# 2009 Power Smart Plan

Manitoba Hydro
POWER SMART*

July 2009

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# *Executive Summary*

The 2009 Power Smart Plan forecasts Manitoba Hydro's costs and savings to the benchmark year of 2024/25 which will be achieved through electricity and natural gas Power Smart Programs. The plan sets out to realize electricity savings of 644 MW and 2,053 GW.h, natural gas savings of 137 million cubic meters and combined global greenhouse gas emission reductions of 1,646,000 tonnes by 2024/25. The total cost of achieving the energy savings is $622 million; $458 million of the costs are funded through the Corporation's Power Smart electricity budget, $134 million from the Power Smart natural gas budget, $25 million from the Affordable Energy Fund created through provincial legislation, and $5 million from the Lower Income Natural Gas Furnace Replacement budget for targeting furnace replacement.

Combined with energy savings achieved to date, total electrical savings of 915 MW and 3,271 GW.h and total natural gas savings of 172 million cubic meters will be realized by 2024/25. These combined energy savings are expected to result in an overall reduction of greenhouse gas emissions of 2,535,000 tonnes by 2024/25.

While reducing electricity and natural gas consumption through innovative products, participating customers can expect to save $105 million in 2024/25 and $1.1 billion cumulatively by 2024/25. When combined with bill reductions achieved to date, programs are expected to save participating customers $152 million in 2024/25 and $2.4 billion cumulatively.

The electric Power Smart portfolio is cost-effective with an overall TRC and RIM of 2.5 and 1.3 respectively and an overall utility cost of 1.9 cents per kilowatt-hour.

The natural gas Power Smart portfolio is cost-effective with an overall TRC and RIM of 1.7 and 0.7 respectively and an overall utility cost of 9.5 cents per cubic meter.

The overall TRC for the electric and natural gas Power Smart portfolio is 2.3.

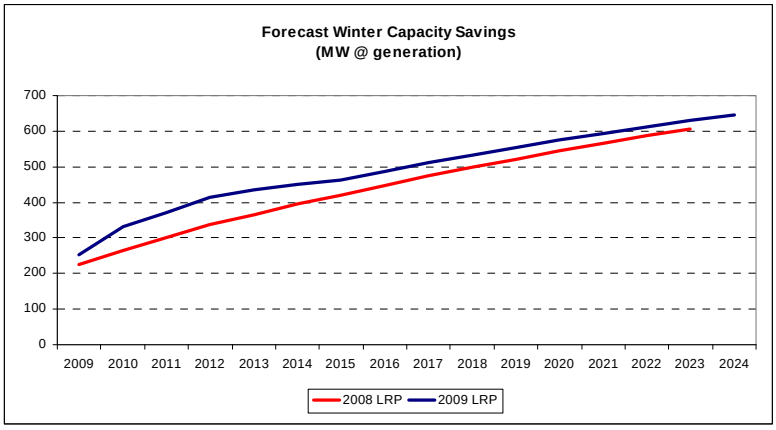
## *Changes from the 2008/09 Power Smart Plan*

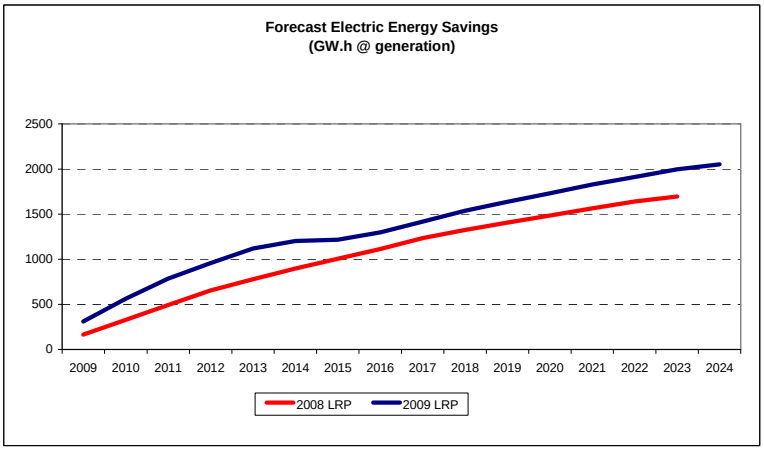
The following graphs outline changes in electric and natural gas energy savings and utility costs forecasted in the 2009 Power Smart Plan relative to those outlined in the 2008 Power Smart Plan.

### *Electric DSM Targets - Differences*

Overall, winter capacity and electric energy savings are expected to increase from the 2008 Plan. The differences in estimated electric savings are the result of the addition of new programs and adjustments to existing and future programs based on updated market information. Most notably, revisions made to the Compact Fluorescent Lighting program and the addition of the Emergency Preparedness program result in an increase in planned savings.

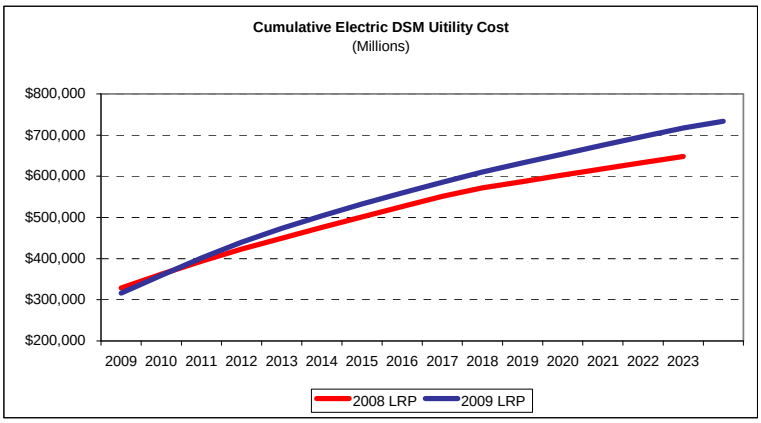
In addition, the electric impacts of Codes and Standards due to Manitoba Hydro's on-going efforts in the residential and commercial sectors represent the increase in energy savings in the latter years of the planning horizon.



