Energy Efficiency
In
Iowa's Electric and Natural Gas Sectors

Report to the Iowa General Assembly

January 1, 2009

IOWA UTILITIES BOARD

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NOTE

The Iowa Utilities Board submitted Parts I, II, III and IV of this report to the General Assembly in January 2009. The IUB will submit Part V later in 2009 after approving the investor-owned utilities' 2009-2013 energy efficiency plans.

PART I. INTRODUCTION

The Iowa Utilities Board, through this report, is updating members of the General Assembly on the energy efficiency and load management programs operated by Iowa's investor-owned utilities and funded by the utilities' ratepayers.

This report includes:

- Data about energy efficiency spending and results contained in documents that utilities have submitted to the IUB.
- Descriptions of utility energy efficiency programs contained in documents that the utilities have submitted to the IUB.
- IUB staff analyses of spending and results of utility energy efficiency programs in 2007.
- IUB staff analyses of trends in utility energy efficiency spending and results for the 2001-2007 period.

The report is required under provisions of Senate File 2386, enacted on May 6, 2008.

Iowa has three major investor-owned utilities. Two of them – MidAmerican Energy Company and Interstate Power and Light Company (Alliant) – sell both electricity and natural gas. A third – Black Hills Corporation (formerly Aquila) – sells only natural gas.

Each IOU is required by law to submit to the IUB an annual report describing its energy efficiency efforts during the previous year. In addition, each IOU is required by law to submit an energy efficiency plan to the IUB for approval. In 2008 the IOUs submitted to the IUB their plans for 2009-2013.

Iowa also is served by municipally owned utilities and rural electric cooperatives. Senate File 2386 requires the municipals and the RECs to begin developing energy efficiency goals, to submit progress reports to the IUB by January 1, 2009, and to submit final reports on energy efficiency goals to the IUB by January 1, 2010. Thereafter, the municipals and RECs must submit energy efficiency reports to the IUB every two years.

Iowa's utility companies have been operating energy efficiency and load management programs, under statutory requirements, for 18 years.

According to Senate File 2386, utility energy efficiency programs can include "activities which lessen the amount of heating, cooling, or other forms of work which must be performed, including but not limited to energy studies or audits, general information, financial assistance, direct rebates to customers or vendors of energy-efficient products, research projects, direct installation by the utility of energy-efficient equipment, direct and indirect load control, time-of-use rates, tree planting programs, educational programs, and hot water insulation distribution programs."

PART II. HISTORICAL TRENDS IN IOWA UTILITIES' ENERGY EFFICIENCY EFFORTS

In 2007 Iowa's investor-owned utilities spent twice as much on energy efficiency and load management as they did five years earlier. In 2007 they spent $106 million, whereas in 2002 the total was only $51 million. (See Table II-1, page 3.)

Within the electric sector, spending on energy efficiency and load management grew by 130% between 2002 and 2007, going from $34 million to $78 million. During the same period, electric EE and LM spending increased substantially on another measure, too, going from being the equivalent of 1.85% of electric retail sales revenue in 2002 to 3.49% in 2007. (See Table II-1 and Table II-2, page 3.)

Between 2002 and 2007 IOUs' spending on natural gas energy efficiency increased from $17 million to $28 million, or 65%. Spending on natural gas energy efficiency as a percentage of retail natural gas revenue was 2.3% in 2007, about the same level as it was in 2002. (See Table II-1 and Table II-2, page 3.)

The amount of energy saved in a given year as a result of spending on energy efficiency and load management increased substantially during the 2002-2007 period.

The IOUs estimated that EE and LM spending in 2002 ended up reducing electricity consumption that year by 117,000 megawatt hours. However, by 2007, EE and LM spending had reached the point that it was reducing electricity consumption by 284,000 megawatt hours in the year of the spending. During the 2002-2007 period, electricity savings increased substantially on another measure, too, going from 0.38% of utilities' retail megawatt hour sales in 2002 to 0.84% in 2007. (See Table II-3 and Table II-4, page 4.)

Natural gas consumption in 2007 was 806 million cubic feet less than expected as a result of spending on gas energy efficiency that year, according to the IOUs. In 2002 energy efficiency efforts saved only 509 million cubic feet. Natural gas savings as a percentage of retail gas sales increased from 0.47% in 2002 to 0.68% in 2007. (See Table II-8 and Table II-9, page 7.)

Another important measure is the overall cost effectiveness of electric and natural gas efficiency programs. An IUB analysis shows that the annual benefit/cost ratio for the IOUs' energy efficiency programs is consistently about 2-to-1, meaning that $1 of investment in energy efficiency yields $2 of benefits in reduced energy consumption. (See Table II-11, page 8.)

Table II-1
Iowa Investor-Owned Utilities
Spending on Energy Efficiency and Load Management Programs
2001-2007

	2001	2002	2003	2004	2005	2006	2007
Electric	**$33,451,732**	**$33,697,482**	**$46,578,055**	**$66,527,777**	**$70,992,471**	**$75,446,606**	**$77,989,135**
Residential	$13,704,562	$13,031,321	$16,380,837	$18,305,222	$19,231,656	$21,037,971	$22,335,791
Energy Efficiency	$9,309,289	$8,662,171	$11,842,387	$13,092,323	$14,205,512	$15,860,671	$16,360,891
Load Management	$4,395,273	$4,369,150	$4,538,450	$5,212,899	$5,008,145	$5,177,300	$5,974,900
Non-Residential	$17,246,559	$18,155,006	$26,604,529	$45,395,011	$48,936,279	$51,354,235	$51,982,900
Energy Efficiency	$11,892,930	$12,398,617	$13,036,953	$16,787,091	$17,879,026	$21,268,537	$21,349,815
Load Management	$5,353,629	$5,756,389	$13,567,576	$28,607,920	$31,057,253	$30,085,698	$30,633,085
Other	$2,500,611	$2,511,155	$3,592,689	$2,827,544	$2,842,536	$3,054,401	$3,670,444
Natural Gas	**$18,010,597**	**$17,136,016**	**$22,236,361**	**$22,687,726**	**$28,298,984**	**$31,065,272**	**$28,432,982**
Residential EE	$15,431,013	$13,877,136	$18,187,264	$19,080,789	$23,719,125	$25,807,875	$22,228,600
Non-Residential EE	$1,450,209	$2,157,738	$2,176,691	$2,222,615	$3,182,192	$3,648,270	$4,335,062
Other	$1,129,374	$1,101,142	$1,872,406	$1,384,322	$1,397,667	$1,609,127	$1,869,320
Total	**$51,462,328**	**$50,833,498**	**$68,814,416**	**$89,215,502**	**$99,291,455**	**$106,511,878**	**$106,422,117**

Notes: 1) Amounts are expressed in nominal dollars; 2) Rows and columns may not sum because of independent rounding; 3) The major increase in spending between 2003 and 2004 resulted primarily from IPL's having shifted the cost recovery mechanism for its non-residential load management program.
Source: Utilities' reports submitted to the Iowa Utilities Board.

Table II-2
Iowa Investor-Owned Utilities
Spending on Energy Efficiency and Load Management Programs
As a Percentage of Utilities' Retail Sales Revenue
2001-2007

	2001	2002	2003	2004	2005	2006	2007
Electric	1.85%	1.85%	2.52%	3.49%	3.37%	3.36%	3.49%
Natural Gas	2.04%	2.41%	2.29%	2.27%	2.31%	2.80%	2.30%

Source: The Iowa Utilities Board staff calculated the percentages, using data that utilities provided in reports to the IUB.

Table II-3
Iowa Investor-Owned Utilities
Megawatt Hours Saved in a Year
As a Result of Energy Efficiency and Load Management Measures
Initiated in That Year
(Incremental Savings)

	2001	2002	2003	2004	2005	2006	2007
Residential	**20,677**	**23,233**	**27,760**	**33,424**	**62,771**	**63,992**	**64,224**
Energy Efficiency	20,626	23,185	27,727	33,398	60,072	65,532	63,272
Load Management	51	48	33	26	2,699	-1,540	952
Non-Residential	**92,100**	**93,862**	**134,521**	**164,636**	**161,992**	**209,976**	**219,703**
Energy Efficiency	90,769	94,154	133,791	164,636	157,681	209,443	218,625
Load Management	1,331	-291	730	0	4,311	533	1,078
Total	**112,776**	**117,095**	**162,281**	**198,059**	**224,763**	**273,968**	**283,927**

Note: Rows and columns may not sum because of independent rounding.
Source: Utilities' reports submitted to the Iowa Utilities Board.

Table II-4
Iowa Investor-Owned Utilities
Incremental Megawatt Hours Saved
By Energy Efficiency and Load Management
As a Percentage of Utilities' Retail MWh Sales

	2001	2002	2003	2004	2005	2006	2007
Residential	0.25%	0.27%	0.33%	0.40%	0.70%	0.72%	0.69%
Non-Residential	0.42%	0.42%	0.60%	0.74%	0.71%	0.88%	0.89%
Total	0.38%	0.38%	0.53%	0.65%	0.70%	0.84%	0.84%

Source: The Iowa Utilities Board staff calculated the percentages, using data that utilities provided in reports to the IUB.

Table II-5
Iowa Investor-Owned Utilities
Megawatt Hours Saved in a Year
As a Result of Energy Efficiency and Load Management Measures
Initiated in That Year and All Previous Years
(Cumulative Savings)

	2001	2002	2003	2004	2005	2006	2007
Residential	**139,775**	**163,008**	**190,768**	**224,192**	**286,962**	**350,954**	**415,178**
Energy Efficiency	136,819	160,004	187,731	221,129	281,200	346,733	410,004
Load Management	2,955	3,004	3,037	3,063	5,762	4,222	5,174
Non-Residential	**800,098**	**893,961**	**1,028,482**	**1,193,118**	**1,355,110**	**1,565,086**	**1,784,789**
Energy Efficiency	774,945	869,099	1,002,890	1,167,526	1,325,206	1,534,649	1,753,275
Load Management	3,120	2,828	3,558	3,558	7,870	8,403	9,481
Other	22,034	22,034	22,034	22,034	22,034	22,034	22,034
Total	**939,873**	**1,056,968**	**1,219,250**	**1,417,309**	**1,642,072**	**1,916,040**	**2,199,967**

Note: Rows and columns may not sum because of independent rounding.
Source: Utilities' reports submitted to the Iowa Utilities Board.

Table II-6
Iowa Investor-Owned Utilities
Peak Megawatts Saved in a Year
As a Result of Energy Efficiency and Load Management Measures
Initiated in That Year
(Incremental Savings)

	2001	2002	2003	2004	2005	2006	2007
Residential	**12**	**13**	**17**	**26**	**0**	**26**	**26**
Energy Efficiency	9	11	14	18	28	25	24
Load Management	3	2	3	8	-28	1	2
Non-Residential	**15**	**-25**	**35**	**116**	**-16**	**10**	**37**
Energy Efficiency	18	19	28	34	38	40	38
Load Management	-3	-44	7	82	-54	-30	-1
Total	**27**	**-11**	**52**	**143**	**-16**	**36**	**63**

Note: Rows and columns may not sum because of independent rounding.
Source: Utilities' reports submitted to the Iowa Utilities Board.

Table II-7
Iowa Investor-Owned Utilities
Peak Megawatts Saved in a Year
As a Result of Energy Efficiency and Load Management Measures
Initiated in That Year and All Previous Years
(Cumulative Savings)

	2001	2002	2003	2004	2005	2006	2007
Residential	**164**	**178**	**194**	**221**	**221**	**248**	**274**
Energy Efficiency	79	90	104	122	150	175	199
Load Management	85	88	90	99	71	73	75
Non-Residential	**620**	**596**	**631**	**747**	**731**	**742**	**779**
Energy Efficiency	155	175	203	237	275	315	353
Load Management	465	421	428	510	456	427	426
Total	**785**	**774**	**825**	**969**	**953**	**989**	**1,052**

Note: Rows and columns may not sum because of independent rounding.
Source: Utilities' reports submitted to the Iowa Utilities Board.

Table II-8
Iowa Investor-Owned Utilities
Thousands of Cubic Feet of Natural Gas Saved in a Year
As a Result of Energy Efficiency Measures
Initiated in That Year
(Incremental Savings)

	2001	2002	2003	2004	2005	2006	2007
Residential	489,336	414,115	473,365	529,792	661,301	692,112	592,431
Non-Residential	88,830	94,784	146,836	131,092	210,841	175,719	213,587
Total	**578,167**	**508,899**	**620,201**	**660,884**	**872,142**	**867,831**	**806,018**

Note: Rows and columns may not sum because of independent rounding.
Source: Utilities' reports submitted to the Iowa Utilities Board.

Table II-9
Iowa Investor-Owned Utilities
Incremental MCF of Natural Gas Saved
By Energy Efficiency and Load Management
As a Percentage of Utilities' Retail MCF Sales

	2001	2002	2003	2004	2005	2006	2007
Residential	0.73%	0.61%	0.67%	0.81%	1.04%	1.18%	0.91%
Non-Residential	0.22%	0.23%	0.35%	0.33%	0.52%	0.46%	0.41%
Total	0.53%	0.47%	0.55%	0.63%	0.83%	0.89%	0.68%

Source: The Iowa Utilities Board staff calculated the percentages, using data that utilities provided in reports to the IUB.

Table II-10
Iowa Investor-Owned Utilities
Thousand Cubic Feet of Natural Gas Saved in a Year
As a Result of Energy Efficiency Measures
Initiated in That Year and All Previous Years
(Cumulative Savings)

	2001	2002	2003	2004	2005	2006	2007
Residential	3,683,889	4,097,003	4,570,368	5,100,161	5,761,461	6,453,573	7,046,004
Non-Residential	733,798	828,582	975,418	1,106,510	1,317,352	1,493,071	1,706,658
Total	**4,416,687**	**4,925,586**	**5,545,786**	**6,206,671**	**7,078,813**	**7,946,644**	**8,752,662**

Note: Rows and columns may not sum because of independent rounding.
Source: Utilities' reports submitted to the Iowa Utilities Board.

Table II-11
Iowa Investor-Owned Utilities
Benefits and Costs
Of All Energy Efficiency and Load Management Measures
(Using the Societal Test)

	2004	2005	2006	2007
Benefits	$206,456,197	$244,332,182	$298,001,414	$300,415,810
Costs	$113,947,626	$118,313,410	$146,629,198	$139,789,413
Net Benefits	$92,508,571	$126,018,773	$151,372,216	$160,626,397
Benefit/Cost Ratio	1.81	2.07	2.03	2.15

Note: Dollar amounts are expressed in present-value dollars.
Source: Utilities' reports submitted to the Iowa Utilities Board.

PART III. IOWA UTILITIES' ENERGY EFFICIENCY EFFORTS IN 2007

Section 1. Overview

Iowa is one of the leading states in per-capita spending on energy efficiency and load management, according to a nationwide analysis by the Consortium for Energy Efficiency. In 2007 Iowa's investor-owned utilities budgeted $94.8 million for energy efficiency and load management – a per capita level of $31.73. In per capita spending, Iowa ranks third nationally behind Vermont and California. (See Table III-1, page 10, and Table III-2, page 11.)

In 2007 Iowa's IOUs spent $106.4 million on energy efficiency and load management, with $69.8 million going for energy efficiency programs and $36.6 million for load management. Of the $106.4 million, $78.0 million was spent in the electric sector and $28.4 million in the natural gas sector. (See Table III-3, page 12; Table III-4, page 13; and Table III-5, page 14.)

Within the electric sector, spending was divided fairly evenly between energy efficiency and load management, with the utilities spending $41.4 million on energy efficiency and $36.6 million on load management. (See Table III-4, page 13.)

Among the electric energy efficiency programs, five programs accounted for about 70% of the spending: residential equipment rebates, $8.7 million; residential new construction, $3.7 million; non-residential new construction, $6.6 million; non-residential custom rebates, $6.2 million; and non-residential equipment, $4.2 million. (See Table III-4, page 13.)

Among the gas energy efficiency programs, two programs accounted for about half of the spending: residential equipment rebates, $8.3 million, and residential new construction, $5.6 million. (See Table III-5, page 14.)

