

**Evaluation of Energy Efficiency Goals and  
Programs Filed with the Iowa Utilities Board by  
the Iowa Association of Electric Cooperatives**

**Report to the Iowa General Assembly**

**January 1, 2011**

**IOWA UTILITIES BOARD**

**Robert B. Berntsen, Chair  
Krista K. Tanner  
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## Executive Summary

Senate File 2386, enacted in 2008, was an omnibus energy bill that directed gas and electric municipal and rural electric cooperative utilities to assess their maximum potential energy and capacity savings and establish an energy efficiency goal based on that assessment. The utilities were then to establish cost-effective energy efficiency programs designed to help them meet their new energy efficiency goal.

The legislation also established a reporting schedule for the utilities and the Iowa Utilities Board (Board):

- July 1, 2008 Utilities to begin process of determining cost-effective energy efficiency goals
- January 1, 2009 Utilities to provide progress reports to the Board
- January 1, 2010 Utilities to submit final reports to the Board
- January 1, 2011 Board to provide evaluation and summary of the reports to the General Assembly
- January 1, 2012 Utilities are required to file bi-annual reports identifying their progress in meeting their goals and any updates to their plans

On December 31, 2009, the Iowa Association of Electric Cooperatives (IAEC) filed the Electric Cooperatives' Joint Final Report, on behalf of 40 electric cooperatives in Iowa. The goals adopted by the electric cooperatives increase from 1.1 percent of sales in 2010 to 1.3 percent of sales in 2014.

The 2008 legislation directed the Board to evaluate the report submitted by the municipal utilities and the rural electric cooperatives and to report to the legislature summarizing the evaluation by January 1, 2011. Specifically, the Board's report is to include:

1. The goals established by each of the utilities
2. The projected costs of achieving the goals
3. The potential rate impacts
4. A description of the programs offered and proposed by each utility or group of utilities
5. The report may contain recommendations concerning the achievability of the goals based on the results of the utilities' assessment of potential

The Board wishes to express appreciation for the efforts by the rural electric cooperatives and the IAEC. The IAEC Joint Report represents a substantial effort to identify new energy efficiency opportunities for the electric cooperatives of Iowa. The IAEC also provided substantial assistance to the staff of the Iowa Utilities Board, including additional information which helped to clarify various aspects of the IAEC Report.

The Board has reached the following conclusions and recommendations regarding the Electric Cooperatives' Joint Final Report:

**Conclusions:**

1. **Goals** - The goals adopted by the electric cooperatives appear likely to result in increased savings of energy and reduced peak demand for the utilities and their members. The goals vary among the cooperatives due to significant variation in their mix of residential, commercial and industrial customers. The IAEC Joint Final Report shows goals that increase from 1.1 percent of sales in 2010 to 1.3 percent of sales in 2014. Table ES-1, below shows the goals for 2012 in terms of electric energy savings in megawatt-hours (MWh) along with the percentages of estimated sales.

<b>IUB Table ES-1: IAEC Joint Final Report, Total Goals for year 2012</b>				
	<b>Electricity Energy Savings</b>		<b>Electricity Peak Demand Reduction</b>	
	MWh	% of MWh Sales	MW	% of Peak
Residential (Including Low-Income)	43,461	1.5%	10.684	NA
Agricultural/Commercial and Industrial	17,716	0.9%	2.157	NA
Demand Response	0	0	117.546	NA
<b>Total Goals</b>	<b>61,177</b>	<b>1.2%</b>	<b>130.388</b>	<b>NA</b>

2. **Costs of Potential Goals** - The costs associated with the goals of the electric cooperatives appear adequate to allow them to attain their proposed goals. The projected costs to meet the energy efficiency goals for electric cooperatives in 2010 total \$13,322,602 and increase to \$15,222,354 in 2014. This is approximately a 14 percent increase over the five-year period.
3. **Rate Impacts (Cost Impacts)** - The cost impacts of the projected energy efficiency spending do not appear to be at levels which would pose barriers to implementation. Costs compared to future retail revenue were estimated by IAEC to increase from 2.4 percent in 2010 to 2.8 percent in 2014.

The Board used cost impacts expressed as a percentage of revenue because the costs of energy efficiency implemented by each utility will be recovered directly from the utility's customers. Thus the impacts will be proportionate to the spending increases. This does not necessarily mean, however, that customers will see their bills increase 2.4 percent to 2.8 percent. This is because a utility may, for example, simultaneously implement cost saving measures in other areas that offset any increases in energy efficiency spending.

4. **Energy Efficiency Programs** - The IAEC Joint Final Report provides a useful common format for program descriptions, with data on the technologies each cooperative will seek to promote during each of the years 2010 through 2014.
5. **Achievability and Assessment of Potential** - The IAEC Joint Final Report provides a general description of the process for developing assessments of potential used by the firms which consulted directly with the individual cooperatives. Each cooperative then adopted goals based on the identified potential. Because the assessments of potential were not enumerated in the Joint Final Report, the Board cannot say whether the goals are directly identical with potential. However, the goals appear to represent substantial increases in energy efficiency impacts.

The aggregate or average cost-effectiveness numbers for the proposed goals and programs, provided by IAEC from estimates by consultants, amount to a Societal Benefit-Cost ratio of 1.32. In other words, the energy efficiency programs will provide society with benefits that are estimated to be 32 percent greater than the costs.

**Recommendations:**

1. The Board recommends the electric cooperatives participating in the IAEC Joint Final Report continue to implement the programs described in the Report and work diligently toward the goals they have adopted.
2. The Board recommends the electric cooperatives participating in the IAEC Joint Final Report prepare to report on their progress with implementation and any changes needed to their programs, on January 1, 2012. The Board will endeavor to work with these utilities and stakeholders to identify effective reporting requirements that are not burdensome to the many smaller utilities.

## Introduction

Senate File 2386, enacted in 2008, was an omnibus energy bill that directed gas and electric municipal and rural electric cooperative utilities to assess their maximum potential energy and capacity savings and establish an energy efficiency goal based on that assessment. The utilities were then to establish cost-effective energy efficiency programs designed to help them meet their new energy efficiency goal.

The legislation also established a reporting schedule for both the utilities and the Iowa Utilities Board:

- July 1, 2008 Each utility shall commence the process of determining its cost-effective energy efficiency goal on or before July 1, 2008
- January 1, 2009 Utilities to provide progress reports to the Board.
- January 1, 2010 Utilities to submit final reports to the Board
- January 1, 2011 Board to provide evaluation and summary of the reports to the General Assembly
- January 1, 2012 Utilities are required to file bi-annual reports identifying their progress in meeting their goals and any updates to their plans

On December 31, 2009, The Iowa Association of Electric Cooperatives (IAEC), on behalf of 40 electric cooperatives filed the Electric Cooperatives' Joint Final Report. The report summarizes the cooperatives' commitment to energy efficiency, the preparation of the five-year energy efficiency plan, the energy efficiency program highlights and new program offerings, the energy efficiency cost-effectiveness and investment summary, and a presentation of projected results for the electric cooperatives for the years 2010 through 2014.

Additionally, IAEC's report includes a summary for each electric cooperative which provides the utility's background, a profile of its customers and a description of its energy efficiency programs, along with the utility's energy efficiency portfolio, program, and measure goals. This summary also includes a data table detailing by measure the projected participants, costs, lifetime kWh savings, annual kWh savings and kW peak demand savings for each year 2010 through 2014 and a cumulative total for the five-year period.

The IAEC also provides, as Appendix A, a copy of its Joint Progress Report on Energy Efficiency Potential for Member Rural Electric Cooperatives Pursuant to Iowa Code 476.6 subsection 16bb.(3) which was filed with the Board on December 31, 2008.

On October 26, 2010, the IAEC filed a response to IUB staff questions which sought additional information regarding the assessment of potential and benefit-cost numbers. On December 15, the IAEC provided comments in response to a

draft of this report, suggesting some changes in wording to clarify the Board's description of the IAEC Joint Final Report.

After the electric cooperatives filed their Joint Final Report, the 2008 legislation directed the Board to evaluate the reports submitted by the municipal utilities and the rural electric cooperatives and to submit a report summarizing the evaluation by January 1, 2011. Specifically, the Board's report is to include:

1. The goals established by each of the utilities
2. The projected costs of achieving the goals
3. The potential rate impacts
4. A description of the programs offered and proposed by each utility or group of utilities
5. The report may contain recommendations concerning the achievability of the goals based on the results of the utilities' assessment of potential

The structure of this report is based on these legislative directives. The report also includes appendices 1 through 6. All of the energy efficiency statutes applicable to the non-rate regulated utilities are included in Appendix 1. The other appendices are referenced throughout the report.

## 1. Electric Cooperatives' Energy Efficiency Goals

The electric cooperatives' goals were based on the input from their consultants, Power System Engineering and Clearspring Energy Advisors, who developed the assessment of potential. In the Joint Final Report the goals are also labeled as "Estimated Achievable Potential." The label suggests that the goals may be the same as the estimated potential, but the absence of enumerated data for the potential makes it difficult to conclude that the goals are identical to the potential.

Table A provides an aggregate summary of the goals reported by the cooperatives filing their reports through the IAEC Joint Final Report. The goals for each electric cooperative can be found in Appendix 4.

<b>IUB Table A</b>				
<b>IAEC Joint Final Report, Total Goals for year 2012</b>				
	<b>Electricity Energy Savings</b>		<b>Electricity Demand Reduction</b>	
	MWh	% of MWh Sales	MW	% of Peak
Residential (Including Low-Income)	43,461	1.5%	10.684	NA
Agricultural/Commercial and Industrial	17,716	0.9%	2.157	NA
Demand Response	0	0	117.546	NA
<b>Total Goals</b>	<b>61,177</b>	<b>1.2%</b>	<b>130.388</b>	<b>NA</b>

The electric cooperatives provided goals for each of the years 2010 through 2014. In 2014, the electric cooperatives' goals for all programs include energy savings of 64,669 MWh which is an increase of 16 percent over the 2010 energy

savings goals of 55,518 MWh. Additionally, the electric cooperatives have set a goal of 1.3 percent of MWh sales in 2014 compared to a goal of 1.1 percent in 2010. In 2014, the electric cooperatives' goal to reduce electricity demand is 137.196 MW versus a goal of 124.351 MW in 2010.

In addition to the energy savings goals stated as percentages, the cooperatives also established broader goals such as making programs available to all classes of members; member acceptance and satisfaction with the portfolio of energy efficiency programs; and having a cost effective plan and programs.

While the range of goals as a percentage of sales for the year 2012 was from 0.28 percent to more than 2 percent, all but five of the electric cooperatives chose goals greater than 0.8 percent, and the average goal was more than 1.2 percent.

## **2. Electric Cooperatives' Projected Costs of Achieving the Goals**

The Joint Final Report included projected costs for five years of implementation. The costs for all electric cooperatives in 2010 total \$13,322,602 and increase to \$15,222,354 in 2014. This is approximately a 14 percent increase over the five-year period.

## **3. Electric Cooperatives' Potential Rate Impacts (Cost Impacts)**

The Board is required to report on the projected costs of achieving the goals proposed by the electric cooperatives, including some form of reporting on "potential rate impacts." However, the Board has no mandate to oversee the rates of electric cooperatives (with the exception of Linn County REC, which has elected to be rate-regulated). A Board report examining rates of electric cooperatives might be viewed by some as intrusive, considering the focus of the Board's report is on voluntary energy efficiency programs of the electric cooperatives. Additionally, an examination of the rate impacts of energy efficiency spending, in isolation from the benefits, may distort the true picture of energy efficiency programs.

The Board used cost impacts expressed as a percentage of revenue because the costs of energy efficiency implemented by each utility will be recovered directly from the utility's customers. Thus the impacts will be proportionate to the spending increases.

The IAEC provided additional information showing these impacts for each cooperative in the IAEC Joint Final Report. The energy efficiency spending of the individual electric cooperatives is projected to vary from about 0.6 percent to about 4.7 percent of estimated revenues in 2012. The composite effect of

spending by all cooperatives in 2012 will amount to 2.64 percent of estimated revenues. (IAEC Joint Final Report, Additional Information filed October 26, 2010)

Table B shows estimates of the potential rate impacts expressed as cost impacts of the proposed energy efficiency spending for each electric cooperative. It shows each electric cooperative's anticipated energy efficiency investment as a percent of its 2009 revenue.

<b>IUB Table B - Cooperative's Cost Impacts</b>					
<b>Cooperative</b>	<b>% of 2009 Revenue</b>				
	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Access Energy Cooperative	2.44%	2.42%	2.42%	2.42%	2.42%
Allamakee Clayton Elec. Co-op., Inc.	1.80%	1.92%	2.03%	2.16%	2.31%
Atchison Holt Electric Co-op.	4.43%	4.43%	4.43%	4.43%	4.43%
Boone Valley Electric Co-op.	0.52%	0.72%	0.84%	0.86%	0.88%
Butler County Rural Elec. Co-op.	1.34%	1.44%	1.52%	1.61%	1.70%
Calhoun County Electric Co-op. Assn.	1.53%	2.29%	2.71%	3.06%	3.44%
Chariton Valley Electric Cooperative, Inc.	3.14%	3.67%	3.59%	3.59%	3.59%
Clarke Electric Cooperative, Inc.	2.64%	2.57%	2.76%	2.84%	3.16%
Consumers Energy Cooperative	3.77%	4.25%	4.37%	4.25%	4.27%
East-Central Iowa Rural Electric Co-op.	1.96%	2.12%	2.28%	2.35%	2.44%
Eastern Iowa Light & Power Cooperative	4.52%	4.73%	4.74%	4.87%	5.00%
Farmers Electric Co-op., Inc. - Greenfield	1.96%	1.76%	1.86%	1.93%	2.03%
Franklin Rural Electric Cooperative	2.08%	2.02%	2.06%	2.13%	2.16%
Glidden Rural Electric Co-op.	1.07%	1.13%	1.21%	1.29%	1.32%
Grundy County Rural Electric Cooperative	1.63%	1.71%	1.83%	1.91%	2.04%
Grundy Electric Cooperative, Inc. - MO	1.06%	1.06%	1.06%	1.06%	1.06%
Guthrie Co. Rural Electric Cooperative Assn.	1.92%	1.73%	1.81%	1.90%	1.90%
Harrison County Rural Electric Cooperative	2.47%	2.58%	2.71%	2.84%	2.98%
Hawkeye REC	1.06%	1.08%	1.13%	1.17%	1.19%
Heartland Power Cooperative	3.31%	2.88%	2.93%	2.97%	3.02%
Humboldt County Rural Electric Cooperative	1.78%	1.88%	1.96%	1.97%	2.02%
Iowa Lakes Electric Cooperative	0.80%	0.85%	0.91%	0.98%	1.03%
Linn County Rural Electric Co-op. Assn.	3.26%	3.53%	3.77%	3.95%	4.08%
Lyon Rural Electric Cooperative	2.89%	3.93%	3.97%	4.01%	4.09%
Maquoketa Valley Electric Cooperative	3.28%	2.98%	3.16%	3.24%	3.34%
Midland Power Cooperative	2.31%	2.44%	2.59%	2.62%	2.59%
Nishnabotna Valley Rural Electric Co-op.	1.94%	2.03%	2.12%	2.20%	2.30%
North West Rural Electric Cooperative	1.76%	1.85%	1.95%	2.04%	2.13%
Osceola Electric Cooperative, Inc.	2.58%	2.63%	2.76%	2.83%	2.88%
Pella Cooperative Electric Association	2.54%	2.63%	2.78%	2.94%	2.93%
Prairie Energy Cooperative	1.40%	1.51%	1.60%	1.66%	1.74%
Sac County Rural Electric Cooperative	1.55%	1.40%	1.83%	1.97%	2.07%
Southern Iowa Electric Cooperative, Inc.	1.98%	2.56%	2.62%	2.55%	2.55%
Southwest Iowa Rural Electric Cooperative	3.04%	3.21%	3.41%	3.56%	3.63%
T. I. P. Rural Electric Cooperative	2.30%	2.12%	2.24%	2.20%	2.27%
Tri-County Electric Cooperative	0.48%	0.39%	0.59%	0.61%	0.66%
United Electric Cooperative, Inc.	4.26%	4.26%	4.26%	4.26%	4.26%
Western Iowa Power Cooperative	2.70%	3.05%	2.99%	3.13%	3.28%
Woodbury County Rural Electric Cooperative	2.57%	2.70%	2.82%	2.94%	3.07%
<b>Total</b>	<b>2.45%</b>	<b>2.54%</b>	<b>2.64%</b>	<b>2.72%</b>	<b>2.80%</b>

#### **4. Electric Cooperatives' Programs**

The programs offered are described in each cooperative's report in IAEC Joint Final Report Coop Data Appendices. Appendix 2 of this report contains a table listing the programs described on pages 20 through 37 of the IAEC Joint Final Report Executive Summary. Appendix 3 of this report is a table summarizing the energy efficiency programs offered by each electric cooperative submitted by the IAEC with its December 15 comments.

The programs described by the electric cooperatives appear to address the likely demand-side opportunities, with particular attention to the residential customer sector. Residential member sales are critically important to electric cooperatives, representing approximately 50 percent of cooperatives' total electric kilowatt-hour sales in 2009.

Not all programs were adopted by each electric cooperative, making generalization about cooperative programs difficult. In addition, many cooperatives customized the programs to the unique needs of their members. However, the programs target the same, or similar, energy efficiency measures and appear to use commonly accepted promotional techniques, such as rebates, technical advice to customers and contractors, energy efficiency information and education (such as "Kill-A-Watt" meters), and assistance with obtaining funds from other sources, especially the USDA Rural Development REAP 9007 program.