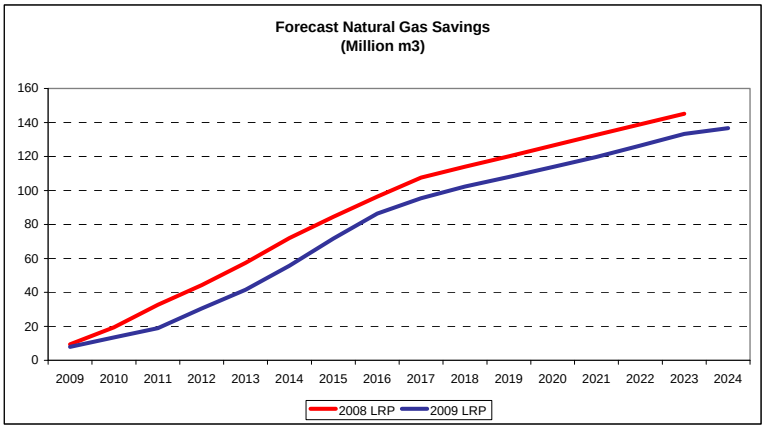
## Electric DSM Utility Costs - Differences

The difference in electric utility cost is mainly the result of increased spending in the Industrial and Customer Self-Generation programs coupled with an increase in the contingency budget.



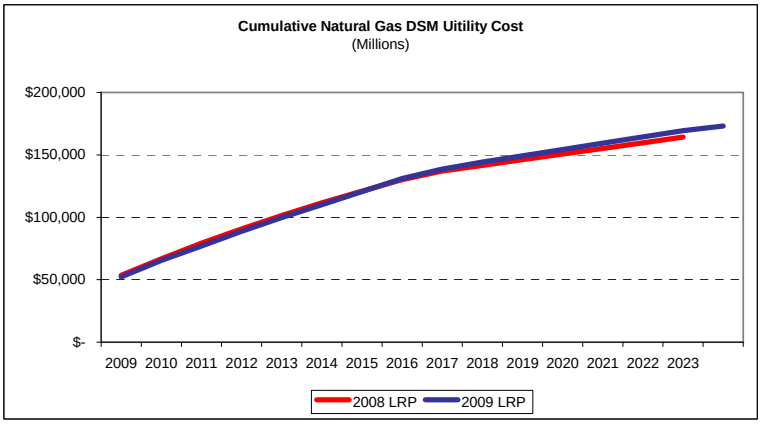
### *Natural Gas DSM Targets - Differences*

Overall, natural gas savings are expected to decrease from the 2008 Plan primarily due to adjustments to existing and future programs based on updated market information. The largest impacts arise from adjustments to the Compact Fluorescent Lighting (CFL), Home Insulation and Commercial Windows programs. For the CFL program, the increase in forecasted electric savings results in a substantial increase in natural gas usage due to interactive effects.




### *Natural Gas DSM Utility Costs - Differences*

As shown in the graph below, there are no significant differences between the 2009 and 2008 plans as it relates to natural gas utility costs.



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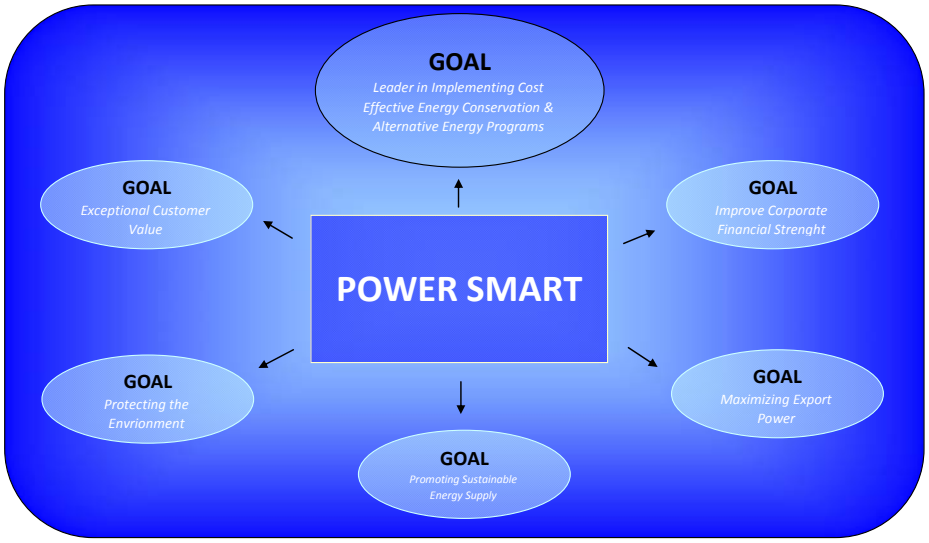
# 1 Introduction

Manitoba Hydro's 2009 Power Smart Plan was developed through an intensive planning process which builds on the Corporation's experience and continuous involvement in energy management since 1989. The planning process involved research on energy management technologies and practices, research on activities of other leading-edge organizations delivering energy efficiency programs and the development of program design concepts.

Manitoba Hydro's 2009 Power Smart Plan provides a roadmap for the future direction of the Corporation's energy conservation program. The plan highlights high-level priorities and specific strategies for the residential, commercial and industrial market sectors.