The utilities calculated that as a result of the 2007 spending in the electric sector, they needed to generate about 284 million fewer kilowatt hours of power in 2007 than they would have otherwise. (See Table III-6, page 15, and Table III-7, page 16.) In the natural gas sector, the utilities calculated that their 2007 spending resulted in gas consumption being 8 million therms less than it would have been otherwise. (A therm is equivalent to 100 cubic feet.) (See Table III-6, page 15, and Table III-8, page 17.)

Each of the three IOUs submitted an annual report providing details of its energy efficiency operations in 2007. Each of those annual reports contained the equivalent of an executive summary, and those summaries appear in this report to the General Assembly on pages 18 through 35.

Table III-1
States Ranked by Spending Budgeted
For Energy Efficiency (EE) and Load Management (LM)
In 2007

	Amount Budgeted For				
	EE Electric	Load Management	EE Natural Gas	EE & LM Total	Rank In Total Spending
California	$823,200,000	$204,500,000	$182,500,000	$1,210,200,000	1
New York	$239,800,000	$15,700,000	$15,000,000	$270,600,000	2
Florida	$119,500,000	$136,500,000	$0	$256,000,000	3
Massachusetts	$122,000,000	$0	$26,800,000	$148,800,000	4
New Jersey	$98,800,000	$0	$45,600,000	$144,400,000	5
Wisconsin	$58,000,000	$2,000,000	$53,900,000	$113,800,000	6
Connecticut	$72,700,000	$30,900,000	$4,000,000	$107,700,000	7
Iowa	$34,600,000	$36,900,000	$23,300,000	$94,800,000	8
Minnesota	$50,700,000	$20,900,000	$18,000,000	$89,600,000	9
Washington	$76,700,000	$0	$10,500,000	$87,200,000	10
Texas	$76,300,000	$6,700,000	$0	$83,000,000	11
Oregon	$46,000,000	$100,000	$0	$46,100,000	12
Utah	$23,100,000	$8,600,000	$7,000,000	$38,700,000	13
Nevada	$28,600,000	$7,900,000	$600,000	$37,100,000	14
Arizona	$30,500,000	$0	$0	$30,500,000	15
Georgia	$9,800,000	$19,900,000	$0	$29,700,000	16
Vermont	$23,800,000	$0	$1,600,000	$25,400,000	17
Colorado	$15,000,000	$7,200,000	$2,600,000	$24,800,000	18
Hawaii	$19,300,000	$5,100,000	$0	$24,400,000	19
Idaho	$15,900,000	$5,900,000	$1,000,000	$22,800,000	20
Rhode Island	$21,800,000	$0	$0	$21,800,000	21
New Hampshire	$18,800,000	$100,000	$2,400,000	$21,300,000	22
Michigan	$20,000,000	$0	$0	$20,000,000	23
Maine	$16,600,000	$0	$700,000	$17,300,000	24
Maryland	$2,000,000	$13,100,000	$800,000	$15,900,000	25
Tennessee	$11,500,000	$2,200,000	$0	$13,700,000	26
Montana	$12,000,000	$0	$0	$12,000,000	27
Indiana	$2,800,000	$3,300,000	$4,500,000	$10,600,000	28
Illinois	$5,200,000	$3,400,000	$0	$8,500,000	29
Missouri	$5,500,000	$2,000,000	$300,000	$7,800,000	30
Ohio	$3,200,000	$0	$2,900,000	$6,100,000	31
Kansas	$2,000,000	$2,300,000	$0	$4,300,000	32
Kentucky	$1,400,000	$800,000	$200,000	$2,400,000	33
New Mexico	$300,000	$0	$1,700,000	$2,000,000	34
Wyoming	$1,200,000	$0	$0	$1,200,000	35

Note: Fifteen states and the District of Columbia budgeted no money for energy efficiency and load management.

Sources: 1) Consortium for Energy Efficiency, for the amount each state budgeted for energy efficiency and load management in 2007; 2) U. S. Census Bureau, for the estimated population of each state in 2007; 3) Iowa Utilities Board staff, for the calculation of the amount budgeted per capita and the calculation of state rankings.

Table III-2
States Ranked by Per Capita Spending Budgeted
For Energy Efficiency (EE) and Load Management (LM)
In 2007

	Amount Budgeted Per Capita				State Rankings			
	EE Electric	LM	EE Natural Gas	EE & LM Total	EE Electric	LM	EE Natural Gas	EE & LM Total
Vermont	$38.31	$0.00	$2.58	$40.89	1	38	8	1
California	$22.52	$5.59	$4.99	$33.11	2	4	4	2
Iowa	**$11.58**	**$12.35**	**$7.80**	**$31.73**	**13**	**1**	**2**	**3**
Connecticut	$20.76	$8.82	$1.14	$30.75	3	2	11	4
Massachusetts	$18.92	$0.00	$4.16	$23.07	5	38	5	5
Rhode Island	$20.61	$0.00	$0.00	$20.61	4	38	37	6
Wisconsin	$10.35	$0.36	$9.62	$20.32	17	17	1	7
Hawaii	$15.04	$3.97	$0.00	$19.01	6	6	37	8
Minnesota	$9.75	$4.02	$3.46	$17.24	18	5	6	9
New Jersey	$11.37	$0.00	$5.25	$16.62	14	38	3	10
New Hampshire	$14.29	$0.08	$1.82	$16.19	7	22	9	11
Idaho	$10.60	$3.93	$0.67	$15.21	16	7	15	12
Utah	$8.73	$3.25	$2.65	$14.63	19	8	7	13
Nevada	$11.15	$3.08	$0.23	$14.46	15	9	19	14
Florida	$6.55	$7.48	$0.00	$14.03	20	3	37	15
New York	$12.43	$0.81	$0.78	$14.02	10	14	13	16
Washington	$11.86	$0.00	$1.62	$13.48	12	38	10	17
Maine	$12.60	$0.00	$0.53	$13.13	8	38	17	18
Montana	$12.53	$0.00	$0.00	$12.53	9	38	37	19
Oregon	$12.27	$0.03	$0.00	$12.30	11	23	37	20
Colorado	$3.09	$1.48	$0.53	$5.10	23	12	16	21
Arizona	$4.81	$0.00	$0.00	$4.81	21	38	37	22
Texas	$3.19	$0.28	$0.00	$3.47	22	19	37	23
Georgia	$1.03	$2.08	$0.00	$3.11	27	11	37	24
Maryland	$0.36	$2.33	$0.14	$2.83	32	10	20	25
Wyoming	$2.30	$0.00	$0.00	$2.30	24	38	37	26
Tennessee	$1.87	$0.36	$0.00	$2.23	26	16	37	27
Michigan	$1.99	$0.00	$0.00	$1.99	25	38	37	28
Indiana	$0.44	$0.52	$0.71	$1.67	30	15	14	29
Kansas	$0.72	$0.83	$0.00	$1.55	29	13	37	30
Missouri	$0.94	$0.34	$0.05	$1.33	28	18	21	31
New Mexico	$0.15	$0.00	$0.86	$1.02	35	38	12	32
Illinois	$0.40	$0.26	$0.00	$0.66	31	20	37	33
Kentucky	$0.33	$0.19	$0.05	$0.57	33	21	22	34
Ohio	$0.28	$0.00	$0.25	$0.53	34	38	18	35

Note: Fifteen states and the District of Columbia budgeted no money for energy efficiency and load management.

Sources: 1) Consortium for Energy Efficiency, for the amount each state budgeted for energy efficiency and load management in 2007; 2) U. S. Census Bureau, for the estimated population of each state in 2007; 3) Iowa Utilities Board staff, for the calculation of the amount budgeted per capita and the calculation of state rankings.

Table III-3
Iowa Investor-Owned Utility Companies
Spending on Energy Efficiency Programs and Load Management
In 2007

	MidAmerican	IPL/Alliant	Black Hills	Total
Energy Efficiency Programs	**$35,267,908**	**$30,953,867**	**$3,592,458**	**$69,814,232**
Electric	$19,454,240	$21,926,911	-----	$41,381,151
Natural Gas	$15,813,668	$9,026,956	$3,592,458	$28,433,082
Load Management	**$10,815,747**	**$25,792,238**	**-----**	**$36,607,985**
Total	**$46,083,654**	**$56,746,105**	**$3,592,458**	**$106,422,217**

Note: Rows and columns may not sum because of independent rounding.
Sources: Utilities' 2007 annual reports for energy efficiency programs.

Table III-4
Iowa Investor-Owned Utility Companies
Spending for Electric Energy Efficiency Programs and Load Management
In 2007

	MidAmerican	IPL/Alliant	Total
Energy Efficiency Programs	**$19,454,240**	**$21,926,911**	**$41,381,151**
Residential	**$6,793,887**	**$9,567,005**	**$16,360,892**
Equipment/Prescriptive Rebates	$2,459,871	$6,219,823	$8,679,694
Appliance Recycling	-----	$692,105	$692,105
New Construction	$2,390,762	$1,272,298	$3,663,060
Energy Audits	$1,423,054	$728,202	$2,151,256
Low-Income	$520,199	$654,577	$1,174,776
Non-Residential	**$11,248,460**	**$10,101,355**	**$21,349,815**
New Construction	$4,875,302	$1,692,250	$6,567,552
Equipment/Prescriptive Rebates	$2,593,421	$1,577,788	$4,171,209
Commercial Energy Audits	$742,543	-----	$742,543
Energy Analysis	$1,578,285	-----	$1,578,285
Custom Rebates	$1,016,480	$5,211,175	$6,227,656
Efficiency Bid	$442,429	-----	$442,429
Performance Contracting	-----	$1,090,079	$1,090,079
Agriculture	-----	$530,062	$530,062
Other	**$1,411,893**	**$2,258,551**	**$3,670,444**
Trees	$275,865	$663,201	$939,066
Assessments/Regulatory	$1,136,028	$1,185,128	$2,321,156
Other	-----	$410,222	$410,222
Load Management	**$10,815,747**	**$25,792,238**	**$36,607,985**
Residential	$3,177,993	$2,796,907	$5,974,900
Non-Residential	$7,637,754	$22,995,332	$30,633,085
Total Energy Efficiency and Load Management	**$30,269,986**	**$47,719,149**	**$77,989,135**

Note: Rows and columns may not sum because of independent rounding.
Sources: Utilities' 2007 annual reports for energy efficiency programs.

Table III-5
Iowa Investor-Owned Utility Companies
Spending for Natural Gas Energy Efficiency Programs
In 2007

	MidAmerican	IPL/Alliant	Black Hills	Total
Residential	**$12,538,264**	**$6,894,022**	**$2,650,446**	**$22,082,732**
Equipment/Prescriptive Rebates	$3,421,744	$3,269,006	$1,623,108	$8,313,858
New Construction	$4,490,168	$703,739	$391,440	$5,585,347
Energy Audits	$2,819,308	$597,093	$186,467	$3,602,868
Low-Income	$1,807,044	$2,324,184	$449,431	$4,580,659
Non-Residential	**$2,344,463**	**$1,628,724**	**$329,375**	**$4,302,562**
New Construction	$1,008,275	$176,446	-----	$1,184,721
Equipment/Prescriptive Rebates	$258,261	$633,442	$119,073	$1,010,776
Commercial Energy Audits	$629,207	-----	$29,305	$658,512
Energy Analysis	$98,169	-----	-----	$98,169
Custom Rebates	$348,786	$531,477	$180,997	$1,061,260
Efficiency Bid	$1,766	-----	-----	$1,766
Performance Contracting	-----	$287,259	-----	$287,259
Agriculture	-----	$100	-----	$100
Other	**$930,941**	**$504,211**	**$612,636**	**$2,047,788**
Trees	$279,388	-----	$118,786	$398,174
Assessments/Regulatory	$651,553	$328,130	$186,810	$1,166,493
Other	-----	$176,081	$307,040	$483,121
Total	**$15,813,668**	**$9,026,956**	**$3,592,458**	**$28,433,082**

Note: Rows and columns may not sum because of independent rounding.
Sources: Utilities' 2007 annual reports for energy efficiency programs.

Table III-6
Iowa Investor-Owned Utility Companies
Energy Savings
Resulting from Energy Efficiency Programs and Load Management
In 2007

kWh of Electricity Saved in 2007 as a Result of EE and LM Measures Initiated in 2007

	MidAmerican	IPL/Alliant	Total
Energy Efficiency Programs	**161,690,473**	**120,206,222**	**281,896,695**
Load Management	**2,030,380**	**-----**	**2,030,380**
Total	**163,720,853**	**120,206,222**	**283,927,075**

Therms of Natural Gas Saved in 2007 as a Result of EE Measures Initiated in 2007

	MidAmerican	IPL/Alliant	Black Hills	Total
Energy Efficiency Programs	**3,718,576**	**2,888,205**	**1,453,390**	**8,060,171**

Note: Rows and columns may not sum because of independent rounding.
Sources: Utilities' 2007 annual reports for energy efficiency programs.

Table III-7
Iowa Investor-Owned Utility Companies
Electric Energy Savings
Resulting from Energy Efficiency Programs and Load Management
In 2007

	kWh Saved in 2007 As a Result of EE and LM Measures Initiated in 2007		
	MidAmerican	**IPL/Alliant**	**Total**
Energy Efficiency Programs	**161,690,473**	**120,206,222**	**281,896,695**
Residential	**29,135,527**	**34,136,049**	**63,271,576**
Equipment/Prescriptive Rebates	4,911,600	19,065,554	23,977,154
Appliance Recycling	-----	6,515,723	6,515,723
New Construction	8,856,052	3,445,549	12,301,601
Energy Audits	13,707,482	2,827,702	16,535,184
Low-Income	1,660,393	2,281,521	3,941,914
Non-Residential	**132,554,946**	**86,070,173**	**218,625,119**
New Construction	33,881,815	6,176,234	40,058,049
Equipment/Prescriptive Rebates	74,280,767	11,720,541	86,001,308
Commercial Energy Audits	3,203,582	-----	3,203,582
Energy Analysis	8,240,475	-----	8,240,475
Custom Rebates	10,065,550	54,869,056	64,934,606
Efficiency Bid	2,882,757	-----	2,882,757
Performance Contracting	-----	8,066,557	8,066,557
Agriculture	-----	5,237,785	5,237,785
Load Management	**2,030,380**	**-----**	**2,030,380**
Residential	952,389	-----	952,389
Non-Residential	1,077,991	-----	1,077,991
Total	**163,720,853**	**120,206,222**	**283,927,075**

Note: Rows and columns may not sum because of independent rounding.
Sources: Utilities' 2007 annual reports for energy efficiency programs.

Table III-8
Iowa Investor-Owned Utility Companies
Natural Gas Energy Savings
Resulting from Energy Efficiency Programs
In 2007

	Therms Saved in 2007 As a Result of EE Measures Initiated in 2007			
	MidAmerican	**IPL/Alliant**	**Black Hills**	**Total**
Residential	**2,889,646**	**1,929,668**	**1,026,820**	**4,921,996**
Equipment/Prescriptive Rebates	805,684	940,125	877,590	1,833,568
New Construction	1,307,020	164,002	86,350	1,479,657
Energy Audits	631,351	650,922	37,380	1,286,011
Low-Income	145,591	174,619	25,500	322,760
Non-Residential	**828,930**	**958,537**	**298,660**	**1,817,333**
New Construction	457,408	76,155	-----	533,563
Equipment/Prescriptive Rebates	142,756	236,330	150,090	394,095
Commercial Energy Audits	119,020	-----	-----	119,020
Energy Analysis	1,576	-----	-----	1,576
Custom Rebates	108,170	476,390	148,570	599,417
Performance Contracting	-----	144,739	-----	144,739
Agriculture	-----	24,923	-----	24,923
Other	**-----**	**-----**	**127,920**	**12,792**
Total	**3,718,576**	**2,888,205**	**1,453,390**	**8,060,171**

Note: Rows and columns may not sum because of independent rounding.
Sources: Utilities' 2007 annual reports for energy efficiency programs.

Section 2. MidAmerican Energy Company – 2007 Energy Efficiency Report

EXECUTIVE SUMMARY

Introduction

MidAmerican Energy Company (MidAmerican) presents its 2007 annual report on energy efficiency programs and activities. MidAmerican had a successful year in 2007, making additional progress toward each of our three central goals for the current plan.

