250	0.0000	0.0000	7.8250	7.8250
NPV		4.8536	0.0000	0.0000	4.8536	4.8536

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	0.2164	0.0081	0.0000	0.0000	0.0081	0.0081
2011	0.6493	0.0255	0.0000	0.0000	0.0255	0.0255
2012	1.0822	0.0456	0.0000	0.0000	0.0456	0.0456
2013	1.5151	0.0666	0.0000	0.0000	0.0666	0.0666
2014	1.9480	0.0893	0.0000	0.0000	0.0893	0.0893
2015	2.3809	0.1149	0.0000	0.0000	0.1149	0.1149
2016	2.8137	0.1418	0.0000	0.0000	0.1418	0.1418
2017	3.2466	0.1734	0.0000	0.0000	0.1734	0.1734
2018	3.6795	0.2035	0.0000	0.0000	0.2035	0.2035
2019	4.1124	0.2429	0.0000	0.0000	0.2429	0.2429
NOMINAL	21.6441	1.1117	0.0000	0.0000	1.1117	1.1117
NPV		0.6896	0.0000	0.0000	0.6896	0.6896

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Indoor Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	1,514.5182	56.4612	0.0000	0.0000	56.4612	56.4612
2011	4,543.5546	178.2436	0.0000	0.0000	178.2436	178.2436
2012	7,572.5911	318.9575	0.0000	0.0000	318.9575	318.9575
2013	10,601.6275	466.3656	0.0000	0.0000	466.3656	466.3656
2014	13,630.6639	624.9659	0.0000	0.0000	624.9659	624.9659
2015	16,659.7003	804.3303	0.0000	0.0000	804.3303	804.3303
2016	19,688.7367	992.5092	0.0000	0.0000	992.5092	992.5092
2017	22,717.7732	1,213.3563	0.0000	0.0000	1,213.3563	1,213.3563
2018	25,746.8096	1,424.3135	0.0000	0.0000	1,424.3135	1,424.3135
2019	28,775.8460	1,699.7892	0.0000	0.0000	1,699.7892	1,699.7892
NOMINAL	151,451.8210	7,779.2925	0.0000	0.0000	7,779.2925	7,779.2925
NPV		4,825.2157	0.0000	0.0000	4,825.2157	4,825.2157

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	0.2714	0.0101	0.0000	0.0000	0.0101	0.0101
2011	0.8141	0.0319	0.0000	0.0000	0.0319	0.0319
2012	1.3569	0.0572	0.0000	0.0000	0.0572	0.0572
2013	1.8996	0.0836	0.0000	0.0000	0.0836	0.0836
2014	2.4424	0.1120	0.0000	0.0000	0.1120	0.1120
2015	2.9851	0.1441	0.0000	0.0000	0.1441	0.1441
2016	3.5279	0.1778	0.0000	0.0000	0.1778	0.1778
2017	4.0706	0.2174	0.0000	0.0000	0.2174	0.2174
2018	4.6134	0.2552	0.0000	0.0000	0.2552	0.2552
2019	5.1561	0.3046	0.0000	0.0000	0.3046	0.3046
NOMINAL	27.1376	1.3939	0.0000	0.0000	1.3939	1.3939
NPV		0.8646	0.0000	0.0000	0.8646	0.8646

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Commercial Energy Audit

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2010	109.4968	4.0820	0.0000	0.0000	4.0820	4.0820
2011	328.4903	12.8867	0.0000	0.0000	12.8867	12.8867
2012	547.4839	23.0600	0.0000	0.0000	23.0600	23.0600
2013	766.4774	33.7173	0.0000	0.0000	33.7173	33.7173
2014	985.4710	45.1838	0.0000	0.0000	45.1838	45.1838
2015	1,204.4645	58.1515	0.0000	0.0000	58.1515	58.1515
2016	1,423.4581	71.7565	0.0000	0.0000	71.7565	71.7565
2017	1,642.4516	87.7233	0.0000	0.0000	87.7233	87.7233
2018	1,861.4452	102.9751	0.0000	0.0000	102.9751	102.9751
2019	2,080.4387	122.8915	0.0000	0.0000	122.8915	122.8915
NOMINAL	10,949.6774	562.4280	0.0000	0.0000	562.4280	562.4280
NPV		348.8539	0.0000	0.0000	348.8539	348.8539

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Energy Efficiency Duct

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	1.9563	0.0729	0.0000	0.0000	0.0729	0.0729
2011	5.8689	0.2302	0.0000	0.0000	0.2302	0.2302
2012	9.7815	0.4120	0.0000	0.0000	0.4120	0.4120
2013	13.6941	0.6024	0.0000	0.0000	0.6024	0.6024
2014	17.6067	0.8073	0.0000	0.0000	0.8073	0.8073
2015	21.5193	1.0389	0.0000	0.0000	1.0389	1.0389
2016	25.4318	1.2820	0.0000	0.0000	1.2820	1.2820
2017	29.3444	1.5673	0.0000	0.0000	1.5673	1.5673
2018	33.2570	1.8398	0.0000	0.0000	1.8398	1.8398
2019	37.1696	2.1956	0.0000	0.0000	2.1956	2.1956
NOMINAL	195.6296	10.0485	0.0000	0.0000	10.0485	10.0485
NPV		6.2327	0.0000	0.0000	6.2327	6.2327

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Energy Efficiency Cool Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	473.8493	17.6651	0.0000	0.0000	17.6651	17.6651
2011	1,421.5480	55.7673	0.0000	0.0000	55.7673	55.7673
2012	2,369.2467	99.7927	0.0000	0.0000	99.7927	99.7927
2013	3,316.9453	145.9124	0.0000	0.0000	145.9124	145.9124
2014	4,264.6440	195.5339	0.0000	0.0000	195.5339	195.5339
2015	5,212.3427	251.6519	0.0000	0.0000	251.6519	251.6519
2016	6,160.0414	310.5277	0.0000	0.0000	310.5277	310.5277
2017	7,107.7400	379.6244	0.0000	0.0000	379.6244	379.6244
2018	8,055.4387	445.6269	0.0000	0.0000	445.6269	445.6269
2019	9,003.1374	531.8153	0.0000	0.0000	531.8153	531.8153
NOMINAL	47,384.9335	2,433.9176	0.0000	0.0000	2,433.9176	2,433.9176
NPV		1,509.6717	0.0000	0.0000	1,509.6717	1,509.6717

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Commercial Energy Efficiency Ceiling Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
YEAR						
2010	2.0541	0.0766	0.0000	0.0000	0.0766	0.0766
2011	6.1623	0.2417	0.0000	0.0000	0.2417	0.2417
2012	10.2706	0.4326	0.0000	0.0000	0.4326	0.4326
2013	14.3788	0.6325	0.0000	0.0000	0.6325	0.6325
2014	18.4870	0.8476	0.0000	0.0000	0.8476	0.8476
2015	22.5952	1.0909	0.0000	0.0000	1.0909	1.0909
2016	26.7034	1.3461	0.0000	0.0000	1.3461	1.3461
2017	30.8117	1.6457	0.0000	0.0000	1.6457	1.6457
2018	34.9199	1.9318	0.0000	0.0000	1.9318	1.9318
2019	39.0281	2.3054	0.0000	0.0000	2.3054	2.3054
NOMINAL	205.4110	10.5509	0.0000	0.0000	10.5509	10.5509
NPV		6.5443	0.0000	0.0000	6.5443	6.5443

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.03	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.04	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	111.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	106.6	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	33.40	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	200.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	60.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	90	90	3.36	3.73	3.87	3.36	1	1
2011	180	180	3.65	3.92	3.99	3.65	1	1
2012	270	270	3.93	4.21	4.24	3.93	1	1
2013	360	360	4.05	4.40	4.47	4.05	1	1
2014	450	450	4.14	4.59	4.65	4.14	1	1
2015	540	540	4.34	4.83	4.96	4.34	1	1
2016	630	630	4.48	5.04	5.20	4.48	1	1
2017	720	720	4.67	5.34	5.60	4.67	1	1
2018	810	810	4.86	5.53	5.91	4.85	1	1
2019	900	900	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency Wall Insulation

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.02	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.02	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	53.5	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	51.4	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	16.11	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	2,215.55	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	664.67	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	15 %
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Wall Insulation

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
YEAR								
2010	7	7	3.36	3.73	3.87	3.36	1	1
2011	14	14	3.65	3.92	3.99	3.65	1	1
2012	21	21	3.93	4.21	4.24	3.93	1	1
2013	28	28	4.05	4.40	4.47	4.05	1	1
2014	35	35	4.14	4.59	4.65	4.14	1	1
2015	42	42	4.34	4.83	4.96	4.34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4.67	1	1
2018	63	63	4.86	5.53	5.91	4.85	1	1
2019	70	70	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Single Family Survey Walk Through

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	273.7	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	263.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	219.63	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

*SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Single Family Survey Walk Through

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	2013	2013	3.36	3.73	3.87	3.36	1	1
2011	4026	4026	3.65	3.92	3.99	3.65	1	1
2012	6039	6039	3.93	4.21	4.24	3.93	1	1
2013	8052	8052	4.05	4.40	4.47	4.05	1	1
2014	10065	10065	4.14	4.59	4.65	4.14	1	1
2015	12078	12078	4.34	4.83	4.96	4.34	1	1
2016	14091	14091	4.48	5.04	5.20	4.48	1	1
2017	16104	16104	4.67	5.34	5.60	4.67	1	1
2018	18117	18117	4.86	5.53	5.91	4.85	1	1
2019	20130	20130	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Single Family Survey Video & DVDsI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	136.3	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	131.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	43.12	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Single Family Survey Video & DVDs

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	1816	1816	3.36	3.73	3.87	3.36	1	1
2011	3632	3632	3.65	3.92	3.99	3.65	1	1
2012	5448	5448	3.93	4.21	4.24	3.93	1	1
2013	7264	7264	4.05	4.40	4.47	4.05	1	1
2014	9080	9080	4.14	4.59	4.65	4.14	1	1
2015	10896	10896	4.34	4.83	4.96	4.34	1	1
2016	12712	12712	4.48	5.04	5.20	4.48	1	1
2017	14528	14528	4.67	5.34	5.60	4.67	1	1
2018	16344	16344	4.86	5.53	5.91	4.85	1	1
2019	18160	18160	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Single Family Survey On LineI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	136.3	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	131.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	57.34	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

◆SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

◆FIRE Program Version Number: 1.03

PROGRAM: Residential Single Family Survey On Line

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	1320	1320	3.36	3.73	3.87	3.36	1	1
2011	2640	2640	3.65	3.92	3.99	3.65	1	1
2012	3960	3960	3.93	4.21	4.24	3.93	1	1
2013	5280	5280	4.05	4.40	4.47	4.05	1	1
2014	6600	6600	4.14	4.59	4.65	4.14	1	1
2015	7920	7920	4.34	4.83	4.96	4.34	1	1
2016	9240	9240	4.48	5.04	5.20	4.48	1	1
2017	10560	10560	4.67	5.34	5.60	4.67	1	1
2018	11880	11880	4.86	5.53	5.91	4.85	1	1
2019	13200	13200	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.65	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.68	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,423.5	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,368.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	249.36	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	6,022.82	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	30	30	3.36	3.73	3.87	3.36	1	1
2011	60	60	3.65	3.92	3.99	3.65	1	1
2012	90	90	3.93	4.21	4.24	3.93	1	1
2013	120	120	4.05	4.40	4.47	4.05	1	1
2014	150	150	4.14	4.59	4.65	4.14	1	1
2015	180	180	4.34	4.83	4.96	4.34	1	1
2016	210	210	4.48	5.04	5.20	4.48	1	1
2017	240	240	4.67	5.34	5.60	4.67	1	1
2018	270	270	4.86	5.53	5.91	4.85	1	1
2019	300	300	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.60	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.62	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,215.4	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,168.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	249.36	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	4,844.82	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	15 %
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	72	72	3.36	3.73	3.87	3.36	1	1
2011	144	144	3.65	3.92	3.99	3.65	1	1
2012	216	216	3.93	4.21	4.24	3.93	1	1
2013	288	288	4.05	4.40	4.47	4.05	1	1
2014	360	360	4.14	4.59	4.65	4.14	1	1
2015	432	432	4.34	4.83	4.96	4.34	1	1
2016	504	504	4.48	5.04	5.20	4.48	1	1
2017	576	576	4.67	5.34	5.60	4.67	1	1
2018	648	648	4.86	5.53	5.91	4.85	1	1
2019	720	720	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.45	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.47	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	969.8	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	932.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	249.36	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	3,713.70	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	110	110	3.36	3.73	3.87	3.36	1	1
2011	220	220	3.65	3.92	3.99	3.65	1	1
2012	330	330	3.93	4.21	4.24	3.93	1	1
2013	440	440	4.05	4.40	4.47	4.05	1	1
2014	550	550	4.14	4.59	4.65	4.14	1	1
2015	660	660	4.34	4.83	4.96	4.34	1	1
2016	770	770	4.48	5.04	5.20	4.48	1	1
2017	880	880	4.67	5.34	5.60	4.67	1	1
2018	990	990	4.86	5.53	5.91	4.85	1	1
2019	1100	1100	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.36	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.37	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	761.7	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	732.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	249.36	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	2,629.38	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	200.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SE) Efficient Electric Heat Pump SEER 15