#### **5. Achievability, Assessment of Potential, and Cost-Effectiveness**

The IAEC conveyed a preliminary description of the assessment of potential in a report filed with the Board on December 31, 2008. The IAEC also filed the description of the cooperatives' assessment of potential in its Joint Final Report and stated:

The IAEC is using a qualified independent third-party consultant to assist in the assessment of potential. The IAEC consultant will aggregate the results of the potential assessments of the member cooperatives into a statewide Iowa rural electric cooperative energy efficiency assessment. The potential assessments that are underway for the member cooperatives are initially being conducted at the Generation and Transmission cooperative (G&T) level to reflect critical differences in avoided costs. The G&Ts have engaged qualified independent third-party consultants to assess energy efficiency potential for the distribution cooperatives that comprise their membership. This integrated approach of assessments is being completed based on the unique characteristics of each G&T group. While there are some

similarities between rural electric cooperatives in Iowa there also are some significant differences that impact energy efficiency potential. (IAEC Joint Final Report, Appendix A, p. 2)

The IAEC Joint Final Report stated “the electric co-ops utilized two independent professional energy-efficiency consulting firms that conducted an assessment of the potential energy-efficiency for cooperatives at the power supplier level.” The consulting firms were Power System Engineering and Clearspring Energy Advisors, both of Madison, Wisconsin.

The IAEC Joint Final Report did not contain a detailed summary of the process or numbers for the results of the cooperatives’ Assessment of Potential. However, the IAEC Joint Final Report included a Table of Contents which described the information provided for each cooperative as: “Individual electric co-op energy-efficiency estimated achievable potential goals.” A similar label is included in the individual description of every cooperative’s proposed goals and programs: “Estimated Achievable Potential Goals.”

In addition, the sections of the IAEC Joint Final Report describing the goals and programs for each cooperative contain the following statement:

The assessment of potential process commenced prior to July 1, 2008 as required in Senate file 2386. Independent qualified third-party consultants were hired to perform the assessments for our member cooperatives. Per SF 2386 the IAEC filed a progress report on 12/31/2008. This progress report has been attached to this filing and is shown as Appendix A.

Following the progress report filing, our member cooperatives continued to work with the hired consultant in order to determine their achievable potential. Once the potential was determined, our members then worked together to develop their goals for energy efficiency. The IAEC completed the process by compiling the goals for each of our members for purposes of this filing.

For each program of each cooperative, the IAEC Joint Final Report provided detailed tables of energy efficiency measures, showing for each measure the projected numbers of participants, cost, lifetime kWh savings, annual kWh savings and kW savings. The IAEC Joint Final Report also compiled these measures into tables showing the projected aggregate savings for all of the cooperatives included in the Report.

Cost-effectiveness of the goals and programs proposed by electric cooperatives was not specifically required to be reported. However, the statute generally requires that utility plans be cost-effective. The IAEC Joint Final Report provided

information on cost-effectiveness on the level of each cooperative and in aggregate for all of the cooperatives in the report.

Individual cooperatives reported on the cost-effectiveness of each individual energy efficiency measure they proposed for their programs. This “Cost-Effectiveness Analysis” was included in the tables summarizing each cooperative’s proposed programs, and provided benefit-cost ratios for each energy efficiency and demand-response measure. Appendix 5 provides an example of the information filed for each electric cooperative in the IAEC Joint Final Report.

The IAEC also filed an analysis of all the cooperatives’ benefits and costs, in aggregate, for programs to be implemented in 2010 through 2014. The IAEC Benefit-Cost Table shown below was included in the IAEC Additional Information filed October 26, 2010. The terms “PV Benefits” and “PV Costs” translate to “Present Value of Benefits” and “Present Value of Costs.”

<b>IAEC Benefit-Cost Table</b>			
Aggregate Benefit-Cost Ratios for All Electric Cooperatives in Joint Final Report			
Rural Electric Cooperative Totals – 5 year Plan			
<b>Test</b>	<b>PV Benefits</b>	<b>PV Costs</b>	<b>Ratio</b>
Rate Payer	\$155,076,185	\$337,339,179	0.46
Participant	\$354,690,259	\$118,038,423	3.00
Utility	\$155,076,185	\$38,528,133	4.03
Societal	\$168,937,394	\$127,651,950	1.32

The cost-effectiveness of the programs and goals aggregated for all of the electric cooperatives over the five years of the programs is greater than 1.0, thus the programs of all of the cooperatives for all of the years 2010 through 2014, in aggregate, appear cost-effective.

## **6. Other Electric Cooperatives' Goals and Programs**

Two electric cooperatives chose to develop and present their goals and programs as part of the Iowa Association of Municipal Utilities (IAMU) Joint Report. The goals and spending for Farmers’ Electric Cooperative (Kalona) and Consumers’ Energy (Gas Service) can be found in Appendices 5 and 6 in the IAMU Joint Report. However, the electric energy efficiency programs and goals for Consumers’ Energy are included in the IAEC report.

Three rural electric cooperatives were not included in the Joint Final Report filed by the IAEC: Federated Rural Electric Association, Freeborn-Mower Cooperatives Services, and Nobles Cooperative Electric Association. These three cooperatives are all headquartered in Minnesota, with very few members in Iowa, totaling 69 out of approximately 16,000 total members, or less than one-half of one percent. The Minnesota RECs are subject, in Minnesota, to extensive

requirements for energy efficiency goals and programs including very specific goals and spending requirements.

As evidence of the efforts they are making, the Minnesota RECs filed, with the Board, reports showing goals and spending for their total membership. In total, the three Minnesota RECs estimated they will spend about \$5,000 per year to help their Iowa members achieve new electricity savings of 28,500 kWh per year. (See Appendix 6 of this report for more information.)

## 7. IUB Conclusions and Recommendations

### Conclusions:

1. **Goals** - The goals adopted by the electric cooperatives appear likely to result in increased savings of energy and peak capacity for the utilities and their members. The goals vary among the cooperatives due to significant variation in their mix of residential, commercial and industrial customers. The IAEC Joint Final Report shows goals that increase from 1.1 percent of sales in 2010 to 1.3 percent kWh sales in 2014.
2. **Costs of Potential Goals** - The costs associated with the goals of the electric cooperatives appear adequate to allow them to attain their proposed goals. The projected costs for electric cooperatives in 2010 total \$13,322,602 and increase to \$15,222,354 in 2014. This is approximately a 14 percent increase over the five-year period.
3. **Rate Impacts (Cost Impacts)** - The cost impacts of the projected energy efficiency spending do not appear to be at levels which would pose barriers to implementation. Costs compared to future retail revenue were estimated by IAEC to range from 2.4 percent in 2010 to 2.8 percent in 2014.

The Board used cost impacts expressed as a percentage of revenue because the costs of energy efficiency implemented by each utility will be recovered directly from the utility's customers. Thus the impacts will be proportionate to the spending increases. This does not necessarily mean, however, that customers will see their bills increase 2.4 percent to 2.8 percent. This is because a utility may, for example, simultaneously implement cost saving measures in other areas that offset any increases in energy efficiency spending.

4. **Energy Efficiency Programs** - The IAEC Joint Final Report provides a useful common format for program descriptions, with data on the technologies each cooperative will seek to promote during each of the years 2010 through 2014.

5. **Achievability and Assessment of Potential** - The IAEC Joint Final Report provides a general description of the process for developing assessments of potential used by the firms which consulted directly with the individual cooperatives. Each cooperative then adopted goals based on the identified potential. Because the assessments of potential were not enumerated in the Joint Final Report, the Board cannot say whether the goals are directly identical with potential. However, the goals appear to represent substantial increases in energy efficiency impacts.

The aggregate or average cost-effectiveness numbers for the proposed goals and programs, provided by IAEC from estimates by consultants, amount to a Societal Benefit-Cost ratio of 1.32. In other words, the energy efficiency programs will provide society with benefits that are estimated to be 32 percent greater than the costs.

**Recommendations:**

1. The Board recommends the electric cooperatives participating in the IAEC Joint Final Report continue to implement the programs described in the Report and work diligently toward the goals they have adopted.
2. The Board recommends the electric cooperatives participating in the IAEC Joint Final Report prepare to report on their progress with implementation and any changes needed to their programs, on January 1, 2012. The Board will endeavor to work with these utilities and stakeholders to identify effective reporting requirements that are not burdensome to the many smaller utilities.

476.1A Applicability of authority - certain electric utilities

1. Electric public utilities having fewer than ten thousand customers and electric cooperative corporations and associations are not subject to the rate regulation authority of the board. Such utilities are subject to all other regulation and enforcement activities of the board, including:
  - e. Assessment of fees for the support of the Iowa energy center created in section 266.39C and the center for global and regional environmental research established by the state board of regents.
  - g. Filing energy efficiency plans and energy efficiency results with the board. The energy efficiency plans as a whole shall be cost-effective. The board may permit these utilities to file joint plans. The board may waive all or part of the energy efficiency filing and review requirements for electric cooperative corporations and associations and electric public utilities which demonstrate superior results with existing energy efficiency efforts.

476.1B Applicability of authority - municipally owned utilities

- k. Assessment of fees for the support of the Iowa energy center created in section 266.39C and the center for global and regional environmental research created by the state board of regents.
  - l. Filing energy efficiency plans and energy efficiency results with the board. The energy efficiency plans as a whole shall be cost-effective. The board may permit these utilities to file joint plans.
2. The board may waive all or part of the energy efficiency filing and review requirements for municipally owned utilities which demonstrate superior results with existing energy efficiency efforts.

Iowa Code §476.6"14". Energy efficiency plans.

Electric and gas public utilities shall offer energy efficiency programs to their customers through energy efficiency plans. An energy efficiency plan as a whole shall be cost-effective. In determining the cost-effectiveness of an energy efficiency plan, the board shall apply the societal test, utility cost test, rate-payer impact test, and participant test. Energy efficiency programs for qualified low-income persons and for tree planting programs, educational programs, and assessments of consumers' needs for information to make effective choices regarding energy use and energy efficiency need not be cost-effective and shall not be considered in determining cost-effectiveness of plans as a whole. The energy efficiency programs in the plans may be provided by the utility or by a contractor or agent of the utility. Programs offered pursuant to this subsection by gas and electric utilities that are required to be rate-regulated shall require board approval.

Iowa Code §476.6"16"c(1). Gas and electric utilities that are not required to be rate-regulated under this chapter shall assess maximum potential energy and capacity savings available from actual and projected customer usage through cost-effective energy efficiency measures and programs, taking into consideration the utility service area's historic energy load, projected demand, customer base, and other relevant factors. Each utility shall establish an energy efficiency goal based upon this assessment of potential and shall establish cost-effective energy efficiency programs designed to meet the energy efficiency goal. Separate goals may be established for various customer groupings.

Iowa Code §476.6"16"c(2). Energy efficiency programs shall include efficiency improvements to a utility infrastructure and system and activities conducted by a utility intended to enable or encourage customers to increase the amount of heat, light, cooling, motive power, or other forms of work performed per unit of energy used. In the case of a municipal utility, for purposes of this paragraph, other utilities and departments of the municipal utility shall be considered customers to the same extent that such utilities and departments would be considered customers if served by an electric or gas utility that is not a municipal utility. Energy efficiency programs 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.

Iowa Code §476.6"16"c(3). Each utility shall commence the process of determining its cost-effective energy efficiency goal on or before July 1, 2008, shall provide a progress report to the board on or before January 1, 2009, and complete the process and submit a final report to the board on or before January 1, 2010. The report shall include the utility's cost-effective energy efficiency goal, and for each measure utilized by the utility in meeting the goal, the measure's description, projected costs, and the analysis of its cost-effectiveness. Each utility or group of utilities shall evaluate cost-effectiveness using the cost-effectiveness tests in accordance with subsection 14 of this section. Individual utilities or groups of utilities may collaborate in conducting the studies required hereunder and may file a joint report or reports with the board. However, the board may require individual information from any utility, even if it participates in a joint report.

Iowa Code §476.6"16"c(4). On January 1 of each even-numbered year, commencing January 1, 2012, gas and electric utilities that are not required to be rate-regulated shall file a report with the board identifying their progress in meeting the energy efficiency goal and any updates or amendments to their energy efficiency plans and goals. Filings made pursuant to this paragraph "c"

shall be deemed to meet the filing requirements of section 476.1A, subsection 1, paragraph "g", and section 476.1B, subsection 1, paragraph "l".

Iowa Code §476.6"16"d(2). The board shall evaluate the reports required to be filed pursuant to paragraph "c" by gas and electric utilities that are not required to be rate-regulated, and shall submit a report summarizing the evaluation to the general assembly on or before January 1, 2011.

Iowa Code §476.6"16"d(3). The reports submitted by the board to the general assembly pursuant to this paragraph "d" shall include the goals established by each of the utilities. The reports shall also include the projected costs of achieving the goals, potential rate impacts, and a description of the programs offered and proposed by each utility or group of utilities, and may take into account differences in system characteristics, including but not limited to sales to various customer classes, age of facilities of new large customers, and heating fuel type. The reports may contain recommendations concerning the achievability of certain intermediate and long-term energy efficiency goals based upon the results of the assessments submitted by the utilities.

The following program descriptions were extracted from the IAEC Joint Final Report summary tables, found in the Compilation of data for all RECs on pages 20 through 37 of the Executive Summary.

<b>Residential Heating &amp; Cooling</b>	<b>Residential Water Heating</b>
ENERGY STAR Central Air Conditioning	High Efficiency Water Heaters
ENERGY STAR Qualified Room Air Conditioning	Heat Pump Water Heater (Add-On or Integrated)
Geothermal Heat Pump	Solar Water Heaters with electric auxiliary tank
Air Source Heat Pump	Drain Water Heat Recovery Systems
Heat Recovery Ventilators	Flow Restrictors – Faucet
Contractor Rebates	
<b>Residential Interior Lighting</b>	<b>Residential Exterior Lighting</b>
Change a Light Rebate Program	High Efficiency Exterior Lighting (High Pressure Sodium, Metal Halide and CFL)
Local CFL Rebate Program	LED Holiday Lighting
ENERGY STAR CFL Fixtures	
T8 or better Lighting Fixtures (2 ft, 4 ft or 8 ft)	
ENERGY STAR CFL Fixtures	
ENERGY STAR LED Lighting	
CFL Recycling	
<b>Residential Appliances</b>	<b>Additional Low-Income</b>
ENERGY STAR Qualified Clothes Washer	Energy Efficiency Kits
ENERGY STAR Qualified Dishwasher	Weatherization Rebates
ENERGY STAR Qualified Refrigerator	Ceiling (Bring up to R-38) - Elect. Heat or Central AC - with LP Heat Only
ENERGY STAR Qualified Dehumidifier	Wall (Bring Up to R19) - Elect. Heat or Central AC - with LP Heat Only
ENERGY STAR Qualified Freezer	Foundation (Bring Up to R10)
Appliance Recycling (Refrigerators, Freezers, Window AC Units)	Infiltration Control
Efficient Television	
Smart Strip	
<b>Building Shell – Existing Home Only</b>	<b>Efficient Home Incentives</b>
Ceiling (Bring up to R-38) - Elect. Heat or Central AC - with LP Heat Only	Energy Efficient Home Construction Rebates
Wall (Bring Up to R19) - Elect. Heat or Central AC - with LP Heat Only	Advanced Lighting Package
Foundation (Bring Up to R-10)	
Infiltration Control	
Duct Insulation (in unconditioned space)	

<b>Agriculture/Commercial &amp; Industrial Interior Lighting</b>	<b>Agriculture/Commercial &amp; Industrial Exterior Lighting</b>
Change a Light Rebate Program	Pulse start metal halide fixtures – (70-249 watt or >=250 watt) RETRO ONLY
T8 (2 ft, 46", or 8 ft) or T-5 fixtures - (2 ft, 4 ft, or 8 ft)	High Pressure Sodium Fixture (ballast & lamp replacement) – (50-100 watt or > 100 watt)
High Bay T-8/T-5 fixture w/ High Output Ballast – Replacement	CFL Outdoor Light - 42 W min., Cold Start
High Bay T-8/T-5 fixture w/ High Output Ballast - New Construction	Security Lighting: LED Technology
Pulse Start Metal Halide Fixtures – (100-249 watts or 250+ watts)	Security Lighting: Induction
CFL lamps - Energy Star- 9W and up	
Occupancy Sensors - Must control >150 Watts	<b>Agriculture/Commercial &amp; Industrial Water Heating</b>
Compact fluorescent fixtures (Hard-Wired)	High-Efficiency Water Heater (50-79 gallon or 80 gallon +)
Metal Halide Lamps	Heat Pump Water Heater
LED Exit Signs	
ENERGY STAR LED Lights	
<b>Agriculture/Commercial &amp; Industrial Heating and Cooling</b>	<b>Agriculture/Commercial &amp; Industrial Appliances</b>
ENERGY STAR Air Conditioning	Commercial Solid Door Refrigerators (< 19 cu ft, 19-30 cu ft, 31-60 cu ft or 61-90 cu ft)
Air Cooled Chillers	Commercial Glass Door Refrigerators (< 19 cu ft, 19-30 cu ft or 31-60 cu ft)
Water Cooled Chillers	Commercial Solid Door Freezers (< 19 cu ft, 19-30 cu ft or 31-60 cu ft)
Geothermal Heat Pump	
Air Source Heat Pump - (SEER 14.5, EER 12, HSPF 8.2)	<b>Agriculture/Commercial &amp; Industrial Insulation</b>
Heat Recovery Ventilators	Insulation (wall, ceiling, foundation, infiltration control)
Commercial Contractor Rebate (GS & AS)	Multi Family - Insulation & Sealing
<b>Agriculture/Commercial &amp; Industrial Motors</b>	<b>Agriculture/Commercial &amp; Industrial Custom Rebates</b>
Premium Motors Rebate Program - NEMA	Custom Rebate Program
Variable Speed Drive Motor Incentive	
<b>Agriculture</b>	
Dairy Pre-coolers Incentive	Scroll compressor (milk cooling)
Dairy Heat Reclaimer	Efficient Livestock Waterers
Livestock Ventilation Fans (14"-23", 24"-35", 36"-47", 48"-49" or 50" & up)	Premium Motors Rebate Program - Dairy Vacuum Pump
Ventilation Thermostat Controller	Variable Speed Drive Motor - Dairy Vacuum Pump
Circulating Fans- BESS Lab Ratings (20"-23", 24"-35", 36"-47", 48"-52" or High Velocity; Low Speed)	Hog Farrowing - Heat Lamps (<= 175W), Single Crate Heating Pads (<=85W), Double Crate Heating Pads(<=170W), or Heat Lamp or Pad Controller