- MidAmerican increased the emphasis on commercial and industrial customers by continuing to grow the core group of business customers who have adapted their corporate cultures to internalize energy efficiency into their management processes. MidAmerican's customers are making energy efficiency part of their core corporate values similar to their emphasis on quality and safety. The strong performance of our nonresidential programs in 2007 is a reflection of our customers' commitments to energy efficiency. In 2007, MidAmerican continued to encourage nonresidential customers to take a comprehensive approach to energy efficiency. The success of this effort is found in the improved results in 2007 compared to 2006 of our comprehensive programs such as Nonresidential Custom, Commercial New Construction and Nonresidential Energy Analysis. MidAmerican is proud of its role in encouraging customers to make energy efficiency part of their core values and in partnering with them in their corporate-wide adoption of energy efficiency practices.

- MidAmerican increased advertising and promotion efforts to raise customer awareness of programs and promote the benefits of energy efficiency. Last year was the second full year for MidAmerican's updated *Save some green*®. campaign, including Mr. Green as the campaign's chief spokesperson. In June of 2007, MidAmerican held important consumer focus group meetings to gain customer feedback and impressions of energy efficiency advertising and our *Save some green. campaign.* The information collected was valuable and was used in 2007 to update our television ads. In 2008, MidAmerican plans to make additional updates to the media campaign, drawing on information from the focus group meetings.

- MidAmerican accomplished these goals without sacrificing the ongoing success of our residential programs. Major accomplishments in the residential sector included extending the Energy Wise low-income program to include all Community Action Program agencies in the Iowa service territory and increasing the total number of electric and natural gas measures rebated or financed compared to 2006. Additionally, MidAmerican dramatically increased the number of participating homes in the Residential New Construction program that utilized the ENERGY STAR® performance path that requires individual modeling of the home to ensure its energy savings to 2,508 in 2007 compared to 812 in 2006. Correspondingly, the number of Home Energy Rating System (HERS) raters in Iowa who perform third-party inspections for our Residential New Construction program increased to 18 in 2007

compared to 3 in early 2006. This is a solid example of a MidAmerican energy efficiency program's ability to transform markets and delivery channels.

Key Successes in 2007

MidAmerican also achieved great success in a number of other areas.

- MidAmerican received a number of awards recognizing local, regional and national leadership in energy efficiency, including the following.
  - MidAmerican's seventh consecutive *ENERGY STAR-Labeled Homes Outstanding Achievement Award* from the U.S. Environmental Protection Agency (EPA)
  - American Council for an Energy-Efficient Economy (ACEEE) Certificate of Recognition for Exemplary Programs, Honorable Mention for the Residential New Construction Program
    - The award certificate states the following: *In recognition of its success and effectiveness in helping customers realize greater levels of energy efficiency. This program has yielded significant economic and environmental benefits through the energy savings it has achieved. MidAmerican Energy is commended for this high quality program which is hereby selected for honorable mention by the ACEEE in our 2007 national review of energy efficiency programs.*
  - Utility Communicators International 2007 Better Communications Competition Complete Campaign Marketing Award
  - MidAmerican was recognized for its Mr. Green/Save some green. advertising campaign which utilizes television, radio, print, magazine, Internet banner and outdoor advertising.
  - The Tree Line USA award from the National Arbor Day Foundation

- MidAmerican passed important milestones marking our continuing program success, including the following.
  - Exceeded all plan participation and energy-savings goals for 2007
  - Exceeded overall plan kilowatt-hour savings goals by about 134 percent and other savings goals by about 9 percent to 35 percent
  - Completed our 21,000th ENERGY STAR new home
  - Installed our 59,000th residential load control receiver
  - Completed our 105,000th residential energy audit
  - Approved six bids from industrial customers during the fourth year of the Efficiency Bid® program
  - Improved contract realization rate for kW reduced through our Nonresidential Load Management program by six points in 2007 to 93 percent compared to 87 percent in 2006
  - Eleven customers signed comprehensive energy efficiency action plans through the Nonresidential Energy Analysis (*EfficiencyPartners*®) program, bringing our total number of program enrollees to 38. One of the new energy

efficiency action plans includes 19 individual energy efficiency improvement projects to be completed during the next few years.

- o Aside from customer enrollments and energy efficiency action plans, MidAmerican is proud of its *EfficiencyPartners* program. It was very challenging to go from thinking about individual or multiple pieces of energy efficiency equipment to comprehensive holistic energy efficiency action plans. When MidAmerican implemented the idea that comprehensive energy efficiency projects should include four elements (operation improvements to reduce energy, installing/retrocommissioning energy management systems, upgrading equipment and making energy efficiency structural improvements), the concept of the energy efficiency action plan started to take on meaning and we were able to easily communicate the idea to key account managers and customers. MidAmerican expects this program to continue growing to the point when it will be a pillar of future energy efficiency plans.
- o Exceeded participation goals in Nonresidential Equipment by 55 percent

- During 2007, we started and/or completed several important energy-efficiency initiatives including:
  - o Completed the third year of the statewide retail sales promotion of compact fluorescent light bulbs during the EPA's *Change A Light, Change The World* campaign. The 2007 CFL promotion was implemented jointly with Interstate Power & Light Company. Fifty-three local and municipal utilities participated in the campaign,
  - o Continued developing the new five-year energy efficiency plan. Activities underway in 2007 included calculating new electric and gas avoided costs, completing the new IOU joint assessment of energy efficiency potential, developing a work plan and timeline for program development workshops and developing program concepts for potential new programs and tweaking program concepts for existing programs,
  - o Selection of a vendor to build MidAmerican's new energy efficiency management information system (EEMIS) and
  - o Held focus groups in June 2007 to help understand customers' perceptions of MidAmerican's energy efficiency advertising.

- Energy efficiency program implementation efforts contributed directly to MidAmerican's high level of customer satisfaction, recognized by MidAmerican's continued success as a leader in the J.D. Power and Associates customer satisfaction surveys and its number one ranking in the Total Quality Solutions industrial customer satisfaction survey.

- Nonresidential Load Management added five new participants and about 2.7 MW of interruptible load without increasing interruptible customer incentives, and MidAmerican successfully conducted one mandatory curtailment event during the summer season.

- Residential Load Management exceeded its goal of adding 2,000 new participants by 23 percent and MidAmerican successfully conducted four cycling events.

- Commercial New Construction had a record number of completed projects in 2007 - 49 - with almost 34 million annual kWh savings and 450,000 therm savings. The program enrolled 56 new projects during 2007 compared to 60 new projects in 2006.

- During 2007, MidAmerican continued to implement the *Energy Efficiency Awareness Campaign*® that large commercial and industrial customers use to increase awareness and reduce energy usage among their employees and students.

- MidAmerican and its contractors, A-TEC Energy Corporation and The Energy Group, continued to increase customer participation in the BusinessCheck (small commercial energy audit) program in 2007.
    - In 2007, MidAmerican received 1,016 requests for small business energy audits, a 30 percent increase over 2006, and we completed 778 energy audits in 2007, including installing 12,588 energy efficiency measures as a result of the audits and follow-up actions by customers.

- MidAmerican has continued its collaboration with other stakeholders, including the trade allies that help deliver programs to customers as well as the local, regional and national organizations that shape energy efficiency policy. Representatives from MidAmerican's energy efficiency department serve on the boards of directors of the national Consortium for Energy Efficiency, the Midwest Energy Efficiency Alliance, the Iowa Association of Energy Efficiency and the Center on Sustainable Communities. MidAmerican is a member of the Demand Response Coordinating Committee that holds frequent national *Town Meetings* regarding demand response programs and activities. MidAmerican also is a member of the Leadership Group of the DOE/EPA/NARUC-sponsored National Action Plan for Energy Efficiency (NAPEE), including serving on the new Advisory Group that is overseeing ongoing NAPEE efforts regarding monitoring and evaluation. MidAmerican also participates in the Association of Energy Service Professionals (with an emphasis on program implementation) and the Association of Energy Engineers (with an emphasis on energy efficiency technologies).

- Many of MidAmerican's energy efficiency programs continue to be affiliated with the EPA's ENERGY STAR certification programs including the *Change A Light, Change The World* CFL promotional campaign, the EPA ENERGY STAR new homes certification program and the Portfolio Manager commercial building benchmarking tool.

- MidAmerican helped customers better manage their energy use, reduce their energy costs, improve their productivity and competitiveness and help protect the environment.

Key Challenges in 2007

MidAmerican also faced and overcame a number of challenges during 2007.

- During 2007, increases in mortgage rates and the well publicized mortgage loan crisis contributed to fewer new homes being built and fewer participants in MidAmerican's Residential New Construction program. Despite the slowdown, program participation did not decline in proportion to the overall reduction in new housing starts. However, the total number of new homes in the program declined by 10 percent to 3,790 in 2007 from 4,209 in 2006.

- Customer interest in residential energy audits declined from the extremely high levels of the 2005-2006 heating season. MidAmerican promoted the program more in 2007 than in 2006 to reach the participation goal of 6,000 audits.

- The Commercial New Construction program continues to face a challenge enrolling new buildings and additions having less than 15,000 square feet. MidAmerican experimented with several different approaches in order to improve small building participation. Results were mixed.

- Although its performance still exceeded goal by 50 percent, the number of projects approved for Efficiency Bid was less at six in 2007 compared with the 11 approved projects MidAmerican recorded in 2006 and the 18 approved projects recorded in 2005. The declining number of projects in the program is explained in part by a growing customer preference for MidAmerican's Nonresidential Energy Analysis program and the fact that large customers may have already submitted their best and most obvious projects in prior program years. MidAmerican is addressing these concerns by reducing the minimum customer size requirement for the program from 3 MW to 2 MW in 2009.

- As part of our new energy efficiency plan development, during 2007 MidAmerican began investigating comprehensive residential energy efficiency programs that encourage efficiency improvements in existing homes. Residential customers in existing homes can participate in MidAmerican's HomeCheck®, Residential Equipment and SummerSaver℠ programs; however, it may be possible to develop a more effective and efficient method to promote and deliver the benefits of these programs to customers in existing homes. The challenge is identifying alternative methods and the associated costs for delivering program benefits.

- All programs managed uncertainty to deliver participation and savings goals within budget. However, a few programs faced substantial uncertainties from forces out of program managers' control. Although the housing boom of the last few years seems to be slowing, participation in MidAmerican's Residential New Construction program continued at high levels; the Nonresidential Equipment program faced high demand for lighting systems and variable-speed drives; and there was a steady level

of customer applications for the Nonresidential Custom program. By using the flexibility built into the rules, MidAmerican was able to continue to meet the customer participation-driven funding requirements of all programs and ended the year with savings that exceeded plan goals by 9 to 140 percent against expenditures that exceeded plan goals by about 33 percent.

Key Activities Planned for 2008

Most 2008 program management activities will maintain the momentum of the 2004 - 2007 timeframe. Program managers will continue to update measures, incentives, promotions and other activities to ensure that the programs continue to grow and meet the needs of our customers. However, there are a few additional initiatives that deserve special mention.

- MidAmerican will file its new energy efficiency plan on or before the due date of April 30, 2008.

- MidAmerican will complete the regulatory process related to the new energy efficiency plan and will prepare to implement the new plan.

- MidAmerican will support the Iowa Utilities Board's implementation of the 2008 *Iowa Weatherization Challenge*, the Midwest Natural Gas Initiative and the DOE/EPA/NARUC-sponsored National Action Plan for Energy Efficiency.

- MidAmerican will promote comprehensive energy efficiency retrofits in existing homes and we will continue efforts to expand participation in the Nonresidential Energy Analysis program (*EfficiencyPartners*).

- MidAmerican will continue developing a new energy efficiency management information system to better support implementation of MidAmerican's energy efficiency programs.

- MidAmerican will continue promoting customer purchases of compact fluorescent light bulbs through a joint MidAmerican – Interstate Power & Light Company retail sales promotion with in-store rebates in October and November 2008, in conjunction with the EPA's annual *Change A Light, Change The World* CFL promotional campaign.

- MidAmerican will continue efforts to expand weatherization services to low-income multifamily and institutional housing.

- MidAmerican will begin replacing the oldest load control receivers with new models in the Residential Load Management program.

- MidAmerican will continue expanding our efforts to engage large commercial and industrial customers in energy efficiency.

Conclusion

MidAmerican is pleased with the progress made in energy efficiency in 2007 and we look forward to continued progress in 2008. The balance of this report includes informative narratives for each 2007 energy efficiency program. In addition, narratives are included for other important energy efficiency functions that are directly related to the implementation of programs but are not programs themselves. These functions include advertising and promotion, EnergyAdvantage® Financing, trade ally relations and online energy audits.

MidAmerican's focus has been to provide useful, substantive and insightful information about program successes and the challenges and barriers faced while implementing them. Our goal is to provide a better understanding of our processes and to communicate MidAmerican's serious commitment to providing excellent energy efficiency programs for customers in Iowa.

Section 3. Interstate Power and Light Company – 2007 Energy Efficiency Report

PLAN AND PROGRAM SUMMARIES

1. 1 Introduction

In response to the Iowa Utilities Board's (IUB's or Board's) order in Docket No. EEP-02-38 and the Board's final orders in Docket Nos. EEP-03-1 (MidAmerican Energy [MEC]), EEP-03-3 (Atmos Energy) and EEP-03-4 (Aquila), Interstate Power and Light Company (IPL) files here a comprehensive report for 2007. For calendar year 2007 the program offerings are from the Energy Efficiency Plan (Plan) approved in Docket No. EEP-02-38 by Board orders issued June 3, 2003, November 30, 2005, and October 20, 2006.

Section 1 of this report summarizes the Plan and program results. Section 2 gives a program-by-program report. Included in Section 2 are program descriptions, administrative budgets, incentives paid, participation rates, associated energy and peak demand savings, and cost effectiveness for the programs. Also included in Section 2 is a description of each program's eligibility criteria, target markets, energy efficiency measure descriptions and incentives.

1.2 Overall Energy Savings, Spending and Cost-Effectiveness

IPL is proud to announce that the estimated electric energy savings for 2007 exceeded the total program goal by 54 percent, while the total program expenditures were 0.1 percent over budget. IPL achieved a total savings of over 120 million kilowatt-hours (kWh) with peak demand reductions of 302 megawatts (MW) from all participants.

Natural gas energy savings exceeded the total program goal by 13 percent, with expenditures 7 percent below the budget. Natural gas energy savings reached 2.9 million therms with peak-day demand reductions of 38,852 therms per day.

Tables 1-1 and 1-2 summarize the aggregate expenditures and energy savings impacts for all IPL Residential, Nonresidential, Load Management and Other energy efficiency programs. The Other category includes Low Income, Agriculture and Trees programs and the regulatory assessments for the Iowa Energy Center and the Iowa Center for Global and Regional Environmental Research.

Table 1-1: Aggregate Actual Expenditures

Program Type	Electric Programs			Natural Gas Programs		
	Budget	Actual	% of Budget	Budget	Actual	% of Budget
Residential	$8,149,218	$8,912,428	109.4%	$5,379,604	$4,569,838	84.9%
Nonresidential	$10,000,442	$9,571,292	95.7%	$1,619,549	$1,628,624	100.6%
Load Management	$26,965,172	$25,792,239	95.7%	NA	NA	NA
Other (Low Inc, Ag, Etc.)	$2,570,039	$3,443,190	134.0%	$2,713,072	$2,828,495	104.3%
Total	**$47,684,871**	**$47,719,149**	**100.1%**	**$9,712,225**	**$9,026,957**	**92.9%**

Table 1-2: Aggregate Energy and Peak Demand Impacts

Electric Programs	2007 Energy Savings (MWh)			2007 Peak Demand Reduction (MW)		
	Goal	Actual	% of Goal	Goal	Actual	% of Goal
Residential	15,170	31,855	210.0%	6.7	12.3	184.2%
Nonresidential	59,800	80,832	135.2%	14.7	14.6	99.3%
Load Management	NA	NA	NA	345.5	273.6	79.2%
Other (Low Inc, etc)	3,072	7,519	244.8%	0.7	1.7	253.3%
Total Electric	**78,042**	**120,206**	**154.0%**	**367.5**	**302.2**	**82.2%**

Natural Gas Programs	2007 Energy Savings (Therms)			2007 Peak-Day Reduction		
	Goal	Actual	% of Goal	Goal	Actual	% of Goal
Residential	1,631,900	1,755,049	107.5%	22,698	23,793	104.8%
Nonresidential	730,000	933,614	127.9%	8,869	12,079	136.2%
Other (Low Inc, etc)	204,375	199,542	97.6%	2,861	2,981	104.2%
Total Natural Gas	**2,566,275**	**2,888,205**	**112.5%**	**34,427**	**38,852**	**112.9%**

IPL's programs were very cost effective overall, as seen in Table 1-3. The electric program benefit-cost ratio is 2.94 and the natural gas program ratio is 2.08. The lifetime electric and natural gas societal benefits from the installed measures are $484,767,287.