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			UTILITY AVERAGE					
	CUMULATIVE TOTAL PARTICIPATING	ADJUSTED CUMULATIVE PARTICIPATING	SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
YEAR	CUSTOMERS	CUSTOMERS						
2010	383	383	3.36	3.73	3.87	3.36	1	1
2011	766	766	3.65	3.92	3.99	3.65	1	1
2012	1149	1149	3.93	4.21	4.24	3.93	1	1
2013	1532	1532	4.05	4.40	4.47	4.05	1	1
2014	1915	1915	4.14	4.59	4.65	4.14	1	1
2015	2298	2298	4.34	4.83	4.96	4.34	1	1
2016	2681	2681	4.48	5.04	5.20	4.48	1	1
2017	3064	3064	4.67	5.34	5.60	4.67	1	1
2018	3447	3447	4.86	5.53	5.91	4.85	1	1
2019	3830	3830	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.19	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	432.9	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	416.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	249.36	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	1,591.92	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	90	90	3.36	3.73	3.87	3.36	1	1
2011	180	180	3.65	3.92	3.99	3.65	1	1
2012	270	270	3.93	4.21	4.24	3.93	1	1
2013	360	360	4.05	4.40	4.47	4.05	1	1
2014	450	450	4.14	4.59	4.65	4.14	1	1
2015	540	540	4.34	4.83	4.96	4.34	1	1
2016	630	630	4.48	5.04	5.20	4.48	1	1
2017	720	720	4.67	5.34	5.60	4.67	1	1
2018	810	810	4.86	5.53	5.91	4.85	1	1
2019	900	900	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Multi Family Survey Walk ThroughI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	208.1	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST.YR
(8)* CUSTOMER KWH REDUCTION AT METER	200.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	199.89	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Multi Family Survey Walk Through

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	863	863	3.36	3.73	3.87	3.36	1	1
2011	1726	1726	3.65	3.92	3.99	3.65	1	1
2012	2589	2589	3.93	4.21	4.24	3.93	1	1
2013	3452	3452	4.05	4.40	4.47	4.05	1	1
2014	4315	4315	4.14	4.59	4.65	4.14	1	1
2015	5178	5178	4.34	4.83	4.96	4.34	1	1
2016	6041	6041	4.48	5.04	5.20	4.48	1	1
2017	6904	6904	4.67	5.34	5.60	4.67	1	1
2018	7767	7767	4.86	5.53	5.91	4.85	1	1
2019	8630	8630	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Multi Family Survey Video & DVDsI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	104.1	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	100.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	33.42	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	15 %
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Multi Family Survey Video & DVDs

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	778	778	3.36	3.73	3.87	3.36	1	1
2011	1556	1556	3.65	3.92	3.99	3.65	1	1
2012	2334	2334	3.93	4.21	4.24	3.93	1	1
2013	3112	3112	4.05	4.40	4.47	4.05	1	1
2014	3890	3890	4.14	4.59	4.65	4.14	1	1
2015	4668	4668	4.34	4.83	4.96	4.34	1	1
2016	5446	5446	4.48	5.04	5.20	4.48	1	1
2017	6224	6224	4.67	5.34	5.60	4.67	1	1
2018	7002	7002	4.86	5.53	5.91	4.85	1	1
2019	7780	7780	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Multi Family Survey On Line

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	104.1	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	100.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	47.63	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

• SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Multi Family Survey On Line

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	566	566	3.36	3.73	3.87	3.36	1	1
2011	1132	1132	3.65	3.92	3.99	3.65	1	1
2012	1698	1698	3.93	4.21	4.24	3.93	1	1
2013	2264	2264	4.05	4.40	4.47	4.05	1	1
2014	2830	2830	4.14	4.59	4.65	4.14	1	1
2015	3396	3396	4.34	4.83	4.96	4.34	1	1
2016	3962	3962	4.48	5.04	5.20	4.48	1	1
2017	4528	4528	4.67	5.34	5.60	4.67	1	1
2018	5094	5094	4.86	5.53	5.91	4.85	1	1
2019	5660	5660	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Lighting Program (CFL)

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.04	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.04	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	60.8	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	58.4	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	1.00	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

• SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Lighting Program (CFL)

* Avoided Generation Unit: 7FA CT

* Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	2876	2876	3.36	3.73	3.87	3.36	1	1
2011	5752	5752	3.65	3.92	3.99	3.65	1	1
2012	8628	8628	3.93	4.21	4.24	3.93	1	1
2013	11504	11504	4.05	4.40	4.47	4.05	1	1
2014	14380	14380	4.14	4.59	4.65	4.14	1	1
2015	17256	17256	4.34	4.83	4.96	4.34	1	1
2016	20132	20132	4.48	5.04	5.20	4.48	1	1
2017	23008	23008	4.67	5.34	5.60	4.67	1	1
2018	25884	25884	4.86	5.53	5.91	4.85	1	1
2019	28760	28760	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency InsulationI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.17	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.18	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	477.6	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	459.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	154.29	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	576.45	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	270.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Insulation

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	225	225	3.36	3.73	3.87	3.36	1	1
2011	450	450	3.65	3.92	3.99	3.65	1	1
2012	675	675	3.93	4.21	4.24	3.93	1	1
2013	900	900	4.05	4.40	4.47	4.05	1	1
2014	1125	1125	4.14	4.59	4.65	4.14	1	1
2015	1350	1350	4.34	4.83	4.96	4.34	1	1
2016	1575	1575	4.48	5.04	5.20	4.48	1	1
2017	1800	1800	4.67	5.34	5.60	4.67	1	1
2018	2025	2025	4.86	5.53	5.91	4.85	1	1
2019	2250	2250	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency High Performance WindowsI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.37 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.39 KW GEN./CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	811.7 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	780.1 KWH/CUST YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	244.34 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	1,563.77 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	8.00 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	250.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	15 %
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency High Performance Windows

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	105	105	3.36	3.73	3.87	3.36	1	1
2011	210	210	3.65	3.92	3.99	3.65	1	1
2012	315	315	3.93	4.21	4.24	3.93	1	1
2013	420	420	4.05	4.40	4.47	4.05	1	1
2014	525	525	4.14	4.59	4.65	4.14	1	1
2015	630	630	4.34	4.83	4.96	4.34	1	1
2016	735	735	4.48	5.04	5.20	4.48	1	1
2017	840	840	4.67	5.34	5.60	4.67	1	1
2018	945	945	4.86	5.53	5.91	4.85	1	1
2019	1050	1050	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency Gold Ring

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.89	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.93	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,366.8	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,313.5	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	411.44	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	700.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Gold Ring

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	6	6	3.36	3.73	3.87	3.36	1	1
2011	12	12	3.65	3.92	3.99	3.65	1	1
2012	18	18	3.93	4.21	4.24	3.93	1	1
2013	24	24	4.05	4.40	4.47	4.05	1	1
2014	30	30	4.14	4.59	4.65	4.14	1	1
2015	36	36	4.34	4.83	4.96	4.34	1	1
2016	42	42	4.48	5.04	5.20	4.48	1	1
2017	48	48	4.67	5.34	5.60	4.67	1	1
2018	54	54	4.86	5.53	5.91	4.85	1	1
2019	60	60	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Home Energy Fix Up

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.27	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.28	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	260.1	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	250.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	78.31	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	97.76	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	554.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	2.5	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	15 %
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Home Energy Fix Up

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	52	52	3.36	3.73	3.87	3.36	1	1
2011	104	104	3.65	3.92	3.99	3.65	1	1
2012	156	156	3.93	4.21	4.24	3.93	1	1
2013	208	208	4.05	4.40	4.47	4.05	1	1
2014	260	260	4.14	4.59	4.65	4.14	1	1
2015	312	312	4.34	4.83	4.96	4.34	1	1
2016	364	364	4.48	5.04	5.20	4.48	1	1
2017	416	416	4.67	5.34	5.60	4.67	1	1
2018	468	468	4.86	5.53	5.91	4.85	1	1
2019	520	520	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency Duct Repair

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.22	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.23	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	318.4	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	306.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	107.50	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	450.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	150.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

◆ SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Duct Repair

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	135	135	3.36	3.73	3.87	3.36	1	1
2011	270	270	3.65	3.92	3.99	3.65	1	1
2012	405	405	3.93	4.21	4.24	3.93	1	1
2013	540	540	4.05	4.40	4.47	4.05	1	1
2014	675	675	4.14	4.59	4.65	4.14	1	1
2015	810	810	4.34	4.83	4.96	4.34	1	1
2016	945	945	4.48	5.04	5.20	4.48	1	1
2017	1080	1080	4.67	5.34	5.60	4.67	1	1
2018	1215	1215	4.86	5.53	5.91	4.85	1	1
2019	1350	1350	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency Cool Reflective Roof

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.31	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.32	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	715.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	687.2	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6) SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	215.24	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	650.94	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	150.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Cool Reflective Roof

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	13	13	3.36	3.73	3.87	3.36	1	1
2011	26	26	3.65	3.92	3.99	3.65	1	1
2012	39	39	3.93	4.21	4.24	3.93	1	1
2013	52	52	4.05	4.40	4.47	4.05	1	1
2014	65	65	4.14	4.59	4.65	4.14	1	1
2015	78	78	4.34	4.83	4.96	4.34	1	1
2016	91	91	4.48	5.04	5.20	4.48	1	1
2017	104	104	4.67	5.34	5.60	4.67	1	1
2018	117	117	4.86	5.53	5.91	4.85	1	1
2019	130	130	5.14	5.91	5.58	5.06	1	1

PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	26.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	25.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	7.83	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	100.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	0.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	30.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	50.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	8.536	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	34	34	3.36	3.73	3.87	3.36	1	1
2011	68	68	3.65	3.92	3.99	3.65	1	1
2012	102	102	3.93	4.21	4.24	3.93	1	1
2013	136	136	4.05	4.40	4.47	4.05	1	1
2014	170	170	4.14	4.59	4.65	4.14	1	1
2015	204	204	4.34	4.83	4.96	4.34	1	1
2016	238	238	4.48	5.04	5.20	4.48	1	1
2017	272	272	4.67	5.34	5.60	4.67	1	1
2018	306	306	4.86	5.53	5.91	4.85	1	1
2019	340	340	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Heat Pump SEER 18I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.65	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.68	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,423.5	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,368.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	129.84	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	6,022.82	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 18

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	3	3	3.36	3.73	3.87	3.36	1	1
2011	6	6	3.65	3.92	3.99	3.65	1	1
2012	9	9	3.93	4.21	4.24	3.93	1	1
2013	12	12	4.05	4.40	4.47	4.05	1	1
2014	15	15	4.14	4.59	4.65	4.14	1	1
2015	18	18	4.34	4.83	4.96	4.34	1	1
2016	21	21	4.48	5.04	5.20	4.48	1	1
2017	24	24	4.67	5.34	5.60	4.67	1	1
2018	27	27	4.86	5.53	5.91	4.85	1	1
2019	30	30	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Heat Pump SEER 17I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.60	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.62	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,215.4	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,168.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	129.84	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	4,844.82	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 17

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	4	4	3.36	3.73	3.87	3.36	1	1
2011	8	8	3.65	3.92	3.99	3.65	1	1
2012	12	12	3.93	4.21	4.24	3.93	1	1
2013	16	16	4.05	4.40	4.47	4.05	1	1
2014	20	20	4.14	4.59	4.65	4.14	1	1
2015	24	24	4.34	4.83	4.96	4.34	1	1
2016	28	28	4.48	5.04	5.20	4.48	1	1
2017	32	32	4.67	5.34	5.60	4.67	1	1
2018	36	36	4.86	5.53	5.91	4.85	1	1
2019	40	40	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Heat Pump SEER 16I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.45	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.47	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	969.8	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	932.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	129.84	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	3,713.70	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	300.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

*SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN. TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 16

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	7	7	3.36	3.73	3.87	3.36	1	1
2011	14	14	3.65	3.92	3.99	3.65	1	1
2012	21	21	3.93	4.21	4.24	3.93	1	1
2013	28	28	4.05	4.40	4.47	4.05	1	1
2014	35	35	4.14	4.59	4.65	4.14	1	1
2015	42	42	4.34	4.83	4.96	4.34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4.67	1	1
2018	63	63	4.86	5.53	5.91	4.85	1	1
2019	70	70	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Heat Pump SEER 15I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.36	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.37	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	761.7	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	732.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	129.84	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	2,629.38	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	200.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 15

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	4	4	3.36	3.73	3.87	3.36	1	1
2011	8	8	3.65	3.92	3.99	3.65	1	1
2012	12	12	3.93	4.21	4.24	3.93	1	1
2013	16	16	4.05	4.40	4.47	4.05	1	1
2014	20	20	4.14	4.59	4.65	4.14	1	1
2015	24	24	4.34	4.83	4.96	4.34	1	1
2016	28	28	4.48	5.04	5.20	4.48	1	1
2017	32	32	4.67	5.34	5.60	4.67	1	1
2018	36	36	4.86	5.53	5.91	4.85	1	1
2019	40	40	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Heat Pump SEER 14I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.19	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	432.9	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	416.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	129.84	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	1,591.92	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

◆FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 14

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	1	1	3.36	3.73	3.87	3.36	1	1
2011	2	2	3.65	3.92	3.99	3.65	1	1
2012	3	3	3.93	4.21	4.24	3.93	1	1
2013	4	4	4.05	4.40	4.47	4.05	1	1
2014	5	5	4.14	4.59	4.65	4.14	1	1
2015	6	6	4.34	4.83	4.96	4.34	1	1
2016	7	7	4.48	5.04	5.20	4.48	1	1
2017	8	8	4.67	5.34	5.60	4.67	1	1
2018	9	9	4.86	5.53	5.91	4.85	1	1
2019	10	10	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Indoor LightingI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	81.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	84.29	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	378,629.6	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	363,863.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	48,143.55	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Indoor Lighting