# 2 Power Smart – Supporting Corporate Strategic Goals

Power Smart is an overall strategy that serves to support Manitoba Hydro's Corporate Strategic Goals.




Through the aggressive development, implementation and promotion of cost-effective energy conservation programs, Power Smart ultimately supports the strategic goal of being a National Leader in Implementing Cost-Effective Energy Conservation and Emerging Energy Systems.

## Be a National Leader in Implementing Cost-Effective Energy Conservation and Emerging Energy Systems

Manitoba Hydro's Power Smart activities are designed to aggressively pursue cost-effective energy conservation and explore emerging energy systems to ensure Manitobans are provided with cost-effective alternative methods of energy supply. The strategic goal involves being an industry leader as measured by:

- Manitoba Hydro's long-standing DSM commitments and energy conservation achievements;
- Manitoba Hydro's DSM efforts being comparable to leading edge North American utilities and agencies; and
- Manitoba Hydro's programs exhibiting best practices for energy efficient program designs in today's markets.

Through its on-going efforts, Power Smart activities concurrently support the following other corporate strategic goals:

### *Provide Customers with Exceptional Value*

Manitoba Hydro's Power Smart activities provide value-added customer service by providing Manitobans with access to energy-saving programs and financial support, expert advice and up-to-date energy-efficiency information. As a result of these on-going efforts, Manitobans realize a number of benefits including:

- Improvement to the comfort and productivity of home and work environments through increased awareness and adoption of energy efficiency measures;
- Energy bill reduction as a result of reduced consumption;
- Assisting businesses in becoming more competitive in national and international markets via economic and qualitative assistance;
- Economic growth by way of new employment opportunities for manufacturers, distributors, retailers, trade allies and installers of energy-efficient products and services.

### *Be Proactive in Protecting the Environment and be the Leading Utility in Promoting Sustainable Energy Supply and Service*

Manitoba Hydro's Power Smart activities encourage the Corporation's commitment to be proactive in protecting the environment and to be the leading utility in promoting sustainable energy supply and service. Through Power Smart activities, greenhouse gas emissions are reduced directly through lower natural gas consumption in Manitoba and indirectly through lower electricity consumption. In the latter case, electricity exports, generated from Manitoba Hydro's clean hydraulic sources, displace electricity that would otherwise be generated elsewhere through greenhouse gas-emitting generating sources (e.g. coal or natural gas).

A primary objective of Power Smart is to achieve a sustainable market shift, or market transformation, towards energy efficient technologies and practices. Through Power Smart initiatives, Manitoba Hydro communicates environmental performance and achievements and assists customers in realizing the associated persisting eco-efficiency benefits.

### *Maximize Export Power Net Revenues and Improve Corporate Financial Strength*

Manitoba Hydro's Power Smart activities involve supporting the Corporation's export business and concurrently improving the Corporation's financial strength. The electricity savings derived from Power Smart activities are, in turn, available for sale in the export market. The additional revenues realized through this export activity contribute to improving the Corporation's financial strength.

# 3 Power Smart - Strategies and Principles

## 3.1 Strategies

Power Smart's goal is to achieve market transformation; to create a sustainable market change where energy-efficient technologies and practices become the market standard. To achieve this goal, Manitoba Hydro's Power Smart activities are guided by eleven key strategies:

### 1) Comprehensive & Technology Specific Approach to Program Design

This strategy involves assessing and pursuing opportunities from a systems perspective. This process examines systems and technologies that function together within the building or process and optimizes the operation for improved performance efficiency. This approach leads to achieving efficiency improvements in a cost-effective manner. The approach is especially effective in new construction and large retrofit applications.

Technology specific opportunities are effective and appropriate for addressing opportunities such as when a customer is considering an isolated retrofit application.

### 2) Integrated Approach to Program Design

This strategy involves taking an integrated approach to pursuing energy efficiency objectives, with consideration being given to program impacts on electricity use, natural gas use, greenhouse gas emission reductions, water use and waste reduction.

### 3) Collaborative Approach

This strategy involves taking a collaborative approach in pursuing energy efficiency objectives. This approach involves:

- partnering and integrating programs offered by other organizations committed to energy efficiency such as the Manitoba Government and Natural Resources Canada;
- consulting and collaborating with industry, trade allies, retailers, distributors and associations on program design and delivery;
- partnering with other utilities and organizations on joint interest projects, including R&D initiatives, code and standards changes and other activity; and
- consulting with and seeking input from interested stakeholders on Manitoba Hydro's overall Power Smart initiative.

### *4) Leveraging Non-Energy Related Benefits*

Power Smart leverages non-energy related benefits associated with energy efficiency initiatives by promoting these benefits and thereby increasing participation in these initiatives. Non-energy benefits include improved comfort, lower maintenance costs, increased productivity, reduced water consumption costs, reduced waste disposal costs, improved product quality and better work environments resulting in increased competitiveness for Manitoba businesses.

### *5) Leveraging the Power Smart & Energy Star Brand*

Power Smart recognizes that having an identifiable, trusted and positive brand image adds value to a product or service. The Power Smart Plan includes leveraging the proven strength of the Power Smart brand to increase the effectiveness of the Corporation's conservation efforts. Power Smart is positioned to mean energy efficiency, low energy rates, environmental benefits and increased system reliability.