<b>Demand Response Programs</b>	
Water Heater Load Control	<i>Crop Drying</i>
Water Heater Storage	Off Peak Pricing
Air Conditioning Load Control	Load Control
Space Heating Load Control (Interruptible)	<i>Irrigation</i>
Residential Time-of-Day Price	Time of Use Pricing
Dual-Fuel (also called Electric Thermal) Storage Space Heating and Air Conditioning	Load Control
Dual-Fuel Space Heating	Commercial and Industrial Time-of-Day Price
	Industrial Interruptible Price
<b>Energy Audit &amp; Technical Support Programs</b>	<b>Educational &amp; Research Programs</b>
Expert Energy Services - Agricultural	Model Housing Education
Expert Energy Services - C&I	Domestic Water Heater Enhancement
Energy Audit Services - Residential *	Member Information and Education
	Peak Alert
	Living with Energy in Iowa
	Iowa Energy Center and Center for Global Regional Environmental Research & Cooperative Research Network





Plan Years 2010-2014		Total	Access Energy Cooperative	Atamakee-Clayton Electric Cooperative, Inc.	Aitchison-Holt Electric Cooperative	Boone Valley Electric Cooperative	Butler County REC	Cathlamet County Electric Cooperative Assoc.	Chariton Valley Electric Cooperative, Inc.	Clarke Electric Cooperative, Inc.	Consumers Energy	East-Central Iowa REC	Eastern Iowa Light & Power Cooperative	Farmers Electric Cooperative, Inc. (G)	Franklin REC	Gladwin Rural Electric Cooperative	Gundy County REC	Gundy Electric Cooperative, Inc. (Mo.)	Guthrie County REC	Harrison County REC	Hawkeye REC	Hearland Power Cooperative	Humboldt County REC	Iowa Lakes Electric Cooperative	Linn County REC	Lyon Rural Electric Cooperative	Maquoketa Valley Electric Cooperative	Midland Power Cooperative	Nishnabona Valley REC	North West REC	Oceola Electric Cooperative, Inc.	Pella Cooperative Electric Association	Prairie Energy Cooperative	Sac County Rural Electric Cooperative	Southern Iowa Electric Cooperative, Inc.	Southwest Iowa Rural Electric Cooperative	T.I.P. REC	Tri-County Electric Cooperative	United Electric Cooperative	Western Iowa Power Cooperative	Woodbury County REC												
<b>II. Demand Response Programs</b>		<b>19</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>										
17.1	Water Heater Load Control		x																x	x	x																																
18.1	Water Heater Storage			x																x	x	x																															
19.1	Air Conditioning Load Control		x																	x	x																																
20.1	Space Heating Load Control (Interruptible)		x																	x	x																																
21.1	Residential Time-of-Day Price																			x	x																																
22.1	Dual-Fuel (also called Electric Thermal) Storage Space Heating and Air Conditioning		x																																																		
23.1	Dual-Fuel Space Heating																			x	x	x																															
<b>Crop Drying</b>		<b>4</b>	<b>x</b>																																																		
24.1	Off Peak Pricing																																																				
24.2	Load Control		x																																																		
<b>Irrigation</b>		<b>18</b>	<b>x</b>																																																		
25.1	Time of Use Pricing																																																				
25.2	Load Control																																																				
26.1	Commercial and Industrial Time-of-Day Price		x																																																		
27.1	Industrial Interruptible Price																																																				
<b>III. Energy Audit &amp; Technical Support Programs</b>		<b>35</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>			
28.1	Expert Energy Services - Agricultural		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
29.1	Expert Energy Services - C&I		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
30.1	Energy Audit Services - Residential		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
<b>IV. Educational &amp; Research Programs</b>		<b>35</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>		
31.1	Model Housing Education		x																																																		
32.1	Domestic Water Heater Enhancement																																																				
33.1	Member Information and Education		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
34.1	Peak Alert		x	x																																																	
35.1	Living with Energy in Iowa																																																				
36.1	Iowa Energy Center and Center for Global Regional Environmental Research & Cooperative Research Network		x	x																																																	

Electric Cooperative Goals as Percentage of Estimated Sales – Sorted Alphabetically  
 (Table prepared by the Iowa Utilities Board from information provided by the IAEC)

**Appendix 4**

Cooperative	Goals (% of Sales)				
	2010	2011	2012	2013	2014
Access Energy Cooperative	0.29%	0.28%	0.28%	0.28%	0.28%
Allamakee Clayton Elec. Co-op., Inc.	0.71%	0.77%	0.82%	0.87%	0.96%
Atchison Holt Electric Co-op.	1.40%	1.40%	1.39%	1.38%	1.36%
Boone Valley Electric Co-op.	0.40%	0.45%	0.49%	0.50%	0.50%
Butler County Rural Elec. Co-op.	0.93%	0.96%	1.00%	1.02%	1.04%
Calhoun County Electric Co-op. Assn.	1.24%	1.36%	1.47%	1.50%	1.62%
Chariton Valley Electric Cooperative, Inc.	0.55%	0.62%	0.57%	0.56%	0.55%
Clarke Electric Cooperative, Inc.	1.83%	1.92%	2.04%	2.06%	2.18%
Consumers Energy Cooperative	1.58%	1.76%	1.88%	1.75%	1.68%
East-Central Iowa Rural Electric Co-op.	1.30%	1.43%	1.54%	1.55%	1.57%
Eastern Iowa Light & Power Cooperative	1.20%	1.33%	1.42%	1.44%	1.45%
Farmers Electric Co-op., Inc. - Greenfield	1.12%	0.93%	0.97%	0.99%	1.03%
Franklin Rural Electric Cooperative	0.99%	1.01%	1.06%	1.10%	1.10%
Glidden Rural Electric Co-op.	0.96%	0.96%	1.01%	1.05%	1.06%
Grundy County Rural Electric Cooperative	1.30%	1.77%	1.88%	1.61%	1.68%
Grundy Electric Cooperative, Inc. - MO	0.23%	0.21%	0.21%	0.20%	0.20%
Guthrie Co. Rural Electric Cooperative Assn.	1.90%	1.52%	1.62%	1.68%	1.68%
Harrison County Rural Electric Cooperative	2.25%	2.15%	2.07%	2.04%	2.05%
Hawkeye REC	0.77%	0.86%	0.94%	1.00%	1.00%
Heartland Power Cooperative	1.08%	0.91%	0.98%	1.02%	1.07%
Humboldt County Rural Electric Cooperative	1.16%	1.25%	1.33%	1.34%	1.38%
Iowa Lakes Electric Cooperative	0.71%	0.75%	0.80%	0.81%	0.80%
Linn County Rural Electric Co-op. Assn.	1.58%	1.71%	1.72%	1.73%	1.72%
Lyon Rural Electric Cooperative	1.21%	1.19%	1.17%	1.14%	1.12%
Maquoketa Valley Electric Cooperative	1.59%	1.59%	1.71%	1.76%	1.81%
Midland Power Cooperative	1.28%	1.38%	1.48%	1.41%	1.29%
Nishnabotna Valley Rural Electric Co-op.	0.94%	0.97%	0.99%	1.02%	1.06%
North West Rural Electric Cooperative	0.94%	0.96%	0.99%	1.03%	1.30%
Osceola Electric Cooperative, Inc.	0.86%	0.88%	0.93%	0.97%	0.98%
Pella Cooperative Electric Association	1.50%	1.55%	1.59%	1.60%	1.53%
Prairie Energy Cooperative	0.58%	0.67%	0.73%	0.72%	0.76%
Sac County Rural Electric Cooperative	1.01%	1.17%	1.31%	1.34%	1.39%
Southern Iowa Electric Cooperative, Inc.	0.28%	0.47%	0.51%	0.48%	0.47%
Southwest Iowa Rural Electric Cooperative	1.73%	1.86%	2.00%	2.08%	2.13%
T. I. P. Rural Electric Cooperative	1.74%	1.58%	1.67%	1.41%	1.44%
Tri-County Electric Cooperative	0.71%	0.70%	0.84%	0.86%	0.90%
United Electric Cooperative, Inc.	1.41%	1.40%	1.39%	1.38%	1.36%
Western Iowa Power Cooperative	1.72%	1.81%	1.94%	2.03%	2.14%
Woodbury County Rural Electric Cooperative	1.74%	1.56%	1.45%	1.41%	1.45%

Electric Cooperative Goals as Percentage of Estimated Sales – Sorted Alphabetically  
 (Table prepared by the Iowa Utilities Board from information provided by the IAEC)

Appendix 4

Cooperative	Goals (% of Sales)				
	2010	2011	2012	2013	2014
Grundy Electric Cooperative, Inc. - MO	0.23%	0.21%	0.21%	0.20%	0.20%
Access Energy Cooperative	0.29%	0.28%	0.28%	0.28%	0.28%
Southern Iowa Electric Cooperative, Inc.	0.28%	0.47%	0.51%	0.48%	0.47%
Boone Valley Electric Co-op.	0.40%	0.45%	0.49%	0.50%	0.50%
Chariton Valley Electric Cooperative, Inc.	0.55%	0.62%	0.57%	0.56%	0.55%
Prairie Energy Cooperative	0.58%	0.67%	0.73%	0.72%	0.76%
Iowa Lakes Electric Cooperative	0.71%	0.75%	0.80%	0.81%	0.80%
Tri-County Electric Cooperative	0.71%	0.70%	0.84%	0.86%	0.90%
Allamakee Clayton Elec. Co-op., Inc.	0.71%	0.77%	0.82%	0.87%	0.96%
Osceola Electric Cooperative, Inc.	0.86%	0.88%	0.93%	0.97%	0.98%
Hawkeye REC	0.77%	0.86%	0.94%	1.00%	1.00%
Farmers Electric Co-op., Inc. - Greenfield	1.12%	0.93%	0.97%	0.99%	1.03%
Butler County Rural Elec. Co-op.	0.93%	0.96%	1.00%	1.02%	1.04%
Glidden Rural Electric Co-op.	0.96%	0.96%	1.01%	1.05%	1.06%
Nishnabotna Valley Rural Electric Co-op.	0.94%	0.97%	0.99%	1.02%	1.06%
Heartland Power Cooperative	1.08%	0.91%	0.98%	1.02%	1.07%
Franklin Rural Electric Cooperative	0.99%	1.01%	1.06%	1.10%	1.10%
Lyon Rural Electric Cooperative	1.21%	1.19%	1.17%	1.14%	1.12%
Midland Power Cooperative	1.28%	1.38%	1.48%	1.41%	1.29%
North West Rural Electric Cooperative	0.94%	0.96%	0.99%	1.03%	1.30%
United Electric Cooperative, Inc.	1.41%	1.40%	1.39%	1.38%	1.36%
Atchison Holt Electric Co-op.	1.40%	1.40%	1.39%	1.38%	1.36%
Humboldt County Rural Electric Cooperative	1.16%	1.25%	1.33%	1.34%	1.38%
Sac County Rural Electric Cooperative	1.01%	1.17%	1.31%	1.34%	1.39%
T. I. P. Rural Electric Cooperative	1.74%	1.58%	1.67%	1.41%	1.44%
Woodbury County Rural Electric Cooperative	1.74%	1.56%	1.45%	1.41%	1.45%
Eastern Iowa Light & Power Cooperative	1.20%	1.33%	1.42%	1.44%	1.45%
Pella Cooperative Electric Association	1.50%	1.55%	1.59%	1.60%	1.53%
East-Central Iowa Rural Electric Co-op.	1.30%	1.43%	1.54%	1.55%	1.57%
Calhoun County Electric Co-op. Assn.	1.24%	1.36%	1.47%	1.50%	1.62%
Consumers Energy Cooperative	1.58%	1.76%	1.88%	1.75%	1.68%
Guthrie Co. Rural Electric Cooperative Assn.	1.90%	1.52%	1.62%	1.68%	1.68%
Grundy County Rural Electric Cooperative	1.30%	1.77%	1.88%	1.61%	1.68%
Linn County Rural Electric Co-op. Assn.	1.58%	1.71%	1.72%	1.73%	1.72%
Maquoketa Valley Electric Cooperative	1.59%	1.59%	1.71%	1.76%	1.81%
Harrison County Rural Electric Cooperative	2.25%	2.15%	2.07%	2.04%	2.05%
Southwest Iowa Rural Electric Cooperative	1.73%	1.86%	2.00%	2.08%	2.13%
Western Iowa Power Cooperative	1.72%	1.81%	1.94%	2.03%	2.14%
Clarke Electric Cooperative, Inc.	1.83%	1.92%	2.04%	2.06%	2.18%

## Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

## Appendix 5



229 Highway 51 ■ PO Box 715  
Postville, IA 52162-0715

Phone: (563) 864-7611 ■ (888) 788-1551  
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A Touchstone Energy® Cooperative 

### BACKGROUND

Allamakee-Clayton Electric Cooperative, a not-for-profit cooperative based out of Postville, Iowa, provides electric service to its member-consumers in northeast Iowa. ACEC's service territory includes portions of Allamakee, Clayton, Fayette, Winneshiek, Dubuque, Delaware, Chickasaw and Dubuque counties and is bordered by Minnesota on the north and the Mississippi River and Wisconsin on the east.

Organized in 1938 by a group of rural citizens who had been bypassed by the investor-owned utilities because of the area's sparse, agrarian population and heavily wooded and rough terrain, ACEC's mission is to provide safe, reliable, affordable and environmentally friendly electric service to its member-owners. The Cooperative is governed by a nine-member board of directors, elected by and from its member-owners, and is operated by a staff of 46 employees.

ACEC's distribution system includes approximately 2,500 miles of line; it serves less than 4 members per mile of line.

ACEC has an all inclusive wholesale power contract to purchase its power from Dairyland Power Cooperative, LaCrosse, Wisc.

The Cooperative's customer base is primarily residential and small farm, along with a few small commercial and industrial consumers. The small C & I accounts consist of larger ag confinement or dairy facilities, small businesses, billboard lighting, cell towers, and highway lighting, many of which offer no opportunity for improved efficiency. It's also difficult for the Cooperative to assist its member-consumers in improving the efficiency of their home heating; the majority of them burn wood for heat because of the area's abundance of trees. The Cooperative's energy efficiency programs are designed to fit the specific needs of its member-owners by helping them manage their electric needs and lower their carbon footprint.

## ACEC'S ENERGY EFFICIENCY PROGRAM

- **Energy Efficiency Education**
  - **One-on-one consultation with members** who are planning remodeling or construction projects to discuss energy efficient options for insulation, windows, heating and cooling and related incentives. This applies to residential, agricultural and/or commercial projects.
  - **One-on-one consultation and assistance to area electrical contractors and HVAC dealers** to ensure they have the latest energy efficiency information and are knowledgeable about ACEC's energy efficiency programs when dealing with ACEC member-consumers.
  - ACEC performs electrical safety **demonstrations for students in area schools** and incorporates energy efficiency education with its safety message.
  - Area contractors are informed about seminars on energy efficiency through ACEC's newsletter and individual mailings. ACEC helps plan and support "**Momentum is Building,**" an annual three-day energy efficiency seminar in Des Moines. In addition, the Cooperative sponsors local contractors to attend the event.
  - Along with two neighboring cooperatives, ACEC sponsors an annual **Home Efficiency Expo** for members, contractors and the public. Geared towards new construction and remodeling projects, individual seminars offer instruction on proper techniques for making a home energy efficient. Representatives from lighting, heating, cooling, insulation and window manufacturers demonstrate their products and answer questions. The Expo is held at a centralized location, making it convenient for members to attend.
  - ACEC provides energy efficiency education through its **booth at three annual county fairs**, giving free CFL bulbs to fairgoers and demonstrating the efficiency of various products such as CFL
  - **Kill-a-Watt meters** are available free of charge for ACEC members to monitor the actual usage of their appliances in order to better understand energy consumption and the effect of energy-saving measures
  - ACEC **staff participate in regular training** to remain knowledgeable on the latest and improved methods for energy audits and related activity
  
- **Energy Efficiency Rebates**

*To encourage energy efficiency, ACEC offers rebates for members who purchase qualifying appliances.*

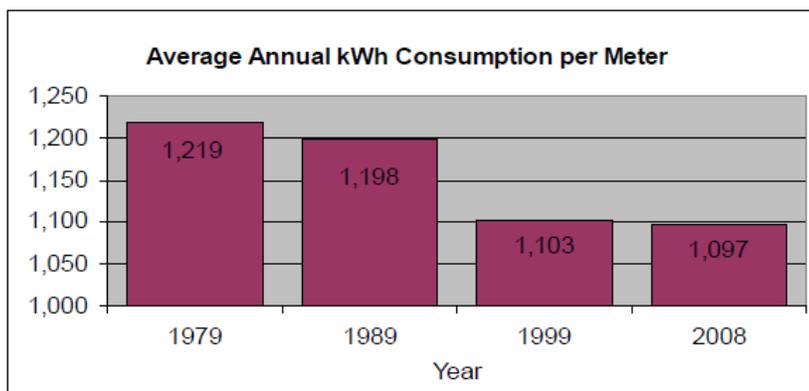
  - Electric water heaters: Unit must be 80 gallon or larger and meet minimum efficiency standards (energy factor); member must participate in the load management program.
  - Central air conditioners: Unit must be SEER 14+
  - Heat pumps: Air source unit must be SEER 14+

- Energy Star appliances: Member must provide Energy Guide label for qualifying clothes washer, dishwasher, refrigerator, freezer, room air conditioner or dehumidifier.
- Lighting (commercial or residential): CFLs, LEDs, electronically ballasted fluorescent, metal halide and sodium vapor fixtures.
- Agricultural equipment such as dairy plate coolers, variable frequency drives, scroll refrigeration compressors, livestock waterers, exhaust fans, circulation fans, high velocity fans, variable speed compressed air.
- Prescribed incentives for qualifying energy efficiency measures.
- ACEC conducts energy audits with a written report that can be used for USDA Rural Development Energy Efficiency Grant applications, with the majority of the grants awarded to ACEC member-consumers being for the purchase of a more energy efficient grain drying system.
  