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	8	8	3.36	3.73	3.87	3.36	1	1
2011	16	16	3.65	3.92	3.99	3.65	1	1
2012	24	24	3.93	4.21	4.24	3.93	1	1
2013	32	32	4.05	4.40	4.47	4.05	1	1
2014	40	40	4.14	4.59	4.65	4.14	1	1
2015	48	48	4.34	4.83	4.96	4.34	1	1
2016	56	56	4.48	5.04	5.20	4.48	1	1
2017	64	64	4.67	5.34	5.60	4.67	1	1
2018	72	72	4.86	5.53	5.91	4.85	1	1
2019	80	80	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Energy Efficiency Window Film & Solar ScreenI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	77.5	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	74.5	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	9.86	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	356.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	106.80	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	133.43	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

*SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	7	7	3.36	3.73	3.87	3.36	1	1
2011	14	14	3.65	3.92	3.99	3.65	1	1
2012	21	21	3.93	4.21	4.24	3.93	1	1
2013	28	28	4.05	4.40	4.47	4.05	1	1
2014	35	35	4.14	4.59	4.65	4.14	1	1
2015	42	42	4.34	4.83	4.96	4.34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4.67	1	1
2018	63	63	4.86	5.53	5.91	4.85	1	1
2019	70	70	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Energy Audit

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.15	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.16	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	883.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	848.6	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	576.50	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	15 %
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Audit

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	248	248	3.36	3.73	3.87	3.36	1	1
2011	496	496	3.65	3.92	3.99	3.65	1	1
2012	744	744	3.93	4.21	4.24	3.93	1	1
2013	992	992	4.05	4.40	4.47	4.05	1	1
2014	1240	1240	4.14	4.59	4.65	4.14	1	1
2015	1488	1488	4.34	4.83	4.96	4.34	1	1
2016	1736	1736	4.48	5.04	5.20	4.48	1	1
2017	1984	1984	4.67	5.34	5.60	4.67	1	1
2018	2232	2232	4.86	5.53	5.91	4.85	1	1
2019	2480	2480	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Energy Efficiency DuctI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.22	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.23	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	391.3	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	376.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	45.10	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	450.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	150.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

*SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN. & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

*FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Efficiency Duct

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	10	10	3.36	3.73	3.87	3.36	1	1
2011	20	20	3.65	3.92	3.99	3.65	1	1
2012	30	30	3.93	4.21	4.24	3.93	1	1
2013	40	40	4.05	4.40	4.47	4.05	1	1
2014	50	50	4.14	4.59	4.65	4.14	1	1
2015	60	60	4.34	4.83	4.96	4.34	1	1
2016	70	70	4.48	5.04	5.20	4.48	1	1
2017	80	80	4.67	5.34	5.60	4.67	1	1
2018	90	90	4.86	5.53	5.91	4.85	1	1
2019	100	100	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Energy Efficiency Cool RoofI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	135,385.5	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	130,105.5	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	17,214.55	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	58,736.67	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	4,316.71	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

♥FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Efficiency Cool Roof

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2010	7	7	3.36	3.73	3.87	3.36	1	1
2011	14	14	3.65	3.92	3.99	3.65	1	1
2012	21	21	3.93	4.21	4.24	3.93	1	1
2013	28	28	4.05	4.40	4.47	4.05	1	1
2014	35	35	4.14	4.59	4.65	4.14	1	1
2015	42	42	4.34	4.83	4.96	4.34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4.67	1	1
2018	63	63	4.86	5.53	5.91	4.85	1	1
2019	70	70	5.14	5.91	5.58	5.06	1	1

PROGRAM: Commercial Energy Efficiency Ceiling InsulationI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.17	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.18	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	586.9	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	564.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	65.17	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	576.45	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	270.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	8.00	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2010	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2018	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	120.0557	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0	\$/KW
(6) BASE YEAR DISTRIBUTION COST	0	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0	%
(8) GENERATOR FIXED O & M COST	10.74022	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5	%
(10) TRANSMISSION FIXED O & M COST	0	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5	%
(15) GENERATOR CAPACITY FACTOR	15	%
(16) AVOIDED GENERATING UNIT FUEL COST	3.363149	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	3.586	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	7.98	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

●FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Efficiency Ceiling Insulation

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			UTILITY AVERAGE					
	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
YEAR								
2010	7	7	3.36	3.73	3.87	3.36	1	1
2011	14	14	3.65	3.92	3.99	3.65	1	1
2012	21	21	3.93	4.21	4.24	3.93	1	1
2013	28	28	4.05	4.40	4.47	4.05	1	1
2014	35	35	4.14	4.59	4.65	4.14	1	1
2015	42	42	4.34	4.83	4.96	4.34	1	1
2016	49	49	4.48	5.04	5.20	4.48	1	1
2017	56	56	4.67	5.34	5.60	4.67	1	1
2018	63	63	4.86	5.53	5.91	4.85	1	1
2019	70	70	5.14	5.91	5.58	5.06	1	1

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

[illegible]

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Single Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	442.109	0.000	0.000	442.109	0.000	0.000	10.269	0.000	10.269	(431.840)	(431.840)
2011	0.000	453.161	0.000	0.000	453.161	0.000	0.000	32.418	0.000	32.418	(420.743)	(821.417)
2012	0.000	464.490	0.000	0.000	464.490	0.000	0.000	58.010	0.000	58.010	(406.480)	(1,169.908)
2013	0.000	476.103	0.000	0.000	476.103	0.000	0.000	84.820	0.000	84.820	(391.283)	(1,480.521)
2014	0.000	488.005	0.000	0.000	488.005	0.000	0.000	113.665	0.000	113.665	(374.340)	(1,755.672)
2015	0.000	500.205	0.000	0.000	500.205	0.000	0.000	146.287	0.000	146.287	(353.918)	(1,996.543)
2016	0.000	512.710	0.000	0.000	512.710	0.000	0.000	180.512	0.000	180.512	(332.198)	(2,205.884)
2017	0.000	525.528	0.000	0.000	525.528	0.000	0.000	220.678	0.000	220.678	(304.850)	(2,383.761)
2018	0.000	538.666	0.000	0.000	538.666	0.000	0.000	259.046	0.000	259.046	(279.620)	(2,534.831)
2019	0.000	552.133	0.000	0.000	552.133	0.000	0.000	309.148	0.000	309.148	(242.985)	(2,656.384)
NOMINAL	0.000	4,953.112	0.000	0.000	4,953.112	0.000	0.000	1,414.854	0.000	1,414.854	(3,538.258)	
NPV	0.000	3,533.968	0.000	0.000	3,533.968	0.000	0.000	877.583	0.000	877.583	(2,656.384)	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 0.25

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Single Family Survey Video & DVDs

[illegible]

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Single Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	75.687	0.000	0.000	75.687	0.000	0.000	3.354	0.000	3.354	(72.333)	(72.333)
2011	0.000	77.579	0.000	0.000	77.579	0.000	0.000	10.588	0.000	10.588	(66.991)	(134.361)
2012	0.000	79.518	0.000	0.000	79.518	0.000	0.000	18.947	0.000	18.947	(60.571)	(186.291)
2013	0.000	81.506	0.000	0.000	81.506	0.000	0.000	27.704	0.000	27.704	(53.802)	(229.001)
2014	0.000	83.544	0.000	0.000	83.544	0.000	0.000	37.126	0.000	37.126	(46.418)	(263.120)
2015	0.000	85.633	0.000	0.000	85.633	0.000	0.000	47.781	0.000	47.781	(37.852)	(288.881)
2016	0.000	87.774	0.000	0.000	87.774	0.000	0.000	58.959	0.000	58.959	(28.814)	(307.039)
2017	0.000	89.968	0.000	0.000	89.968	0.000	0.000	72.078	0.000	72.078	(17.889)	(317.478)
2018	0.000	92.217	0.000	0.000	92.217	0.000	0.000	84.610	0.000	84.610	(7.607)	(321.587)
2019	0.000	94.522	0.000	0.000	94.522	0.000	0.000	100.975	0.000	100.975	6.452	(318.360)
NOMINAL	0.000	847.948	0.000	0.000	847.948	0.000	0.000	462.123	0.000	462.123	(385.825)	
NPV	0.000	604.998	0.000	0.000	604.998	0.000	0.000	286.638	0.000	286.638	(318.360)	

Discount Rate: 8.00%
 Benefit/Cost Ratio [col (11) / col (6)]: 0.47

TOTAL RESOURCE COST TESTS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2010	0.000	7.481	180.685	0.000	188.165	0.000	0.000	0.796	0.000	0.796	(187.369)	(187.369)
2011	0.000	7.668	185.202	0.000	192.870	0.000	0.000	2.513	0.000	2.513	(190.357)	(363.626)
2012	0.000	7.860	189.832	0.000	197.691	0.000	0.000	4.497	0.000	4.497	(193.194)	(529.259)
2013	0.000	8.056	194.578	0.000	202.634	0.000	0.000	6.575	0.000	6.575	(196.058)	(684.896)
2014	0.000	8.257	199.442	0.000	207.699	0.000	0.000	8.811	0.000	8.811	(198.888)	(831.085)
2015	0.000	8.464	204.428	0.000	212.892	0.000	0.000	11.340	0.000	11.340	(201.552)	(968.258)
2016	0.000	8.676	209.539	0.000	218.214	0.000	0.000	13.993	0.000	13.993	(204.221)	(1,096.952)
2017	0.000	8.892	214.777	0.000	223.670	0.000	0.000	17.107	0.000	17.107	(206.563)	(1,217.479)
2018	0.000	9.115	220.147	0.000	229.261	23.956	0.000	20.081	0.000	44.037	(185.224)	(1,317.550)
2019	0.000	9.343	225.650	0.000	234.993	24.652	0.000	23.965	0.000	48.617	(186.376)	(1,410.784)
NOMINAL	0.000	83.811	2,024.279	0.000	2,108.089	48.608	0.000	109.678	0.000	158.286	(1,949.803)	
NPV	0.000	59.798	1,444.291	0.000	1,504.089	25.275	0.000	68.029	0.000	93.304	(1,410.784)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.06

TOTAL RESOURCE COST TESTS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	17.954	348.827	0.000	366.781	0.000	0.000	1.631	0.000	1.631	(365.150)	(365.150)
2011	0.000	18.403	357.548	0.000	375.951	0.000	0.000	5.149	0.000	5.149	(370.801)	(708.484)
2012	0.000	18.863	366.486	0.000	385.349	0.000	0.000	9.215	0.000	9.215	(376.135)	(1,030.959)
2013	0.000	19.335	375.649	0.000	394.983	0.000	0.000	13.473	0.000	13.473	(381.510)	(1,333.814)
2014	0.000	19.818	385.040	0.000	404.858	0.000	0.000	18.055	0.000	18.055	(386.802)	(1,618.125)
2015	0.000	20.313	394.666	0.000	414.979	0.000	0.000	23.237	0.000	23.237	(391.742)	(1,884.738)
2016	0.000	20.821	404.532	0.000	425.354	0.000	0.000	28.674	0.000	28.674	(396.680)	(2,134.714)
2017	0.000	21.342	414.646	0.000	435.987	0.000	0.000	35.054	0.000	35.054	(400.934)	(2,368.655)
2018	0.000	21.875	425.012	0.000	446.887	53.073	0.000	41.148	0.000	94.221	(352.666)	(2,559.190)
2019	0.000	22.422	435.637	0.000	458.059	54.613	0.000	49.107	0.000	103.720	(354.339)	(2,736.447)
NOMINAL	0.000	201.146	3,908.043	0.000	4,109.189	107.686	0.000	224.744	0.000	332.430	(3,776.759)	
NPV	0.000	143.515	2,788.327	0.000	2,931.842	55.994	0.000	139.400	0.000	195.394	(2,736.447)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.07

TOTAL RESOURCE COST TESTS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

[illegible]

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Multi Family Survey Walk Through

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	172.501	0.000	0.000	172.501	0.000	0.000	3.348	0.000	3.348	(169.153)	(169.153)
2011	0.000	176.813	0.000	0.000	176.813	0.000	0.000	10.569	0.000	10.569	(166.245)	(323.083)
2012	0.000	181.234	0.000	0.000	181.234	0.000	0.000	18.912	0.000	18.912	(162.321)	(462.248)
2013	0.000	185.765	0.000	0.000	185.765	0.000	0.000	27.653	0.000	27.653	(158.112)	(587.762)
2014	0.000	190.409	0.000	0.000	190.409	0.000	0.000	37.057	0.000	37.057	(153.352)	(700.480)
2015	0.000	195.169	0.000	0.000	195.169	0.000	0.000	47.692	0.000	47.692	(147.477)	(800.851)
2016	0.000	200.048	0.000	0.000	200.048	0.000	0.000	58.850	0.000	58.850	(141.198)	(889.829)
2017	0.000	205.049	0.000	0.000	205.049	0.000	0.000	71.945	0.000	71.945	(133.104)	(967.494)
2018	0.000	210.176	0.000	0.000	210.176	0.000	0.000	84.454	0.000	84.454	(125.722)	(1,035.418)
2019	0.000	215.430	0.000	0.000	215.430	0.000	0.000	100.788	0.000	100.788	(114.642)	(1,092.768)
NOMINAL	0.000	1,932.594	0.000	0.000	1,932.594	0.000	0.000	461.268	0.000	461.268	(1,471.327)	
NPV	0.000	1,378.876	0.000	0.000	1,378.876	0.000	0.000	286.108	0.000	286.108	(1,092.768)	
				Discount Rate:	8.00%							
				Benefit/Cost Ratio [col (11) / col (6)]:	0.21							

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Multi Family Survey Video & DVDs

[illegible]