The Other category in Table 1-3 includes the Trees program costs, regulatory costs related to assessments for the Iowa Energy Center and the Iowa Center for Global and Regional Environmental Research, and development costs of the next (2009-2013) IPL Plan. All of the programs and assessments in the Other category except the Low Income program are items where there are costs but no reportable benefits. When the effects of the Load Management programs are removed, the overall benefit-cost ratio including electric and natural gas results is 2.41, with lifetime societal benefits of $171,951,669. Finally, every ongoing program has a positive societal test benefit-cost ratio.

Table 1-3: Cost-Effectiveness Societal Test Result Summary using Full Impacts of Load Management Programs

Program Type		Dollars			B/C Ratio
		Societal Benefits	Societal Costs	Net Benefits	
Electric Programs	Residential	$55,684,760	$18,345,863	$37,338,897	3.04
	Nonresidential	$72,078,386	$30,333,784	$41,744,602	2.38
	Load Management	$312,815,618	$98,394,694	$214,420,923	3.18
	Other (Low Inc, etc)	$10,171,786	$6,399,159	$3,772,627	1.59
	Total Electric	$450,750,550	$153,473,501	$297,277,049	2.94
Gas Programs	Residential	$20,509,598	$9,211,478	$11,298,119	2.23
	Nonresidential	$11,275,897	$5,161,789	$6,114,108	2.18
	Other (Low Inc, etc)	$2,231,241	$1,987,906	$243,336	1.12
	Total Gas	$34,016,737	$16,361,174	$17,655,563	2.08
Total All Programs		**$484,767,287**	**$169,834,675**	**$314,932,612**	**2.85**
Total Energy Efficiency Only		**$171,951,669**	**$71,439,980**	**$100,511,689**	**2.41**

An alternative perspective was run for the two Load Management programs, interruptible and direct load control, using the incremental impacts of these programs realized during 2007 rather than the full impacts analyzed above. The results of the cost-effectiveness analysis under this alternative are summarized in Table 1-4. The main difference is that with the incremental impacts the overall electric program benefit-cost ratio is reduced from 2.94 (Table 1-3) to 2.44 (Table 1-4).

Table 1-4: Cost Effectiveness Societal Test Result Summary using Incremental Impacts of Load Management Programs

	Program Type	Dollars			B/C Ratio
		Societal Benefits	Societal Costs	Net Benefits	
Electric Programs	Residential	$55,684,760	$18,345,863	$37,338,897	3.04
	Nonresidential	$72,078,386	$30,333,784	$41,744,602	2.38
	Load Management	$4,526,909	$3,424,840	$1,102,069	1.32
	Other (Low Inc, etc)	$10,171,786	$6,399,159	$3,772,627	1.59
	Total Electric	$142,461,841	$58,503,647	$83,958,194	2.44
Gas Programs	Residential	$20,509,598	$9,211,478	$11,298,119	2.23
	Nonresidential	$11,275,897	$5,161,789	$6,114,108	2.18
	Other (Low Inc, etc))	$2,231,241	$1,987,906	$243,336	1.12
	Total Gas	$34,016,737	$16,361,174	$17,655,563	2.08
Total All Programs		**$176,478,578**	**$74,864,820**	**$101,613,757**	**2.36**
Total Energy Efficiency Only		**$171,951,669**	**$71,439,980**	**$100,511,689**	**2.41**

1.3 Program Highlights for Residential Customers

The residential portfolio had a very successful year, with a 4 percent increase in kWh savings and a 12 percent increase in therm savings as compared to 2006 year-end results. The kWh savings for 2007 exceeded the residential goal by over 100 percent and the demand savings goal by over 80 percent. IPL also exceeded the natural gas goal with savings of over 1.76 million therms.

The highly successful “Change a Light, Change the World” campaign was expanded in 2007 to include partnerships with 53 electric municipal utilities and cooperatives in addition to MEC. This in-store, instant rebate promotion resulted in IPL savings of over 8 million kWh for residential customers, plus over 822,000 kWh for small business.

Additionally, an innovative marketing approach led to virtually immediate response from customers. Personal use history reports were individualized for all residential customers and provided household specific usage information, energy efficiency tips and rebate information. This campaign resulted in significant increases to online and on-site audits.

And, building on its 2006 success, the annual “Iowa Weatherization Challenge” was promoted heavily to civic groups and organizations. This led to the distribution of eight

$500 matching grants from IPL, which resulted in the weatherization of an estimated 247 homes.

1.4 Program Highlights for Small Business and Agriculture Customers

Small business customers are the primary target for the Nonresidential Prescriptive Rebates program; judging by the results, the program effectively met their needs. The kWh goal was exceeded by 186 percent and the therm goal was exceeded by 75 percent. The therm goal success is a result of adding the insulation rebate in 2005, which accounts for over 40 percent of the program's therm savings.

IPL engaged almost two-and-a-half times as many agriculture customers to participate in the program as were targeted as a program goal. Agriculture kWh impacts also exceeded the goal by 149 percent.

1.5 Program Highlights for Commercial and Industrial Customers

IPL surpassed four of the five aggregate Energy Solutions for Business and Industry (ESBI) program goals, exceeding kWh by 35 percent, therms by 28 percent, electric participation by 31 percent and natural gas participation by 53 percent. IPL fell just short of the kW goal, achieving 99 percent of the targeted demand savings.

Nonresidential Prescriptive Rebates continued as the lead program of choice for nonresidential (primarily small business) customers, with over 3,000 electric and 900 natural gas participants, and exceeded both kWh and therm goals by significant amounts (286 percent of kWh goal and 175 percent of therm goal).

Custom Rebates again delivered the greatest energy impacts of the four ESBI programs with nearly 55 million kWh (196 percent of goal) and 476,000 therms (242 percent of goal). Custom Rebates is the first ESBI program of choice for large commercial and industrial customers. The Custom Rebates program funds the Building Operator Certification (BOC) program, which is a nationally recognized competency-based training and certification program for operations and maintenance staff working in commercial, institutional or industrial buildings. The first training session, held in Cedar Rapids beginning February 13, 2007, was sold out; this is the first time in the nation that the demand for a BOC training session has exceeded the planned supply of training slots. The Des Moines training, which began October 2007, was also sold out.

IPL completed its first full year with a redesigned Performance Contracting program, including a bidding process and new independent third-party program administrator. The program had a 20 percent increase in the number of projects completed in 2007, compared to the previous year. However, the energy savings decreased by 18.7 percent for electric and 36 percent for natural gas.

The Nonresidential Commercial New Construction program, which was launched in May 2005, verified 13 projects in 2007 and completed its first full year of verifications. IPL

also enrolled 64 new projects and expects to see a 238 percent growth in the number of projects verified in 2008 as compared to 2007.

1.6 Plan Highlights, Successes and Challenges

IPL's energy efficiency programs offer residential, agricultural and commercial and industrial customers a wide range of energy savings opportunities. This year 158,713 electric and natural gas participants invested in high-efficiency technologies to increase comfort, improve productivity and lower energy use by participating in IPL energy savings programs. As seen above, IPL electric energy savings exceeded the total program goal by 54 percent and exceeded the natural gas energy savings total program goal by 13 percent, while under spending the approved budget by 1 percent.

A major success is that IPL met the natural gas energy savings goal that has been a challenge in prior years. Another major accomplishment is that IPL began a five-year test and maintenance plan for the residential direct load control program. The maintenance plan in 2007 included testing switches in the Dubuque and Mason City areas and upgrading switches in under-performing areas.

One of the major challenges in 2007 was the State of Iowa adoption of the International Energy Conservation Code (ASHRAE 90.1 2004). Market transformation is working, but caused growing pains—the new building code is a success for our state and environment, but the higher baseline measurements for several technologies erode the impacts that are available. Furthermore, higher federal appliance standards such as the minimum air conditioner SEER rating compounds this challenge. These challenges will continue to make it difficult to achieve 2007 results in 2008.

Section 4. Aquila - Iowa – 2007 Energy Efficiency Report

INTRODUCTION

Aquila operates a suite of programs for its residential, commercial, and industrial consumers in Iowa. These programs are designed to encourage the adoption of high-efficiency gas technologies and behaviors. As requested by the Iowa Utilities Board (IUB), Aquila respectfully submits this status report for the program year 2007. In this report, Aquila will:

- Summarize program participation, expenditures, and impacts
- Document adaptive management strategies over the course of the reporting period
- Demonstrate the overall cost-effectiveness of specific programs and the overall program portfolio

The various programs offered by Aquila to Iowa customers during 2007 are listed in Table 1.

Table 1. Program Offerings

Program	
Residential	
Residential Heating	Furnace Replacement
	Envelope Measures Retrofit
	Water Heating
	Setback Thermostats & Maintenance of Furnaces
	Innovative Space & Water Heating Technologies
Residential New Construction	Performance-Based Incentives for High-Efficiency Construction
Residential Audit	Site Visits & Low-Cost Measures
School-Based Energy Education	Curriculum Materials & Low-Cost Measures
Commercial & Industrial	
Commercial & Industrial	Small Commercial Audits
	C&I Prescriptive Rebates
	C&I Custom Rebates
	Building Operator Certification
Special Programs	
Low-Income	Weatherization
	Energy Education
	Habitat for Humanity (New Construction)
	Multi-Family Efficiency Improvements
	Weatherization Teams
Other	Tree Planting Program
Other	Iowa Energy Center & Center for Global Environmental Research
Other	Energy Efficiency Plan 2009-2013

While spending was higher than budget for the program year, participation and impacts greatly exceeded goals, as shown in Figure 1.

Figure 1. 2007 Program Results

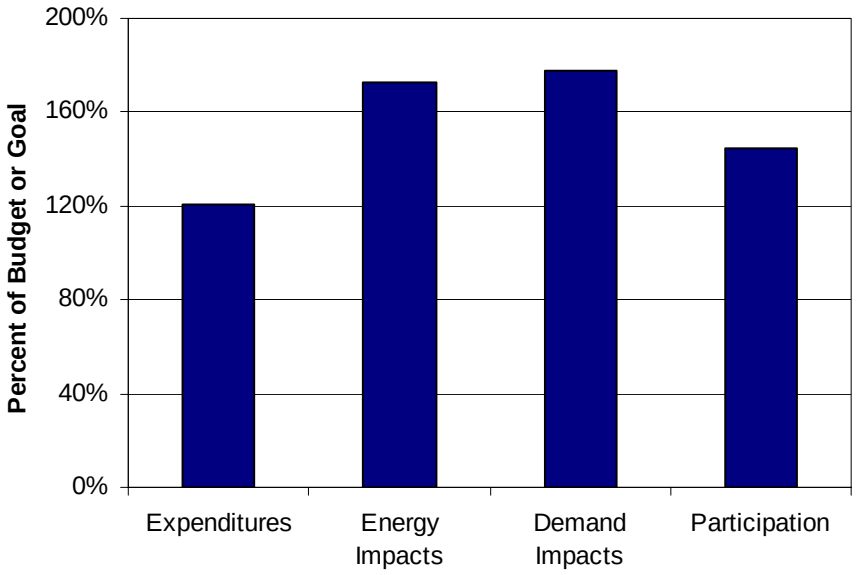


Table 2 compares the Aquila Energy Efficiency Plan goals for 2007 to actual expenditures, impacts, and participation. Program expenditures, impacts, and participation all exceeded projected budgets and goals as interest in programs remained high. Budgets have increased by 2.6% over the 2006 levels as provided for in Aquila's Energy Efficiency Plan.[1] Participation and impact goals have increased by 2.2%.

Table 2. 2007 Program Goals and Performance

	Budget or Goal	Actual	% Budget or Goal Achieved
Expenditures	$2,968,999	$3,592,458	121%
Energy Impacts (MCF)	84,004	145,339	173%
Demand Impacts (MCF/day)	981	1,745	178%
Participation	12,126	16,225	134%

Table 3 shows the overall energy and demand savings by program, while Table 4 shows the expenditures by program.

[1] Two programs targeted at a low-income population did not increase their budgets by 2.6%. The 2007 contract with Iowa State's Department of Human Rights provided for weatherization funding in the amount of $431,374. The Multi-Family Efficiency Improvement Program had expected funding of $47,809.

Table 3. 2007 Energy Savings (MCF) by Program

Program	Savings			Peak Savings		
	Goal (MCF)	Actual (MCF)	As Percent of Goal	Annual Goal	Actual	As Percent of Goal
Furnace Replacement	20,714	26,350	127%	305	388	128%
Envelope Measures Retrofit	5,614	12,363	220%	84	184	219%
Water Heater Replacement	1,117	666	60%	3	7	219%
Innovative Space & Water Heating Technologies	1,073	2,132	199%	13	13	98%
Setback Thermostat & Furnace Maintenance	12,685	46,248	365%	186	588	316%
Residential New Construction	7,999	8,635	108%	103	110	107%
Residential Energy Audits	2,314	3,738	162%	6	10	160%
School-Based Energy Education	947	4,974	525%	3	14	441%
C/I Prescriptive Rebate	17,074	15,009	88%	127	150	118%
C/I Custom Rebate	4,742	14,857	313%	61	192	313%
Low-Income Weatherization	2,550	2,550	100%	25	25	100%
Low-Income Energy Education	4,914	4,914	100%	13	13	100%
Weatherization Teams	407	1,049	258%	24	24	100%
Multi-Family Efficiency Improvement Program	1,855	1,855	100%	28	28	100%
Total	84,004	145,339	173%	981	1,745	178%

Table 4. 2007 Expenditures by Program

Program	Annual Budget	Actual Expenditures	% of Budget Expended
Furnace Replacement	$642,627	$882,131	137%
Envelope Measures Retrofit	$205,749	$431,932	210%
Water Heater Replacement	$35,641	$22,730	64%
Innovative Space & Water Heating Technologies	$41,312	$51,857	126%
Setback Thermostat & Furnace Maintenance	$90,724	$234,458	258%
Residential New Construction	$383,416	$391,440	102%
Residential Energy Audits	$136,086	$186,467	137%
School-Based Energy Education	$50,762	$42,718	84%
Small Commercial Energy Audits	$108,005	$29,305	27%
C/I Prescriptive Rebate	$129,605	$119,073	92%
C/I Custom Rebate	$145,806	$180,997	124%
Building Operator Certification	$32,600	$32,600	100%
Low-Income Weatherization	$431,374	$449,431	104%
Low-Income Energy Education	$50,774	$54,273	107%
Habitat for Humanity	$31,322	$15,153	48%
Multi-Family Efficiency Improvement Program	$47,809	$52,506	110%
Tree Planting Program	$119,885	$118,786	99%
Iowa Energy Center & Center for Global Environmental Research	$181,448	$186,810	103%
Weatherization Teams	$18,200	$23,936	132%
Energy Efficiency Planning 2009-2013	$85,854	$85,854	100%
Total	*$2,968,999*	*$3,592,458*	*121%*

Table 5 shows participation by program.