- **Communicating Energy Efficiency**
  - **Monthly newsletter (*REC News*) and monthly bill insert (*Energy Update*)** offer valuable articles and tips for using energy wisely; both are mailed to all ACEC member-consumers each month.
  - **Seasonal bill inserts** are used to deliver a specific message such as the benefits of LED holiday lighting.
  - **Newspaper ads** are frequently used as another tool for communicating energy efficiency messages.
  - **Web site:** <http://www.acrec.com> contains energy efficiency tips and access to several do-it-yourself energy audits, from quick and easy to extensive.
  - **Wait til eight** program is a joint effort with neighboring cooperatives to promote scheduling household tasks after 8 p.m. to avoid peak times.
  - **Evergreen** program allows members to purchase blocks of renewable energy through the Cooperative's wholesale power provider. Currently 105 participating member-owners are purchasing 309 blocks.
  - Each year ACEC provides area schools with 50,000 **popcorn bags, imprinted with energy saving tips**, for use at their concession stands during extra curricular events.
  - ACEC provides energy efficiency and electrical safety **messages for broadcast on area radio stations** on a continual year-round basis.
  - As a Touchstone Energy Cooperative, ACEC provides access to the **Together We Save** initiative, a free Web site that provides hands on demonstrations of energy savings that can be achieved through simple and inexpensive actions at home. The site provides an ongoing tabulation of the energy savings.
  - **Free CFL bulbs** are often distributed: two free CFL bulbs were mailed to each ACEC member-owner during 2008; free bulbs are also given out at the annual meeting, open house, during on-site visits for energy audits, and to all member-consumers who visit the ACEC office during the month of December.

- Contractors and members have access to two versions (residential and commercial) of **Questline**, a monthly e-newsletter that provides energy-saving tips and up-to-date ideas for using energy efficiently.

### **ENERGY EFFICIENCY PROGRAMS PRODUCE RESULTS**

The chart below shows that ACEC's energy efficiency programs ARE producing results. The average kWh consumption per meter has been declining since 1979, when the U.S. was in the midst of its first energy crisis and President Jimmy Carter encouraged citizens to cut back on energy use by driving less, turning down thermostats and turning off unnecessary lighting. ACEC and its member-consumers voluntarily began efforts to comply with the President's appeal for energy conservation and energy efficiency. In fact, during 2008 the average consumption was 1,097 kWh per meter, a reduction of more than 10% since 1979.



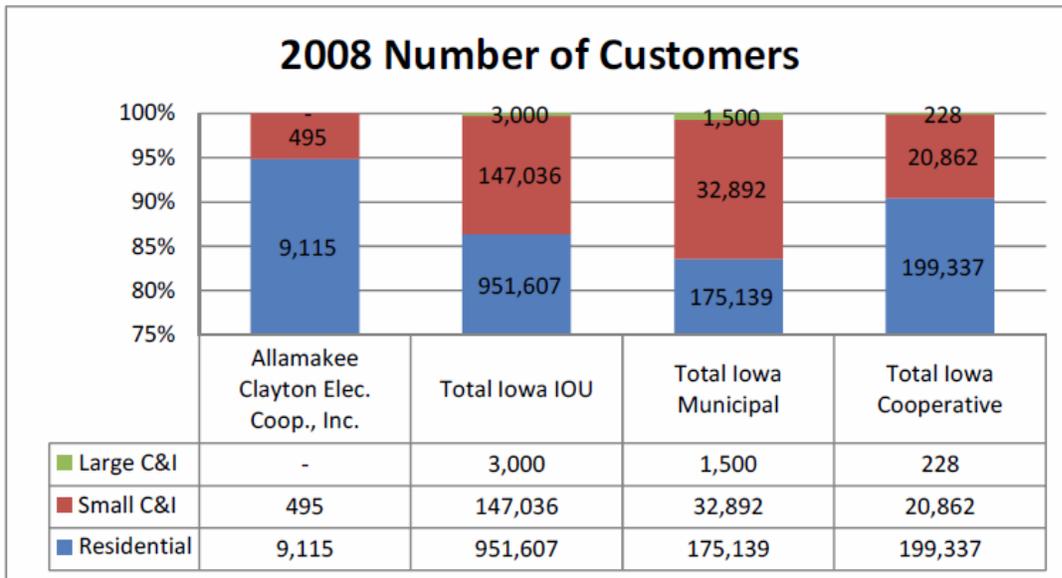
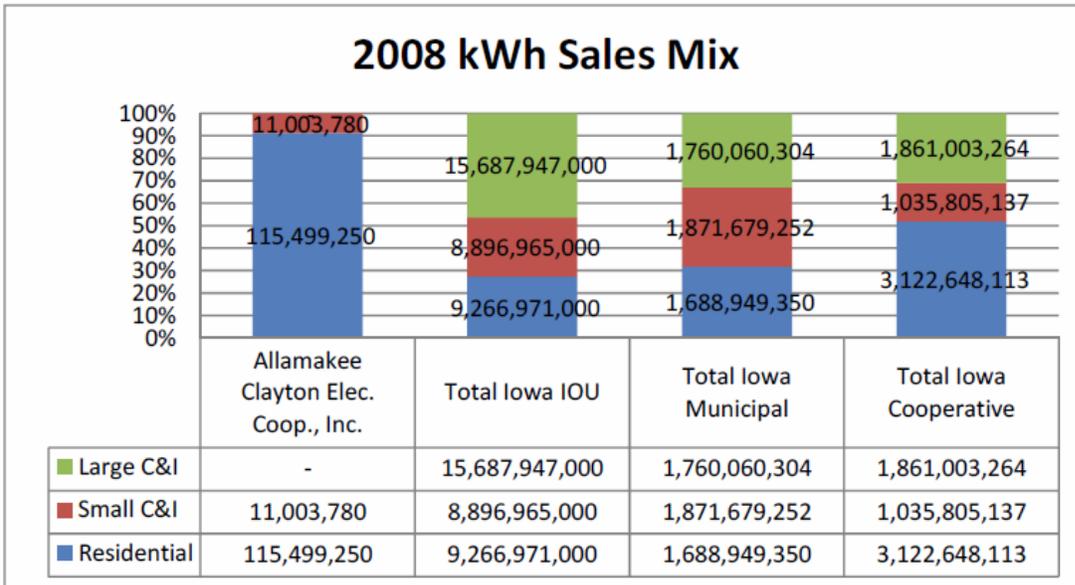
### **DESCRIPTION OF ASSESSMENT OF POTENTIAL PROCESS**

The assessment of potential process commenced prior to July 1, 2008 as required in Senate file 2386. An independent qualified third-party consultant was hired to perform the assessment for our member cooperatives. Per SF 2386 the IAEC filed a progress report on December 31, 2008. This progress report has been attached to this filing and is shown as Appendix A.

Following the progress report filing, our member cooperatives continued to work with the hired consultant in order to determine their achievable potential. Once the potential was determined our members then worked together to develop their goals for energy efficiency. The IAEC completed the process by compiling the goals for each of our members for purposes of this filing.

**CUSTOMER MIX**

The following column charts illustrate the kWh sales mix and customer mix of the investor-owned utilities (IOUs), the municipal utilities, the RECs as a group and Allamakee-Clayton Electric Cooperative itself. The charts exemplify that making any comparison of ACEC’s energy efficiency goals against the IOUs, municipals or RECs as a group, without taking into account customer mix and sales mix, renders an apples and oranges comparison.



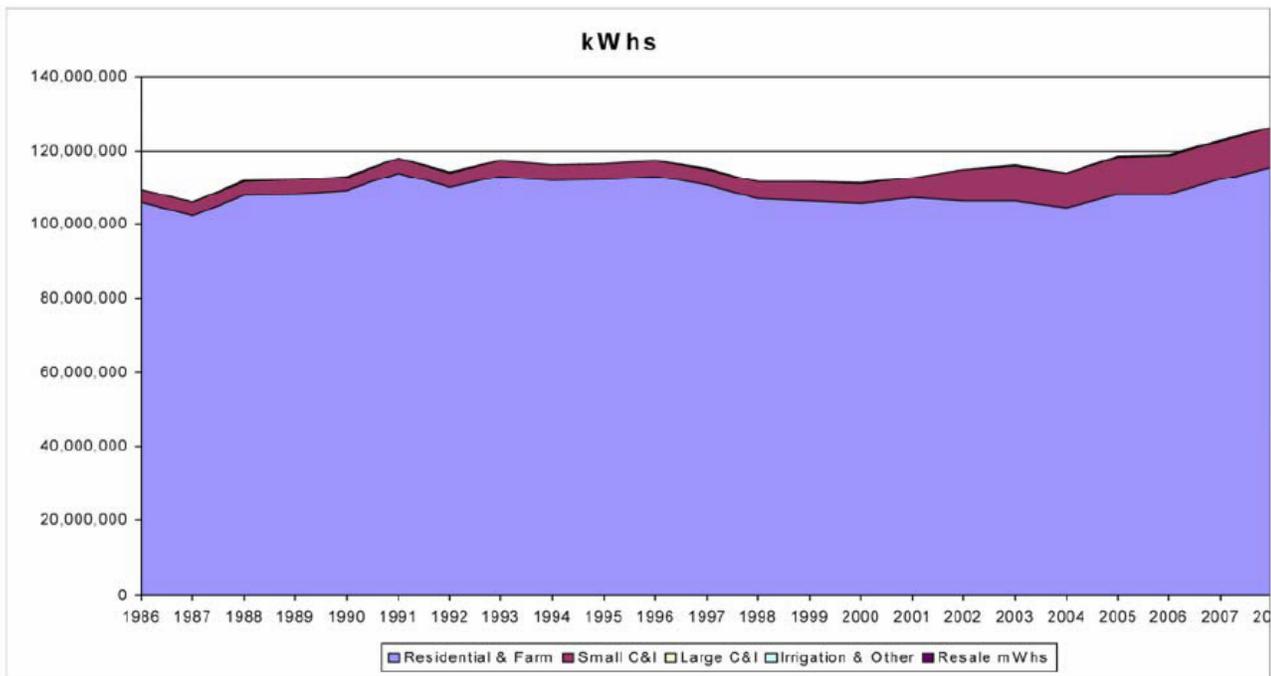
Source: IUB website raw data for the calendar year 2008.

As mentioned previously, ACEC’s service territory lies along the Mississippi River which means a significant number of its accounts are seasonal. Resort areas are filled with cabins and trailers that are inhabited only sporadically. In addition, the agriculture industry in northeast Iowa often requires electric services that are seasonal in nature. Examples are remote well services located in cow pastures that are only used during the summer months when livestock is pastured, second farmsteads where electricity is used only for lighting outbuildings and remotely located crop dryers.

Of its 8,655 services, ACEC estimates that 2,445 (28%) are seasonal and offer no opportunity for energy savings. (These meters record an annual consumption lower than 3,000 kWh.) That leaves only 6,199 services with the potential to increase energy efficiency and to whom ACEC can direct its energy efficiency programs.

This chart shows ACEC’s kWh sales by customer type from 1986 through 2008. As illustrated, nearly 91% of 2008 kWh sales was to residential and farm consumers; small C & I accounted for the remaining 9%. During 2002 kWh sales to small C & I increased by a noticeable amount with the addition of a new C & I customer, Kol-Gol, Inc., which manufactures wire formed display equipment. Although Kol-Gol operated in an efficient new facility, ACEC was able to help it improve energy efficiency through motor evaluation and replacement, and offering suggestions for improvements in its high efficiency lighting. ACEC also assisted Kol-Gol with qualifying for participation in the Peak Alert program, which allows them to avoid using electricity during peak times.

Allamakee-Clayton Electric Cooperative, Inc.



## **COMMITMENT TO ENERGY EFFICIENCY**

Allamakee-Clayton Electric Cooperative has been committed to supply side and demand side energy efficiency for many years. ACEC has invested \$3,119,185 (or 2% of revenue) in demand side energy efficiency programs from 1992 through 2007. Going forward, ACEC has a planned demand side investment of \$1.5 million for 2010 through 2014.

This increased emphasis is fueled by increased awareness and access to tools that address energy efficiency, load management / time of electric use and carbon footprint. Organized efforts, such as the Iowa legislature's Assessment of Potential, provide a planning platform that coordinates and builds-upon not only internal initiatives, but also those from across the industry, such that the sharing of best practices and innovative programs is facilitated.

Key-additions to support our continuous progress are:

- ACEC is assisting our agricultural and commercial members with obtaining funds through the USDA Rural Development REAP 9007 program. In 2009 ACEC assisted 32 members with energy audits that were part of their grant applications. The grant dollars are used to improve energy efficiency in the members' operations.
- ACEC is continuing with gradual deployment of its automated meter reading, expected to be completed during 2010. AMI will enable ACEC to obtain meter readings from its headquarters (saving a trip to a distant location), will provide load profiling data, and will enhance service reliability and outage management. The program also offers the potential for possible development of time-of-use rates.
- Creation of a new Energy Efficiency position within Dairyland Power Cooperative (DPC) to coordinate both the G&T and member distribution efforts in this area.

The position was filled September 3, 2009 such that an increased emphasis on processes and programs to more effectively reach our efficiency and carbon reduction goals is anticipated. Because of this and the likelihood of continued technological advances, we anticipate both a ramp-up in program reach over time and an ongoing assessment-redefinition cycle to our program plans.

- Initiation of a rate study by DPC with REC involvement to build-upon existing approaches to use rates to reward members for participating in load-management, energy efficiency and distributed resources.

**INTEGRATED APPROACH TO ENERGY EFFICIENCY**

Given the combination of ACEC’s all-requirements contract with DPC and our shared ownership of DPC, many of the energy efficiency programs and philosophies are either shared efforts or G&T “owned”. Furthermore, the approach taken by ACEC and DPC is holistic such that separating distribution and generation initiatives presents only a partial look at sponsored energy efficiency efforts.

This integrated philosophy is consistent with the approach outlined by the Iowa legislature and with a framework being jointly developed by the Rural Electric Management Development Council’s Energy Innovation Task Force and the National Rural Electric Cooperative Association’s (NRECA) Technical Advisory Subcommittee on Energy Efficiency. The referenced framework looks to maximize energy efficiency potential by integrating supply and demand side programs across four platforms, which include:

- 1. **Energy Efficiency**            Reducing energy use without changing behavior
- 2. **Conservation**                Changing behavior to reduce energy use
- 3. **Demand Response**        Shifting energy use to different times
- 4. **Distributed Resources**    Generation on the distribution side rather than supply side

**The interconnectivity of these platforms is easily illustrated using water heaters.**

<b>Action</b>	<b>Goal</b>	<b>Platform</b>
Rebate to purchase a high-efficiency water heater. Restrict rebate to those who will allow utility to control time-of-use.	Save energy consumption (kWh) based on regular use Optimize electrical system efficiency by managing peak demand, which reduces the need to invest in generation capacity that is expensive and used both sporadically and infrequently.	Energy Efficiency Demand Response
Educate that savings in one area (example: efficient water heater under load control) should not be accompanied by increased use in another... ...especially if related to load control (example: need to convey that baking a turkey during control times of water	Ensure that success in one area is not offset by actions in another.  Ensure that success in one area is not offset by actions in another	Conservation  Demand Response

heaters defeats the purpose of load management).

Enhance power management capabilities and ability to “store” energy by varying water temperatures based on ability to modulate the amount of energy put into the water heater.

Enhance use and integration of renewable-energy.

Distributed Resources

A brief narrative, organized using this four-platform approach, follows the presentation of our Energy Efficiency Goals, provides an overview of the integrated activities being undertaken by ACEC and DPC. It is supplemented by a quantitative 5-year plan.

Please note that, to be consistent with past IUB filings, this plan highlights all areas except Distributed Resources. Also, because modeling of “traditional” residential efficiency incentives is more developed and singularly focused than initiatives in the other platforms, we are better able to project member participation and kWh savings for a given program.

## **ENERGY EFFICIENCY GOALS**

### **Energy Efficiency Portfolio Goals:**

1. Energy efficiency programs available to all revenue classes of member-consumers.
2. Member acceptance and satisfaction of portfolio.
3. Cost effective plan and programs.
4. Stable funding over the plan life.
5. Flexibility in portfolio to take into account certain unique circumstances of members.
6. Leveraging local jobs within the community for the delivery of programs to the maximum extent reasonably possible.
7. Adherence to the Cooperatives principles and in particular the education and training principle, concern for community and cooperation among cooperative principles.

### **Energy Efficiency Program Goals:**

1. Offer members rebate or incentive programs for efficient technologies
2. Participate in educational energy efficiency programs
3. Participate in research programs related to energy efficiency
4. Offer member-consumers demand response programs
5. Offer member-consumers energy audit & technical support programs

6. Develop distribution, transmission and generation-side efficiencies, along with alternative fuel-solutions that reduce carbon emissions and solve member-specific problems.

### **Energy Efficiency (supply side)**

Primary platforms to increase energy efficiency with our residential, agriculture and commercial & industrial (C&I) segments include incentives, audits and education & outreach.

The majority of residential incentives are offered by providing a list of rebate / purchase incentives for energy efficient alternatives. Exceptions include 1) CFL and multi-product household efficiency kit giveaways, 2) appliance recycling and 3) enhanced focus on ensuring recommendations for energy savings are implemented post-audit / assessment.

While a list of item-specific (prescriptive) incentives also exists for Ag and Commercial & Industrial members, the majority of our activity with these segments takes the form of “custom” programs where an audit occurs and is followed-up by a recommendation tailored to that member’s specific needs. Custom program funding levels are determined by energy savings potential and are capped based on saving opportunity and maximum amounts both per member and as a percent of equipment investment. In some instances, we are able to assist members in accessing grant money to implement efficiency recommendations.

In the presentation of potential, the rebate level for custom programs and projected energy savings is an average across custom Ag programs executed within the DPC system during 2008 and 2009. Custom C&I programs tend to be larger in both dollars invested and energy saved. However, the low C&I base combined with the high Ag base dictates using Ag as the basis for projections. Similarly, while many programs focus on Ag, we will continue to reach out to our C&I members with both prescriptive and custom rebate programs.

Energy efficiency programs are communicated in a number of ways; inserts, Web sites, newsletter, community outreach events, advertising, and direct mail. Attempts are made to educate members on what is available not only from the cooperative network but also programs such as Energy Star and stimulus programs from state and federal agencies.