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Multi Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	26.960	0.000	0.000	26.960	0.000	0.000	1.098	0.000	1.098	(25.862)	(25.862)
2011	0.000	27.634	0.000	0.000	27.634	0.000	0.000	3.466	0.000	3.466	(24.168)	(48.239)
2012	0.000	28.324	0.000	0.000	28.324	0.000	0.000	6.202	0.000	6.202	(22.123)	(67.206)
2013	0.000	29.033	0.000	0.000	29.033	0.000	0.000	9.068	0.000	9.068	(19.964)	(83.054)
2014	0.000	29.758	0.000	0.000	29.758	0.000	0.000	12.152	0.000	12.152	(17.606)	(95.995)
2015	0.000	30.502	0.000	0.000	30.502	0.000	0.000	15.640	0.000	15.640	(14.863)	(106.111)
2016	0.000	31.265	0.000	0.000	31.265	0.000	0.000	19.298	0.000	19.298	(11.966)	(113.652)
2017	0.000	32.046	0.000	0.000	32.046	0.000	0.000	23.593	0.000	23.593	(8.454)	(118.584)
2018	0.000	32.848	0.000	0.000	32.848	0.000	0.000	27.695	0.000	27.695	(5.153)	(121.368)
2019	0.000	33.669	0.000	0.000	33.669	0.000	0.000	33.051	0.000	33.051	(0.618)	(121.677)
NOMINAL	0.000	302.038	0.000	0.000	302.038	0.000	0.000	151.262	0.000	151.262	(150.777)	
NPV	0.000	215.500	0.000	0.000	215.500	0.000	0.000	93.822	0.000	93.822	(121.677)	

Discount Rate: 8.00%
 Benefit/Cost Ratio [col (11) / col (6)]: 0.44

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Lighting Program (CFL)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2010	0.000	2.876	0.000	0.000	2.876	0.000	0.000	3.258	0.000	3.258	0.382	0.382
2011	0.000	2.948	0.000	0.000	2.948	0.000	0.000	10.285	0.000	10.285	7.337	7.175
2012	0.000											
2013	0.000											
2014	0.000											
2015	0.000											
2016	0.000											
2017	0.000											
2018	0.000											
2019	0.000											
NOMINAL	0.000	5.824	0.000	0.000	5.824	0.000	0.000	13.542	0.000	13.542	7.719	
NPV	0.000	5.606	0.000	0.000	5.606	0.000	0.000	12.781	0.000	12.781	7.175	

Discount Rate: 8.00%
 Benefit/Cost Ratio [col (11) / col (6)]: 2.28

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Energy Efficiency Insulation

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	34.716	129.701	0.000	164.417	0.000	0.000	2.003	0.000	2.003	(162.414)	(162.414)
2011	0.000	35.584	132.944	0.000	168.528	0.000	0.000	6.324	0.000	6.324	(162.204)	(312.603)
2012	0.000	36.473	136.267	0.000	172.741	0.000	0.000	11.316	0.000	11.316	(161.425)	(450.998)
2013	0.000	37.385	139.674	0.000	177.059	0.000	0.000	16.546	0.000	16.546	(160.513)	(578.419)
2014	0.000	38.320	143.166	0.000	181.486	0.000	0.000	22.173	0.000	22.173	(159.313)	(695.519)
2015	0.000	39.278	146.745	0.000	186.023	0.000	0.000	28.537	0.000	28.537	(157.486)	(802.701)
2016	0.000	40.260	150.414	0.000	190.674	0.000	0.000	35.213	0.000	35.213	(155.461)	(900.668)
2017	0.000	41.266	154.174	0.000	195.440	0.000	0.000	43.048	0.000	43.048	(152.392)	(989.587)
2018	0.000	42.298	158.028	0.000	200.326	48.097	0.000	50.533	0.000	98.630	(101.696)	(1,044.531)
2019	0.000	43.356	161.979	0.000	205.335	49.493	0.000	60.306	0.000	109.799	(95.535)	(1,092.322)
NOMINAL	0.000	388.936	1,453.093	0.000	1,842.029	97.590	0.000	275.999	0.000	373.589	(1,468.440)	
NPV	0.000	277.500	1,036.759	0.000	1,314.259	50.744	0.000	171.192	0.000	221.937	(1,092.322)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.17

TOTAL RESOURCE COST TESTS

PROGRAM: Residential Energy Efficiency High Performance Windows

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2010	0.000	25.656	164.196	0.000	189.851	0.000	0.000	1.589	0.000	1.589	(188.263)	(188.263)
2011	0.000	26.297	168.301	0.000	194.598	0.000	0.000	5.015	0.000	5.015	(189.582)	(363.802)
2012	0.000	26.954	172.508	0.000	199.463	0.000	0.000	8.975	0.000	8.975	(190.488)	(527.115)
2013	0.000	27.628	176.821	0.000	204.449	0.000	0.000	13.122	0.000	13.122	(191.327)	(678.996)
2014	0.000	28.319	181.241	0.000	209.561	0.000	0.000	17.585	0.000	17.585	(191.975)	(820.104)
2015	0.000	29.027	185.773	0.000	214.800	0.000	0.000	22.632	0.000	22.632	(192.168)	(950.890)
2016	0.000	29.753	190.417	0.000	220.170	0.000	0.000	27.927	0.000	27.927	(192.243)	(1,072.036)
2017	0.000	30.497	195.177	0.000	225.674	0.000	0.000	34.141	0.000	34.141	(191.533)	(1,183.793)
2018	0.000	31.259	200.057	0.000	231.316	47.733	0.000	40.077	0.000	87.810	(143.506)	(1,261.325)
2019	0.000	32.040	205.058	0.000	237.099	49.118	0.000	47.828	0.000	96.946	(140.152)	(1,331.436)
NOMINAL	0.000	287.430	1,839.549	0.000	2,126.979	96.851	0.000	218.891	0.000	315.742	(1,811.237)	
NPV	0.000	205.077	1,312.489	0.000	1,517.566	50.360	0.000	135.770	0.000	186.130	(1,331.436)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.12

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Energy Efficiency Gold Ring

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	2.469	0.000	0.000	2.469	0.000	0.000	0.153	0.000	0.153	(2.316)	(2.316)
2011	0.000	2.530	0.000	0.000	2.530	0.000	0.000	0.483	0.000	0.483	(2.048)	(4.212)
2012	0.000	2.594	0.000	0.000	2.594	0.000	0.000	0.864	0.000	0.864	(1.730)	(5.695)
2013	0.000	2.658	0.000	0.000	2.658	0.000	0.000	1.263	0.000	1.263	(1.396)	(6.803)
2014	0.000	2.725	0.000	0.000	2.725	0.000	0.000	1.692	0.000	1.692	(1.033)	(7.562)
2015	0.000	2.793	0.000	0.000	2.793	0.000	0.000	2.178	0.000	2.178	(0.615)	(7.981)
2016	0.000	2.863	0.000	0.000	2.863	0.000	0.000	2.687	0.000	2.687	(0.176)	(8.092)
2017	0.000	2.934	0.000	0.000	2.934	0.000	0.000	3.285	0.000	3.285	0.351	(7.887)
2018	0.000	3.008	0.000	0.000	3.008	6.560	0.000	3.856	0.000	10.417	7.409	(3.884)
2019	0.000	3.083	0.000	0.000	3.083	6.751	0.000	4.602	0.000	11.353	8.270	0.253
NOMINAL	0.000	27.657	0.000	0.000	27.657	13.311	0.000	21.062	0.000	34.373	6.716	
NPV	0.000	19.733	0.000	0.000	19.733	6.921	0.000	13.064	0.000	19.985	0.253	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 1.01

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Home Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
YEAR												
2010	0.000	4.072	5.084	0.000	9.156	0.000	0.000	0.252	0.000	0.252	(8.903)	(8.903)
2011	0.000	4.174	5.211	0.000	9.385	0.000	0.000	0.796	0.000	0.796	(8.589)	(16.856)
2012	0.000	4.278	5.341	0.000	9.619	0.000	0.000	1.424	0.000	1.424	(8.195)	(23.881)
2013	0.000	4.385	5.474	0.000	9.860	0.000	0.000	2.083	0.000	2.083	(7.777)	(30.055)
2014	0.000	4.495	5.611	0.000	10.106	0.000	0.000	2.791	0.000	2.791	(7.315)	(35.432)
2015	0.000	4.607	5.752	0.000	10.359	0.000	0.000	3.592	0.000	3.592	(6.767)	(40.037)
2016	0.000	4.722	5.895	0.000	10.618	0.000	0.000	4.433	0.000	4.433	(6.185)	(43.935)
2017	0.000	4.840	6.043	0.000	10.883	0.000	0.000	5.419	0.000	5.419	(5.464)	(47.123)
2018	0.000	4.961	6.194	0.000	11.155	17.249	0.000	6.361	0.000	23.610	12.454	(40.394)
2019	0.000	5.086	6.349	0.000	11.434	17.749	0.000	7.591	0.000	25.340	13.906	(33.438)
NOMINAL	0.000	45.622	56.953	0.000	102.574	34.998	0.000	34.742	0.000	69.740	(32.834)	
NPV	0.000	32.550	40.635	0.000	73.185	18.198	0.000	21.549	0.000	39.747	(33.438)	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 0.54

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Energy Efficiency Duct Repair

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
YEAR												
2010	0.000	14.513	60.750	0.000	75.263	0.000	0.000	0.801	0.000	0.801	(74.462)	(74.462)
2011	0.000	14.876	62.269	0.000	77.144	0.000	0.000	2.530	0.000	2.530	(74.615)	(143.549)
2012	0.000	15.247	63.825	0.000	79.073	0.000	0.000	4.526	0.000	4.526	(74.546)	(207.461)
2013	0.000	15.629	65.421	0.000	81.050	0.000	0.000	6.618	0.000	6.618	(74.431)	(266.547)
2014	0.000	16.019	67.057	0.000	83.076	0.000	0.000	8.869	0.000	8.869	(74.207)	(321.091)
2015	0.000	16.420	68.733	0.000	85.153	0.000	0.000	11.415	0.000	11.415	(73.738)	(371.276)
2016	0.000	16.830	70.451	0.000	87.282	0.000	0.000	14.085	0.000	14.085	(73.197)	(417.402)
2017	0.000	17.251	72.213	0.000	89.464	0.000	0.000	17.219	0.000	17.219	(72.244)	(459.556)
2018	0.000	17.682	74.018	0.000	91.700	36.727	0.000	20.213	0.000	56.940	(34.760)	(478.336)
2019	0.000	18.124	75.868	0.000	93.993	37.793	0.000	24.123	0.000	61.915	(32.077)	(494.383)
NOMINAL	0.000	162.592	680.605	0.000	843.198	74.520	0.000	110.400	0.000	184.920	(658.278)	
NPV	0.000	116.007	485.601	0.000	601.608	38.748	0.000	68.477	0.000	107.225	(494.383)	

Discount Rate: 8.00%
 Benefit/Cost Ratio [col (11) / col (6)]: 0.18

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Energy Efficiency Cool Reflective Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	2.798	8.462	0.000	11.260	0.000	0.000	0.173	0.000	0.173	(11.087)	(11.087)
2011	0.000	2.868	8.674	0.000	11.542	0.000	0.000	0.547	0.000	0.547	(10.995)	(21.267)
2012	0.000	2.940	8.891	0.000	11.830	0.000	0.000	0.979	0.000	0.979	(10.852)	(30.571)
2013	0.000	3.013	9.113	0.000	12.126	0.000	0.000	1.431	0.000	1.431	(10.695)	(39.061)
2014	0.000	3.089	9.341	0.000	12.429	0.000	0.000	1.918	0.000	1.918	(10.511)	(46.787)
2015	0.000	3.166	9.574	0.000	12.740	0.000	0.000	2.468	0.000	2.468	(10.272)	(53.778)
2016	0.000	3.245	9.814	0.000	13.059	0.000	0.000	3.046	0.000	3.046	(10.013)	(60.088)
2017	0.000	3.326	10.059	0.000	13.385	0.000	0.000	3.724	0.000	3.724	(9.661)	(65.725)
2018	0.000	3.409	10.310	0.000	13.720	4.958	0.000	4.371	0.000	9.329	(4.390)	(68.097)
2019	0.000	3.494	10.568	0.000	14.063	5.102	0.000	5.216	0.000	10.318	(3.744)	(69.970)
NOMINAL	0.000	31.348	94.805	0.000	126.154	10.060	0.000	23.873	0.000	33.933	(92.220)	
NPV	0.000	22.367	67.642	0.000	90.009	5.231	0.000	14.808	0.000	20.039	(69.970)	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 0.22

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.266	3.400	0.000	3.666	0.000	0.000	0.016	0.000	0.016	(3.650)	(3.650)
2011	0.000	0.273	3.400	0.000	3.673	0.000	0.000	0.052	0.000	0.052	(3.621)	(7.002)
2012	0.000	0.280	3.400	0.000	3.680	0.000	0.000	0.093	0.000	0.093	(3.587)	(10.077)
2013	0.000	0.287	3.400	0.000	3.687	0.000	0.000	0.136	0.000	0.136	(3.551)	(12.896)
2014	0.000	0.294	3.400	0.000	3.694	0.000	0.000	0.182	0.000	0.182	(3.511)	(15.477)
2015	0.000	0.301	3.400	0.000	3.701	0.000	0.000	0.235	0.000	0.235	(3.466)	(17.836)
2016	0.000	0.309	3.400	0.000	3.709	0.000	0.000	0.290	0.000	0.290	(3.419)	(19.991)
2017	0.000	0.316	3.400	0.000	3.716	0.000	0.000	0.354	0.000	0.354	(3.362)	(21.952)
2018	0.000	0.324	3.400	0.000	3.724	0.000	0.000	0.416	0.000	0.416	(3.308)	(23.740)
2019	0.000	0.333	3.400	0.000	3.733	0.000	0.000	0.496	0.000	0.496	(3.236)	(25.359)
NOMINAL	0.000	2.983	34.000	0.000	36.983	0.000	0.000	2.272	0.000	2.272	(34.711)	
NPV	0.000	2.128	24.639	0.000	26.768	0.000	0.000	1.409	0.000	1.409	(25.359)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.05