Table 5. 2007 Participation by Program

Program	Participation Goals	Annual Participation	Participation as Percent of Goal
Furnace Replacement	2,135	2,386	112%
Envelope Measures Retrofit	374	660	176%
Water Heater Replacement	268	190	71%
Innovative Space & Water Heating Technologies	101	127	126%
Setback Thermostat & Furnace Maintenance	1,121	4,463	398%
Residential New Construction	213	230	108%
Residential Energy Audits	854	941	110%
School-Based Energy Education	1,067	1,557	146%
Small Commercial Energy Audits	187	37	20%
C/I Prescriptive Rebate	374	237	63%
C/I Custom Rebate	68	59	86%
Low-Income Weatherization	188	163	87%
Low-Income Energy Education	5,000	5,000	100%
Habitat for Humanity	6	6	100%
Multi-Family Efficiency Improvement Program	6	6	100%
Weatherization Teams	163	163	100%
Total	*12,126*	*16,225*	*134%*

Overall program cost-effectiveness is shown in Table 6. We measure program cost-effectiveness from the following perspectives:

- Societal (SOC)
- Utility (UCT)
- Rate Impact (RIM)
- Participant (PCT)

Table 6. Program Portfolio Cost Effectiveness

Test	Total Discounted Costs	Total Discounted Benefits	Net Present Value	Benefit/Cost Ratio
SOC	$4,943,551	$11,736,002	$6,792,452	2.37
UCT	$3,269,140	$7,834,117	$4,564,977	2.40
RIM	$8,648,156	$7,834,117	($814,039)	0.91
PCT	$1,461,512	$5,345,043	$3,883,531	3.66

The year 2007 was a successful program year. As described in the subsequent sections, Aquila:

- Delivered cost-effective savings to both residential and business customers
- Established relationships with key trade allies
- Facilitated coordination with other Iowa utilities to offer efficiency improvements and education opportunities for residents of affordable multi-family housing
- Served over 16,000 Iowa households and 300 businesses
- Generated nearly $6.8 million in net benefits from a societal perspective

Areas of focus for program year 2008 will include:

- Increased participation in the Small Commercial Audit program
- Continued development and increased activity in the multi-family and education initiatives for low-income consumers
- Continued success in implementation of other initiatives
- Increased participation of the Water Heater Replacement program
- Increased participation of the C/I Prescriptive Rebate program

PART IV. IOWA UTILITIES' PROPOSED ENERGY EFFICIENCY PLANS FOR 2009-2013

Section 1. Overview

In the spring of 2008 each of the three major IOUs filed with the IUB a proposed energy efficiency plan for the 2009-2013 period. The IUB has analyzed the proposed plans; the utilities, the Consumer Advocate and other intervenors have submitted testimony; and the utilities, the Consumer Advocate and other intervenors have engaged in discussions aimed at reaching settlements of disputed issues. The IUB expects to issue final rulings on the proposed plans in the first quarter of 2009.

Each of the proposed energy efficiency plans contained the equivalent of an executive summary, and those summaries appear in this report to the General Assembly on pages 37 through 61.

The IOUs project that in 2013 they will be spending a combined total of $133 million for electric energy efficiency and load management programs, with about 80% of that funding going for customer incentives. That $133 million total would represent a 70% increase from the 2007 level of $78 million.

The IOUs project that in 2013 they will be spending a combined total of $49 million for natural gas energy efficiency programs, with about 75% of that funding going for customer incentives. That $49 million total would represent a 75% increase from the 2007 level of $28 million.

Thus, under the utilities' plans, total IOU spending on energy efficiency and load management in 2013 is expected to be $182 million, up 72% from the 2007 level of $106 million.

The IOUs project that the energy efficiency and load management measures initiated in 2013 will result in electricity consumption in that year being 520,000 megawatt hours less than it would have been otherwise. The megawatt hours saved would be the equivalent of about 1.4% of the retail megawatt-hour sales projected for 2013, up significantly from the 2007 level of 0.8%.

The IOUs project that the energy efficiency measures initiated in 2013 will result in natural gas consumption in that year being 1 billion cubic feet less than it would have been otherwise. The natural gas saved would be the equivalent of about 1.0% of the retail gas sales projected for 2013, up significantly from the 2007 level of 0.7%.

Section 2. MidAmerican Energy Company – 2009-2013 Proposed Energy Efficiency Plan

EXECUTIVE SUMMARY

The following pages describe a set of programs which MidAmerican Energy Company (MidAmerican or the Company) proposes to offer to its electric and natural gas customers in Iowa. These programs are being filed in accordance with the conditions set forth under Chapter 35 of the Iowa Administrative Code (IAC). The programs represent a significant expansion of activity, funding and projected energy savings compared to the current Plan. MidAmerican is pleased to offer these services in Iowa and looks forward to helping customers take advantage of the programs to manage energy costs and improve business competitiveness.

1. Overview of Programs

MidAmerican's Plan includes a comprehensive set of programs to meet customers' varied needs. While many of these programs continue and expand MidAmerican's successful energy efficiency programs, the Plan also includes several new programs, new measures and investment in infrastructure to help MidAmerican reach new markets and further capitalize on energy efficiency potential in Iowa. Table 1 summarizes the programs, as well as program marketing names and target markets (by fuel). The programs offer services to:

- Electric and natural gas customers
- Residential, commercial, industrial, agricultural and governmental customers
- Large and small customers
- Homeowners, commercial building owners and tenants
- Customers in existing and new buildings
- Customers buying individual pieces of equipment
- Customers pursuing more comprehensive energy efficiency solutions.

Table 1
Summary of Iowa Programs

Program	Marketing Name (where applicable)	Fuel	
		Natural Gas	Electric
Residential			
Residential Equipment		✓	✓
Residential Audit	HomeCheck® Online; HomeCheck® ; Home Performance with ENERGY STAR ®	✓	✓
Residential New Construction	New Homes	✓	✓
Residential Load Management	SummerSaver[sm]		✓
Critical-Peak Pricing			✓
Nonresidential			
Nonresidential Equipment		✓	✓
Nonresidential Custom	Custom Systems	✓	✓
Efficiency Bid	Efficiency Bid®		✓
Small Commercial Energy Audit	BusinessCheck®; BusinessCheck® Online	✓	✓
Nonresidential Energy Analysis	*EfficiencyPartners*®	✓	✓
Commercial New Construction		✓	✓
Nonresidential Load Management	Curtailment		✓
Multiple-Sectors			
Appliance Recycling			✓
Low-Income		✓	✓
Multifamily		✓	✓
Agriculture		✓	✓
Third-Party		✓	✓
Education		✓	✓
Trees	*Trees Please!*; Plant some shade®; Trees for Kids/Trees for Teens	✓	✓
Assessments		✓	✓

Residential programs include:

- ***Residential Equipment*** provides customers with incentives to help them purchase energy-efficient heating, cooling, water heating, lighting and appliance measures from an extensive network of trade allies.
- ***Residential Audit*** helps existing homeowners improve energy efficiency through three different program options:

    - o ***HomeCheck®,*** which provides participants with an on-site energy audit, direct installation of simple energy efficiency measures and financial incentives for installation of insulation, infiltration and window measures,
    - o ***HomeCheck® Online***, through which customers can perform Internet-based audits of their own homes and
    - o ***Home Performance with ENERGY STAR®*** (HPwES), which includes a subsidized, comprehensive energy audit, eligibility for all of the financial incentives available to HomeCheck participants and incentive bonuses for meeting performance targets.
- ***Residential New Construction*** provides builders and developers with financial incentives and marketing support in return for meeting ENERGY STAR certification or completing the program requirements in the Builder Option Package (BOP).
- ***Residential Load Management*** provides residential customers with bill credits in return for allowing MidAmerican to use radio- or pager-controlled devices to cycle their air conditioners during peak summer hours.
- ***Critical-Peak Pricing*** is a pilot program designed to test the key features of new demand response strategies in MidAmerican's service territory. The pilot will be offered to residential customers in a limited geographical area.

Nonresidential programs include:

- ***Nonresidential Equipment*** provides customers with financial incentives to help them purchase energy-efficient heating, cooling, water heating, lighting, motor, commercial kitchen and insulation measures.
- ***Nonresidential Custom*** provides customers with financial incentives and technical support to help them adopt efficient equipment and practices that do not fit within MidAmerican's other nonresidential programs.
- ***Efficiency Bid®*** allows large industrial customers to develop proposals for energy efficiency projects within their plants. The proposals identify the equipment or practices that will be implemented and the financial incentives needed by customers to move forward. MidAmerican evaluates the proposals and funds those that are the most cost-effective.
- ***Small Commercial Energy Audit*** provides professional energy audits for small business customers that include advice on efficient energy usage, installation of lighting and water heating measures and recommendations for additional measures that may be eligible for incentives. Customers also can perform Internet-based audits of their own facilities through ***BusinessCheck® Online***.
- ***Nonresidential Energy Analysis*** helps larger customers develop comprehensive energy efficiency action plans that improve their facilities' energy efficiency and their companies' financial competitiveness. MidAmerican also provides rebates to bring the cost of implementing the energy plan within customers' investment guidelines.
- ***Commercial New Construction*** provides commercial developers with design assistance, financial incentives and construction verification to help them construct energy-efficient buildings.

- ***Nonresidential Load Management*** provides large commercial and industrial customers with financial incentives in return for agreeing to reduce electric demand during peak hours when notified by MidAmerican's Internet-based monitoring and communication system.

Multiple-sector programs include:

- ***Appliance Recycling*** encourages customers to stop using old, inefficient refrigerators, freezers and room air conditioners and helps them dispose of the old units in an environmentally responsible manner.
- ***Low-Income*** provides free weatherization services, including installation of lighting, water heating and insulation measures and replacement of inefficient furnaces, water heaters, refrigerators and freezers. The program also distributes thousands of free energy efficiency kits to qualifying customers and provides energy efficiency services to multifamily and institutional housing projects.
- ***Multifamily*** provides a comprehensive set of services and financial incentives to help multifamily property owners, property managers, landlords and renters improve the efficiency of existing buildings.
- ***Agriculture*** promotes the purchase of high-efficiency equipment by agricultural customers in both existing and new facilities.
- ***Third-Party*** encourages third-party contractors to compete for project funding to implement projects that capitalize on untapped energy efficiency potential from new markets, technologies or approaches.
- ***Education*** promotes energy efficiency education through activities organized into four general areas: customer awareness, trade ally awareness, training and school curriculum.

2. Estimated Program Budgets

Table 2 lists estimated program budgets for the years 2009 to 2013. MidAmerican proposes investing nearly $360 million in these programs over the five-year period including:

- Almost $117 million on natural gas programs and over $243 million on electric programs and
- Over $182 million on residential programs and almost $178 million on nonresidential programs.

Accounting systems will ensure that costs for providing the programs are recovered from appropriate customers: electric program costs from electric customers and natural gas program costs from natural gas customers; residential program costs from residential customers and nonresidential program costs from nonresidential customers. Table 3 lists estimated implementation costs by functional category, including incentives paid directly to program participants as well as support services, which includes administration and advertising, necessary to deliver programs. About three-quarters of the costs provide direct benefits to customers for energy efficiency measures, either through incentive payments or through equipment and installation costs MidAmerican incurs directly to operate programs.

Table 2
Estimated Budgets by Program ($000)

	Electric						Natural Gas						Total					
Residential Combined	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**
Residential Equipment	$3,889	$5,161	$6,703	$7,025	$7,280	$30,058	$3,858	$4,302	$4,960	$5,197	$5,383	$23,700	$7,747	$9,463	$11,663	$12,222	$12,663	$53,758
Residential Audit	$1,295	$1,377	$1,378	$1,436	$1,528	$7,014	$3,482	$3,740	$3,739	$3,944	$4,260	$19,165	$4,777	$5,117	$5,117	$5,380	$5,788	$26,179
Residential New Construction	$2,342	$2,553	$2,832	$2,935	$3,060	$13,722	$4,238	$4,461	$4,535	$4,698	$4,901	$22,833	$6,580	$7,014	$7,367	$7,633	$7,961	$36,555
Residential Load Management	$3,832	$3,917	$4,304	$4,219	$4,055	$20,327	$0	$0	$0	$0	$0	$0	$3,832	$3,917	$4,304	$4,219	$4,055	$20,327
Critical-Peak Pricing	$693	$504	$496	$279	$273	$2,245	$0	$0	$0	$0	$0	$0	$693	$504	$496	$279	$273	$2,245
Appliance Recycling	$403	$939	$1,084	$1,131	$1,163	$4,720	$0	$0	$0	$0	$0	$0	$403	$939	$1,084	$1,131	$1,163	$4,720
Low-Income	$843	$863	$891	$928	$942	$4,467	$1,666	$1,694	$1,741	$1,807	$1,836	$8,744	$2,509	$2,557	$2,632	$2,735	$2,778	$13,211
Multifamily	$186	$193	$193	$199	$202	$973	$560	$555	$567	$606	$607	$2,895	$746	$748	$760	$805	$809	$3,868
Agriculture	$34	$49	$42	$42	$42	$209	$0	$0	$0	$0	$0	$0	$34	$49	$42	$42	$42	$209
Third-Party	$16	$78	$135	$266	$270	$765	$58	$274	$478	$924	$941	$2,675	$74	$352	$613	$1,190	$1,211	$3,440
Education	$823	$1,093	$1,109	$1,132	$1,158	$5,315	$893	$1,202	$1,218	$1,246	$1,274	$5,833	$1,716	$2,295	$2,327	$2,378	$2,432	$11,148
Trees	$113	$122	$122	$125	$130	$612	$179	$188	$188	$196	$201	$952	$292	$310	$310	$321	$331	$1,564
Assessments	$510	$520	$528	$537	$546	$2,641	$498	$532	$523	$521	$520	$2,594	$1,008	$1,052	$1,051	$1,058	$1,066	$5,235
Nonresidential Combined																		
Nonresidential Equipment	$2,925	$3,352	$3,619	$3,914	$3,885	$17,695	$312	$339	$367	$392	$385	$1,795	$3,237	$3,691	$3,986	$4,306	$4,270	$19,490
Nonresidential Custom	$939	$1,101	$1,055	$1,226	$1,141	$5,462	$327	$382	$363	$410	$383	$1,865	$1,266	$1,483	$1,418	$1,636	$1,524	$7,327
Efficiency Bid	$841	$1,038	$1,077	$1,224	$1,238	$5,418	$0	$0	$0	$0	$0	$0	$841	$1,038	$1,077	$1,224	$1,238	$5,418
Small Commercial Energy Audit	$895	$1,058	$1,058	$1,156	$1,129	$5,296	$717	$835	$836	$906	$890	$4,184	$1,612	$1,893	$1,894	$2,062	$2,019	$9,480
Nonresidential Energy Analysis	$1,865	$3,573	$3,093	$3,467	$4,087	$16,085	$87	$174	$156	$164	$166	$747	$1,952	$3,747	$3,249	$3,631	$4,253	$16,832
Commercial New Construction	$4,810	$5,724	$5,687	$7,160	$7,525	$30,906	$729	$1,701	$1,692	$1,889	$2,015	$8,026	$5,539	$7,425	$7,379	$9,049	$9,540	$38,932
Nonresidential Load Management	$9,662	$9,983	$10,145	$10,360	$10,420	$50,570	$0	$0	$0	$0	$0	$0	$9,662	$9,983	$10,145	$10,360	$10,420	$50,570
Appliance Recycling	$20	$47	$54	$56	$58	$235	$0	$0	$0	$0	$0	$0	$20	$47	$54	$56	$58	$235
Low-Income	$36	$42	$48	$50	$51	$227	$92	$107	$112	$123	$121	$555	$128	$149	$160	$173	$172	$782
Multifamily	$96	$98	$101	$104	$106	$505	$450	$460	$470	$489	$495	$2,364	$546	$558	$571	$593	$601	$2,869
Agriculture	$277	$319	$302	$305	$313	$1,516	$0	$0	$0	$0	$0	$0	$277	$319	$302	$305	$313	$1,516
Third-Party	$105	$421	$717	$1,370	$1,393	$4,006	$62	$304	$529	$1,029	$1,047	$2,971	$167	$725	$1,246	$2,399	$2,440	$6,977
Education	$1,192	$1,580	$1,604	$1,639	$1,677	$7,692	$441	$593	$602	$614	$628	$2,878	$1,633	$2,173	$2,206	$2,253	$2,305	$10,570
Trees	$174	$184	$183	$193	$196	$930	$88	$92	$91	$94	$96	$461	$262	$276	$274	$287	$292	$1,391
Assessments	$734	$749	$760	$773	$785	$3,801	$245	$262	$258	$257	$256	$1,278	$979	$1,011	$1,018	$1,030	$1,041	$5,079
Totals																		
Residential	$14,979	$17,369	$19,817	$20,254	$20,649	$93,068	$15,432	$16,948	$17,949	$19,139	$19,923	$89,391	$30,411	$34,317	$37,766	$39,393	$40,572	$182,459
Nonresidential	$24,571	$29,269	$29,503	$32,997	$34,004	$150,344	$3,550	$5,249	$5,476	$6,367	$6,482	$27,124	$28,121	$34,518	$34,979	$39,364	$40,486	$177,468
Total	$39,550	$46,638	$49,320	$53,251	$54,653	$243,412	$18,982	$22,197	$23,425	$25,506	$26,405	$116,515	$58,532	$68,835	$72,745	$78,757	$81,058	$359,927