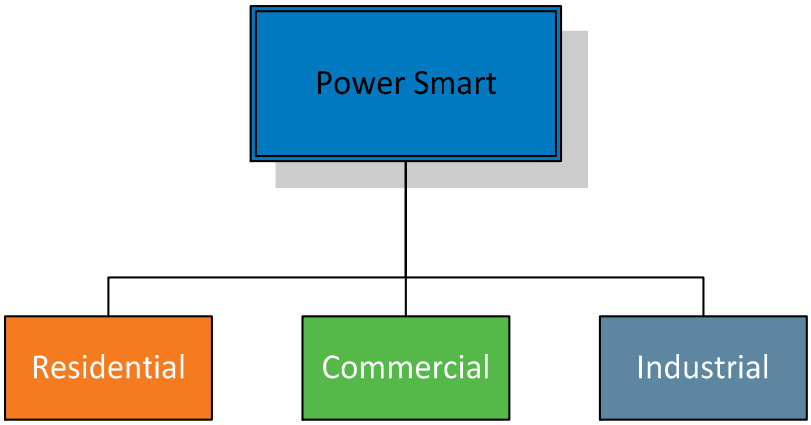
Manitoba Hydro POWER SMART

Manitoba Hydro also takes strategic advantage of local and national efforts to brand Energy Star; a labeling device identifying products with improved energy efficiency.

energy ENERGY STAR

### *6) Market Focused*

Power Smart programs and efforts are designed and delivered from a customer perspective. The strategy involves taking a multi-dimensional view where customer attributes and environments are considered from various perspectives, including customer class (e.g. residential, commercial and industrial), customer demographics (e.g. seniors) and customer drivers.




### *7) Leveraging Financial Tools – Loans, Incentives, Rates and Service Fees*

This strategy involves leveraging the financial tools available to Manitoba Hydro for the purpose of achieving energy efficiency objectives in a fair and effective manner.

- ***Loans*** – this instrument can be effective for addressing the capital or first cost barrier associated with implementing energy efficient measures and can be structured as a cost-recovery incentive tool.

- ***Incentives*** – this instrument can be an effective alternative for addressing the customer's capital or first cost barrier associated with implementing energy efficient measures.

- ***Rates*** – this instrument can be used to influence a customer's energy management decision by creating a price signal which will directly impact relative operating costs and direct costs to inefficient energy users. Applications include curtailable, energy intensive and inverted rates.

- ***Service Fees*** – this instrument can be useful in new service applications. Service fees can be designed to create a price signal that will encourage customers to incorporate energy efficiency into the building design.

### *8) Supporting Industry Infrastructure*

This strategy recognizes that a key component of creating a sustainable energy efficient market is establishing a skilled and trained trade ally network and infrastructure. This strategy promotes energy efficiency education in building practices, best practices, and training for targeted groups, including homebuilders, equipment installers, engineers, architects, retailers, distributors and consumers. Sustained success also involves incorporating training into formal educational programs.

### *9) Exit Strategy: Codes and Standards*

Power Smart recognizes the importance of incorporating energy efficiency into codes and standards in creating a sustainable energy efficient future. The strategy involves:

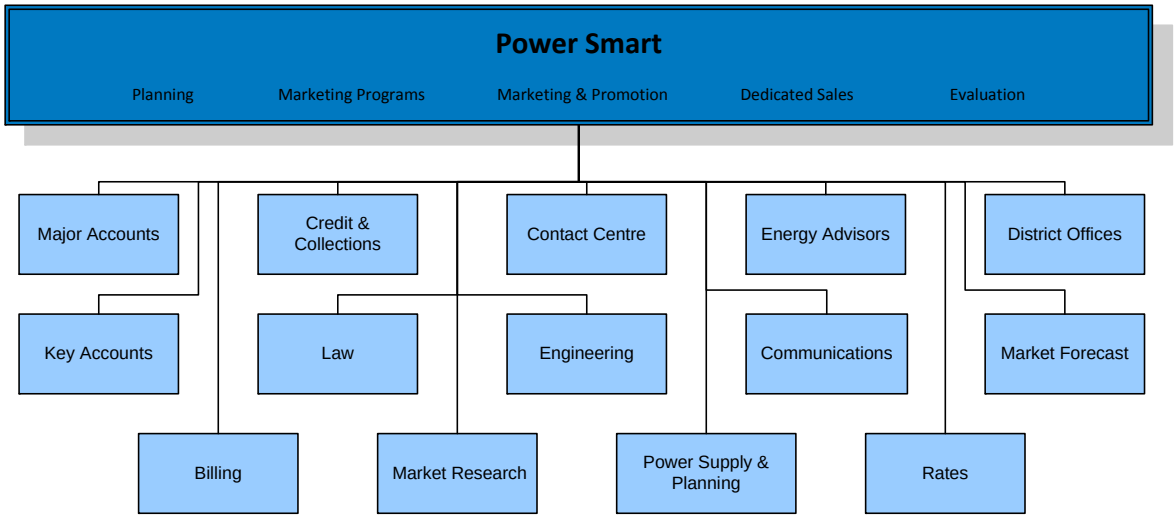
- being an aggressive and active participant and in many cases, a driving force on a number of provincial and national energy efficiency codes and standards committees; and

- working cooperatively with other utilities, energy efficiency agencies and governments in cooperation to effectively incorporate energy efficiency into codes and standards.

### *10) Promoting Innovation: Research and Development*

This strategy recognizes that new and innovative solutions to achieving energy efficiencies can be discovered through investment in research and development. This strategy also recognizes that a coordinated approach is more effective and efficient as both financial and technical resources are leveraged.

### *11) Leveraging the Corporation's Extensive Infrastructure and Broad Outreach Capabilities*




This strategy involves leveraging Manitoba Hydro's infrastructure and broad outreach capabilities to achieve greater energy efficiencies in a cost-effective manner:

- ***Outreach Efforts*** – Energy Service Advisors, Key Account Representatives, Major Account Representatives and District Representatives are located throughout the province. While their regular duties include a variety of customer service activities, a key component is to promote and sell Power Smart programs. These staff members have developed trusted business relationships with their customers, are community leaders and are trained to promote and sell Power Smart programs.