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2010	0.000	0.390	18.068	0.000	18.458	0.000	0.000	0.080	0.000	0.080	(18.378)	(18.378)
2011	0.000	0.399	18.520	0.000	18.919	0.000	0.000	0.251	0.000	0.251	(18.668)	(35.664)
2012	0.000	0.409	18.983	0.000	19.392	0.000	0.000	0.450	0.000	0.450	(18.943)	(51.904)
2013	0.000	0.419	19.458	0.000	19.877	0.000	0.000	0.658	0.000	0.658	(19.220)	(67.161)
2014	0.000	0.430	19.944	0.000	20.374	0.000	0.000	0.881	0.000	0.881	(19.493)	(81.489)
2015	0.000	0.441	20.443	0.000	20.883	0.000	0.000	1.134	0.000	1.134	(19.749)	(94.930)
2016	0.000	0.452	20.954	0.000	21.406	0.000	0.000	1.399	0.000	1.399	(20.006)	(107.538)
2017	0.000	0.463	21.478	0.000	21.941	0.000	0.000	1.711	0.000	1.711	(20.230)	(119.342)
2018	0.000	0.475	22.015	0.000	22.489	2.396	0.000	2.008	0.000	4.404	(18.085)	(129.113)
2019	0.000	0.486	22.565	0.000	23.051	2.465	0.000	2.396	0.000	4.862	(18.190)	(138.212)
NOMINAL	0.000	4.364	202.428	0.000	206.792	4.861	0.000	10.968	0.000	15.829	(190.963)	
NPV	0.000	3.114	144.429	0.000	147.543	2.527	0.000	6.803	0.000	9.330	(138.212)	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 0.06

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
YEAR												
2010	0.000	0.519	19.379	0.000	19.899	0.000	0.000	0.091	0.000	0.091	(19.808)	(19.808)
2011	0.000	0.532	19.864	0.000	20.396	0.000	0.000	0.286	0.000	0.286	(20.110)	(38.428)
2012	0.000	0.546	20.360	0.000	20.906	0.000	0.000	0.512	0.000	0.512	(20.394)	(55.913)
2013	0.000	0.559	20.869	0.000	21.429	0.000	0.000	0.749	0.000	0.749	(20.680)	(72.330)
2014	0.000	0.573	21.391	0.000	21.964	0.000	0.000	1.003	0.000	1.003	(20.961)	(87.737)
2015	0.000	0.588	21.926	0.000	22.513	0.000	0.000	1.291	0.000	1.291	(21.223)	(102.180)
2016	0.000	0.602	22.474	0.000	23.076	0.000	0.000	1.593	0.000	1.593	(21.483)	(115.719)
2017	0.000	0.617	23.036	0.000	23.653	0.000	0.000	1.947	0.000	1.947	(21.706)	(128.384)
2018	0.000	0.633	23.612	0.000	24.245	2.948	0.000	2.286	0.000	5.235	(19.010)	(138.654)
2019	0.000	0.649	24.202	0.000	24.851	3.034	0.000	2.728	0.000	5.762	(19.088)	(148.203)
NOMINAL	0.000	5.818	217.113	0.000	222.932	5.983	0.000	12.486	0.000	18.468	(204.464)	
NPV	0.000	4.151	154.907	0.000	159.058	3.111	0.000	7.744	0.000	10.855	(148.203)	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 0.07

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
YEAR												
2010	0.000	0.909	25.996	0.000	26.905	0.000	0.000	0.127	0.000	0.127	(26.778)	(26.778)
2011	0.000	0.932	26.646	0.000	27.577	0.000	0.000	0.399	0.000	0.399	(27.178)	(51.943)
2012	0.000	0.955	27.312	0.000	28.267	0.000	0.000	0.715	0.000	0.715	(27.552)	(75.564)
2013	0.000	0.979	27.995	0.000	28.973	0.000	0.000	1.045	0.000	1.045	(27.928)	(97.735)
2014	0.000	1.003	28.695	0.000	29.698	0.000	0.000	1.401	0.000	1.401	(28.297)	(118.534)
2015	0.000	1.028	29.412	0.000	30.440	0.000	0.000	1.803	0.000	1.803	(28.638)	(138.024)
2016	0.000	1.054	30.147	0.000	31.201	0.000	0.000	2.224	0.000	2.224	(28.977)	(156.284)
2017	0.000	1.080	30.901	0.000	31.981	0.000	0.000	2.719	0.000	2.719	(29.262)	(173.358)
2018	0.000	1.107	31.673	0.000	32.781	3.870	0.000	3.192	0.000	7.062	(25.719)	(187.254)
2019	0.000	1.135	32.465	0.000	33.600	3.982	0.000	3.810	0.000	7.792	(25.809)	(200.164)
NOMINAL	0.000	10.182	291.242	0.000	301.424	7.852	0.000	17.435	0.000	25.287	(276.137)	
NPV	0.000	7.265	207.797	0.000	215.061	4.083	0.000	10.814	0.000	14.897	(200.164)	

Discount Rate: 8.00%
 Benefit/Cost Ratio [col (11) / col (6)]: 0.07

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.519	10.518	0.000	11.037	0.000	0.000	0.057	0.000	0.057	(10.980)	(10.980)
2011	0.000	0.532	10.780	0.000	11.313	0.000	0.000	0.179	0.000	0.179	(11.133)	(21.289)
2012	0.000	0.546	11.050	0.000	11.596	0.000	0.000	0.321	0.000	0.321	(11.275)	(30.955)
2013	0.000	0.559	11.326	0.000	11.885	0.000	0.000	0.469	0.000	0.469	(11.416)	(40.018)
2014	0.000	0.573	11.609	0.000	12.183	0.000	0.000	0.629	0.000	0.629	(11.554)	(48.510)
2015	0.000	0.588	11.900	0.000	12.487	0.000	0.000	0.809	0.000	0.809	(11.678)	(56.458)
2016	0.000	0.602	12.197	0.000	12.799	0.000	0.000	0.998	0.000	0.998	(11.801)	(63.895)
2017	0.000	0.617	12.502	0.000	13.119	0.000	0.000	1.220	0.000	1.220	(11.899)	(70.838)
2018	0.000	0.633	12.815	0.000	13.447	1.769	0.000	1.433	0.000	3.202	(10.246)	(76.373)
2019	0.000	0.649	13.135	0.000	13.784	1.820	0.000	1.710	0.000	3.530	(10.253)	(81.502)
NOMINAL	0.000	5.818	117.832	0.000	123.650	3.590	0.000	7.825	0.000	11.415	(112.236)	
NPV	0.000	4.151	84.071	0.000	88.222	1.866	0.000	4.854	0.000	6.720	(81.502)	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 0.08

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Heat Pump SEER 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2010	0.000	0.130	1.592	0.000	1.722	0.000	0.000	0.008	0.000	0.008	(1.714)	(1.714)
2011	0.000	0.133	1.632	0.000	1.765	0.000	0.000	0.025	0.000	0.025	(1.739)	(3.324)
2012	0.000	0.136	1.673	0.000	1.809	0.000	0.000	0.046	0.000	0.046	(1.763)	(4.836)
2013	0.000	0.140	1.714	0.000	1.854	0.000	0.000	0.067	0.000	0.067	(1.787)	(6.255)
2014	0.000	0.143	1.757	0.000	1.900	0.000	0.000	0.089	0.000	0.089	(1.811)	(7.586)
2015	0.000	0.147	1.801	0.000	1.948	0.000	0.000	0.115	0.000	0.115	(1.833)	(8.834)
2016	0.000	0.151	1.846	0.000	1.997	0.000	0.000	0.142	0.000	0.142	(1.855)	(10.003)
2017	0.000	0.154	1.892	0.000	2.047	0.000	0.000	0.173	0.000	0.173	(1.873)	(11.096)
2018	0.000	0.158	1.940	0.000	2.098	0.233	0.000	0.204	0.000	0.437	(1.661)	(11.993)
2019	0.000	0.162	1.988	0.000	2.150	0.240	0.000	0.243	0.000	0.483	(1.667)	(12.827)
NOMINAL	0.000	1.455	17.835	0.000	19.289	0.474	0.000	1.112	0.000	1.585	(17.704)	
NPV	0.000	1.038	12.725	0.000	13.763	0.246	0.000	0.690	0.000	0.936	(12.827)	

Discount Rate: 8.00%
Benefit/Cost Ratio [col (11) / col (6)]: 0.07

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Indoor Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2010	0.000	385.148	0.000	0.000	385.148	0.000	0.000	56.461	0.000	56.461	(328.687)	(328.687)
2011	0.000	394.777	0.000	0.000	394.777	0.000	0.000	178.244	0.000	178.244	(216.533)	(529.181)
2012	0.000	404.647	0.000	0.000	404.647	0.000	0.000	318.958	0.000	318.958	(85.689)	(602.646)
2013	0.000	414.763	0.000	0.000	414.763	0.000	0.000	466.366	0.000	466.366	51.603	(561.682)
2014	0.000	425.132	0.000	0.000	425.132	0.000	0.000	624.966	0.000	624.966	199.834	(414.798)
2015	0.000	435.760	0.000	0.000	435.760	0.000	0.000	804.330	0.000	804.330	368.570	(163.955)
2016	0.000	446.654	0.000	0.000	446.654	0.000	0.000	992.509	0.000	992.509	545.855	180.026
2017	0.000	457.820	0.000	0.000	457.820	0.000	0.000	1,213.356	0.000	1,213.356	755.536	620.874
2018	0.000	469.266	0.000	0.000	469.266	796.092	0.000	1,424.314	0.000	2,220.406	1,751.140	1,566.961
2019	0.000	480.998	0.000	0.000	480.998	819.196	0.000	1,699.789	0.000	2,518.985	2,037.988	2,586.462
NOMINAL	0.000	4,314.965	0.000	0.000	4,314.965	1,615.289	0.000	7,779.292	0.000	9,394.581	5,079.616	
NPV	0.000	3,078.660	0.000	0.000	3,078.660	839.906	0.000	4,825.216	0.000	5,665.122	2,586.462	

Discount Rate: 8.00%
 Benefit/Cost Ratio [col (11) / col (6)]: 1.84

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.069	2.492	0.000	2.561	0.000	0.000	0.010	0.000	0.010	(2.551)	(2.551)
2011	0.000	0.071	2.554	0.000	2.625	0.000	0.000	0.032	0.000	0.032	(2.593)	(4.952)
2012	0.000	0.073	2.618	0.000	2.691	0.000	0.000	0.057	0.000	0.057	(2.634)	(7.210)
2013	0.000	0.074	2.684	0.000	2.758	0.000	0.000	0.084	0.000	0.084	(2.674)	(9.333)
2014	0.000	0.076	2.751	0.000	2.827	0.000	0.000	0.112	0.000	0.112	(2.715)	(11.328)
2015	0.000	0.078	2.819	0.000	2.898	0.000	0.000	0.144	0.000	0.144	(2.753)	(13.202)
2016	0.000	0.080	2.890	0.000	2.970	0.000	0.000	0.178	0.000	0.178	(2.792)	(14.962)
2017	0.000	0.082	2.962	0.000	3.044	0.000	0.000	0.217	0.000	0.217	(2.827)	(16.611)
2018	0.000	0.084	3.036	0.000	3.120	0.000	0.000	0.255	0.000	0.255	(2.865)	(18.159)
2019	0.000	0.086	3.112	0.000	3.198	0.000	0.000	0.305	0.000	0.305	(2.894)	(19.607)
NOMINAL	0.000	0.773	27.919	0.000	28.692	0.000	0.000	1.394	0.000	1.394	(27.298)	
NPV	0.000	0.552	19.920	0.000	20.471	0.000	0.000	0.865	0.000	0.865	(19.607)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.04

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Energy Audit

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	142.972	0.000	0.000	142.972	0.000	0.000	4.082	0.000	4.082	(138.890)	(138.890)
2011	0.000	146.547	0.000	0.000	146.547	0.000	0.000	12.887	0.000	12.887	(133.660)	(262.649)
2012	0.000	150.210	0.000	0.000	150.210	0.000	0.000	23.060	0.000	23.060	(127.150)	(371.660)
2013	0.000	153.965	0.000	0.000	153.965	0.000	0.000	33.717	0.000	33.717	(120.248)	(467.117)
2014	0.000	157.815	0.000	0.000	157.815	0.000	0.000	45.184	0.000	45.184	(112.631)	(549.904)
2015	0.000	161.760	0.000	0.000	161.760	0.000	0.000	58.152	0.000	58.152	(103.608)	(620.418)
2016	0.000	165.804	0.000	0.000	165.804	0.000	0.000	71.757	0.000	71.757	(94.047)	(679.684)
2017	0.000	169.949	0.000	0.000	169.949	0.000	0.000	87.723	0.000	87.723	(82.226)	(727.662)
2018	0.000	174.198	0.000	0.000	174.198	45.407	0.000	102.975	0.000	148.382	(25.815)	(741.609)
2019	0.000	178.553	0.000	0.000	178.553	46.725	0.000	122.892	0.000	169.617	(8.936)	(746.079)
NOMINAL	0.000	1,601.773	0.000	0.000	1,601.773	92.132	0.000	562.428	0.000	654.560	(947.212)	
NPV	0.000	1,142.840	0.000	0.000	1,142.840	47.906	0.000	348.854	0.000	396.760	(746.079)	