Sponsorship and involvement in education events is undertaken to increase member and public awareness concerning energy efficiency, conservation and renewable energy programs and activities. Types of outreach events include energy fairs, workshops, forums and conferences.

On-line tools, such as Questline and Touchstone, are supported due to the ability to deliver significant information on efficiency and conservation. DPC also has an energy audit calculator on its website that is made available and utilized by distribution co-ops, including ACEC. Marketing to increase consumer-member use of these “information” assets will be a priority in the coming years.

### **Conservation**

Conservation messages are delivered in the programs and vehicles cited above. DPC and ACEC will continue to focus on conservation efforts even though “deemed energy efficiency credits” are not “awarded” in the Iowa filing. This is a strategic imperative since conservation is a critical tool to maximize energy savings in both the short and long-term. Additionally, as a cooperative, our core operating principles include concern for community and the environment, as well as the provision of education, training and information for our members.

While many initiatives to educate members on how changing behaviors and practices can reduce energy consumption are holistic (i.e., Questline and event participation features activities across all four of the outlined platforms), we also invest singularly in conservation tools. For example:

- Regional investment in Touchstone Energy’s “Together We Save” conservation advertising campaign, in addition to our financial support of the national media plan.
- Inclusion of conservation campaigns in member communications (bill inserts, newsletters, direct mail)
- Providing members with free publications such as Touchstone Energy’s “101 Low Cost / No Cost Home Energy-Savings Measures” and “Use Energy Wisely” booklets.

### **Demand Response**

Dairyland and its member cooperatives utilize load management, or direct load control, to keep demand for electricity below our ability to generate or economically buy electricity, reduce load during system emergencies, and provide rate alternatives to member consumers. Over 100,000 loads are currently controlled by radio receivers, including approximately:

- 82,000 Residential electric water heaters (2,949 for ACEC)
- 30,000 Residential interruptible heating systems (920 for ACEC)
- 15,000 Residential air conditioners (66 for ACEC)

- 8,000 Residential heat storage systems (12 for ACEC)
- 380 Commercial and industrial generators (19 for ACEC)
- 170 Commercial and industrial Peak Alert voluntary load reduction (1 for ACEC)
- 190 Agricultural grain dryers (28 for ACEC)
- 220 Agricultural irrigation systems (0 for ACEC)
- 5 Commercial and industrial bulk interruptible under direct control (0 for ACEC)

The participation shown in the spreadsheets includes both current and projected new participants. Also, in preparation for the SmartGrid (*see discussion below*), some years' spending forecasts include the cost to switch existing analog meters to digital.

Total load controlled during peak conditions is 50 to 80 MW in the summer season and 92 to 140 MW in the winter season.

In addition to seasonal demand reduction, Dairyland actively uses load management as an operational tool to save energy and money for its members. Operational strategies include economic dispatch, transmission peak management and load shifting to minimum loading periods. In 2008, Dairyland shed loads using load management over 300 times saving \$2 million in market energy costs and \$7.9 million in capacity costs. Dairyland and its member cooperatives utilize incentive programs, including water heater and air conditioner control rebates, to promote load management with members and enhance load management capabilities and value.

Several load management / system efficiency rate options are available to qualifying agricultural, commercial and industrial member-consumers. The member-consumer benefits from reduced demand charge on their monthly bill, and the Dairyland / REC benefit is load relief during periods of intense usage or system emergencies.

- Rate with Peak Alert: Upon notification of an impending load reduction event, the member-consumer voluntarily reduces all or a portion of their load.
- Interruptible Rate: This rate option entails automatic interruption of all or a portion of the member-consumer's load directly by Dairyland Power. When notified of an impending interruption, member-consumers have the option to buy-through at market-rate pricing except during periods of low reserves.
- Critical Peak Pricing: Available to member-consumers who can reduce or shift all or any portion of their electric use during a designated critical peak pricing (CPP) event. For CPP member-consumers, energy prices during CPP events are significantly higher than energy rates at other times, but day-to-day energy prices are lower than standard. In addition to a reduced demand charge, member-consumers benefit by day-to-day discounted on-peak energy pricing.

Dairyland and its member cooperatives are committed to the continued development and rollout of Smart Grid systems and technologies which provide member-consumers with additional energy efficiency and conservation opportunities. The integration of existing advanced metering infrastructure (AMI) with other utility applications, coupled with the expansion and securitization of core communication networks, has improved interoperability and provided more robust and reliable two-way communication capabilities. This secure and scalable communication system has enabled the development of innovative, consumer-driven demand response and pricing programs. Several Dairyland cooperatives are already working into dynamic pricing initiatives, whereby end-use members decide for themselves how to best manage their energy consumption and costs based on varying electricity prices.

### **Distributed Resources**

#### **Renewable Energy Site Assessments**

Beginning in 2010, Dairyland Power's Iowa member cooperatives will provide renewable energy site assessments to agricultural and eligible commercial and industrial member-consumers. The member-consumer will be responsible for 25% of the cost of the site assessment.

In some instances, Dairyland Power and its member-cooperatives have assisted agricultural and/or commercial and industrial member-consumers access state and/or federal incentives when the power generated by the consumer-owned distributed generation project was expected to benefit the entire Dairyland Power system. In those instances, Dairyland Power has compiled and submitted the funding program application at no cost to the member-consumer.

#### **Power Purchase**

- **Net Metering**

Dairyland Power reimburses member cooperatives for the difference between the cooperative's average wholesale rate and the applicable average retail rate for renewable distributed generation projects smaller than 40 kW. As of the end of 2008, the Dairyland Power system had at least 69 (9 in IA) member consumers participating in net metering with a total capacity of about 782 kW (47.4 kW in IA). Approximately, 1.6 million kWh (108,931 kWh in IA) of renewable energy was generated which has an equivalent of 1,160 metric tons of CO<sub>2</sub> avoided (78.2 in IA). Of the 69 net metering participants, 30 (5 in IA) were small photovoltaic systems and 38 (4 in IA) were small wind turbines.

- **Voluntary Advanced Renewable Tariff**

Dairyland Power acquires renewable energy from consumer-owned distributed generation through a voluntary advanced renewable tariff. Dairyland's member-cooperatives have interconnection agreements with the customer-owned distributed generation facilities. DPC has purchase agreements with three member-consumer-owned wind systems in Iowa totaling 580 kW. Approximately 1,524,240 kWh are generated each year which has an equivalent of 1,095 metric tons of CO<sub>2</sub>. Dairyland acquires energy from six methane digesters totaling about 4.1 MW. Approximately 23,586,300 kWh are generated each year which has an equivalent of 16,939 metric tons of CO<sub>2</sub>.

- Evergreen Green Power Program

Dairyland Power offers *Evergreen*, a renewable energy "green power" option, to its member cooperatives who in turn market it to their member-consumers who want to do more to support renewable energy. *Evergreen* is separate from and in addition to state renewable portfolio standard requirements. The program has been available since January 1999 and, by yearend 2009, there were about 3,000 participants. The 2010/2011 goal is 2.0% residential market penetration (4,300 consumers).

**Energy Efficiency Measure Goals:**

The following tables show the goal for participants by measure and the resulting savings expected by measure as well as the cost-effectiveness and projected costs for a five year period 2010-2014.

Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

Appendix 5

		2010-2014					
		Estimated Achievable Potential Goals					
	Allamakee-Clayton Electric Cooperative, Inc.	Measure Description	Projected Participants	Projected Cost	Cumulative Measure Lifetime kWh Savings	Cumulative 5 Year Plan kWh Savings	Sum of Incremental Annual kWh Savings 2010-2014
<b>I. Incentive Programs for Energy Efficient Technologies</b>							
<i>Residential Cooling &amp; Heating (low income included)</i>							
	ENERGY STAR Central Air Conditioning	Rebate for central air conditioners above the baseline efficient models.	167	\$32,125	522,890	105,956	37,349
	SEER 14.5 (and EER 12)		47	\$5,875	105,175	21,419	7,512
	SEER 15 +		60	\$11,250	173,426	35,098	12,388
	SEER 16 (and EER 13)		60	\$15,000	244,289	49,439	17,449
	ENERGY STAR Qualified Room Air Conditioner	Rebate for window air conditioners above the baseline efficient models.	117	\$3,656	66,623	21,132	7,403
	Geothermal Heat Pump	Rebate for geothermal heat pumps above the baseline efficient models.	117	\$131,625	31,072,696	4,435,163	1,553,635
	Air Source Heat Pump	Rebate for air source heat pumps above the baseline efficient models.	87	\$39,150	10,249,940	1,947,881	683,329
<i>Residential Lighting (low income included)</i>							
<b>Interior Lighting</b>							
	Change a Light Rebate Program (or similar program)	Rebate for compact florescent light bulbs.	5,000	\$10,950	2,390,385	982,350	327,450
	Local CFL Rebate Program(s)	Rebate for compact florescent light bulbs.	4,693	\$11,733	2,243,615	874,881	307,345
	T8 or better Lighting Fixtures	Rebate for T8 or better fixtures and bulbs.	117	\$1,463	80,935	14,088	4,935
	4 ft. T8 or better Fixture w/ electronic ballasts		117	\$1,463	80,935	14,088	4,935
	ENERGY STAR LED lighting	Rebate for LED lighting.	87	\$218	116,463	18,444	6,470
<b>Exterior Lighting</b>							
	High Efficiency Exterior Lighting	Rebates for exterior lighting (high pressure sodium, metal halide or compact fluorescent)	131	\$2,456	172,472	106,357	37,567
	High Pressure Sodium - 50 - 100 W		60	\$1,125	60,073	38,684	13,653
	High Pressure Sodium - 100+ W		42	\$788	42,051	27,078	9,557
	Metal Halide - 250+ W (pulse start lamp and ballasts)		29	\$544	70,348	40,595	14,357
	LED Holiday Lighting	Rebate for holiday lighting.	146	\$1,460	136,130	32,323	11,344
<i>Residential Water Heating (low income included)</i>							
	High Efficiency Water Heater	Rebate for high efficiency electric water heaters.	293	\$73,250	1,624,524	308,271	108,302
	80 gallon+		293	\$73,250	1,624,524	308,271	108,302
	Heat Pump Water Heater - (Integrated)	Rebate for integrated heat pump water heater.	10	\$3,750	231,102	57,776	19,259
	Solar Water Heaters (w/ Electric auxiliary tank)	Rebate for solar water heater.	5	\$1,875	112,221	28,055	9,352
	Flow Restrictors - Faucet	Incentive for faucet flow restrictors.	523	\$654	1,745,073	599,857	193,897
	Flow Restrictors - Shower	Incentive for low-flow shower head.	298	\$1,863	1,885,446	536,530	188,545
	Pipe Insulation	Incentive for water pipe insulation.	300	\$1,245	534,465	100,955	35,631
<i>Residential Appliances (low income included)</i>							
	ENERGY STAR Qualified Clothes Washer	Rebate for ENERGY STAR clothes washer.	880	\$55,000	2,148,960	556,110	195,360
	ENERGY STAR Qualified Dishwasher	Rebate for ENERGY STAR dishwasher.	322	\$10,063	416,752	107,777	37,887
	ENERGY STAR Qualified Refrigerator	Rebate for ENERGY STAR refrigerator.	527	\$16,469	833,582	158,280	55,572
	ENERGY STAR Qualified Dehumidifier	Rebate for ENERGY STAR dehumidifier.	87	\$1,631	246,833	58,635	20,569
	ENERGY STAR Qualified Freezer	Rebate for ENERGY STAR freezer.	117	\$3,656	130,519	24,840	8,701
	Appliance Recycling	Incentives for appliance recycling.	89	\$5,563	853,376	268,525	94,820
	Refrigerator		60	\$3,750	648,551	204,173	72,061
	Freezer		29	\$1,813	204,825	64,351	22,758
	Smart Strip	Incentive for smart power supply strip.	175	\$1,094	194,250	52,725	19,425
<i>Efficient Home Incentives (low income included)</i>							
	Energy Efficient Home Construction Rebates *	Rebate for energy efficient home construction.	35	\$26,250	1,165,500	105,450	38,850
<b>Additional Low Income</b>							
	Energy Efficiency Kits	Energy efficiency kit for low-income.	146	\$1,825	1,484,794	470,072	164,977
<i>Building Shell - Existing Home Only</i>							
	Weatherization Rebates	Rebates for various insulation measures.	45	\$11,250	1,711,537	138,423	59,324
	Ceiling (Bring up to R-38) - Elect. Heat Only		30	\$7,500	1,370,628	106,604	45,688
	Infiltration Control		15	\$3,750	340,909	31,818	13,636
<b>Residential Total</b>			<b>14,514</b>	<b>\$450,271</b>	<b>62,371,084</b>	<b>12,110,854</b>	<b>4,227,296</b>
<b>Residential Average kWh Sales (3 yr Ave actual and projected)</b>							<b>573,766,659</b>
<b>Residential kWh Savings as percentage of Residential kWh Sales</b>							<b>0.7%</b>

# Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

# Appendix 5

		2010-2014				
		Estimated Achievable Potential Goals				
Allamakee-Clayton Electric Cooperative, Inc.	Measure Description	Projected Participants	Projected Cost	Cumulative Measure Lifetime kWh Savings	Cumulative 5 Year Plan kWh Savings	Sum of Incremental Annual kWh Savings 2010-2014
<b>Agriculture/Commercial &amp; Industrial Lighting</b>						
<b>Interior Lighting</b>						
	High Efficiency Interior Lighting	526	\$5,755	1,489,058	619,462	215,942
	T-8 or 40" T5 - 4 ft	47	\$529	65,442	29,153	10,225
	T8 or T-5 fixtures - 8 ft	60	\$688	71,608	31,702	11,189
	High Bay T-8/T-5 fixture w/ High Output Ballast - Replacement	117	\$1,316	658,999	244,318	85,584
	High Bay T-8/T-5 fixture w/ High Output Ballast - New Construction	117	\$1,316	590,999	219,107	76,753
	CFL lamps - Energy Star- 9W and up	125	\$781	62,049	71,595	23,865
	Metal Halide Lamps	60	\$1,125	39,960	23,588	8,325
<b>Exterior Lighting</b>						
	High Efficiency Exterior Lighting	88	\$1,650	98,120	56,432	20,024
	High Pressure Sodium Fixture (ballast & lamp replacement) - 50-100 W	59	\$1,106	65,785	37,773	13,425
	High Pressure Sodium Fixture (ballast & lamp replacement) - >100 W	29	\$544	32,335	18,659	6,599
<b>Ag/Commercial &amp; Industrial Heating and Cooling</b>						
	ENERGY STAR Air Conditioning	5	\$625	15,485	3,097	1,032
	Geothermal Heat Pump	9	\$10,125	2,390,207	331,973	119,510
	Air Source Heat Pump - (SEER 14.5, EER 12, HSPF 8.2)	5	\$2,250	589,077	117,815	39,272
<b>Ag/Commercial &amp; Industrial Water Heating</b>						
	High-Efficiency Water Heater	23	\$5,750	127,522	24,396	8,501
	80 gallon+	23	\$5,750	127,522	24,396	8,501
<b>Ag/Commercial &amp; Industrial Motors</b>						
	Variable Speed Drive Motor Incentive	5	\$1,875	1,632,533	326,507	108,836
<b>Agricultural</b>						
	Dairy Pre-coolers Incentive	9	\$5,625	1,323,925	186,330	88,262
	Dairy Heat Reclaimer	9	\$3,375	1,493,555	210,204	99,570
	Livestock Ventilation Fans	35	\$2,100	919,346	207,947	76,612
	48"-49"	35	\$2,100	919,346	207,947	76,612
	Scroll compressor (milk cooling)	12	\$2,250	664,335	121,795	44,289
	Efficient Livestock Waterers	15	\$938	143,057	35,764	11,921
<b>Ag/Commercial &amp; Industrial Custom Rebates</b>						
	Custom Rebate Program	10	\$7,300	2,331,000	466,200	155,400
<b>Ag, Commercial and Industrial Total</b>		<b>751</b>	<b>\$49,618</b>	<b>13,217,219</b>	<b>2,707,923</b>	<b>989,172</b>
<b>C &amp; I Average kWh Sales (3 yr Ave actual and projected)**</b>						<b>57,475,003</b>
<b>C &amp; I kWh Savings as percentage of C &amp; I kWh Sales</b>						<b>1.7%</b>

<b>II. Demand Response Programs</b>						
	Water Heater Load Control	15,118	\$223,163			
	Water Heater Storage	707	\$21,938			
	Air Conditioning Load Control	60	\$6,377			
	Space Heating Load Control (Interruptible)	5,084	\$274,912			
	Dual-Fuel (also called Electric Thermal) Storage Space Heating and Air Conditioning	60	\$10,747			
<b>Crop Drying</b>						
	Load Control	145	\$7,526			
	Commercial and Industrial Time-of-Day Price	12	\$27,629			
<b>III. Energy Audit &amp; Technical Support Programs</b>						
	Expert Energy Services - Agricultural	469	\$106,976			
	Expert Energy Services - C&I	10	\$2,674			
	Energy Audit Services - Residential *	270	\$79,547			
<b>IV. Educational &amp; Research Programs</b>						
	Model Housing Education	1,100	\$13,268			
	Member Information and Education	35,000	\$133,537			
	Peak Alert	35,000				
	Iowa Energy Center and Center for Global Regional Environmental Research & Cooperative Research Network	35,000	\$95,477			
<b>TOTAL</b>		<b>143,300</b>	<b>\$1,503,660</b>	<b>75,588,304</b>	<b>14,818,776</b>	<b>5,216,468</b>
<b>Total Average kWh Sales (3 yr Ave actual and projected)**</b>						<b>631,241,662</b>
<b>Total kWh Savings as percentage of Total kWh Sales</b>						<b>0.8%</b>

\* Savings for the specific measures are accounted for and included in the applicable programs.

\*\*Excludes kWh sales to biofuel production facilities and natural gas pumping stations.