- ***Contact Centre Operations*** - The Corporation's Contact Centre receives more than 600,000 calls per year, which presents numerous opportunities to promote Power Smart programs and objectives.

- ***Technical Support & Delivery Services*** **-** Manitoba Hydro has extensive resources skilled in customer service, marketing, sales, load research, metering, rate design and engineering. These resources are all available to support Power Smart efforts.

- ***Borrowing Ability, Billing System, Credit & Collection Processing Capability*** **-** Manitoba Hydro's borrowing ability and billing system offers a convenient means for offering Manitobans financial assistance and repayment options.

- ***Demand Response Programs*** – As an electric utility, Manitoba Hydro is uniquely positioned to deliver demand response programs.

- ***Market Intelligence*** – Manitoba Hydro has developed an extensive database on customer end-use profiles and attributes. This database offers value in pursuing a variety of energy efficiency opportunities and targeted marketing efforts.

- ***Rates & Services*** – Rates offer innovative uses of financial mechanisms for achieving energy efficiency objectives through the use of an inverted rate structures and time of use rates. Similarly, services offer alternative innovative options for pursuing energy efficiency objectives through the use of pre-pay service and differential hook-up structures.

## *3.2 Principles*

The principles underlying Manitoba Hydro's DSM activity for electricity and natural gas include:

### *Reducing customer energy bills in a cost-effective and efficient manner*

This principle highlights the need to be effective and efficient in designing, delivering and evaluating DSM programs. Inherent in lowering customers bills, DSM programs themselves need to be effective and efficient, otherwise Manitobans will incur unnecessary costs associated with DSM efforts which could undermine one of the underlying principle objectives of DSM programs: reducing customer energy bills.

### *Minimizing capital spending on infrastructure*

This principle highlights the need to integrate utility facility planning with DSM program design. Through a coordinated effort, Manitobans will realize the benefits directly associated with conservation efforts and those indirectly associated with DSM efforts through reduced infrastructure expenditures.

### *Facilitating an optimal mix of energy supply and demand in Manitoba*

This principle highlights the need to undertake integrated resource planning in order to minimize the overall cost of balancing energy supply and demand in Manitoba.

### *Promoting consistency and fairness*

This principle highlights the need to balance the consistency and fairness issue across all customers impacted by DSM efforts. Impacts of DSM programs will be different for participants and non-participants depending on a number of considerations, including the customer's ability to participate. This issue also highlights the need to be considerate of cross-subsidization issues between the natural gas and electricity businesses.

### *Promoting sustainability and minimizing environmental and social impacts*

This goal highlights the need to consider environmental and social impacts. In the first case, programs need to consider environmental impacts either through qualitative or quantitative assessments. In the latter case, consideration needs to be given to social issues such as lower income Manitobans who are unable to participate because of their financial situation.

# 4 Program Evaluation Criteria

Manitoba Hydro's Power Smart programs take into account the underlying differences in the electricity and natural gas industries and the nature of the programs evaluated. Power Smart programs are assessed annually to ensure the individual programs as well as the overall portfolio of programs are cost-effective and meeting intended market transformation objectives and targets.

## 4.1 Nature of Electricity and Natural Gas Markets

The nature of the electricity and natural gas markets are similar, however unique differences exist and need to be considered in Manitoba Hydro's Power Smart initiative.

For electricity, lower consumption in Manitoba and lower utility revenue is offset by higher revenues realized by selling the conserved energy in the export market. Lower electricity consumption also defers the need to invest in new generation and transmission facilities that would be required to meet future domestic demand. Load management and certain types of demand response initiatives are also unique elements of electricity markets (e.g. short term price volatility creates opportunities for cost-effective load management and demand response initiatives). The combined effect results in an economic case for Manitoba Hydro to aggressively pursue electricity DSM in Manitoba.

With natural gas, lower consumption in Manitoba is offset by lower natural gas purchases from Alberta. In general, this is a one-to-one relationship as Manitoba Hydro passes the cost of primary natural gas through to its customers with no mark up on the commodity. Reduced natural gas consumption can also reduce or defer capital expenditures on natural gas transmission facilities. Load management opportunities are generally not available in the natural gas market as these operational issues are handled through natural gas storage facilities.

## *4.2 Program Categories*

### *a) Customer Service Programs*

Customer service programs are those programs offered as part of the overall Power Smart initiative that represent the customer service levels that would be expected of a utility. Customer service programs and services are assessed by the aggregate value realized by both the Corporation's customers and the Corporation. These assessments are undertaken on an on going basis and require a qualitative evaluation of the benefits. Service levels are then adjusted accordingly.

### *b) Cost-Recovery Programs*

Cost-recovery programs are those programs where the cost associated with the program is recovered from participating customers through fees or charges (e.g. interest rates). The cost-effectiveness of these programs is assessed annually with fees or charges adjusted accordingly.

### *c) Incentive Based Programs*

Incentive based programs are those programs where Power Smart uses a financial incentive to encourage customer participation. Assessments provide feedback on the success and cost-effectiveness of individual programs and the Power Smart portfolio. The results of these assessments drive program design and strategy modifications.

### *d) Energy Efficient Codes & Standards*

The most effective and permanent form of market transformation for energy efficient technologies and practices is the adoption of energy efficient codes and standards. However, the process of achieving these changes is complex and politically sensitive due to three factors:

1. Governance: The provincial government department responsible for energy is separate from the department responsible for building codes. Canada's national model code development process historically only engages with provinces and territories via the department responsible for building codes;
2. Applicability: Building codes are minimum requirements for health and life-safety in buildings. Energy efficiency is not viewed by the code community as a necessary minimum requirement;
3. Market Acceptance: These changes impact building design and construction, as well as industry manufacturing processes, and therefore do not always receive strong industry support.