Discount Rate: 8.00%

Benefit/Cost Ratio [col (11) / col (6)]: 0.35

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Energy Efficiency Duct

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	0.451	4.500	0.000	4.951	0.000	0.000	0.073	0.000	0.073	(4.878)	(4.878)
2011	0.000	0.462	4.613	0.000	5.075	0.000	0.000	0.230	0.000	0.230	(4.845)	(9.364)
2012	0.000	0.474	4.728	0.000	5.202	0.000	0.000	0.412	0.000	0.412	(4.790)	(13.470)
2013	0.000	0.486	4.846	0.000	5.332	0.000	0.000	0.602	0.000	0.602	(4.729)	(17.224)
2014	0.000	0.498	4.967	0.000	5.465	0.000	0.000	0.807	0.000	0.807	(4.658)	(20.648)
2015	0.000	0.510	5.091	0.000	5.602	0.000	0.000	1.039	0.000	1.039	(4.563)	(23.753)
2016	0.000	0.523	5.219	0.000	5.742	0.000	0.000	1.282	0.000	1.282	(4.460)	(26.564)
2017	0.000	0.536	5.349	0.000	5.885	0.000	0.000	1.567	0.000	1.567	(4.318)	(29.083)
2018	0.000	0.549	5.483	0.000	6.032	2.721	0.000	1.840	0.000	4.560	(1.472)	(29.878)
2019	0.000	0.563	5.620	0.000	6.183	2.799	0.000	2.196	0.000	4.995	(1.188)	(30.473)
NOMINAL	0.000	5.053	50.415	0.000	55.468	5.520	0.000	10.048	0.000	15.568	(39.899)	
NPV	0.000	3.605	35.970	0.000	39.576	2.870	0.000	6.233	0.000	9.103	(30.473)	

Discount Rate: 8.00%
 Benefit/Cost Ratio [col (11) / col (6)]: 0.23

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Energy Efficiency Cool Roof

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	INCREASED SUPPLY COSTS	UTILITY PROGRAM COSTS	PARTICIPANT PROGRAM COSTS	OTHER COSTS	TOTAL COSTS	AVOIDED GEN UNIT BENEFITS	AVOIDED T & D BENEFITS	PROGRAM FUEL SAVINGS	OTHER BENEFITS	TOTAL BENEFITS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS
YEAR	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)
2010	0.000	120.502	411.157	0.000	531.659	0.000	0.000	17.665	0.000	17.665	(513.993)	(513.993)
2011	0.000	123.514	421.436	0.000	544.950	0.000	0.000	55.767	0.000	55.767	(489.183)	(966.940)
2012	0.000	126.602	431.971	0.000	558.574	0.000	0.000	99.793	0.000	99.793	(458.781)	(1,360.271)
2013	0.000	129.767	442.771	0.000	572.538	0.000	0.000	145.912	0.000	145.912	(426.626)	(1,698.940)
2014	0.000	133.011	453.840	0.000	586.852	0.000	0.000	195.534	0.000	195.534	(391.318)	(1,986.570)
2015	0.000	136.337	465.186	0.000	601.523	0.000	0.000	251.652	0.000	251.652	(349.871)	(2,224.687)
2016	0.000	139.745	476.816	0.000	616.561	0.000	0.000	310.528	0.000	310.528	(306.033)	(2,417.540)
2017	0.000	143.239	488.736	0.000	631.975	0.000	0.000	379.624	0.000	379.624	(252.351)	(2,564.784)
2018	0.000	146.820	500.955	0.000	647.774	0.011	0.000	445.627	0.000	445.638	(202.136)	(2,673.992)
2019	0.000	150.490	513.478	0.000	663.969	0.011	0.000	531.815	0.000	531.827	(132.142)	(2,740.096)
NOMINAL	0.000	1,350.028	4,606.345	0.000	5,956.373	0.022	0.000	2,433.918	0.000	2,433.940	(3,522.433)	
NPV	0.000	963.224	3,286.555	0.000	4,249.779	0.012	0.000	1,509.672	0.000	1,509.683	(2,740.096)	
				Discount Rate:	8.00%							
				Benefit/Cost Ratio [col (11) / col (6)]:	0.36							

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Energy Efficiency Ceiling Insulation

[illegible]

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Energy Efficiency Wall Insulation

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Single Family Survey Walk Through

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Single Family Survey Video & DVDs

[illegible]

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Single Family Survey On Line

[illegible]

PARTICIPANT COSTS AND BENEFITS

[illegible]

PARTICIPANT COSTS AND BENEFITS

[illegible]

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

[illegible]

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

[illegible]

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 14

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Multi Family Survey Walk Through

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Multi Family Survey Video & DVDs

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Multi Family Survey On Line

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Lighting Program (CFL)

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Energy Efficiency Insulation

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Energy Efficiency High Performance Windows

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Energy Efficiency Gold Ring

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Home Energy Fix Up

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Energy Efficiency Duct Repair

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Residential Energy Efficiency Cool Reflective Roof

[illegible]

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Energy Efficiency Caulk & Wthr Strip Rev 1

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Commercial Heat Pump SEER 18

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Commercial Heat Pump SEER 17

[illegible]

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Commercial Heat Pump SEER 16

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Commercial Heat Pump SEER 15

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Commercial Heat Pump SEER 14

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Commercial Indoor Lighting

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Commercial Energy Audit

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Commercial Energy Efficiency Duct

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Commercial Energy Efficiency Cool Roof

[illegible]

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Commercial Energy Efficiency Ceiling Insulation

[illegible]

RATE IMPACT TEST
PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

[illegible]

RATE IMPACT TEST
PROGRAM: Residential Energy Efficiency Wall Insulation

[illegible]

RATE IMPACT TEST
PROGRAM: Residential Single Family Survey Walk Through

[illegible]

RATE IMPACT TEST
PROGRAM: Residential Single Family Survey Video & DVDs

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	INCREASED	UTILITY					AVOIDED GEN UNIT	AVOIDED				NET BENEFITS TO ALL CUSTOMERS	CUMULATIVE DISCOUNTED NET BENEFIT
	SUPPLY COSTS	PROGRAM COSTS	INCENTIVES	REVENUE LOSSES	OTHER COSTS	TOTAL COSTS	& FUEL BENEFITS	T & D BENEFITS	REVENUE GAINS	OTHER BENEFITS	TOTAL BENEFITS	\$(\$)	\$(\$)
YEAR	\$('))	\$('))	\$('))	\$('))	\$('))	\$('))	\$('))	\$('))	\$('))	\$('))	\$('))	\$('))	\$('))
2010	0.000	78.309	0.000	14.154	0.000	92.463	4.614	0.000	0.000	0.000	4.614	(87.849)	(87.849)
2011	0.000	80.267	0.000	44.085	0.000	124.351	14.567	0.000	0.000	0.000	14.567	(109.784)	(189.501)
2012	0.000	82.273	0.000	76.203	0.000	158.477	26.067	0.000	0.000	0.000	26.067	(132.409)	(303.020)
2013	0.000	84.330	0.000	109.182	0.000	193.513	38.114	0.000	0.000	0.000	38.114	(155.398)	(426.381)
2014	0.000	86.439	0.000	143.285	0.000	229.723	51.076	0.000	0.000	0.000	51.076	(178.647)	(557.692)
2015	0.000	88.600	0.000	180.063	0.000	268.663	65.735	0.000	0.000	0.000	65.735	(202.928)	(695.801)
2016	0.000	90.815	0.000	217.949	0.000	308.764	81.114	0.000	0.000	0.000	81.114	(227.650)	(839.259)
2017	0.000	93.085	0.000	258.305	0.000	351.390	99.163	0.000	0.000	0.000	99.163	(252.228)	(986.432)
2018	0.000	95.412	0.000	300.500	0.000	395.912	116.403	0.000	0.000	0.000	116.403	(279.509)	(1,137.442)
2019	0.000	97.797	0.000	346.649	0.000	444.446	138.917	0.000	0.000	0.000	138.917	(305.530)	(1,290.283)
NOMINAL	0.000	877.327	0.000	1,690.375	0.000	#####	635.769	0.000	0.000	0.000	635.769	(1,931.932)	
NPV	0.000	625.959	0.000	1,058.669	0.000	#####	394.345	0.000	0.000	0.000	394.345	(1,290.283)	
				Discount rate:	8.00%								
				Benefit / Cost Ratio [col (12) / col (7)]:	0.23								

RATE IMPACT TEST
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	INCREASED	UTILITY		REVENUE	OTHER	TOTAL	AVOIDED	AVOIDED	REVENUE	OTHER	TOTAL	NET	CUMULATIVE
	SUPPLY	PROGRAM		LOSSES	COSTS	COSTS	GEN UNIT	T & D	GAINS	BENEFITS	BENEFITS	BENEFITS	DISCOUNTED
YEAR	\$ (000)	\$ (000)	INCENTIVES \$ (000)	\$ (000)	\$ (000)	\$ (000)	& FUEL BENEFITS \$ (000)	BENEFITS \$ (000)	\$ (000)	\$ (000)	\$ (000)	TO ALL CUSTOMERS \$ (000)	NET BENEFIT \$ (000)
2010	0.000	7.481	9.000	2.442	0.000	18.923	0.796	0.000	0.000	0.000	0.796	(18.127)	(18.127)
2011	0.000	7.668	9.000	7.605	0.000	24.273	2.513	0.000	0.000	0.000	2.513	(21.760)	(38.275)
2012	0.000	7.860	9.000	13.146	0.000	30.006	4.497	0.000	0.000	0.000	4.497	(25.509)	(60.144)
2013	0.000	8.056	9.000	18.835	0.000	35.891	6.575	0.000	0.000	0.000	6.575	(29.316)	(83.416)
2014	0.000	8.257	9.000	24.718	0.000	41.976	8.811	0.000	0.000	0.000	8.811	(33.165)	(107.793)
2015	0.000	8.464	9.000	31.063	0.000	48.527	11.340	0.000	0.000	0.000	11.340	(37.187)	(133.102)
2016	0.000	8.676	9.000	37.599	0.000	55.274	13.993	0.000	0.000	0.000	13.993	(41.281)	(159.116)
2017	0.000	8.892	9.000	44.561	0.000	62.453	17.107	0.000	0.000	0.000	17.107	(45.346)	(185.576)
2018	0.000	9.115	9.000	51.840	0.000	69.955	44.037	0.000	0.000	0.000	44.037	(25.917)	(199.578)
2019	0.000	9.343	9.000	59.801	0.000	78.144	48.617	0.000	0.000	0.000	48.617	(29.527)	(214.349)
NOMINAL	0.000	83.811	90.000	291.611	0.000	465.421	158.286	0.000	0.000	0.000	158.286	(307.135)	
NPV	0.000	59.798	65.222	182.633	0.000	307.653	93.304	0.000	0.000	0.000	93.304	(214.349)	
Discount rate:				8.00%									
Benefit / Cost Ratio [col (12) / col (7)]:				0.30									

RATE IMPACT TEST
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

[illegible]

RATE IMPACT TEST
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

[illegible]

RATE IMPACT TEST
PROGRAM: Residential Multi Family Survey Walk Through

[illegible]

RATE IMPACT TEST
PROGRAM: Residential Energy Efficiency High Performance Windows

[illegible]

RATE IMPACT TEST
PROGRAM: Commercial Indoor Lighting

[illegible]

RATE IMPACT TEST
PROGRAM: Commercial Energy Audit

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	INCREASED SUPPLY	UTILITY PROGRAM		REVENUE	OTHER	TOTAL	AVOIDED GEN UNIT & FUEL BENEFITS	AVOIDED T & D BENEFITS	REVENUE	OTHER	TOTAL	NET BENEFITS TO ALL CUSTOMERS	CUMULATIVE DISCOUNTED NET BENEFIT
YEAR	\$('000)	\$('000)	\$('000)	\$('000)	\$('000)	\$('000)	\$('000)	\$('000)	GAINS \$('000)	BENEFITS \$('000)	BENEFITS \$('000)	\$('000)	\$('000)
2010	0.000	142.972	0.000	9.083	0.000	152.055	4.082	0.000	0.000	0.000	4.082	(147.973)	(147.973)
2011	0.000	146.547	0.000	28.505	0.000	175.051	12.887	0.000	0.000	0.000	12.887	(162.165)	(298.125)
2012	0.000	150.210	0.000	49.617	0.000	199.828	23.060	0.000	0.000	0.000	23.060	(176.768)	(449.675)
2013	0.000	153.965	0.000	71.241	0.000	225.206	33.717	0.000	0.000	0.000	33.717	(191.489)	(601.685)
2014	0.000	157.815	0.000	93.601	0.000	251.416	45.184	0.000	0.000	0.000	45.184	(206.232)	(753.272)
2015	0.000	161.760	0.000	118.067	0.000	279.827	58.152	0.000	0.000	0.000	58.152	(221.675)	(904.141)
2016	0.000	165.804	0.000	143.243	0.000	309.047	71.757	0.000	0.000	0.000	71.757	(237.290)	(1,053.674)
2017	0.000	169.949	0.000	170.328	0.000	340.278	87.723	0.000	0.000	0.000	87.723	(252.554)	(1,201.037)
2018	0.000	174.198	0.000	198.759	0.000	372.956	148.382	0.000	0.000	0.000	148.382	(224.574)	(1,322.367)
2019	0.000	178.553	0.000	230.398	0.000	408.951	169.617	0.000	0.000	0.000	169.617	(239.335)	(1,442.094)
NOMINAL	0.000	1,601.773	0.000	1,112.843	0.000	#####	654.560	0.000	0.000	0.000	654.560	(2,060.055)	
NPV	0.000	1,142.840	0.000	696.014	0.000	#####	396.760	0.000	0.000	0.000	396.760	(1,442.094)	
				Discount rate:	8.00%								
				Benefit / Cost Ratio [col (12) / col (7)]:	0.22								