# See Appendix B for details

Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

Appendix 5

		2010				
		Estimated Achievable Potential Goals				
Allamakee-Clayton Electric Cooperative, Inc.		Projected Participants	Projected Cost	Lifetime kWh Savings	Annual kWh Savings	KW Savings
<b>I. Incentive Programs for Energy Efficient Technologies</b>						
<i>Residential Cooling &amp; Heating (low income included)</i>						
	ENERGY STAR Central Air Conditioning	28	\$5,375	87,521	6,252	9
	SEER 14.5 (and EER 12)	8	\$1,000	17,902	1,279	2
	SEER 15 +	10	\$1,875	28,904	2,065	3
	SEER 16 (and EER 13)	10	\$2,500	40,715	2,908	4
	ENERGY STAR Qualified Room Air Conditioner	20	\$625	11,389	1,265	2
	Geothermal Heat Pump	20	\$22,500	5,311,572	265,579	31
	Air Source Heat Pump	15	\$6,750	1,767,231	117,815	15
<i>Residential Lighting (low income included)</i>						
<b>Interior Lighting</b>						
	Change a Light Rebate Program (or similar program)	1,000	\$2,190	478,077	65,490	60
	Local CFL Rebate Program(s)	800	\$2,000	382,462	52,392	48
	T8 or better Lighting Fixtures	20	\$250	13,835	844	0
	4 ft. T8 or better Fixture w/ electronic ballasts	20	\$250	13,835	844	0
	ENERGY STAR LED lighting	15	\$38	20,080	1,116	1
<b>Exterior Lighting</b>						
	High Efficiency Exterior Lighting	22	\$413	29,150	6,344	0
	High Pressure Sodium - 50 - 100 W	10	\$188	10,012	2,276	
	High Pressure Sodium - 100+ W	7	\$131	7,009	1,593	0
	Metal Halide - 250+ W (pulse start lamp and ballasts)	5	\$94	12,129	2,475	0
	LED Holiday Lighting	25	\$250	23,310	1,943	6
<i>Residential Water Heating (low income included)</i>						
	High Efficiency Water Heater	50	\$12,500	277,223	18,482	3
	80 gallon+	50	\$12,500	277,223	18,482	3
	Heat Pump Water Heater - (Integrated)	2	\$750	46,220	3,852	0
	Solar Water Heaters (w/ Electric auxiliary tank)	1	\$375	22,444	1,870	0
	Flow Restrictors - Faucet	100	\$125	333,666	37,074	2
	Flow Restrictors - Shower	50	\$313	316,350	31,635	3
	Pipe Insulation	50	\$208	89,078	5,939	1
<i>Residential Appliances (low income included)</i>						
	ENERGY STAR Qualified Clothes Washer	150	\$9,375	366,300	33,300	12
	ENERGY STAR Qualified Dishwasher	55	\$1,719	71,184	6,471	5
	ENERGY STAR Qualified Refrigerator	90	\$2,813	142,358	9,491	1
	ENERGY STAR Qualified Dehumidifier	15	\$281	42,557	3,546	0
	ENERGY STAR Qualified Freezer	20	\$625	22,311	1,487	0
	Appliance Recycling	15	\$938	143,406	15,934	3
	Refrigerator	10	\$625	108,092	12,010	2
	Freezer	5	\$313	35,315	3,924	1
	Smart Strip	25	\$156	27,750	2,775	
<i>Efficient Home Incentives (low income included)</i>						
	Energy Efficient Home Construction Rebates *	5	\$3,750	166,500	5,550	1
<i>Additional Low Income</i>						
	Energy Efficiency Kits	25	\$313	254,246	28,250	3
<i>Building Shell - Existing Home Only</i>						
	Weatherization Rebates	3	\$750	114,102	3,955	0
	Ceiling (Bring up to R-38) - Elect. Heat Only	2	\$500	91,375	3,046	0
	Infiltration Control	1	\$250	22,727	909	0
<b>Residential Total</b>		<b>2,621</b>	<b>\$75,379</b>	<b>10,560,321</b>	<b>728,648</b>	<b>206</b>
Residential Average kWh Sales (3 yr Ave actual and projected)					<b>113,351,909</b>	
Residential kWh Savings as percentage of Residential kWh Sales					<b>0.6%</b>	

Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

Appendix 5

		2010				
		Estimated Achievable Potential Goals				
Allamakee-Clayton Electric Cooperative, Inc.		Projected Participants	Projected Cost	Lifetime kWh Savings	Annual kWh Savings	KW Savings
<b>Agriculture/Commercial &amp; Industrial Lighting</b>						
<b>Interior Lighting</b>						
	High Efficiency Interior Lighting	93	\$1,009	255,819	37,516	1
	T-8 or 48" T5 - 4 ft	8	\$90	11,139	1,740	0
	T8 or T-5 fixtures - 8 ft	10	\$125	11,935	1,865	0
	High Bay T-8/T-5 fixture w/ High Output Ballast - Replacement	20	\$225	112,649	14,630	0
	High Bay T-8/T-5 fixture w/ High Output Ballast - New Construction	20	\$225	101,026	13,120	0
	CFL lamps - Energy Star- 9W and up	25	\$156	12,410	4,773	0
	Metal Halide Lamps	10	\$188	6,660	1,388	0
<b>Exterior Lighting</b>						
	High Efficiency Exterior Lighting	15	\$281	16,725	3,413	0
	High Pressure Sodium Fixture (ballast & lamp replacement) - 50-100 W	10	\$188	11,150	2,276	0
	High Pressure Sodium Fixture (ballast & lamp replacement) - >100 W	5	\$94	5,575	1,138	0
<b>Ag/Commercial &amp; Industrial Heating and Cooling</b>						
	ENERGY STAR Air Conditioning	1	\$125	3,097	206	0
	Geothermal Heat Pump	1	\$1,125	265,579	13,279	15
	Air Source Heat Pump - (SEER 14.5, EER 12, HSPF 8.2)	1	\$450	117,815	7,854	10
<b>Ag/Commercial &amp; Industrial Water Heating</b>						
	High-Efficiency Water Heater	4	\$1,000	22,178	1,479	0
	80 gallon+	4	\$1,000	22,178	1,479	0
<b>Ag/Commercial &amp; Industrial Motors</b>						
	Variable Speed Drive Motor Incentive	1	\$375	326,507	21,767	0
<b>Agricultural</b>						
	Dairy Pre-coolers Incentive	1	\$625	147,103	9,807	5
	Dairy Heat Reclaimer	1	\$375	165,951	11,063	5
	Livestock Ventilation Fans	5	\$300	131,335	10,945	1
	48"-49"	5	\$300	131,335	10,945	1
	Scroll compressor (milk cooling)	2	\$375	110,723	7,382	1
	Efficient Livestock Waterers	3	\$188	28,611	2,384	
<b>Ag/Commercial &amp; Industrial Custom Rebates</b>						
	Custom Rebate Program	2	\$1,460	466,200	31,080	16
<b>Ag, Commercial and Industrial Total</b>		<b>130</b>	<b>\$7,688</b>	<b>2,057,641</b>	<b>158,175</b>	<b>54</b>
<b>C &amp; I Average kWh Sales (3 yr Ave actual and projected)**</b>					<b>11,024,077</b>	
<b>C &amp; I kWh Savings as percentage of C &amp; I kWh Sales</b>					<b>1.4%</b>	

<b>II. Demand Response Programs</b>						
	Water Heater Load Control	2,949	\$40,387			1,475
	Water Heater Storage	128	\$3,970			128
	Air Conditioning Load Control	10	\$1,154			7
	Space Heating Load Control (Interruptible)	920	\$49,752			4,140
	Dual-Fuel (also called Electric Thermal) Storage Space Heating and Air Conditioning	12	\$1,945			72
<b>Crop Drying</b>						
	Load Control	27	\$1,362			54
	Commercial and Industrial Time-of-Day Price	2	\$5,000			
<b>III. Energy Audit &amp; Technical Support Programs</b>						
	Expert Energy Services - Agricultural	80	\$19,360			
	Expert Energy Services - C&I	2	\$484			
	Energy Audit Services - Residential *	54	\$14,396			
<b>IV. Educational &amp; Research Programs</b>						
	Model Housing Education	200	\$2,401			
	Member Information and Education	7,000	\$24,167			
	Peak Alert	7,000				
	Iowa Energy Center and Center for Global Regional Environmental Research & Cooperative Research Network	7,000	\$17,287			
<b>TOTAL</b>		<b>28,135</b>	<b>\$264,731</b>	<b>12,617,962</b>	<b>886,823</b>	<b>6,136</b>
<b>Total Average kWh Sales (3 yr Ave actual and projected)**</b>					<b>124,375,985</b>	
<b>Total kWh Savings as percentage of Total kWh Sales</b>					<b>0.7%</b>	

\* Savings for the specific measures are accounted for and included in the applicable programs.

\*\*Excludes kWh sales to biofuel production facilities and natural gas pumping stations.

# See Appendix B for details

Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

Appendix 5

		2011				
		Estimated Achievable Potential Goals				
Allamakee-Clayton Electric Cooperative, Inc.		Projected Participants	Projected Cost	Lifetime kWh Savings	Annual kWh Savings	KW Savings
<b>I. Incentive Programs for Energy Efficient Technologies</b>						
<i>Residential Cooling &amp; Heating (low income included)</i>						
	ENERGY STAR Central Air Conditioning	31	\$5,938	96,721	6,909	10
	SEER 14.5 (and EER 12)	9	\$1,125	20,140	1,439	2
	SEER 15 +	11	\$2,063	31,795	2,271	3
	SEER 16 (and EER 13)	11	\$2,750	44,786	3,199	5
	ENERGY STAR Qualified Room Air Conditioner	22	\$688	12,527	1,392	2
	Geothermal Heat Pump	22	\$24,750	5,842,729	292,136	34
	Air Source Heat Pump	16	\$7,200	1,885,046	125,670	16
<i>Residential Lighting (low income included)</i>						
<b>Interior Lighting</b>						
	Change a Light Rebate Program (or similar program)	1,000	\$2,190	478,077	65,490	60
	Local CFL Rebate Program(s)	864	\$2,160	413,059	56,583	52
	T8 or better Lighting Fixtures	22	\$275	15,219	928	0
	4 ft. T8 or better Fixture w/ electronic ballasts	22	\$275	15,219	928	0
	ENERGY STAR LED lighting	16	\$40	21,419	1,190	1
<b>Exterior Lighting</b>						
	High Efficiency Exterior Lighting	24	\$450	31,152	6,799	0
	High Pressure Sodium - 50 - 100 W	11	\$206	11,013	2,503	
	High Pressure Sodium - 100+ W	8	\$150	8,010	1,820	0
	Metal Halide - 250+ W (pulse start lamp and ballasts)	5	\$94	12,129	2,475	0
	LED Holiday Lighting	27	\$270	25,175	2,098	7
<i>Residential Water Heating (low income included)</i>						
	High Efficiency Water Heater	54	\$13,500	299,400	19,960	3
	80 gallon+	54	\$13,500	299,400	19,960	3
	Heat Pump Water Heater - (Integrated)	2	\$750	46,220	3,852	0
	Solar Water Heaters (w/ Electric auxiliary tank)	1	\$375	22,444	1,870	0
	Flow Restrictors - Faucet	110	\$138	367,033	40,781	2
	Flow Restrictors - Shower	55	\$344	347,985	34,799	3
	Pipe Insulation	55	\$228	97,985	6,532	1
<i>Residential Appliances (low income included)</i>						
	ENERGY STAR Qualified Clothes Washer	162	\$10,125	395,604	35,964	13
	ENERGY STAR Qualified Dishwasher	59	\$1,844	76,361	6,942	5
	ENERGY STAR Qualified Refrigerator	97	\$3,031	153,430	10,229	1
	ENERGY STAR Qualified Dehumidifier	16	\$300	45,395	3,783	0
	ENERGY STAR Qualified Freezer	22	\$688	24,542	1,636	0
	Appliance Recycling	16	\$1,000	154,216	17,135	3
	Refrigerator	11	\$688	118,901	13,211	2
	Freezer	5	\$313	35,315	3,924	1
	Smart Strip	30	\$188	33,300	3,330	
<i>Efficient Home Incentives (low income included)</i>						
	Energy Efficient Home Construction Rebates *	6	\$4,500	199,800	6,660	1
<i>Additional Low Income</i>						
	Energy Efficiency Kits	27	\$338	274,585	30,509	4
<i>Building Shell - Existing Home Only</i>						
	Weatherization Rebates	6	\$1,500	228,205	7,910	1
	Ceiling (Bring up to R-38) - Elect. Heat Only	4	\$1,000	182,750	6,092	0
	Infiltration Control	2	\$500	45,455	1,818	0
<b>Residential Total</b>		<b>2,762</b>	<b>\$82,807</b>	<b>11,587,629</b>	<b>791,087</b>	<b>219</b>
<b>Residential Average kWh Sales (3 yr Ave actual and projected)</b>					<b>114,052,417</b>	
<b>Residential kWh Savings as percentage of Residential kWh Sales</b>					<b>0.7%</b>	

Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

Appendix 5

		2011				
		Estimated Achievable Potential Goals				
Allamakee-Clayton Electric Cooperative, Inc.		Projected Participants	Projected Cost	Lifetime kWh Savings	Annual kWh Savings	KW Savings
<b>Agriculture/Commercial &amp; Industrial Lighting</b>						
<b>Interior Lighting</b>						
High Efficiency Interior Lighting		100	\$1,083	280,438	40,834	1
T-8 or 48" T5 - 4 ft		9	\$101	12,531	1,958	0
T8 or T-5 fixtures - 8 ft		11	\$124	13,128	2,051	0
High Bay T-8/T-5 fixture w/ High Output Ballast - Replacement		22	\$248	123,914	16,093	0
High Bay T-8/T-5 fixture w/ High Output Ballast - New Construction		22	\$248	111,128	14,432	0
CFL lamps - Energy Star- 9W and up		25	\$156	12,410	4,773	0
Metal Halide Lamps		11	\$206	7,326	1,526	0
<b>Exterior Lighting</b>						
High Efficiency Exterior Lighting		15	\$281	16,725	3,413	0
High Pressure Sodium Fixture (ballast & lamp replacement) - 50-100 W		10	\$188	11,150	2,276	0
High Pressure Sodium Fixture (ballast & lamp replacement) - >100 W		5	\$94	5,575	1,138	0
<b>Ag/Commercial &amp; Industrial Heating and Cooling</b>						
ENERGY STAR Air Conditioning		1	\$125	3,097	206	0
Geothermal Heat Pump		2	\$2,250	531,157	26,558	30
Air Source Heat Pump - (SEER 14.5, EER 12, HSPF 8.2)		1	\$450	117,815	7,854	10
<b>Ag/Commercial &amp; Industrial Water Heating</b>						
High-Efficiency Water Heater		4	\$1,000	22,178	1,479	0
80 gallon+		4	\$1,000	22,178	1,479	0
<b>Ag/Commercial &amp; Industrial Motors</b>						
Variable Speed Drive Motor Incentive		1	\$375	326,507	21,767	0
<b>Agricultural</b>						
Dairy Pre-coolers Incentive		1	\$625	147,103	9,807	5
Dairy Heat Reclaimer		1	\$375	165,951	11,063	5
Livestock Ventilation Fans		6	\$360	157,602	13,134	1
48"-49"		6	\$360	157,602	13,134	1
Scroll compressor (milk cooling)		2	\$375	110,723	7,382	1
Efficient Livestock Waterers		3	\$188	28,611	2,384	
<b>Ag/Commercial &amp; Industrial Custom Rebates</b>						
Custom Rebate Program		2	\$1,460	466,200	31,080	16
<b>Ag, Commercial and Industrial Total</b>		<b>139</b>	<b>\$8,946</b>	<b>2,374,106</b>	<b>176,961</b>	<b>69</b>
<b>C &amp; I Average kWh Sales (3 yr Ave actual and projected)**</b>					<b>11,214,260</b>	
<b>C &amp; I kWh Savings as percentage of C &amp; I kWh Sales</b>					<b>1.6%</b>	

<b>II. Demand Response Programs</b>						
Water Heater Load Control		2,986	\$42,406			1,493
Water Heater Storage		134	\$4,169			134
Air Conditioning Load Control		11	\$1,212			8
Space Heating Load Control (Interruptible)		966	\$52,240			4,347
Dual-Fuel (also called Electric Thermal) Storage Space Heating and Air Conditioning		12	\$2,042			72
<b>Crop Drying</b>						
Load Control		28	\$1,430			56
Commercial and Industrial Time-of-Day Price		2	\$5,250			
<b>III. Energy Audit &amp; Technical Support Programs</b>						
Expert Energy Services - Agricultural		86	\$20,328			
Expert Energy Services - C&I		2	\$508			
Energy Audit Services - Residential *		54	\$15,116			
<b>IV. Educational &amp; Research Programs</b>						
Model Housing Education		210	\$2,521			
Member Information and Education		7,000	\$25,375			
Peak Alert		7,000				
Iowa Energy Center and Center for Global Regional Environmental Research & Cooperative Research Network		7,000	\$18,152			
<b>TOTAL</b>		<b>28,392</b>	<b>\$282,502</b>	<b>13,961,735</b>	<b>968,048</b>	<b>6,398</b>
<b>Total Average kWh Sales (3 yr Ave actual and projected)**</b>					<b>125,266,677</b>	
<b>Total kWh Savings as percentage of Total kWh Sales</b>					<b>0.8%</b>	

\* Savings for the specific measures are accounted for and included in the applicable programs.

\*\*Excludes kWh sales to biofuel production facilities and natural gas pumping stations.