Manitoba Hydro's strategy to affect change in codes and standards involves being an aggressive and active participant and in many cases, a driving force on a number of provincial and national energy efficiency codes and standards committees (e.g. Manitoba Hydro representatives often chair committees). The focus of Manitoba

Hydro's efforts on these committees is towards developing new energy efficient technologies, developing energy efficient codes and standards and facilitating market acceptance of new technologies and building design practices.

## *4.3 Economic Effectiveness Ratios*

Manitoba Hydro uses a number of cost effective tests to assess energy efficient opportunities, including whether to pursue an opportunity, how aggressively an opportunity will be pursued, effectiveness of program design options and the relative investment from ratepayers and participants. In addition to quantitative assessments, Manitoba Hydro also considers various qualitative factors including equity (i.e. reasonable participation by various ratepayer sectors such as lower income) and overall contribution towards having a balanced energy conservation strategy and plan.

Quantitative assessments include using the following cost effective tests:

- Marginal Resource Cost (MRC) test;
- Total Resource Cost (TRC) test;
- Rate Impact Cost (RIM) test;
- Levelized Utility Cost (LUC);
- Simple Customer Payback calculation; and
- Participating Customer (PC) test.

### *a) Marginal Resource Cost Test*

The Marginal Resource Cost (MRC) test is used as a preliminary and high level screen to assess the benefits associated with an energy efficient opportunity. This benefit/cost ratio is a simple assessment to determine whether the benefits that are associated with an energy efficient opportunity are greater than the costs. This assessment is undertaken irrespective of who realizes the benefits and who pays the costs with any economic transfers between the Corporation and the participating customer being excluded. In addition, the assessment excludes any program administration costs (e.g. program planning, design, marketing, implementation and evaluation).

In general, if an opportunity offers greater benefits relative to costs, then a program for pursuing the opportunity should be considered, however Manitoba Hydro will also consider supporting certain programs where the benefits are less than the costs. In the latter case, the rationale driving the support will be driven by other qualitative factors such as supporting emerging technologies (e.g. solar panels). The Marginal Resource Cost test is defined as follows:

$$\text{MRC} = \frac{\text{PV (Marginal Benefits)}}{\text{PV (Incremental Product Costs)}}$$

*Where:*

- *For electricity, the Marginal Benefits includes the revenue realized by Manitoba Hydro from conserved electricity being sold in the export market, the avoided cost of new infrastructure (e.g. electric transmission facilities) and measurable non-energy benefits (e.g. water savings);*

- *For natural gas, the Marginal Benefits includes Manitoba Hydro's avoided cost of purchasing natural gas, avoided transportation costs, the value of reduced greenhouse gas emissions (GHGs) and measurable non-energy benefits (e.g. water savings);*

- *Incremental Product Costs includes the total incremental cost associated with implementing an energy efficient opportunity. It is the difference in costs between the energy efficient technology and the standard technology that would have been installed in the absence of the program. Any maintenance cost differences associated with the technology options is also considered as part of the incremental cost.*

### *b) Total Resource Cost Test*

The Total Resource Cost (TRC) test is used to assess the benefits associated with an energy efficient program. This benefit/cost ratio is a detailed assessment to determine whether the benefits that are associated with an energy efficient program are greater than the costs. This assessment is undertaken irrespective of who realizes the benefits and who pays the costs with any economic transfers between the Corporation and the participating customer being excluded.

In general, if program offers greater benefits relative to costs, then a program for pursuing the opportunity should be considered, however Manitoba Hydro will also consider supporting certain programs where the benefits are less than the costs. In the latter case, the rationale driving the support will be driven by other qualitative factors such as supporting emerging technologies (e.g. solar panels) or targeting low participation market sectors (e.g. lower income). The Total Resource Cost test is defined as follows:

$$\textbf{TRC} = \frac{\textbf{PV (Marginal Benefits)}}{\textbf{PV (Total Program Admin Costs + Incremental Product Costs)}}$$

*Where:*

- *For electricity, the Marginal Benefits includes the revenue realized by Manitoba Hydro from conserved electricity being sold in the export market,*

- *For natural gas, the Marginal Benefits includes Manitoba Hydro's avoided cost of purchasing natural gas, avoided transportation costs, the value of reduced greenhouse gas emissions (GHGs) and measurable non-energy benefits (e.g. water savings);*

- *Total Program Admin Costs includes the administrative costs involved in program planning, design, marketing, implementation and evaluation. It includes all costs associated with offering the Power Smart program, except for customer incentive costs;*

- *Incremental Product Costs includes the total incremental cost associated with implementing an energy efficient opportunity. It is the difference in costs between the energy efficient technology and the standard technology that would have been installed in the absence of the program. Any maintenance cost differences associated with the technology options is also considered as part of the incremental cost.*

### *c) Rate Impact Measure Test*

The Rate Impact Measure (RIM) test is used to provide an indication of the long term directional and magnitude impact of an energy efficient program on energy rates. The test is a benefit/cost ratio that represents the economic impact of a program from the ratepayer's perspective. All program related savings and costs incurred by the utility, including revenue loss and incentive payments, are taken into account in this assessment. The Rate Impact Measure test is defined as follows:

$$\text{RIM} = \frac{\text{PV (Utility Marginal Benefits)}}{\text{PV (Revenue Loss + Utility Program Admin Costs + Incentives)}}$$

*Where:*

- *For electricity, the Utility Marginal Benefits includes the revenue realized by Manitoba Hydro from conserved electricity being sold in the export market and the avoided cost of new infrastructure (e.g. electric transmission facilities);*