Table 3
Estimated Budgets by Function

	Natural Gas						Electric						Total					
	2009	**2010**	**2011**	**2012**	**2013**	**Total**	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**
Planning & design	$207	$200	$205	$560	$391	$1,563	$395	$381	$392	$1,080	$751	$2,999	$602	$581	$597	$1,640	$1,142	$4,562
Administration	$2,014	$2,128	$2,175	$2,224	$2,277	$10,818	$3,032	$3,318	$3,388	$3,308	$3,378	$16,424	$5,046	$5,446	$5,563	$5,532	$5,655	$27,242
Advertising & promotion	$1,266	$1,646	$1,682	$1,719	$1,759	$8,072	$2,214	$2,778	$2,824	$2,886	$2,952	$13,654	$3,480	$4,424	$4,506	$4,605	$4,711	$21,726
Customer incentives	$14,287	$16,612	$18,229	$19,774	$20,476	$89,378	$29,424	$35,483	$38,376	$41,481	$43,368	$188,132	$43,711	$52,095	$56,605	$61,255	$63,844	$277,510
Monitoring & evaluation	$262	$817	$353	$451	$726	$2,609	$1,128	$2,139	$1,751	$1,850	$1,984	$8,852	$1,390	$2,956	$2,104	$2,301	$2,710	$11,461
Equipment	$203	$0	$0	$0	$0	$203	$1,516	$755	$773	$793	$504	$4,341	$1,719	$755	$773	$793	$504	$4,544
Installation	$0	$0	$0	$0	$0	$0	$597	$515	$528	$543	$385	$2,568	$597	$515	$528	$543	$385	$2,568
Miscellaneous	$743	$794	$781	$778	$776	$3,872	$1,244	$1,269	$1,288	$1,310	$1,331	$6,442	$1,987	$2,063	$2,069	$2,088	$2,107	$10,314
Total Budget	**$18,982**	**$22,197**	**$23,425**	**$25,506**	**$26,405**	**$116,515**	**$39,550**	**$46,638**	**$49,320**	**$53,251**	**$54,653**	**$243,412**	**$58,532**	**$68,835**	**$72,745**	**$78,757**	**$81,058**	**$359,927**

3. Estimated energy and demand savings

As a result of the investments in program implementation, MidAmerican expects to help customers install almost six million energy efficiency measures in homes and businesses. By 2013, the programs are projected to save 1.37 billion kilowatt-hours per year and 24 million therms per year (see Table 4). In addition, the measures will reduce MidAmerican's electric summer peak demand by over 500 megawatts. If MidAmerican is authorized to continue offering these programs after 2013, the cumulative savings will continue to grow.

Table 4
Cumulative Energy and Demand Savings[2]

	2009	2010	2011	2012	2013
Electric Impacts					
Annual energy (kWh)	200,251,872	479,272,355	777,453,412	1,075,609,638	1,374,667,540
Peak demand (kW)	254,914	318,873	382,591	443,587	506,398
Natural Gas Impacts					
Annual energy (therms)	3,961,406	8,704,168	13,667,992	18,896,929	24,204,960
Peak-day demand (therms)	37,238	79,706	125,511	173,878	222,847

Starting in 2010, the annual savings achieved by the program represent 1.5 percent of MidAmerican's projected electricity sales. On the gas side, annual savings achieved by the program build to 0.85 percent of MidAmerican's projected natural gas sales in 2013 (see Table 5).

Table 5
Annual Energy Savings and Percent of Sales

	2009	2010	2011	2012	2013
Electric Impacts					
Annual electric savings (kWh)	200,251,872	286,091,094	306,539,644	308,621,451	312,493,582
Average sales - three prior years	18,321,096,696	19,067,306,387	19,849,803,998	20,429,583,244	20,800,997,908
Percent savings	1.09%	1.50%	1.54%	1.51%	1.50%
Natural Gas Impacts					
Annual gas savings (therms)	3,961,406	4,742,763	4,971,337	5,251,474	5,353,103
Average sales - three prior years	621,791,684	623,572,331	626,100,921	628,670,445	631,309,152
Percent savings	0.64%	0.76%	0.79%	0.84%	0.85%

4. Cost-effectiveness tests

Once program design and budgets were developed, the results were subjected to cost-effectiveness testing and a sensitivity analysis. These results were

[2] Since measures installed in one year continue to result in energy savings for the life of those measures, savings accumulate each year. In other words, cumulative savings numbers reflect the sum of the savings from measures previously installed (during this plan cycle only) that are still operational. Measure lives for the demand response programs (Residential Load Management, Critical-Peak Pricing, and Nonresidential Load Management) are assumed to be one year because incentives are paid for these measures on an annual basis.

derived using Portfolio Pro software, developed by Quantec, LLC. Overall the societal benefit-cost ratio for the proposed Plan is 2.51.

5. Conclusion

MidAmerican has spent a considerable amount of time, effort, research and thought in the design and development of the proposed Plan. MidAmerican believes energy efficiency programs are implemented for the benefit of customers, and MidAmerican believes that it is in the best interests of our customers that we continue to be their source for energy efficiency programs. For these reasons, MidAmerican offers the following Plan for the Board's consideration and approval.

Section 3. Interstate Power and Light Company – 2009-2013 Proposed Energy Efficiency Plan

EXECUTIVE SUMMARY

Background

This application describes Interstate Power and Light Company's (IPL's or the Company's) five-year Energy Efficiency Plan (Plan), prepared pursuant to §§ 476.6(14) and (16) (2007) of the Code of Iowa and 199 Iowa Administrative Code (IAC), Chapter 35. It addresses the order points and schedule stated in the Iowa Utilities Board's (IUB or Board) orders of January 14, 2008 (the January 14th Order), and March 5, 2008, in Docket No. 199 IAC 35.4(1) (EEP-02-38, EEP-03-1, and EEP-03-4).

The Plan offers a comprehensive portfolio of programs and initiatives for acquiring demand-side management (DSM) resources during the five-year planning period from 2009 to 2013. This Plan expands upon IPL's 2004[3]–2008 Energy Efficiency Plan, filed with the Board October 15, 2002 and approved June 3, 2003, in Docket No. EEP-02-38. It extends the savings targets for all programs in the existing portfolio, introduces enhancements to individual programs where warranted and incorporates new programs and initiatives, such as a renewable portfolio. Once approved, this new Plan will replace the existing Plan beginning January 1, 2009.

IPL has actively pursued DSM since 1992. The Company currently offers a comprehensive suite of energy efficiency and peak load management programs to its residential, commercial, industrial and agriculture customers as part of its existing five-year Energy Efficiency Plan. Since its launch in 2004, the current Plan has produced approximately 426 GWh of electricity and 9.3 million therms of natural gas savings. These savings represented nearly 0.8 percent of IPL's annual retail electricity and natural gas sales in 2007. The current Plan also offers two peak load management programs serving residential and nonresidential customers. In 2007 the two programs had 272 MW under contract, providing IPL with the capability to reduce its peak load by 9 percent.

In the proposed Plan, savings targets are set at significantly higher levels than those historically achieved for both electric and natural gas. The proposed electric portfolio targets 134 GWh of savings in 2009, projected to increase to 207 GWh in 2013 (Figure 1.1). These targets represent approximately 1.0 percent of total annual retail sales in 2011 and reach 1.3 percent of annual retail sales in 2013. In 2009, the natural gas portfolio is expected to produce nearly 2.7 million therms of savings. These savings are projected to increase to 3.5 million

3 The Plan began in the fall of 2003, but 2004 was the first complete program year.

therms in 2013, the equivalent of 1.2 percent of projected retail natural gas sales that year. IPL plans to achieve these aggressive saving targets by enhancing its already aggressive outreach and marketing efforts and offering a larger set of measures, higher incentives and new programs.

Figure 1.1. Annual Electric Targets and Installed Savings (2004-2013)

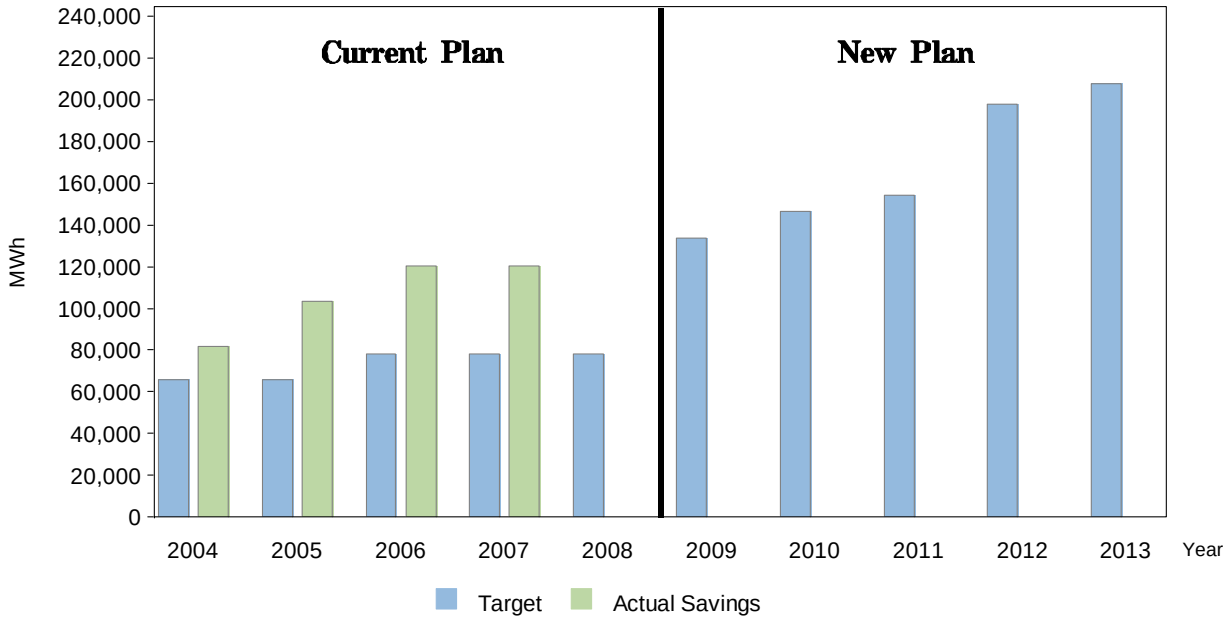
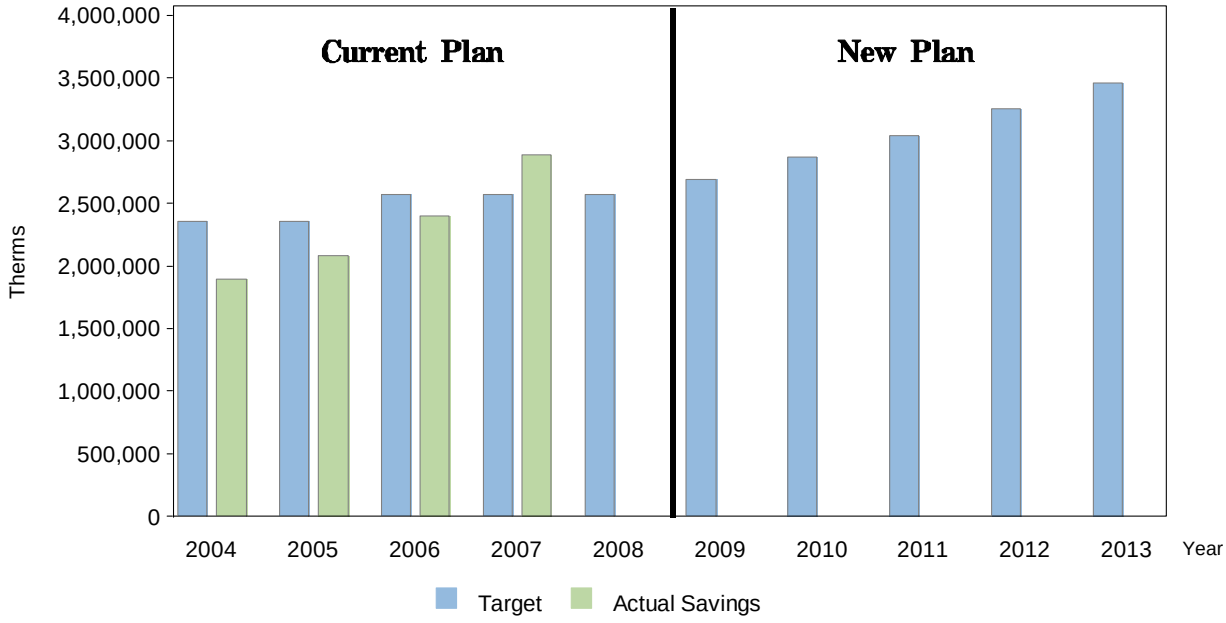


Figure 1.2. Annual Natural Gas Targets and Installed Savings (2004-2013)



The Plan's Composition

The Plan's development was largely guided by the findings of the Joint-Utility Assessment (Assessment), a comprehensive study of energy efficiency, demand response and small-scale renewable energy potential in the service areas of Iowa's three investor-owned utilities: IPL, Aquila and MidAmerican Energy (MEC). The Assessment focused on reporting the potential over a 10-year planning horizon from 2009 to 2018. The Assessment, completed in February 2008, provided estimates of both "technical" and "economic" potentials. The results of the Assessment were later re-estimated based on IPL's March 2008 revised long-run avoided costs.

In developing this Plan, IPL sought to construct a portfolio of innovative programs tailored to the unique characteristics of IPL's service area. The overarching approach may be described best as a "portfolio" perspective addressing virtually every significant energy end-use in a customer's home or business, and doing so through a single, comprehensive whole-facility approach or in a menu approach, whichever works best for the customer. The portfolio employs multiple market intervention strategies, including information, education, technical assistance and, most importantly, financial incentives to produce long-term savings and bring about a lasting change in the way Iowans use energy. This portfolio also seeks to provide IPL and its customers the highest returns in terms of market reach, energy savings and cost effectiveness.

The proposed Plan is comprised of 27 programs and initiatives, organized in the three primary portfolios of energy efficiency, demand response and renewable energy, and a fourth that includes a comprehensive suite of complementary education and training initiatives (Table 1.1). Existing programs account for the largest share of the Plan's projected savings. In many cases, these programs were revised based on recent field experience and evaluation findings. In other cases, new components were added to augment a program's services and increase its savings. IPL also added two new renewable portfolios.

By the end of the planning horizon in 2013, the four portfolios are projected to produce 836 GWh of electricity and nearly 15.4 million therms of natural gas savings at a total cost of $411 million. Energy efficiency accounts for 86 percent of the projected electricity and over 90 percent of overall energy savings. Savings from the electric portfolio will amount to 1.3 percent of the projected retail sales in 2013 and offset over 78 percent of the forecasted load growth between 2009 and 2013. The planned natural gas savings represent 1.2 percent of the natural gas retail sales in 2013 which accelerates the decline in natural gas sales that is already forecast for the entire planning horizon.

Projected savings for the Plan's energy efficiency portfolio represent 1.0 percent and 1.2 percent of electric and natural gas sales in 2013, respectively, and 43 percent and 39 percent of the respective electric and natural gas potentials. The savings targets for the fifth year are aggressive, especially given that most studies of energy efficiency potentials, including the 2002 study of Iowa energy efficiency potentials, have considered a 50 percent of economic potential as the limit for achievable potential for a five to ten-year resource acquisition effort.