# See Appendix B for details

Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

Appendix 5

		2012				
		Estimated Achievable Potential Goals				
Allamakee-Clayton Electric Cooperative, Inc.		Projected Participants	Projected Cost	Lifetime kWh Savings	Annual kWh Savings	KW Savings
<b>I. Incentive Programs for Energy Efficient Technologies</b>						
<i>Residential Cooling &amp; Heating (low income included)</i>						
	ENERGY STAR Central Air Conditioning	33	\$6,375	103,683	7,406	11
	SEER 14.5 (and EER 12)	9	\$1,125	20,140	1,439	2
	SEER 15 +	12	\$2,250	34,685	2,478	4
	SEER 16 (and EER 13)	12	\$3,000	48,858	3,490	5
	ENERGY STAR Qualified Room Air Conditioner	23	\$719	13,097	1,455	2
	Geothermal Heat Pump	23	\$25,875	6,108,308	305,415	35
	Air Source Heat Pump	17	\$7,650	2,002,862	133,524	17
<i>Residential Lighting (low income included)</i>						
<b>Interior Lighting</b>						
	Change a Light Rebate Program (or similar program)	1,000	\$2,190	478,077	65,490	60
	Local CFL Rebate Program(s)	933	\$2,333	446,046	61,102	56
	T8 or better Lighting Fixtures	23	\$288	15,910	970	0
	4 ft. T8 or better Fixture w/ electronic ballasts	23	\$288	15,910	970	0
	ENERGY STAR LED lighting	17	\$43	22,757	1,264	1
<b>Exterior Lighting</b>						
	High Efficiency Exterior Lighting	26	\$488	34,579	7,521	0
	High Pressure Sodium - 50 - 100 W	12	\$225	12,015	2,731	
	High Pressure Sodium - 100+ W	8	\$150	8,010	1,820	0
	Metal Halide - 250+ W (pulse start lamp and ballasts)	6	\$113	14,555	2,970	0
	LED Holiday Lighting	29	\$290	27,040	2,253	7
<i>Residential Water Heating (low income included)</i>						
	High Efficiency Water Heater	58	\$14,500	321,578	21,439	3
	80 gallon+	58	\$14,500	321,578	21,439	3
	Heat Pump Water Heater - (Integrated)	2	\$750	46,220	3,852	0
	Solar Water Heaters (w/ Electric auxiliary tank)	1	\$375	22,444	1,870	0
	Flow Restrictors - Faucet	120	\$150	400,399	44,489	2
	Flow Restrictors - Shower	60	\$375	379,620	37,962	3
	Pipe Insulation	60	\$249	106,893	7,126	1
<i>Residential Appliances (low income included)</i>						
	ENERGY STAR Qualified Clothes Washer	175	\$10,938	427,350	38,850	14
	ENERGY STAR Qualified Dishwasher	64	\$2,000	82,833	7,530	6
	ENERGY STAR Qualified Refrigerator	105	\$3,281	166,084	11,072	1
	ENERGY STAR Qualified Dehumidifier	17	\$319	48,232	4,019	0
	ENERGY STAR Qualified Freezer	23	\$719	25,658	1,711	0
	Appliance Recycling	18	\$1,125	172,088	19,121	3
	Refrigerator	12	\$750	129,710	14,412	2
	Freezer	6	\$375	42,378	4,709	1
	Smart Strip	35	\$219	38,850	3,885	
<i>Efficient Home Incentives (low income included)</i>						
	Energy Efficient Home Construction Rebates *	7	\$5,250	233,100	7,770	1
<i>Additional Low Income</i>						
	Energy Efficiency Kits	29	\$363	294,925	32,769	4
<i>Building Shell - Existing Home Only</i>						
	Weatherization Rebates	9	\$2,250	342,307	11,865	1
	Ceiling (Bring up to R-38) - Elect. Heat Only	6	\$1,500	274,126	9,138	1
	Infiltration Control	3	\$750	68,182	2,727	0
<b>Residential Total</b>		<b>2,907</b>	<b>\$89,110</b>	<b>12,360,939</b>	<b>841,732</b>	<b>231</b>
<b>Residential Average kWh Sales (3 yr Ave actual and projected)</b>					<b>113,975,333</b>	
<b>Residential kWh Savings as percentage of Residential kWh Sales</b>					<b>0.7%</b>	

Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

Appendix 5

		2012				
		Estimated Achievable Potential Goals				
Allamakee-Clayton Electric Cooperative, Inc.		Projected Participants	Projected Cost	Lifetime kWh Savings	Annual kWh Savings	KW Savings
<b>Agriculture/Commercial &amp; Industrial Lighting</b>						
<b>Interior Lighting</b>						
	High Efficiency Interior Lighting	104	\$1,135	292,981	42,546	1
	T-8 or 48" T5 - 4 ft	9	\$101	12,531	1,958	0
	T8 or T-5 fixtures - 8 ft	12	\$135	14,322	2,238	0
	High Bay T-8/T-5 fixture w/ High Output Ballast - Replacement	23	\$259	129,547	16,824	0
	High Bay T-8/T-5 fixture w/ High Output Ballast - New Construction	23	\$259	116,179	15,088	0
	CFL lamps - Energy Star- 9W and up	25	\$156	12,410	4,773	0
	Metal Halide Lamps	12	\$225	7,992	1,665	0
<b>Exterior Lighting</b>						
	High Efficiency Exterior Lighting	18	\$338	20,070	4,096	0
	High Pressure Sodium Fixture (ballast & lamp replacement) - 50-100 W	12	\$225	13,380	2,731	0
	High Pressure Sodium Fixture (ballast & lamp replacement) - >100 W	6	\$113	6,690	1,365	0
<b>Ag/Commercial &amp; Industrial Heating and Cooling</b>						
	ENERGY STAR Air Conditioning	1	\$125	3,097	206	0
	Geothermal Heat Pump	2	\$2,250	531,157	26,558	30
	Air Source Heat Pump - (SEER 14.5, EER 12, HSPF 8.2)	1	\$450	117,815	7,854	10
<b>Ag/Commercial &amp; Industrial Water Heating</b>						
	High-Efficiency Water Heater	5	\$1,250	27,722	1,848	0
	80 gallon+	5	\$1,250	27,722	1,848	0
<b>Ag/Commercial &amp; Industrial Motors</b>						
	Variable Speed Drive Motor Incentive	1	\$375	326,507	21,767	0
<b>Agricultural</b>						
	Dairy Pre-coolers Incentive	1	\$625	147,103	9,807	5
	Dairy Heat Reclaimer	1	\$375	165,951	11,063	5
	Livestock Ventilation Fans	7	\$420	183,869	15,322	1
	48"-49"	7	\$420	183,869	15,322	1
	Scroll compressor (milk cooling)	2	\$375	110,723	7,382	1
	Efficient Livestock Waterers	3	\$188	28,611	2,384	
<b>Ag/Commercial &amp; Industrial Custom Rebates</b>						
	Custom Rebate Program	2	\$1,460	466,200	31,080	16
<b>Ag, Commercial and Industrial Total</b>		<b>148</b>	<b>\$9,365</b>	<b>2,421,806</b>	<b>181,915</b>	<b>69</b>
<b>C &amp; I Average kWh Sales (3 yr Ave actual and projected)**</b>					<b>11,457,333</b>	
<b>C &amp; I kWh Savings as percentage of C &amp; I kWh Sales</b>					<b>1.6%</b>	

<b>II. Demand Response Programs</b>						
	Water Heater Load Control	3,023	\$44,527			1,512
	Water Heater Storage	141	\$4,377			141
	Air Conditioning Load Control	12	\$1,272			8
	Space Heating Load Control (Interruptible)	1,014	\$54,852			4,564
	Dual-Fuel (also called Electric Thermal) Storage Space Heating and Air Conditioning	12	\$2,144			72
<b>Crop Drying</b>						
	Load Control	29	\$1,502			58
	Commercial and Industrial Time-of-Day Price	2	\$5,513			
<b>III. Energy Audit &amp; Technical Support Programs</b>						
	Expert Energy Services - Agricultural	93	\$21,344			
	Expert Energy Services - C&I	2	\$534			
	Energy Audit Services - Residential *	54	\$15,872			
<b>IV. Educational &amp; Research Programs</b>						
	Model Housing Education	220	\$2,647			
	Member Information and Education	7,000	\$26,644			
	Peak Alert	7,000				
	Iowa Energy Center and Center for Global Regional Environmental Research & Cooperative Research Network	7,000	\$19,044			
<b>TOTAL</b>		<b>28,658</b>	<b>\$298,747</b>	<b>14,782,745</b>	<b>1,023,646</b>	<b>6,655</b>
<b>Total Average kWh Sales (3 yr Ave actual and projected)**</b>					<b>125,432,667</b>	
<b>Total kWh Savings as percentage of Total kWh Sales</b>					<b>0.8%</b>	

\* Savings for the specific measures are accounted for and included in the applicable programs.

\*\*Excludes kWh sales to biofuel production facilities and natural gas pumping stations.

# See Appendix B for details

Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

Appendix 5

		2013				
		Estimated Achievable Potential Goals				
Allamakee-Clayton Electric Cooperative, Inc.		Projected Participants	Projected Cost	Lifetime kWh Savings	Annual kWh Savings	KW Savings
<b>I. Incentive Programs for Energy Efficient Technologies</b>						
<i>Residential Cooling &amp; Heating (low income included)</i>						
	ENERGY STAR Central Air Conditioning	36	\$6,938	112,883	8,063	12
	SEER 14.5 (and EER 12)	10	\$1,250	22,378	1,598	2
	SEER 15 +	13	\$2,438	37,576	2,684	4
	SEER 16 (and EER 13)	13	\$3,250	52,929	3,781	6
	ENERGY STAR Qualified Room Air Conditioner	25	\$781	14,236	1,582	2
	Geothermal Heat Pump	25	\$28,125	6,639,465	331,973	39
	Air Source Heat Pump	19	\$8,550	2,238,493	149,233	19
<i>Residential Lighting (low income included)</i>						
<b>Interior Lighting</b>						
	Change a Light Rebate Program (or similar program)	1,000	\$2,190	478,077	65,490	60
	Local CFL Rebate Program(s)	1,008	\$2,520	481,902	66,014	60
	T8 or better Lighting Fixtures	25	\$313	17,294	1,055	0
	4 ft. T8 or better Fixture w/ electronic ballasts	25	\$313	17,294	1,055	0
	ENERGY STAR LED lighting	19	\$48	25,435	1,413	1
<b>Exterior Lighting</b>						
	High Efficiency Exterior Lighting	28	\$525	36,582	7,976	0
	High Pressure Sodium - 50 - 100 W	13	\$244	13,016	2,958	
	High Pressure Sodium - 100+ W	9	\$169	9,011	2,048	0
	Metal Halide - 250+ W (pulse start lamp and ballasts)	6	\$113	14,555	2,970	0
	LED Holiday Lighting	31	\$310	28,904	2,409	8
<i>Residential Water Heating (low income included)</i>						
	High Efficiency Water Heater	63	\$15,750	349,300	23,287	3
	80 gallon+	63	\$15,750	349,300	23,287	3
	Heat Pump Water Heater - (Integrated)	2	\$750	46,220	3,852	0
	Solar Water Heaters (w/ Electric auxiliary tank)	1	\$375	22,444	1,870	0
	Flow Restrictors - Faucet	125	\$156	417,083	46,343	3
	Flow Restrictors - Shower	65	\$406	411,255	41,126	3
	Pipe Insulation	65	\$270	115,801	7,720	1
<i>Residential Appliances (low income included)</i>						
	ENERGY STAR Qualified Clothes Washer	189	\$11,813	461,538	41,958	15
	ENERGY STAR Qualified Dishwasher	69	\$2,156	89,304	8,119	6
	ENERGY STAR Qualified Refrigerator	113	\$3,531	178,738	11,916	1
	ENERGY STAR Qualified Dehumidifier	19	\$356	53,906	4,492	0
	ENERGY STAR Qualified Freezer	25	\$781	27,889	1,859	0
	Appliance Recycling	19	\$1,188	182,897	20,322	3
	Refrigerator	13	\$813	140,519	15,613	2
	Freezer	6	\$375	42,378	4,709	1
	Smart Strip	40	\$250	44,400	4,440	
<i>Efficient Home Incentives (low income included)</i>						
	Energy Efficient Home Construction Rebates *	8	\$6,000	266,400	8,880	1
<i>Additional Low Income</i>						
	Energy Efficiency Kits	31	\$388	315,264	35,029	4
<i>Building Shell - Existing Home Only</i>						
	Weatherization Rebates	12	\$3,000	456,410	15,820	1
	Ceiling (Bring up to R-38) - Elect. Heat Only	8	\$2,000	365,501	12,183	1
	Infiltration Control	4	\$1,000	90,909	3,636	0
<b>Residential Total</b>		<b>3,062</b>	<b>\$97,469</b>	<b>13,512,118</b>	<b>912,239</b>	<b>246</b>
<b>Residential Average kWh Sales (3 yr Ave actual and projected)</b>					<b>115,488,667</b>	
<b>Residential kWh Savings as percentage of Residential kWh Sales</b>					<b>0.8%</b>	

Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

Appendix 5

		2013				
		Estimated Achievable Potential Goals				
Allamakee-Clayton Electric Cooperative, Inc.		Projected Participants	Projected Cost	Lifetime kWh Savings	Annual kWh Savings	KW Savings
<b>Agriculture/Commercial &amp; Industrial Lighting</b>						
<b>Interior Lighting</b>						
	High Efficiency Interior Lighting	111	\$1,221	317,601	45,864	1
	T-8 or 48" T5 - 4 ft	10	\$113	13,924	2,176	0
	T8 or T-5 fixtures - 8 ft	13	\$146	15,515	2,424	0
	High Bay T-8/T-5 fixture w/ High Output Ballast - Replacement	25	\$281	140,812	18,287	0
	High Bay T-8/T-5 fixture w/ High Output Ballast - New Construction	25	\$281	126,282	16,400	0
	CFL lamps - Energy Star- 9W and up	25	\$156	12,410	4,773	0
	Metal Halide Lamps	13	\$244	8,658	1,804	0
<b>Exterior Lighting</b>						
	High Efficiency Exterior Lighting	19	\$356	21,185	4,323	0
	High Pressure Sodium Fixture (ballast & lamp replacement) - 50-100 W	13	\$244	14,495	2,958	0
	High Pressure Sodium Fixture (ballast & lamp replacement) - >100 W	6	\$113	6,690	1,365	0
<b>Ag/Commercial &amp; Industrial Heating and Cooling</b>						
	ENERGY STAR Air Conditioning	1	\$125	3,097	206	0
	Geothermal Heat Pump	2	\$2,250	531,157	26,558	30
	Air Source Heat Pump - (SEER 14.5, EER 12, HSPF 8.2)	1	\$450	117,815	7,854	10
<b>Ag/Commercial &amp; Industrial Water Heating</b>						
	High-Efficiency Water Heater	5	\$1,250	27,722	1,848	0
	80 gallon+	5	\$1,250	27,722	1,848	0
<b>Ag/Commercial &amp; Industrial Motors</b>						
	Variable Speed Drive Motor Incentive	1	\$375	326,507	21,767	0
<b>Agricultural</b>						
	Dairy Pre-coolers Incentive	1	\$625	147,103	9,807	5
	Dairy Heat Reclaimer	1	\$375	165,951	11,063	5
	Livestock Ventilation Fans	8	\$480	210,136	17,511	1
	48"-49"	8	\$480	210,136	17,511	1
	Scroll compressor (milk cooling)	3	\$563	166,084	11,072	1
	Efficient Livestock Waterers	3	\$188	28,611	2,384	
<b>Ag/Commercial &amp; Industrial Custom Rebates</b>						
	Custom Rebate Program	2	\$1,460	466,200	31,080	16
<b>Ag, Commercial and Industrial Total</b>		<b>158</b>	<b>\$9,718</b>	<b>2,529,168</b>	<b>191,340</b>	<b>69</b>
<b>C &amp; I Average kWh Sales (3 yr Ave actual and projected)**</b>					<b>11,746,000</b>	
<b>C &amp; I kWh Savings as percentage of C &amp; I kWh Sales</b>					<b>1.6%</b>	

<b>II. Demand Response Programs</b>						
	Water Heater Load Control	3,061	\$46,753			1,530
	Water Heater Storage	148	\$4,596			148
	Air Conditioning Load Control	13	\$1,336			9
	Space Heating Load Control (Interruptible)	1,065	\$57,594			4,793
	Dual-Fuel (also called Electric Thermal) Storage Space Heating and Air Conditioning	12	\$2,252			72
<b>Crop Drying</b>						
	Load Control	30	\$1,577			60
	Commercial and Industrial Time-of-Day Price	3	\$5,788			
<b>III. Energy Audit &amp; Technical Support Programs</b>						
	Expert Energy Services - Agricultural	101	\$22,412			
	Expert Energy Services - C&I	2	\$560			
	Energy Audit Services - Residential *	54	\$16,665			
<b>IV. Educational &amp; Research Programs</b>						
	Model Housing Education	230	\$2,780			
	Member Information and Education	7,000	\$27,976			
	Peak Alert	7,000				
	Iowa Energy Center and Center for Global Regional Environmental Research & Cooperative Research Network	7,000	\$19,997			
<b>TOTAL</b>		<b>28,939</b>	<b>\$317,472</b>	<b>16,041,286</b>	<b>1,103,579</b>	<b>6,927</b>
<b>Total Average kWh Sales (3 yr Ave actual and projected)**</b>					<b>127,234,667</b>	
<b>Total kWh Savings as percentage of Total kWh Sales</b>					<b>0.9%</b>	

\* Savings for the specific measures are accounted for and included in the applicable programs.

\*\*Excludes kWh sales to biofuel production facilities and natural gas pumping stations.