- *For natural gas, the Utility Marginal Benefits includes Manitoba Hydro's avoided cost of purchasing natural gas, avoided transportation costs and the value of reduced greenhouse gas emissions (GHGs);*

- *Revenue Loss includes Manitoba Hydro's lost revenue associated with the participants' reduced energy consumption (i.e. customer energy bill reductions);*

- *Utility Program Admin Costs includes administrative costs incurred by Manitoba Hydro for staff involved in program planning, design, marketing, implementation and evaluation. It includes all costs associated with offering the Power Smart program, except for customer incentive costs;*

- *Incentives includes the funds transferred from Manitoba Hydro to the participant associated with implementing the Power Smart measure.*

### *d) Levelized Utility Cost*

The Levelized Utility Cost (LUC) test is used to provide an economic cost value for the energy saved through an energy conservation program. The LUC provides the total cost of the conserved energy on a per unit basis levelized over a fixed time period. The cost value allows for a comparison to other supply options and other DSM programs occurring over different timeframes. The Levelized Utility Cost test is defined as follows:

$$\text{LUC} = \frac{\text{PV (Utility Program Admin Costs + Incentives)}}{\text{PV (Energy)}}$$

*Where:*

- *Utility Program Admin Costs includes administrative costs incurred by Manitoba Hydro for staff involved in program planning, design, marketing, implementation and evaluation. It includes all costs associated with offering the Power Smart program, except for customer incentive costs;*

- *Incentives includes the funds transferred from Manitoba Hydro to the participant associated with implementing the Power Smart measure;*

- *Energy includes the annual energy savings.*

### *e) Customer Payback Calculation*

The Customer Payback calculation provides the simple payback of implementing an energy efficient opportunity for customers. This value outlines the amount of time required before the customer recovers the incremental product cost. The value is useful in determining customer participation rates for energy efficient opportunities. The Customer Payback is defined as follows:

$$\text{Customer Payback} = \frac{\text{Participant Costs - Incentives}}{\text{Annual Bill Reductions}}$$

*Where:*

- *Participant Costs includes the participant's total incremental cost associated with implementing the energy efficient opportunity, which is the difference in costs between the energy efficient technology and the standard technology that would have been installed in the absence of the program. Any maintenance cost differences associated with the technology options is also considered as part of the incremental cost ;*

- *Incentives includes funds provided by Manitoba Hydro and external parties to the participant associated with implementing the energy efficient opportunity.*

- *Annual Bill Reductions include the dollar reductions in the customer's electricity, natural gas, and water bills.*

### *f) Participating Customer Test*

The Participating Customer (PC) test measures quantifiable benefits and costs associated with an energy efficient opportunity from a "typical" participating customer's perspective. Similar to the Customer Payback, the value is useful in determining customer participation rates for energy efficient opportunities. The Participating Customer test is defined as follows:

$$\text{PC} = \frac{\text{PV (Customer Bill Reductions + Incentives)}}{\text{PV (Participant Costs)}}$$

*Where:*

- *Customer Bill Reductions includes the reduction in customer bills as a result of installing the energy efficient measure. This includes the dollar reduction in the customer's electricity, natural gas, and water bills.*

- *Incentives includes funds provided by Manitoba Hydro and external parties to the participant associated with implementing the energy efficient opportunity.*

- *Participant Costs includes the participant's total incremental cost associated with implementing the energy efficient opportunity. It is the difference in costs between the energy efficient technology and the standard technology that would have been installed in the absence of the program. Any maintenance cost differences associated with the technology options is also considered as part of the incremental cost.*

## 4.4 Other DSM Program Assumptions

### Market Transformation

Market transformation is a strategic intervention to achieve a lasting, significant share of energy efficient products and services in targeted markets. Manitoba Hydro's Power Smart strategy focuses on creating a sustainable market change where energy efficient technologies and practices become the market standard.

However, market transformation is difficult to measure. Manitoba Hydro has made significant progress in developing specific methodologies for measuring its impacts. Wherever possible, Manitoba Hydro has attempted to obtain sales/technology specific data to calculate a program's true effect. Difficulties arise in 1) obtaining sales data for areas outside of Manitoba for comparison purposes and in 2) obtaining sales information for Manitoba that fall outside of Power Smart program participation. In some instances, qualitative information is used to determine a program's impact on the market. Manitoba Hydro plans to continue work to further quantify and report on the influence of market transformation within the Manitoba marketplace.

For the 2009 Long Range Plan, the DSM programs that have assumed a future level of market transformation have been noted.

### Participant Reinvestment

Participant reinvestment is a marketing assumption which measures the program's influence on a participant's decision to repurchasing the energy efficient technology once the initial product life of the energy efficient technology has ended.

For the 2009 Long Range Plan, the DSM programs that have assumed a future level of participant reinvestment have been noted.

### Interactive Effects

Interactive effects are related to the impacts of implementing certain electric efficiency opportunities. As a consequence of implementing a more efficient technology, less heat is also produced. The interactive effect refers to the offsetting need to supplement heat as a result of implementing the energy efficient technology. For example, a CFL emits less heat than a traditional incandescent light bulb; therefore it will take more natural gas to heat the area after the CFL is installed. With the creation of natural gas DSM, electric DSM programs are required to quantify increases in natural gas usage due to interactive effects.

For the 2009 Long Range Plan, electric DSM programs with natural gas interactive effects have been noted.

# 5 Evaluating Power Smart Success

Manitoba Hydro's POWER SMART initiative continues to be successful with the POWER SMART brand maintaining strong market awareness, offering a comprehensive portfolio of programs, meeting overall conservation targets cost-effectively, integrating natural gas into a number of the programs and reduced greenhouse gas emissions.