The electric portfolio is also expected to provide 433 MW of peak capacity savings by 2013, 126 MW of which are attributable to peak-coincident energy efficiency savings and 309 MW to demand response programs. The nonresidential portfolio accounts for nearly 65 percent of total electricity savings and 43 percent of total natural gas savings in the Plan. Additional energy savings of nearly 100 GWh and 9,000 therms of natural gas savings are expected to result from small-scale renewable energy, a new initiative in IPL's 2009–2013 Plan.

Table 1.1. Proposed Programs in the Plan

Resource	2009-2013 Cumulative Annual Energy Savings: Electricity (GWh)	2009-2013 Cumulative Annual Energy Savings: Natural Gas ('000 Therms)	Total Cost ($MM)
Energy Efficiency Portfolio			
Residential Energy Efficiency Portfolio	***192.2***	***8,677***	***$100***
Residential Prescriptive Rebates	101.1	5,458	$53
Home Energy Audits	8.1	803	$8
Appliance Recycling	48.5	N/A	$4
New Home Construction	21.0	1,000	$13
Home Performance with ENERGY STAR	0.3	83	$4
Low Income	13.2	1,333	$18
Weatherization			
Multifamily and Institutional Efficiency Improvements			
EnergyWise Energy Education			
Targeted Residential Energy Efficiency Opportunity			
Nonresidential Energy Efficiency Portfolio	***543.8***	***6,630***	***$111***
Nonresidential Prescriptive Rebates	57.6	1,438	$21
Custom Rebates	357.7	3,748	$50
Performance Contracting	31.5	724	$9
Commercial New Construction	65.1	720	$22
Agriculture Sector	31.9	N/A	$9
Demand Response Portfolio	***1.1***	***N/A***	***$144***
Residential Direct Load Control	0.3	N/A	$20
Nonresidential Interruptible	0.8	N/A	$124
Outreach, Education and Training*	***0.3***	***53***	***$30***
Non-Targeted Energy Awareness and Education			
School-Based Energy Education			
Research, Development and Demonstration			
Trees	0.3	53	
CFL Recycling			
Builder Training			
Trade Ally Network			
E-Community			
Affinity Bright Ideas			
Renewable Energy Portfolio	***98.2***	***9***	***$25***
Residential Sector Renewable Energy Programs	4.8	9	$9
Nonresidential Sector Renewable Energy Programs	93.4	N/A	$16
TOTAL PORTFOLIO	***835.6***	***15,369***	***$410***

* Not included above are estimated savings of up to 0.004 GWh (or 4,000,000 kWh) and 0.0715 thousand therms (or 71,500) from all Outreach, Education & Training initiatives other than Trees.

Benefits, Costs and Cost Effectiveness of the Portfolio

With the exception of the renewable residential and nonresidential portfolios, every portfolio in this Plan was designed to be cost effective from a "societal" perspective. Selected programs and measures are not cost effective according to the societal test. Cost effectiveness had to be balanced against the objectives of equity and comprehensiveness. Individual programs were designed to incorporate the maximum number of measures, even where each measure did not pass the cost effectiveness screen on its own. The electric portfolio as a whole is cost effective. The natural gas portfolio as a whole is cost effective. The results of the analysis are summarized in Table 1.2 and Table 1.3.

Table 1.2. Plan's Savings, Costs and Cost Effectiveness (Electric Portfolio)

	Plan Year					
Benefit/Cost Component	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**
No of Participants	131,853	136,744	141,838	147,162	152,710	710,307
Energy Savings (GWh)	134	147	154	198	207	836
Capacity Savings (MW)	305	314	323	337	343	449
Total Societal Cost (MM)	$96	$107	$114	$132	$141	$591
Participant Cost Net of Incentives (MM	$37	$42	$46	$58	$64	$248
Direct Utility Costs (MM)	$60	$65	$68	$74	$78	$344
Planning and Design (MM)	$2	$2	$2	$2	$2	$10
Program Administration (MM)	$4	$4	$4	$4	$5	$21
Advertising and Promotion (MM)	$4	$5	$5	$5	$6	$24
Incentives (MM)	$49	$53	$55	$60	$64	$280
Monitoring and Evaluation (MM)	$1	$2	$2	$2	$2	$9
Savings as a % of Total Sales	***0.9%***	***0.9%***	***1.0%***	***1.2%***	***1.3%***	

	Stakeholder Perspective			
Cost-Effectiveness Analysis	**Societal**	**Participant**	**Utility**	**RIM**
NPV Benefits (MM)	$1,239	$376	$959	$959
NPV Costs (MM)	$648	$210	$390	$699
Benefit-Cost Ratio	**1.91**	**1.79**	**2.46**	**1.37**

The total societal cost for the full five-year deployment of the Plan is estimated at $767 million, $591 million of which is attributable to electric and $156 million to natural gas. The electric portfolio accounts for nearly 80 percent of the total cost of the Plan by this measure. Direct IPL costs of $344 million for electric and $68 million for natural gas constitute $411 million, or slightly under 67 percent of the total societal cost of $767 million; the other third is paid directly by participating customers as they install their electric and natural gas measures. Over $330 million of the $411 million of IPL costs, or 80 percent, is incentive payments. The next largest category of IPL spending is for program promotion and represents $30 million or 7 percent of the IPL costs. In sum, over 87 percent of the IPL spending is for incentives and advertising and promotion.

Table 1.3. Projected Savings, Costs and Cost Effectiveness (Natural Gas Portfolio)

Benefit/Cost Component	Plan Year 2009	2010	2011	2012	2013	Total
No of Participants	25,633	26,953	28,338	29,800	31,336	142,060
Savings (000 therms)	2,696	2,882	3,052	3,263	3,475	15,369
Capacity Savings (peak day 000 therms)	20	21	22	23	25	111
Total Societal Cost (MM)	$26	$28	$31	$34	$36	$156
Participant Cost Net of Incentives (MM)	$15	$16	$18	$19	$21	$88
Direct Utility Costs (MM)	$11	$12	$14	$15	$16	$68
Planning and Design (MM)	$0	$0	$1	$1	$0	$2
Program Administration (MM)	$1	$1	$1	$1	$2	$7
Advertising and Promotion (MM)	$1	$1	$1	$1	$2	$6
Incentives (MM)	$8	$9	$10	$11	$12	$50
Monitoring and Evaluation (MM)	$0	$0	$0	$1	$1	$2
Savings as a % of Total Sales	***0.9%***	***1.0%***	***1.1%***	***1.1%***	***1.2%***	

Cost-Effectiveness Analysis	Stakeholder Perspective Societal	Participant	Utility	RIM
NPV Benefits	$213	$133	$153	$153
NPV Costs	$141	$72	$58	$224
Benefit-Cost Ratio	**1.51**	**1.83**	**2.63**	**0.68**

An analysis of the Plan's benefits and costs indicated the Plan's benefits outweigh its costs by 1.9 to 1 for the electric portfolio and 1.5 to 1 for the natural gas portfolio, as measured from a societal point of view. The two portfolios are also cost effective from the participant and utility points of view. Only the electric portfolio passes the cost effectiveness criterion from the non-participant point of view, since the electric portfolio but not the gas portfolio passes the RIM test. The Rate Impact Measurement (RIM) test measures the impact of the rates of those customers who do not participate in the programs.

IPL's expenditures are projected to lead to an initial increase of 1.2 percent on average across all electric customer classes, as measured by the average bill increase from implementing the first year of this plan as compared to the current plan. The comparable value for natural gas customers is 1.1 percent.

Portfolio Outcomes Assuming a 1.5 Percent Savings Scenario

As directed by the January 14th Order, the Plan's expected savings, costs and rate impacts were analyzed assuming a 1.5 percent resource acquisition target for energy efficiency and renewable energy components of the Plan. As defined in the Board's order, this scenario assumes the portfolio's savings would increase to 1.5 percent of annual electricity and natural gas retail sales by the end of 2011, then continue at that level through 2013, the last year of the planning horizon. This scenario was developed by incrementally raising the base case targets for each fuel until cumulative portfolio-level savings reached 1.5 percent of retail sales. This analysis assumed achieving the scenario's targets would require a greater marketing effort and higher incentive amounts. Program costs were accordingly escalated at annual rates of 15 percent for planning and design, administration, and advertising and promotion, 20 percent for incentives and 5 percent for monitoring and evaluation.

Results of this analysis indicate attempting to achieve the 1.5 percent savings target would increase the electric societal costs from $590 million to $820 million, or $229 million—a 38 percent increase (Tables 1.2 vs. 1.4). The natural gas societal costs would increase from $156 million to $212 million, or $56 million—a 36 percent increase (Tables 1.3 vs. 1.5). Both electric and natural gas portfolios, however, remain cost effective from the societal perspective in the 1.5 percent scenario, albeit with lower benefit-to-cost ratios.

From the utility's perspective, once demand response and Outreach, Education and Training costs (which remain flat) and participant net costs are removed from the societal cost figures, analysis reveals that cumulative IPL costs would increase from $236 million to $435 million under the 1.5 percent scenario, an approximate $200 million or 85 percent increase.

Table 1.4. Electric Portfolio Assuming 1.5 Percent Target

	Plan Year					
Benefit/Cost Component	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**
No of Participants						
Energy Savings (GWh)	134	195	238	242	247	1,051
Capacity Savings (MW)	305	323	337	345	350	486
Total Societal Cost (MM)	$96	$139	$180	$199	$205	$820
Participant Cost Net of Incentives (MM)	$37	$57	$72	$73	$77	$315
Total Scenario Utility Costs (MM)	$60	$83	$108	$126	$128	$506
Planning and Design (MM)	$2	$3	$3	$4	$4	$17
Program Administration (MM)	$4	$5	$7	$9	$9	$33
Advertising and Promotion (MM)	$4	$6	$9	$9	$9	$37
Incentives (MM)	$49	$67	$87	$101	$103	$407
Monitoring and Evaluation (MM)	$1	$2	$3	$3	$3	$12
Savings as a % of Total Sales	***0.9%***	***1.3%***	***1.5%***	***1.5%***	***1.5%***	

Cost-Effectiveness Analysis	**Stakeholder Perspective**			
	Societal	**Participant**	**Utility**	**RIM**
NPV Benefits	$1,443	$449	$1,112	$1,112
NPV Costs	$853	$255	$524	$859
Benefit-Cost Ratio	**1.69**	**1.76**	**2.12**	**1.29**

Table 1.5. Natural Gas Portfolio Assuming 1.5 Percent Target

	Plan Year					
Benefit/Cost Component	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**
No of Participants						
Energy Savings (000 therms)	2,696	3,591	4,327	4,347	4,367	19,329
Capacity Savings (peak day 000 therms)	20	25	30	31	31	137
Total Societal Cost (MM)	$26	$36	$49	$50	$51	$212
Participant Cost Net of Incentives (MM)	$15	$19	$24	$24	$25	$108
Total Scenario Utility Costs (MM)	$11	$17	$25	$25	$26	$104
Planning and Design (MM)	$0	$0	$1	$1	$1	$3
Program Administration (MM)	$1	$2	$2	$2	$2	$10
Advertising and Promotion (MM)	$1	$1	$2	$2	$2	$9
Incentives (MM)	$8	$13	$19	$19	$19	$79
Monitoring and Evaluation (MM)	$0	$0	$1	$1	$1	$3
Savings as a % of Total Sales	***0.9%***	***1.3%***	***1.5%***	***1.5%***	***1.5%***	

Cost-Effectiveness Analysis	**Stakeholder Perspective**			
	Societal	**Participant**	**Utility**	**RIM**
NPV Benefits	$266	$165	$191	$191
NPV Costs	$190	$88	$88	$253
Benefit-Cost Ratio	**1.40**	**1.88**	**2.16**	**0.75**

Available evidence suggests the base case savings targets in the IPL Plan are aggressive by all measures, especially when compared to IPL's 2004-2008 Energy Efficiency Plan and to what has been accomplished by utilities with the most successful DSM initiatives. A review of targets in states with some form of Energy Efficiency Resource Standards (EERS)[4] indicate that in the majority of cases, the targets are set at levels below that proposed in IPL's base case.

Moreover, in states with an EERS of 1.5 percent, targets are expected to be met through mechanisms such as codes and standards (e.g., California), transmission and distribution efficiency improvements, or both (e.g., Minnesota). The 1.5 percent scenario being discussed in Iowa contemplates targets significantly above IPL's aggressive base case targets. IPL believes the 1.5 percent should not be viewed as a simple alternative to the base case. Rather, it should be viewed as a modeling exercise outlining an outcome that would be very costly and very difficult to attain.

By 2013, IPL's expenditures on deployment of all DSM resources proposed in the base case Plan will reach 6.4 percent and 4.9 percent of electric and natural gas sales, respectively. Under the 1.5 percent scenario, by 2013, IPL expenditures would reach 11 percent of its retail electric revenues and 8 percent of its retail natural gas revenues.

These figures represent markedly higher levels of spending for DSM in general and energy efficiency in particular, when compared to states and utility jurisdictions with aggressive programs. The latest data available from the Energy Information Administration indicate 61 investor-owned utilities in the United States reported energy efficiency savings and expenditures in 2006. According to this information, these utilities on average spent 1.4 percent of their revenues on energy efficiency in 2006. In California, for example, the three investor-owned utilities spent approximately 3 percent of their annual revenues, achieving savings of slightly over 1 percent of retail sales (San Diego Gas & Electric's savings were lower—about 0.75 percent of retail sales). In Oregon, the Energy Trust of Oregon reported savings of approximately 0.7 percent of retail sales at a cost of approximately 3 percent of retail revenues. Indeed, industry experts have considered annual energy efficiency spending targets of 0.75 percent an indication of a "successful" energy efficiency resource standard.

Analysis of the 1.5 percent scenario further assumed the costs of acquiring additional savings tend to increase as low-cost savings are captured in the early stages of a program's life cycle and the "early-adopter" markets become saturated. Higher incentives and more aggressive marketing are expected to mitigate the effects of the main barriers to program participation, namely awareness, perception of value and access to capital (first cost). However, as

4 Currently eleven states (California, Colorado, Connecticut, Hawaii, Illinois, Minnesota, Nevada, New Jersey, Pennsylvania, Vermont and Washington) have some form of EERS in place. Similar regulations have also been put in place in several European countries such as parts of Belgium, France, Italy and the United Kingdom.

IPL's own experience and the research literature on energy efficiency suggest, there are other barriers impeding widespread adoption of energy efficiency measures. Additional barriers in the equipment replacement and new construction markets are associated with the concept of economically favorable "windows of opportunity" for purchase decisions.

The Impact of Carbon Standards

As directed by the January 14th Order, additional analyses were performed to determine an estimate of the impact on supply option costs caused by the adoption of national carbon dioxide (CO_2) standards, such as a "cap and trade" system or a carbon tax. IPL analyzed two carbon cost scenarios, which are identical to the low and high carbon scenarios analyzed in IPL's application for the proposed Sutherland Generating Station Unit No. 4 in Docket No. RPU-08-1.

The low avoided cost scenario was based on assumed future carbon costs of $8 per ton starting in 2010 and rising at 5.8 percent throughout the planning horizon; for example, the cost per ton is $14 in 2020. The high avoided cost scenario was based on assumed future carbon costs of $15 per ton starting in 2010 and rising at 8.5 percent throughout the planning horizon; for example, the cost per ton is $34 in 2020. Levelized 2009–2018 avoided costs for electricity and natural gas calculated under the four scenarios are summarized in Table 1.6. Only one scenario is reported for the natural gas row in this table since only one natural gas price scenario was examined in the carbon analysis conducted in IPL's application in Docket No. RPU-08-1. Analyzing a second, lower natural gas price scenario associated with a low carbon cost scenario would have little impact on the conclusions of the plan in this EEP proceeding, as will be seen below.