RATE IMPACT TEST
PROGRAM: Commercial Energy Efficiency Cool Roof

[illegible]

RATE IMPACT TEST
PROGRAM: Commercial Energy Efficiency Ceiling Insulation

[illegible]

Table 2a
Residential Program Information - Savings

Program Name		Single Family Energy Surveys - Walk-Through	Single Family Energy Surveys - Video / DVD	Single Family Energy Surveys - Online	Multi Family Energy Surveys - Walk-Through	Multi Family Energy Surveys - Video / DVD	Multi Family Energy Surveys - Online	Duct Repair Rebates	Ceiling Insulation Rebates	Window Film / Solar Screen Rebates	High Performance Window Rebates	Caulking / Weather Stripping Rebates	Wall Insulation Rebates	Cool / Reflective Roof Rebates	Home Energy Fix-Up	Billed Solution Insulation	Efficient Electric Heat Pump Rebates	Gold Ring Home	Compact Fluorescent Lighting
Customer Category	(RES / COM / IND)	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res
Program Type	(EE / DR / RE)	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE
Program Estimate ⁽¹⁾																			
Summer Demand	(MW)	0	0	0	0	0	0	0.31	0.41	0.03	0.4	0	0	0.04	0.15	0.08	2.98	0.06	1.2
Winter Demand	(MW)	0	0	0	0	0	0	0.41	0.75	-0.01	0.24	0	0.01	0	0.03	0.14	1.66	0.06	1.2
Annual Energy	(GWh)	5.5	2.47	1.8	1.79	0.81	0.59	0.43	1.07	0.1	0.85	0.01	0	0.09	0.14	0.21	6.07	0.08	1.75
% of Commission Authorized Goal																			
Summer Demand	(%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.20%	8.20%	0.60%	8.00%	0.00%	0.00%	0.80%	2.90%	1.60%	59.60%	1.10%	24.00%
Winter Demand	(%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.50%	37.50%	-0.50%	12.00%	0.00%	0.30%	0.00%	1.60%	7.20%	83.00%	3.20%	60.00%
Annual Energy	(%)	30.60%	13.70%	10.00%	10.00%	4.50%	3.30%	2.40%	6.00%	0.60%	4.70%	0.00%	0.00%	0.50%	0.80%	1.10%	33.70%	0.50%	9.70%

⁽¹⁾ Represents cumulative projected savings over the 2010 through 2019 period.

Table 2b
Commercial Program Information - Savings

Program Name		Energy Audits	Indoor Lighting Retrofit	Efficient Electric Heat Pump Rebates	Duct Repair Rebates	Window Film / Solar Screen Rebates	Ceiling Insulation Rebates	Cool / Reflective Roof Rebates
Customer Category	(RES / COM / IND)	C/I	C/I	C/I	C/I	C/I	C/I	C/I
Program Type	(EE / DR / RE)	EE	EE	EE	EE	EE	EE	EE
Program Estimate ⁽¹⁾								
Summer Demand	(MW)	0.38	6.73	0.1	0.02	0	0.01	See Note (2)
Winter Demand	(MW)	0.38	6.73	0.06	0.03	0	0.02	See Note (2)
Annual Energy	(GWh)	2.19	30.24	0.19	0.04	0.01	0.04	See Note (2)
% of Commission Authorized Goal								
Summer Demand	(%)	5.50%	96.20%	1.40%	0.30%	0.00%	0.20%	See Note (2)
Winter Demand	(%)	5.50%	96.20%	0.80%	0.40%	0.00%	0.30%	See Note (2)
Annual Energy	(%)	12.10%	168.00%	1.10%	0.20%	0.00%	0.20%	See Note (2)

⁽¹⁾ Represents cumulative projected savings over the 2010 through 2019 period.

⁽²⁾ In the initial offering of the commercial cool reflective roof program in 2009, OUC had 7 customers participate. One of the participants accounted for more than two thirds of the total square footage of the cool roof reflective program. Due to uncertainty regarding the likelihood of similar participation in future years, peak demand and energy reductions associated with commercial cool reflective roof program have not been included in OUC's projected reductions.

Table 3a
Residential Program Information – Total Cost

Program Name		Single Family	Single Family	Single Family	Multi-Family	Multi-Family	Multi-Family												
Customer Category	(RES - COM - IND)	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res
Program Type	(EE / DR / RE)	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE
Program Cost (Cumulative NPV)																			
Administrative	(\$)	\$2,586,569	\$243,344	\$176,922	\$1,052,933	\$79,611	\$57,185	\$47,307	\$113,378	\$9,811	\$83,791	\$87	\$368	\$9,138	\$19,299	\$21,698	\$557,891	\$8,761	\$133,532
Education, Surveys, Marketing	(\$)	\$685,856	\$398,122	\$224,928	\$223,527	\$190,803	\$73,291	\$60,014	\$143,568	\$12,432	\$109,099	\$1,101	\$465	\$11,571	\$16,848	\$27,439	\$706,312	\$10,201	\$169,075
Equipment, Installation, O&M	(\$)	\$	\$4,894	\$159,314	\$	\$12,044	\$68,277	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$59,861
Incentives/Rebates	(\$)	\$	\$	\$	\$	\$	\$	\$153,024	\$179,091	\$68,277	\$192,142	\$12,891	\$15,911	\$14,791	\$218,548	\$32,622	\$1,131,881	\$31,891	\$
Total Cost	(\$)	\$3,272,425	\$556,355	\$560,268	\$1,276,460	\$192,418	\$199,476	\$261,033	\$427,613	\$90,522	\$389,031	\$14,861	\$16,791	\$35,501	\$248,687	\$81,322	\$2,906,121	\$50,131	\$353,477
Program Cost (% of Program)																			
Administrative	(%)	79%	44%	32%	82%	41%	29%	18%	27%	11%	22%	6%	2%	26%	3%	27%	23%	16%	30%
Education, Surveys, Marketing	(%)	21%	55%	40%	18%	32%	37%	23%	34%	14%	28%	7%	3%	33%	7%	34%	29%	20%	49%
Equipment, Installation, O&M	(%)	0%	1%	28%	0%	6%	34%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%
Incentives/Rebates	(%)	0%	0%	0%	0%	0%	0%	59%	40%	75%	51%	87%	95%	42%	88%	40%	47%	64%	0%
Program Rate Impact																			
Residential Rate Impact	(\$/mo)	\$0.1	\$0.1	\$0.1	\$0.02	\$0.01	\$0.01	\$0.01	\$0.02	\$0.01	\$0.02	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.1	\$0.01	\$0.02
Percentage of Total ECCR Rate	(%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lost Revenue	(\$)	\$38,367	\$17,251	\$12,541	\$12,514	\$5,641	\$4,101	\$3,361	\$8,031	\$691	\$5,961	\$12	\$21	\$641	\$9,61	\$1,531	\$39,541	\$571	\$9,461

Table 3b
Commercial Program Information – Total Cost

Program Name		Energy Audits	Indoor Lighting Retrofit	Efficient Electric Heat Pump Rebates	Window Film Rebates	Ceiling Insulation Rebates	Cool Reflective Roofs/Rebates
Customer Category	(RES - COM - IND)	C/I	C/I	C/I	C/I	C/I	C/I
Program Type	(EE / DR / RE)	EE	EE	EE	EE	EE	EE
Program Cost (Cumulative NPV)							
Administrative	(\$)	\$935,841	\$798,021	\$5,761	\$101	\$161	\$1,061
Education, Surveys, Marketing	(\$)	\$127,331	\$1,706,261	\$12,491	\$231	\$341	\$2,311
Equipment, Installation, O&M	(\$)	\$	\$	\$	\$	\$	\$
Incentives/Rebates	(\$)	\$	\$	\$38,691	\$1,131	\$7,081	\$5,311
Total Cost	(\$)	\$1,063,171	\$2,494,281	\$56,941	\$1,471	\$7,591	\$8,681
Program Cost (% of Program)							
Administrative	(%)	88%	32%	10%	7%	2%	12%
Education, Surveys, Marketing	(%)	12%	10%	22%	16%	5%	84%
Equipment, Installation, O&M	(%)	0%	0%	0%	0%	0%	0%
Incentives/Rebates	(%)	0%	0%	68%	7%	93%	20%
Program Rate Impact							
Residential Rate Impact	(\$/mo)	N/A	N/A	N/A	N/A	N/A	N/A
Percentage of Total ECCR Rate	(%)	N/A	N/A	N/A	N/A	N/A	N/A
Lost Revenue	(\$)	\$13,731	\$184,711	\$1,351	\$21	\$31	\$251

Table 4a Residential Program Information – Cost Effectiveness																			
Program Name	Single Family Energy Service – Walk-Through	Single Family Energy Service – Video / DVD	Single Family Energy Service – Online	Multi Family Energy Service – Walk-Through	Multi Family Energy Service – Video / DVD	Multi Family Energy Service – Online	Thermostat Rebate	Ceiling Insulation Rebate	Window Film / Solar Screen Rebate	High Performance Window Rebate	Caulking / Window Striping Rebate	Wall Insulation Rebate	Ceiling / Reflective Roof Rebate	Home Energy Fix-As	Billed Solution Insulation	Efficient Thermostat Pump Rebate	Gold Ring Home	Compact Fluorescent Lighting	
Customer Category	(RES / CCM / IND)	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	Res	
Program Type	(EE / DR / RE)	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	EE	
Typical Results																			
Total Benefits	(2010 NPV \$)	\$177.58	\$196.34	\$286.05	\$276.15	\$178.06	\$95.82	\$107.22	\$221.01	\$19.56	\$186.15	\$1.69	\$79	\$29.05	\$35.74	\$1.7	\$1,290.48	\$19.98	\$12.78
Total Costs	(2010 NPV \$)	\$3,975.86	\$4,515.94	\$6,849.99	\$6,738.81	\$4,207.89	\$2,155.90	\$2,406.69	\$4,914.29	\$437.94	\$4,117.56	\$36.74	\$1,483	\$569.99	\$71.18	\$3.8	\$3,298.42	\$49.78	\$31.66
Ratio		0.22	0.43	0.41	0.41	0.42	0.44	0.44	0.41	0.47	0.45	0.45	0.45	0.42	0.43	0.47	0.47	0.48	0.42
Net Present Value																			
Total Benefits	(2010 NPV \$)	\$177.58	\$196.34	\$286.05	\$276.15	\$178.06	\$95.82	\$107.22	\$221.01	\$19.56	\$186.15	\$1.69	\$79	\$29.05	\$35.74	\$1.7	\$1,290.48	\$19.98	\$12.78
Total Costs	(2010 NPV \$)	\$5,589.95	\$1,084.92	\$1,754.51	\$2,146.96	\$556.92	\$467.23	\$446.91	\$902.12	\$131.96	\$759.86	\$18.24	\$17.72	\$76.25	\$520.67	\$108	\$4,873.95	\$85.24	\$48.41
Ratio		0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.0	0.0	0.0	0.2	0.1	0.23	0.2	0.2	0.2
Participant Test Results																			
Total Benefits	(2010 NPV \$)	\$2,355.94	\$1,018.66	\$296.17	\$296.17	\$106.78	\$296.17	\$106.78	\$1,018.66	\$1,018.66	\$1,018.66	\$1,018.66	\$1,018.66	\$1,018.66	\$1,018.66	\$1,018.66	\$1,018.66	\$1,018.66	\$1,018.66
Total Costs	(2010 NPV \$)	\$	\$	\$	\$	\$	\$	\$	\$1,036.79	\$143.81	\$1,122.49	\$24.55	\$12.56	\$67.66	\$45.83	\$10	\$1,491.06	\$	\$
Ratio									0.68	1.0	1.0	1.0	0.4	2.8	7.0	1.0	0.0		
Payback Period																			
Payback Test	(Yrs)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ratio Test	(Yrs)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Participant Test	(Yrs)							NA				NA	NA		NA	NA			
Footnote																			
1) CCC's Billed Solution Insulation program is currently offered to the Ceiling Insulation Rebate program, except that customer's participating in Billed Solution Insulation may pay for the insulation on their monthly utility bills for up to 1 year (for amounts less than \$500) or up to 2 years (for amounts above \$500) interest-free with no money down. In addition, the customer will receive a \$100 rebate to be deducted from the amount of interest. For purposes of CCC's 2010 TQM Plan, it has been assumed that the cost-effectiveness results for Billed Solution Insulation would be similar to those for the Ceiling Insulation Rebate program.																			
2) Analysis of Table 4a and CCC's 2010 TQM Plan indicates that there are programs for which Participant Test results are indicated as "N/A (Infinite)". Such results indicate that there are either no costs for the participating customer (i.e. residential energy services, commercial energy audits, residential Gold Ring, and residential compact fluorescent lighting), or all costs are earned on the participating customer's utility bills such that benefits from participating in the program are used to offset the up-front costs that CCC pays resulting in a net-of-pocket costs to the participating customer (i.e. commercial indoor lighting retrofit). For purposes of the table, results for these programs are presented as "N/A".																			
3) Payback period for each program represents the year in which program cumulative discounted net benefits first become positive. If this does not occur during the 10-year evaluation period, payback period is indicated as "N/A".																			