# See Appendix B for details

Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

Appendix 5

		2014				
		Estimated Achievable Potential Goals				
Allamakee-Clayton Electric Cooperative, Inc.		Projected Participants	Projected Cost	Lifetime kWh Savings	Annual kWh Savings	KW Savings
<b>I. Incentive Programs for Energy Efficient Technologies</b>						
<i>Residential Cooling &amp; Heating (low income included)</i>						
	ENERGY STAR Central Air Conditioning	39	\$7,500	122,082	8,720	13
	SEER 14.5 (and EER 12)	11	\$1,375	24,615	1,758	3
	SEER 15 +	14	\$2,625	40,466	2,890	4
	SEER 16 (and EER 13)	14	\$3,500	57,001	4,071	6
	ENERGY STAR Qualified Room Air Conditioner	27	\$844	15,375	1,708	2
	Geothermal Heat Pump	27	\$30,375	7,170,622	358,531	42
	Air Source Heat Pump	20	\$9,000	2,356,308	157,087	20
<i>Residential Lighting (low income included)</i>						
<b>Interior Lighting</b>						
	Change a Light Rebate Program (or similar program)	1,000	\$2,190	478,077	65,490	60
	Local CFL Rebate Program(s)	1,088	\$2,720	520,148	71,253	65
	T8 or better Lighting Fixtures	27	\$338	18,677	1,139	0
	4 ft. T8 or better Fixture w/ electronic ballasts	27	\$338	18,677	1,139	0
	ENERGY STAR LED lighting	20	\$50	26,773	1,487	1
<b>Exterior Lighting</b>						
	High Efficiency Exterior Lighting	31	\$581	41,010	8,927	0
	High Pressure Sodium - 50 - 100 W	14	\$263	14,017	3,186	0
	High Pressure Sodium - 100+ W	10	\$188	10,012	2,276	0
	Metal Halide - 250+ W (pulse start lamp and ballasts)	7	\$131	16,981	3,465	0
	LED Holiday Lighting	34	\$340	31,702	2,642	9
<i>Residential Water Heating (low income included)</i>						
	High Efficiency Water Heater	68	\$17,000	377,023	25,135	3
	80 gallon+	68	\$17,000	377,023	25,135	3
	Heat Pump Water Heater - (Integrated)	2	\$750	46,220	3,852	0
	Solar Water Heaters (w/ Electric auxiliary tank)	1	\$375	22,444	1,870	0
	Flow Restrictors - Faucet	68	\$85	226,893	25,210	1
	Flow Restrictors - Shower	68	\$425	430,236	43,024	3
	Pipe Insulation	70	\$291	124,709	8,314	1
<i>Residential Appliances (low income included)</i>						
	ENERGY STAR Qualified Clothes Washer	204	\$12,750	498,168	45,288	16
	ENERGY STAR Qualified Dishwasher	75	\$2,344	97,070	8,825	7
	ENERGY STAR Qualified Refrigerator	122	\$3,813	192,974	12,865	1
	ENERGY STAR Qualified Dehumidifier	20	\$375	56,743	4,729	0
	ENERGY STAR Qualified Freezer	27	\$844	30,120	2,008	0
	Appliance Recycling	21	\$1,313	200,769	22,308	4
	Refrigerator	14	\$875	151,329	16,814	3
	Freezer	7	\$438	49,441	5,493	1
	Smart Strip	45	\$281	49,950	4,995	0
<i>Efficient Home Incentives (low income included)</i>						
	Energy Efficient Home Construction Rebates *	9	\$6,750	299,700	9,990	2
<i>Additional Low Income</i>						
	Energy Efficiency Kits	34	\$425	345,774	38,419	4
<i>Building Shell - Existing Home Only</i>						
	Weatherization Rebates	15	\$3,750	570,512	19,775	2
	Ceiling (Bring up to R-38) - Elect. Heat Only	10	\$2,500	456,876	15,229	1
	Infiltration Control	5	\$1,250	113,636	4,545	0
<b>Residential Total</b>		<b>3,162</b>	<b>\$105,507</b>	<b>14,350,078</b>	<b>953,590</b>	<b>259</b>
<b>Residential Average kWh Sales (3 yr Ave actual and projected)</b>					<b>116,898,333</b>	
<b>Residential kWh Savings as percentage of Residential kWh Sales</b>					<b>0.8%</b>	

Example of information filed for each Electric Cooperative as part of the IAEC Joint Report

Appendix 5

		2014				
		Estimated Achievable Potential Goals				
Allamakee-Clayton Electric Cooperative, Inc.		Projected Participants	Projected Cost	Lifetime kWh Savings	Annual kWh Savings	KW Savings
<b>Agriculture/Commercial &amp; Industrial Lighting</b>						
<b>Interior Lighting</b>						
	High Efficiency Interior Lighting	118	\$1,308	342,220	49,182	1
	T-8 or 48" T5 - 4 ft	11	\$124	15,316	2,393	0
	T8 or T-5 fixtures - 8 ft	14	\$158	16,709	2,611	0
	High Bay T-8/T-5 fixture w/ High Output Ballast - Replacement	27	\$304	152,077	19,750	0
	High Bay T-8/T-5 fixture w/ High Output Ballast - New Construction	27	\$304	136,384	17,712	0
	CFL lamps - Energy Star- 9W and up	25	\$156	12,410	4,773	0
	Metal Halide Lamps	14	\$263	9,324	1,943	0
<b>Exterior Lighting</b>						
	High Efficiency Exterior Lighting	21	\$394	23,415	4,779	0
	High Pressure Sodium Fixture (ballast & lamp replacement) - 50-100 W	14	\$263	15,610	3,186	0
	High Pressure Sodium Fixture (ballast & lamp replacement) - >100 W	7	\$131	7,805	1,593	0
<b>Ag/Commercial &amp; Industrial Heating and Cooling</b>						
	ENERGY STAR Air Conditioning	1	\$125	3,097	206	0
	Geothermal Heat Pump	2	\$2,250	531,157	26,558	30
	Air Source Heat Pump - (SEER 14.5, EER 12, HSPF 8.2)	1	\$450	117,815	7,854	10
<b>Ag/Commercial &amp; Industrial Water Heating</b>						
	High-Efficiency Water Heater	5	\$1,250	27,722	1,848	0
	80 gallon+	5	\$1,250	27,722	1,848	0
<b>Ag/Commercial &amp; Industrial Motors</b>						
	Variable Speed Drive Motor Incentive	1	\$375	326,507	21,767	0
<b>Agricultural</b>						
	Dairy Pre-coolers Incentive	5	\$3,125	735,514	49,034	24
	Dairy Heat Reclaimer	5	\$1,875	829,753	55,317	27
	Livestock Ventilation Fans	9	\$540	236,403	19,700	1
	48"-49"	9	\$540	236,403	19,700	1
	Scroll compressor (milk cooling)	3	\$563	166,084	11,072	1
	Efficient Livestock Waterers	3	\$188	28,611	2,384	
<b>Ag/Commercial &amp; Industrial Custom Rebates</b>						
	Custom Rebate Program	2	\$1,460	466,200	31,080	16
<b>Ag, Commercial and Industrial Total</b>		<b>176</b>	<b>\$13,901</b>	<b>3,834,498</b>	<b>280,782</b>	<b>111</b>
<b>C &amp; I Average kWh Sales (3 yr Ave actual and projected)**</b>					<b>12,033,333</b>	
<b>C &amp; I kWh Savings as percentage of C &amp; I kWh Sales</b>					<b>2.3%</b>	

<b>II. Demand Response Programs</b>						
	Water Heater Load Control	3,099	\$49,090			1,550
	Water Heater Storage	156	\$4,826			156
	Air Conditioning Load Control	14	\$1,403			10
	Space Heating Load Control (Interruptible)	1,118	\$60,474			5,032
	Dual-Fuel (also called Electric Thermal) Storage Space Heating and Air Conditioning	12	\$2,364			72
<b>Crop Drying</b>						
	Load Control	31	\$1,655			62
	Commercial and Industrial Time-of-Day Price	3	\$6,078			
<b>III. Energy Audit &amp; Technical Support Programs</b>						
	Expert Energy Services - Agricultural	109	\$23,532			
	Expert Energy Services - C&I	2	\$588			
	Energy Audit Services - Residential *	54	\$17,498			
<b>IV. Educational &amp; Research Programs</b>						
	Model Housing Education	240	\$2,919			
	Member Information and Education	7,000	\$29,375			
	Peak Alert	7,000				
	Iowa Energy Center and Center for Global Regional Environmental Research & Cooperative Research Network	7,000	\$20,997			
<b>TOTAL</b>		<b>29,176</b>	<b>\$340,207</b>	<b>18,184,576</b>	<b>1,234,372</b>	<b>7,251</b>
<b>Total Average kWh Sales (3 yr Ave actual and projected)**</b>					<b>128,931,667</b>	
<b>Total kWh Savings as percentage of Total kWh Sales</b>					<b>1.0%</b>	

\* Savings for the specific measures are accounted for and included in the applicable programs.

\*\*Excludes kWh sales to biofuel production facilities and natural gas pumping stations.

# See Appendix B for details

**Example of information filed for each Electric Cooperative as part of the IAEC Joint Report**

**Appendix 5**

		Cost Effectiveness Analysis			
		Benefit/Cost Ratios			
Allamakee-Clayton Electric Cooperative, Inc.		Rate Payer	Participant	Utility	Societal
<b>I. Incentive Programs for Energy Efficient Technologies</b>					
<i>Residential Cooling &amp; Heating (low income included)</i>					
ENERGY STAR Central Air Conditioning					
	SEER 14.5 (and EER 12)	1.07	0.90	2.33	1.27
	SEER 15 +	0.88	0.93	1.77	1.08
	SEER 16 (and EER 13)	0.78	0.85	1.62	0.88
ENERGY STAR Qualified Room Air Conditioner					
	Geothermal Heat Pump	0.53	1.83	8.16	1.05
	Air Source Heat Pump	0.55	6.08	10.01	3.92
<i>Residential Lighting (low income included)</i>					
<b>Interior Lighting</b>					
Change a Light Rebate Program (or similar program)					
	Local CFL Rebate Program(s)	0.85	16.63	11.45	13.83
	T8 or better Lighting Fixtures	0.85	12.60	12.54	11.21
	4 ft. T8 or better Fixture w/ electronic ballasts	0.55	4.27	4.83	2.99
	ENERGY STAR LED lighting	0.75	2.87	25.99	2.91
<b>Exterior Lighting</b>					
High Efficiency Exterior Lighting					
	High Pressure Sodium - 50 - 100 W	0.36	2.81	1.69	1.09
	High Pressure Sodium - 100+ W	0.36	2.81	1.69	1.09
	Metal Halide - 250+ W (pulse start lamp and ballasts)	0.40	1.03	3.65	0.48
	LED Holiday Lighting	0.63	2.55	4.66	1.99
<i>Residential Water Heating (low income included)</i>					
High Efficiency Water Heater					
	80 gallon+	1.02	1.03	2.49	1.38
	Heat Pump Water Heater - (Integrated)	0.41	2.43	2.15	1.22
	Solar Water Heaters (w/ Electric auxiliary tank)	0.41	1.09	2.10	0.57
	Flow Restrictors - Faucet	0.44	53.63	18.89	23.29
	Flow Restrictors - Shower	0.43	19.46	6.86	8.55
	Pipe Insulation	0.51	36.12	14.71	19.38
<i>Residential Appliances (low income included)</i>					
ENERGY STAR Qualified Clothes Washer					
		0.47	1.09	1.74	0.65
ENERGY STAR Qualified Dishwasher					
		0.67	2.54	2.58	2.00
ENERGY STAR Qualified Refrigerator					
		0.41	2.57	1.78	1.30
ENERGY STAR Qualified Dehumidifier					
		0.40	Infinite	4.55	28.97
ENERGY STAR Qualified Freezer					
		0.41	2.97	1.38	1.45
Appliance Recycling					
		0.56	3.91	6.28	2.59
Refrigerator					
Freezer					
	Smart Strip	0.49	8.27	6.57	4.55
<i>Efficient Home Incentives (low income included)</i>					
Energy Efficient Home Construction Rebates *					
		0.40	1.60	1.35	0.93
<i>Additional Low Income</i>					
Energy Efficiency Kits					
		0.47	29.98	11.42	14.25
<i>Building Shell - Existing Home Only</i>					
Weatherization Rebates					
	Ceiling (Bring up to R-38) - Elect. Heat Only	0.38	3.23	4.08	1.77
	Infiltration Control	0.39	5.02	2.46	2.54

Residential Total

Residential Average kWh Sales (3 yr Ave actual and projected)

Residential kWh Savings as percentage of Residential kWh Sales

**Example of information filed for each Electric Cooperative as part of the IAEC Joint Report**

**Appendix 5**

		Cost Effectiveness Analysis			
		Benefit/Cost Ratios			
Allamakee-Clayton Electric Cooperative, Inc.		Rate Payer	Participant	Utility	Societal
<b>Agriculture/Commercial &amp; Industrial Lighting</b>					
<b>Interior Lighting</b>					
	High Efficiency Interior Lighting	0.38	2.55	3.80	1.13
	T-8 or 48" T5 - 4 ft				
	T8 or T-5 fixtures - 8 ft				
	High Bay T-8/T-5 fixture w/ High Output Ballast - Replacement				
	High Bay T-8/T-5 fixture w/ High Output Ballast - New Construction				
	CFL lamps - Energy Star- 9W and up				
	Metal Halide Lamps				
<b>Exterior Lighting</b>					
	High Efficiency Exterior Lighting	0.37	1.11	1.95	0.47
	High Pressure Sodium Fixture (ballast & lamp replacement) - 50-100 W				
	High Pressure Sodium Fixture (ballast & lamp replacement) - >100 W				
<b>Ag/Commercial &amp; Industrial Heating and Cooling</b>					
	ENERGY STAR Air Conditioning	0.75	1.07	1.33	1.05
	Geothermal Heat Pump	0.53	1.83	8.16	1.05
	Air Source Heat Pump - (SEER 14.5, EER 12, HSPF 8.2)	0.55	5.66	10.01	3.92
<b>Ag/Commercial &amp; Industrial Water Heating</b>					
	High-Efficiency Water Heater				
	80 gallon+	1.02	1.63	2.49	2.10
<b>Ag/Commercial &amp; Industrial Motors</b>					
	Variable Speed Drive Motor Incentive	0.42	6.19	24.44	3.37
<b>Agricultural</b>					
	Dairy Pre-coolers Incentive	0.43	2.89	7.00	1.59
	Dairy Heat Reclaimer	0.44	4.29	13.16	2.42
	Livestock Ventilation Fans	0.44	23.68	8.88	10.82
	48"-48"				
	Scroll compressor (milk cooling)	0.50	7.55	10.15	4.66
	Efficient Livestock Waterers	0.35	7.00	3.98	2.81
<b>Ag/Commercial &amp; Industrial Custom Rebates</b>					
	Custom Rebate Program	0.39	2.11	8.58	1.07

**Ag, Commercial and Industrial Total**

**C & I Average kWh Sales (3 yr Ave actual and projected)\*\***

**C & I kWh Savings as percentage of C & I kWh Sales**

<b>II. Demand Response Programs</b>					
	Water Heater Load Control	#	#	#	#
	Water Heater Storage	#	#	#	#
	Air Conditioning Load Control	#	#	#	#
	Space Heating Load Control (Interruptible)	#	#	#	#
	Dual-Fuel (also called Electric Thermal) Storage Space Heating and Air Conditioning	#	#	#	#
<b>Crop Drying</b>					
	Load Control	#	#	#	#
	Commercial and Industrial Time-of-Day Price	#	#	#	#
<b>III. Energy Audit &amp; Technical Support Programs</b>					
	Expert Energy Services - Agricultural				
	Expert Energy Services - C&I				
	Energy Audit Services - Residential *				
<b>IV. Educational &amp; Research Programs</b>					
	Model Housing Education				
	Member Information and Education				
	Peak Alert				
	Iowa Energy Center and Center for Global Regional Environmental Research & Cooperative Research Network				

**TOTAL**

**Total Average kWh Sales (3 yr Ave actual and projected)\*\***

**Total kWh Savings as percentage of Total kWh Sales**

\* Savings for the specific measures are accounted for and included in the applicable programs.

\*\*Excludes kWh sales to biofuel production facilities and natural gas pumping stations.

# See Appendix B for details

## Goals and Programs for Electric Cooperatives not Included in the IAEC Joint Final Report

Three non-rate regulated utilities, all rural electric cooperatives, were not included in the Joint Final Report filed by the IAEC. These three cooperatives are all headquartered in Minnesota, and are not members of the IAEC. In addition, the three Minnesota RECs have very few members in Iowa; Iowa members total 69 out of approximately 16,000 total members, or less than one-half of one percent.

The Minnesota RECs are subject, in Minnesota, to extensive requirements for energy efficiency goals and programs. In Minnesota, the State Legislature passed the Next Generation Energy Act of 2007, which established a State Energy Conservation Policy Goal. The goal, codified under Minnesota Statute §216B.2401, states:

It is the energy policy of the state of Minnesota to achieve annual energy savings equal to 1.5 percent of annual retail energy sales of electricity and natural gas directly through energy conservation improvement programs and rate design, and indirectly through energy codes and appliance standards, programs designed to transform the market or change consumer behavior, energy saving resulting from efficiency improvements to the utility infrastructure and system, and other efforts to promote energy efficiency and energy conservation.

The Minnesota statute was updated in 2010 to provide more specific guidance to municipal utilities and cooperatives, as follows:

Subdivision 1b. Conservation improvement by cooperative association or municipality.

- (a) This subdivision applies to:
  - (1) a cooperative electric association that provides retail service to its members;
  - (2) a municipality that provides electric service to retail customers; and
  - (3) a municipality with more than 1,000,000,000 cubic feet in annual throughput sales to natural gas to retail customers.
- (b) Each cooperative electric association and municipality subject to this subdivision shall spend and invest for energy conservation improvements under this subdivision the following amounts:
  - (2) for a cooperative electric association, 1.5 percent of its gross operating revenues from service provided in the state, excluding gross operating revenues from service provided in the state to large electric customer facilities indirectly through a distribution cooperative electric association.

Thus the Minnesota RECs are subject to very specific goals and spending requirements comparable to the goals stated by the Iowa RECs.

Given the emphasis on energy efficiency in both Minnesota and Iowa, the Minnesota RECs will likely extend their programs to include their Iowa members.

As evidence of the efforts they are making, the Minnesota RECs filed, with the Board, reports showing their goals and spending for their total membership. The Board then pro-rated the reported goals and spending for the Iowa members of these RECs, based on the ratio of members in Iowa to total membership. The results can be viewed in IUB Table B

<b>.IUB Table B</b>		
<b>IUB Estimates of Iowa Goals for Iowa Service Area of Minnesota Electric Cooperatives</b>		
<b>Cooperative Name</b>	<b>Iowa Estimate of kWh Savings Goal</b>	<b>Iowa Estimate of Spending Dollars</b>
Federated Rural Electric Association	23,059	\$3,932
Freeborn-Mower Cooperative Services	2,004	\$487
Nobles Cooperative Electric	3,403	\$504
<b>TOTALS</b>	<b>28,466</b>	<b>\$4,922</b>