Table 1.6. Avoided Electric and Natural Gas CostsUnder Alternative Scenarios, including Losses and Externality Factor, Levelized Over 2009-2018

Levelized Avoided Cost	Potential Study	Updated Base Case	Low Carbon Scenario	High Carbon Scenario
Electric ($/MWh)	$0.061	$0.071	$0.080	$0.094
Natural Gas ($/Therm)	$0.798	$0.904	$0.998	

The results of the assessment of economic energy efficiency potentials under the four avoided cost assumptions for electricity and natural gas are shown in Figures 1.3 and 1.4. The effects of the March 2008 updates on economic potentials were relatively small, increasing total electric economic potentials from 3,304 GWh to 3,415 GWh (3 percent) and natural gas economic potentials from 76.8 million therms to 77.6 million therms (1 percent). The largest increases were in the residential sector. Avoided electric costs under the high and low carbon

cost scenarios resulted in additional increases of 7 percent and 1 percent over the updated economic potential, respectively. Avoided natural gas costs under the carbon-constrained scenario led to a relatively small increase of 1 percent in economic potential over the updated base case scenario.

Figure 1.3. Estimates of Economic Electric Energy Efficiency Potential Under Alternative Avoided Cost Scenarios (2004-2013)

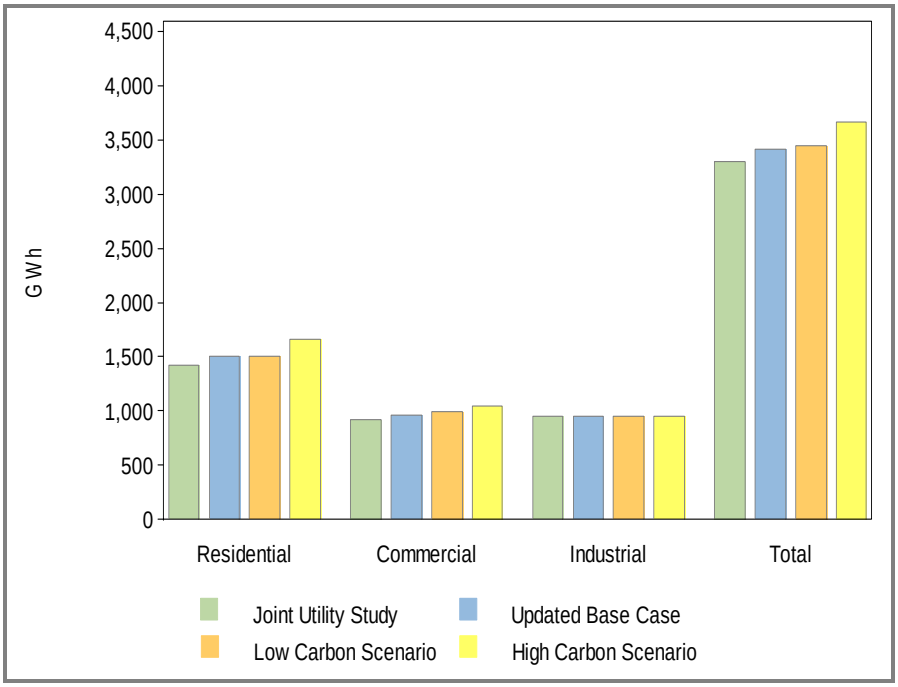
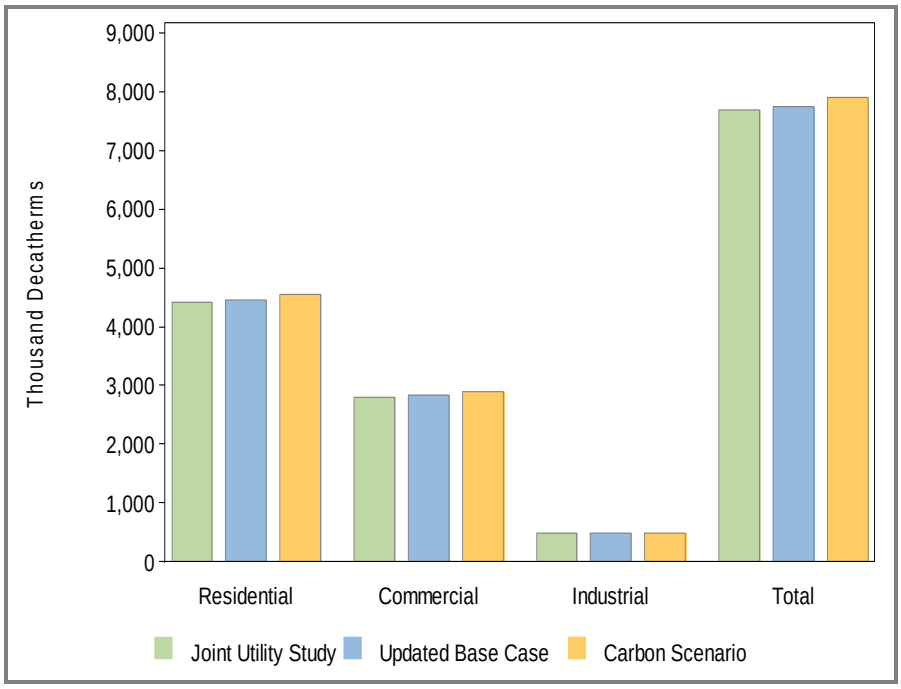


Figure 1.4. Estimates of Economic Natural Gas Energy Efficiency Potential Under Alternative Avoided Cost Scenarios (2004-2013)



Once economic potentials were calculated for each scenario, further analysis was conducted to identify measures that became cost effective from a societal perspective under these scenarios. This analysis identified 17 additional cost-effective measures under the high carbon cost scenario, 13 of which were already included in 2009 programs, although they had not passed the economic screen in the Assessment. To account for potential future carbon constraints, rebates for the remaining four measures will be included in IPL's 2009 programs, unless further research by IPL product managers indicates they are not appropriate for IPL's service territory and customers. For nonresidential segments, 12 measures were identified as becoming cost effective. However, between the Nonresidential Prescriptive Rebates and Custom Rebates programs, rebates were already planned for all of these measures; thus no modification will be necessary to account for future carbon constraints on the nonresidential side.

The adoption of carbon restrictions would increase avoided costs significantly, cause a very modest increase in economic potential and have virtually no effect on the total number of measures included in IPL's base case Plan.

Quality Assurance

Continuous improvement is the guiding principle in IPL's approach to managing its DSM portfolio. IPL views managing its DSM portfolio as a set of interdependent sequential activities that start with planning, proceeds to design, then to implementation and culminates in evaluation. IPL's portfolio management approach provides a framework for continually assessing program performance, assuring quality and adaptively managing programs to meet overall portfolio goals. IPL's continuous improvement process relies on three essential elements: (1) activity tracking, (2) quality control and (3) process and impact evaluations.

An effective activity tracking system forms the foundation of IPL's robust DSM planning and delivery process. To assure accurate tracking of DSM results, IPL uses a .NET application (DSM Tracking System) to pay and track prescriptive rebate payments and impacts. The system receives data feeds from the Company's customer billing system to ensure the customer's premise is active in the billing system and to verify service type. iAvenue application is utilized to pay and track managed account rebate payments and impacts.

Quality control is an integral part of IPL's program delivery and customer/vendor relations-management processes. Quality control measures will be incorporated into program delivery systems at various stages of every program's life cycle.

Evaluations of IPL's program development and delivery process are the principal means of ensuring the validity and reliability of program savings and cost effectiveness. All programs will be evaluated on an ongoing basis. Evaluations will be publicly available, and; where appropriate, they will be conducted by

objective, independent contractors. There will be two types of evaluation: (1) impact evaluation, measuring actual program savings, and (2) process evaluation which examines program implementation issues related to deployment and delivery. Evaluations will be primarily impact evaluations, with process evaluation undertaken as-needed based on program performance and feedback from the field.

Section 4. Aquila - Iowa – Proposed 2009-2013 Energy Efficiency Plan

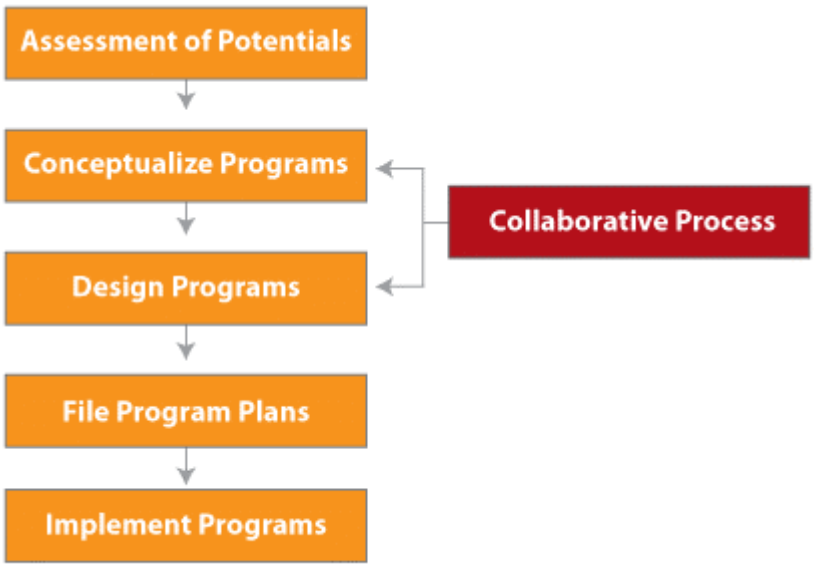
EXECUTIVE SUMMARY

Aquila is pleased to present this energy-efficiency plan (Plan) pursuant to Iowa Code § 476.6(16) 199 IAC 35, and the order issued by the Iowa Utilities Board (Board) on January 14, 2008, in Docket No. 199 IAC 35.4(1). Energy efficiency has been a long-time component of Aquila's operations in Iowa, with numerous programs serving the needs of different customer types throughout the service territory. The two key tenets of Aquila's programs are:

- ***The state of Iowa benefits greatly from energy-efficiency programs***. As part of the overall strategy for meeting the needs of its customers, energy-efficiency programs are a less costly alternative to construction of new pipelines and purchase of natural gas. Iowans benefit from a cleaner environment and more stable communities with fewer disruptions.
- ***Aquila customers benefit from energy-efficiency programs***. Energy efficiency means lower bills; so participants in Aquila's programs immediately benefit from a reduction in their consumption of natural gas. Furthermore, the programs are designed to be inclusive; so all customers have the opportunity to benefit from Aquila's energy-efficiency programs.

Guided by these tenets, the creation of this plan has adhered to a rigorous planning process, beginning in 2007 with the Joint Utility Technology Assessment (Joint Utility Study) and culminating in this document. The various phases of this process are shown in Figure ES.1; the first box, Assessment of Potentials, pertained to the Joint Utility Study, and the rest are specific to the development of Aquila's energy-efficiency portfolio.

Figure ES.1. Program Planning Process



Program Portfolio Overview

Aquila's energy-efficiency portfolio is composed of three broad categories: residential programs, commercial programs, and special programs, with each designed to address the needs of various customer types. The residential program category is further separated into subcategories of space and water heating programs, audit programs, and new construction programs. The commercial programs are the prescriptive and custom rebate program, new construction, and the small commercial audit program. The special programs category consists of the Low-Income Programs, School-Based Energy Education, Tree Planting, and funding for the Iowa Energy Center and the Center for Global and Regional Environmental Research. In addition to these classic programs, Aquila will be sponsoring joint-utility training sessions.

Program Budgets, Savings, and Cost-Effectiveness

Development of this plan has provided an opportunity for Aquila to review its programs and explore both program improvements and innovative new offerings. As a result, the overall budget for Aquila's energy-efficiency portfolio represents a substantial increase over the historical funding levels. The total annual budget for 2009, the first year of this portfolio, is $5,825,000, more than a 60% increase over actual 2007 expenditures. Table ES.1 presents the budgets for individual programs in 2009.

The budget increase reflects Aquila's commitment toward obtaining the greatest amount of cost-effective energy-efficiency savings feasible over the planning horizon, and an equitable balance of the energy efficiency costs between participants and ratepayers. The resulting 2009–2013 Energy Efficiency Plan has annual savings goals of nearly 1% of consumption, double that of the 2004–2008 Plan.

Table ES.1. Program 2009 Budget Summaries

Program Category		2009 Budget
Residential Programs		
R-1 – Residential Space & Water Heating		$1,655,000
R-2 – Residential Envelope Measures Retrofit		$1,090,000
R-3 – Residential New Construction		$393,000
R-4 – Residential Audits		$410,000
Non-Residential Programs		
NR-1 – Small Commercial Audits		$85,000
NR-2 – Non-Residential Prescriptive Rebates		$400,000
NR-3 – Non-Residential Custom Rebates		$210,000
NR-4 – Non-Residential New Construction		$36,000
NR-5 – Builder Operator Certification		$11,000
Special Programs		
S-1 – Low-Income Programs	S-1.1 – Weatherization	$525,000
	S-1.2 – Energy Education	$60,000
	S-1.3 – Multi-Family & Institutional Efficiency Improvements	$20,000
	S-1.4 – Affordable Homes (New Construction)	$20,000
	S-1.5 – Weatherization Teams	$20,000
S-2-School-Based Energy Education		$65,000
S-3 – Tree Planting Programs	S-2.1 – Trees Forever	$109,000
	S-2.2 – Trees For Kids	$17,000
S-4 – Iowa Energy Center and Center for Global & Regional Environmental Research		$200,000
Cross Program Training, Marketing, and Administration		
		$500,000
Total Budget		
		$5,825,000

As some programs are new, budgets will ramp up to cover greater participation in later years. In addition, costs are assumed to inflate at 2.5% per year. Annual budgets by category are given in Table ES.2.

Table ES.2. Annual Utility Budget by Sector by Year

Sector	2009	2010	2011	2012	2013	Average
Residential	$3,546,733	$3,673,252	$3,836,775	$3,975,298	$4,112,431	$3,828,898
Non-Residential	$741,931	$781,655	$794,065	$838,122	$878,033	$806,761
Special	$1,036,000	$1,061,900	$1,088,448	$1,115,658	$1,143,550	$1,089,111
Training, Marketing and Admin	$500,000	$512,500	$525,313	$538,445	$551,906	$525,663
Total	$5,824,664	$6,029,307	$6,244,598	$6,467,524	$6,685,921	$6,250,403

The analysis of the program's cost-effectiveness is an important part of the planning process, both in terms of meeting the regulatory requirement and in selecting and designing the various programs. Table ES.3, Table ES.4, and Table ES.5 show first-year therm savings and cost-effectiveness results for the societal test for the first five years of program activity for residential, commercial, and special programs, respectively. Programs without claimed savings are not shown.

Table ES.3. Residential Program Societal Test (SOC) Benefit-Cost Ratios

Program	First-Year DTh Savings	Five-Year Cumulative SOC Benefits	Five-Year Cumulative SOC Costs	SOC
R-1 – Residential Space & Water Heating	61,995	37,064,291	30,704,336	1.21
R-2 – Residential Envelope Measures Retrofit	21,060	$21,332,724	$14,094,332	1.51
R-3 – Residential New Construction	2,700	$2,994,169	$2,541,689	1.18
R-4 – Residential Audits	11,984	$61,136,264	$49,277,037	1.24

Table ES.4. Non-Residential Program Societal Test (SOC) Benefit-Cost Ratios

Program	First-Year DTh Savings	Five-Year Cumulative SOC Benefits	Five-Year Cumulative SOC Costs	SOC
NR-2 – Non-Residential Prescriptive Rebates	14,656	$10,375,847	$4,887,012	2.12
NR-3 – Non-Residential Custom Rebates	15,000	$5,896,013	$3,070,222	1.92
NR-4 – Non-Residential New Construction	1,500	$2,122,940	$522,318	4.06
NR-5 – Builder Operator Certification	395	$88,287	$83,684	1.06

Table ES.5. Special Program Societal Test (SOC) Benefit-Cost Ratios

Program	First-Year DTh Savings	Five-Year Cumulative SOC Benefits	Five-Year Cumulative SOC Costs	SOC
S-1 – Low-Income Programs	7,618	$3,531,490	$3,543,792	1.15
S-2 – School-Based Energy Education	2,250	$1,384,009	$310,986	4.45