Table 4b Commercial Program Information – Cost Effectiveness									
Program Name	Energy Audit	Indoor Lighting Rebate	Heat Pump Rebate	Duct Repair Rebate	Solar Screen Rebate	Ceiling Insulation Rebate	Roof Rebate		
Customer Category	(RES / CCM / IND)	CI	CI	CI	CI	CI	CI		
Program Type	(EE / DR / RE)	EE	EE	EE	EE	EE	EE		
Total Results									
Total Benefits (2010 NPV \$)	\$196,760	\$1,018,660	\$296,170	\$296,170	\$106,780	\$296,170	\$1,018,660		
Total Costs (2010 NPV \$)	\$1,147,340	\$3,078,660	\$923,040	\$923,040	\$336,770	\$923,040	\$3,249,770		
Ratio	0.3	1.4	0.3	0.3	0.3	0.3	0.4		
Net Present Value									
Total Benefits (2010 NPV \$)	\$196,760	\$1,018,660	\$296,170	\$296,170	\$106,780	\$296,170	\$1,018,660		
Total Costs (2010 NPV \$)	\$1,147,340	\$3,118,430	\$1,038,870	\$1,038,870	\$373,340	\$1,038,870	\$3,499,010		
Ratio	0.22	0.3	0.3	0.3	0.3	0.3	0.3		
Participant Test Results									
Total Benefits (2010 NPV \$)	\$196,760	\$1,018,660	\$296,170	\$296,170	\$106,780	\$296,170	\$1,018,660		
Total Costs (2010 NPV \$)	\$1	\$1	\$1	\$1	\$1	\$1	\$1		
Ratio									
Payback Period									
Payback Period (Yrs)	NA	NA	NA	NA	NA	NA	NA		
Ratio (Yrs)	NA	NA	NA	NA	NA	NA	NA		
Participant Test Results									
Participant Test (Yrs)	NA	NA	NA	NA	NA	NA	NA		

Table 10
Avoided Unit Information

Plant Name		7FA Combustion Turbine
Unit No.		--
Technical Information		
Capacity	Summer	(MW) 142.1
	Winter	(MW) 187.9
	Average	(MW) 157.6
Technology Type		Simple Cycle Combustion Turbine
Primary Fuel		Natural Gas
Commercial In-Service Date		Jun-18
Performance Data		
Capacity Factor		(%) ⁽¹⁾ 3
Heat Rate		(Btu/kWh) ⁽²⁾ 10,888
Financial Data		
Book Life		(years) 20
Total Installed Cost		(\$/kW) ⁽³⁾ \$1,130
Fixed O&M Cost		(2009 \$/kW-year) ⁽³⁾ 8.6
Variable O&M		(2009 \$/MWh) ⁽³⁾ 15.9
Avoided Fuel		
Avoided Energy Rate		(\$/MWh) ⁽⁴⁾ 126

⁽¹⁾ Capacity factor shown is average capacity factor for 2018 and 2019, which are the years in which the avoided unit is in service.

⁽²⁾ Heat rate represents full load, net plant heat rate (higher heating value) at average ambient conditions.

⁽³⁾ Costs per kW, kW-year, and MWh correspond to unit's average ambient rating.

⁽⁴⁾ Avoided energy rate is calculated as the average fuel cost per MWh for the avoided unit during 2018 and 2019, plus the variable O&M cost. Value is expressed in 2009 dollars.

Table 11 Projected Rate Information		
Residential		
Non-Fuel Energy Rate	(cents/kWh)	8.536
Escalation Rate	(%)	2
Commercial		
Non-Fuel Energy Rate	(cents/kWh)	3.586
Escalation Rate	(%)	2
Demand Rate	(\$/kW-mo)	7.98
Escalation Rate	(%)	2.5

Table 12 Line Loss Values		
Residential		
Energy Percentage	(%)	3.9
Energy Percentage	(%)	3.9
Commercial		
Energy Percentage	(%)	3.9
Energy Percentage	(%)	3.9

Attachment 3

Docket 100161-EG

OUC Response to Staff's First Data Request

Tax Credit:

30% of cost up to \$1,500

Expires:

December 31, 2010

Details:

Must be an existing home & your principal residence. New construction and rentals **do not** qualify.

Biomass Stoves



Biomass stoves burn biomass fuel to heat a home or heat water. Biomass fuel includes agricultural crops and trees, wood and wood waste and residues (including wood pellets), plants (including aquatic plants), grasses, residues, and fibers.

Tax Credit:

30% of cost up to \$1,500

Expires:

December 31, 2010

Details:

Must be an existing home & your principal residence. New construction and rentals **do not** qualify.

Heating, Ventilating, Air Conditioning (HVAC)

Advanced Main Air Circulating Fan

An **Advanced Main Air Circulating Fan** is an efficient fan, or blower motor which blows the air that your furnace heats up through the duct system.

Requirements

Must use no more than 2% of the furnace's total energy. Note: If the fan is qualified, but the furnace is not, you will not be able to take 30% off the cost of the entire furnace. Ask your HVAC contractor to break out the cost of the fan in your bill. You can get a 30% tax credit on the cost of the fan alone.

Tax Credit includes installation costs.

More Information

[How to apply](#)

[Advanced Main Air Circulating Fan FAQs](#)

Air Source Heat Pumps



Heat pumps offer an energy-efficient alternative to furnaces and air conditioners in moderate climates. Like your refrigerator, heat pumps use electricity to move heat from a cool space into a warm, making the cool space cooler and the warm space warmer. During the heating season, heat pumps move heat from the cool outdoors into your warm house; during the cooling season, heat pumps move heat from your cool house into the warm outdoors. Because they move heat rather than generate heat, heat pumps can provide up to 4 times the amount of energy they consume.

Requirements**Split Systems:**

HSPF ≥ 8.5

EER ≥ 12.5

SEER ≥ 15

Package systems:

HSPF ≥ 8

EER ≥ 12

SEER ≥ 14

Tax Credit includes installation costs.

See Definitions.

More Information

How to apply

Air Source Heat Pumps FAQs

Central Air Conditioning (CAC)



The best way to find tax credit eligible CACs is to ask your HVAC Contractor (Heating Ventilation and Air Conditioning). To verify tax credit eligibility, ask your HVAC contractor to provide the Manufacturer Certification Statement for the equipment you plan to purchase. Or, search the Manufacturer's website.

Requirements

Split Systems:

SEER ≥ 16

EER ≥ 13

Package systems:

SEER ≥ 14

EER ≥ 12

Tax Credit includes installation costs.

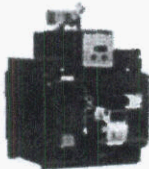
See definitions.

More Information

How to apply

CAC FAQs

Gas, Propane, or Oil Hot Water Boiler



These are heating units that use water circulated throughout the home in a system of baseboard heating units, radiators, and/or in-floor radiant tubing.

Requirements

AFUE ≥ 90

Tax Credit includes installation costs.

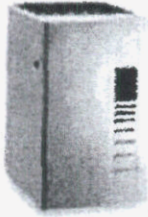
[See definitions.](#)

More Information

[How to apply](#)

[Boiler FAQs](#)

Natural Gas or Propane Furnace



A furnace uses the combustion of fuel and air to create heat.

Requirements

AFUE \geq 95

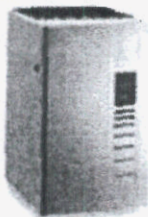
Tax Credit includes installation costs.

More Information

[How to apply](#)

[Gas Furnace FAQs](#)

Oil Furnace



A furnace uses the combustion of fuel and air to create heat.

Requirements

AFUE \geq 90

Tax Credit includes installation costs.

More Information

[How to apply](#)

[Oil Furnace FAQs](#)

Tax Credit:

30% of cost up to \$1,500

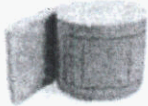
Expires:

December 31, 2010

Details:

Must be an existing home & your principal residence. New construction and rentals **do not** qualify.

Insulation



Adding adequate insulation is one of the most cost-effective home improvements that you can do.

Requirements

Typical bulk insulation products can qualify, such as batts, rolls, blow-in fibers, rigid boards, expanding spray, and pour-in-place.

Products that air seal (reduce air leaks) can also qualify, as long as they come with a Manufacturers Certification Statement, including:

Weather stripping

Spray foam in a can, designed to air seal

Caulk designed to air seal

House wrap

Tax Credit does NOT include installation costs. But, you can install the insulation/home sealing yourself and get the credit.

See definitions.

More Information

How to apply

Insulation FAQs

Insulation efficiency through Home Performance with ENERGY STAR

Heat & Cool Efficiently at Home

Tax Credit:

30% of cost up to \$1,500

Expires:

December 31, 2010

Details:

Must be an existing home & your principal residence. New construction and rentals **do not** qualify.

Roofs (Metal & Asphalt)



Qualified roof products reflect more of the sun's rays, which can lower roof surface temperature by up to 100F, decreasing the amount of heat transferred into your home.

Requirements

"Metal roofs with appropriate pigmented coatings" and "asphalt roofs with appropriate cooling granules" that also meet ENERGY STAR requirements.

Tax Credit does NOT include installation costs.

More Information

[How to apply](#)

[Roofing - Metal & Asphalt FAQs](#)

Tax Credit:

30% of cost up to \$1,500

Expires:

December 31, 2010

Details:

Must be an existing home & your principal residence. New construction and rentals **do not** qualify.

Water Heaters (non-solar)

Gas, Oil, Propane Water Heater



Water heating can account for 14%–25% of the energy consumed in your home.

Requirements

Energy Factor ≥ 0.82 **OR** a thermal efficiency of at least 90%.

Tax Credit includes installation costs.

See definitions.

More Information

How to apply

Gas, Oil, Propane, Water Heaters FAQs

Electric Heat Pump Water Heater



Water heating can account for 14%–25% of the energy consumed in your home.

Requirements

Energy Factor ≥ 2.0

Tax Credit includes installation costs.

More Information

How to apply

Tax Credit:

30% of cost up to \$1,500

Expires:

December 31, 2010

Details:

Must be an existing home & your principal residence. New construction and rentals **do not** qualify.

Windows & Doors

Windows, Doors, Skylights



Energy efficient windows, doors and skylights can reduce energy bills.

Requirements

U factor ≤ 0.30

SHGC ≤ 0.30

Tax Credit does NOT include installation costs.

See definitions.

More Information

How to apply

Windows, Doors, Skylights FAQs

Storm Windows & Doors



A less expensive approach to replacing old windows/doors, is to use storm windows to improve energy efficiency. When installed in combination with older, less efficient window/door, storm windows/doors can enhance efficiency by creating another barrier between the interior of you home and the weather outside.

Requirements

In combination with the exterior window/door over which it is installed:

U-factor and SHGC of 0.30 or below

Must meet the IECC

Tax Credit does NOT include installation costs.

See definitions.

More Information

[How to apply](#)

[Storm Windows & Doors FAQs](#)

Tax Credit:

30% of cost with no upper limit

Expires:

December 31, 2016

Details:

Existing homes & new construction qualify. Both principal residences and second homes qualify.
Rentals do not qualify.

Geothermal Heat Pumps

Geothermal heat pumps are similar to ordinary heat pumps, but use the ground instead of outside air to provide heating, air conditioning and, in most cases, hot water. Because they use the earth's natural heat, they are among the most efficient and comfortable heating and cooling technologies currently available.

Requirements

Closed Loop:

EER \geq 14.1

COP \geq 3.3

Open Loop:

EER \geq 16.2

COP \geq 3.6

Direct Expansion:

EER \geq 15

COP \geq 3.5

Tax Credit includes installation costs.

See definitions.

More Information

[How to apply](#)

[Geothermal Heat Pump FAQs](#)

[All ENERGY STAR geo-thermal heat pumps qualify for the tax credit.](#)

[What about water-to-water geothermal heat pumps?](#)

Tax Credit:

30% of cost with no upper limit

Expires:

December 31, 2016

Details:

Existing homes & new construction qualify. Both principal residences and second homes qualify.
Rentals **do not** qualify.

Small Wind Turbines (Residential)

A wind turbine collects kinetic energy from the wind and converts it to electricity that is compatible with a home's electrical system.

Requirements

Must have a nameplate capacity of no more than 100 kilowatts.

Tax Credit includes installation costs.

Tax Credit:

30% of cost with no upper limit

Expires:

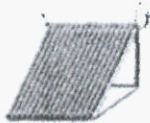
December 31, 2016

Details:

Existing homes & new construction qualify. Both principal residences and second homes qualify. Rentals **do not** qualify.

Solar Energy Systems

Solar Water Heaters



Solar water heaters come in a wide variety of designs, all including a collector and storage tank, and all using the sun's thermal energy to heat water. Solar water heaters are typically described according to the type of collector and the circulation system.

Requirements

At least half of the energy generated by the "qualifying property" must come from the sun. The system must be certified by the Solar Rating and Certification Corporation (SRCC) or a comparable entity endorsed by the government of the state in which the property is installed.

Note: The credit is not available for expenses for swimming pools or hot tubs. The water must be used in the dwelling.

Photovoltaic systems must provide electricity for the residence, and must meet applicable fire and electrical code requirement.

Tax Credit includes installation costs.

More Information

[How to apply](#)

[Solar Water Heater FAQs](#)

[All ENERGY STAR Qualified solar water heaters qualify for the tax credit.](#)

Solar Panels (Photovoltaic Systems)



Solar Panels or Photovoltaic Systems are solar cells that capture light energy from the sun and convert it directly into electricity.

Requirements

Photovoltaic systems must provide electricity for the residence, and must meet applicable fire and electrical code requirement.

Tax Credit:

Credit Details: 30% of the cost, up to \$500 per .5 kW of power capacity

Expires:

December 31, 2016

Details:

Existing homes & new construction qualify. Must be your principal residence. Rentals and second homes **do not** qualify.

Fuel Cells (Residential Fuel Cell and Microturbine System)



Fuel cells are an important enabling technology for the hydrogen economy and have the potential to revolutionize the way we power our nation, offering cleaner, more-efficient alternatives to the combustion of gasoline and other fossil fuels.