## 5.1 Brand Awareness

The Power Smart brand is well established in Manitoba with (as of January 2009):

- 94% of all Manitoba Hydro customers being aware of the Manitoba Hydro Power Smart brand;
- 88% of all Manitoba Hydro customers believing Power Smart encourages or strongly encourages energy efficiency;
- 77% of all Manitoba Hydro customers agree or strongly agree Power Smart helps customers save money on their energy bills;
- 79% of all Manitoba Hydro customers agree or strongly agree Power Smart programs help conserve the environment; and
- 73% of all Manitoba Hydro customers agree or strongly agree Power Smart programs mean there will be electricity available for Manitobans in the future.

## 5.2 Meeting Overall Electric Targets

Power Smart *incentive based* programs (includes incentive based efficiency and incentive based customer self-generation) continue to be very successful with results meeting overall targets established in the 2006 Power Smart Plan. As of the end of 2007/08, these programs have achieved an estimated load reduction of 989 GW.h and 394 MW.

Actual cumulative energy savings of 989 GW.h is 13% above the savings expected to be achieved by the end of 2007/08. The actual peak load reduction cumulative to 2007/08 of 394 MW (at generation) is 12% below the savings expected to be achieved by the end of 2007/08. The 394 MW of peak load reduction includes 16 MW of savings from customer self-generation, 179 MW of savings from energy efficiency programs, and 199 MW of savings from the Curtailable Rates Program.

The most effective and permanent form of market transformation of energy efficient technologies and practices is the adoption of energy efficient codes and standards. However, the process of achieving these changes is complex and politically sensitive. Manitoba Hydro's strategy to effect change on codes and standards involves being an

aggressive and active participant and in many cases, a driving force on a number of provincial and national energy efficiency codes and standards committees. The focus of Manitoba Hydro's efforts on these committees is toward developing energy efficient technologies, developing energy efficient standards and facilitating market acceptance.

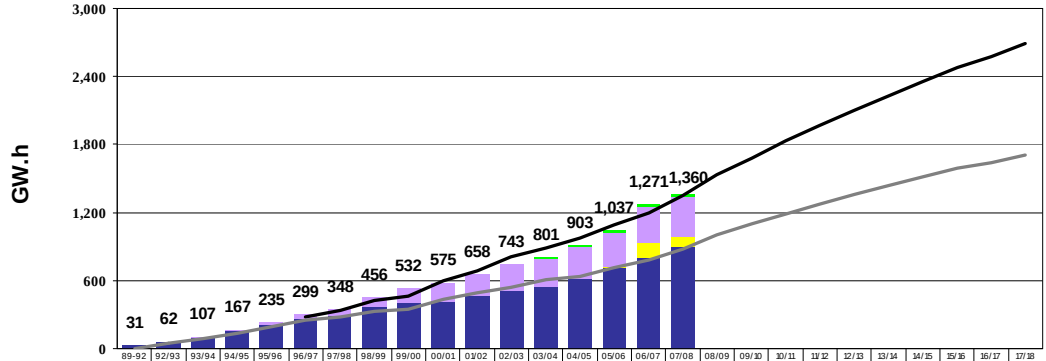
Since there are many participants (utilities, governments, manufacturers, environmental groups, etc.) contributing to the formation of energy efficiency standards, it is difficult to allocate specific credit for energy and demand savings among the various participants. For this reason, Manitoba Hydro only reports the estimated load reductions resulting from changes to energy efficiency codes and standards. Overall by 2007/08, an additional load reduction of 352 GW.h and 89 MW is estimated to have occurred as a result of changes to energy efficiency codes and standards.

The following two graphs display energy and demand savings achieved through to 2007/08 compared to the targeted savings.

**Electric Energy Savings - Power Smart Portfolio**

Total Savings Achieved vs. Plan

*at generation*

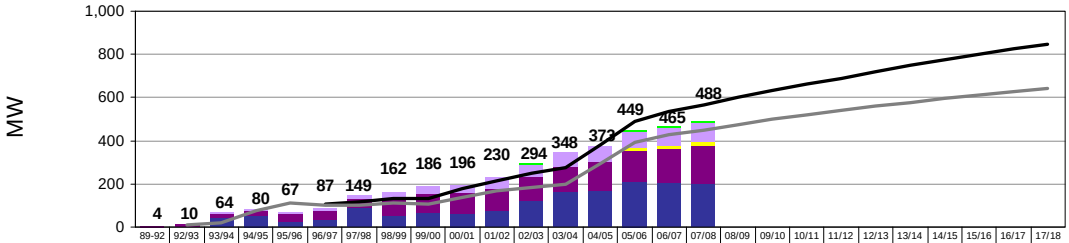



| | 89-92 | 92/93 | 93/94 | 94/95 | 95/96 | 96/97 | 97/98 | 98/99 | 99/00 | 00/01 | 01/02 | 02/03 | 03/04 | 04/05 | 05/06 | 06/07 | 07/08 | 08/09 | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Customer Service Initiatives | | | | | | | | | | | 2 | 4 | 7 | 11 | 13 | 16 | 20 | | | | | | | | | | |
| Codes and Standards | - | 2 | 8 | 16 | 25 | 40 | 63 | 93 | 125 | 156 | 189 | 228 | 248 | 274 | 298 | 323 | 352 | | | | | | | | | | |
| Incentive-based - Customer Self Gen | | | | | | | | | | | | | | | 11 | 132 | 93 | | | | | | | | | | |
| Incentive-based - Efficiency | 31 | 59 | 99 | 151 | 209 | 259 | 285 | 363 | 407 | 419 | 467 | 511 | 546 | 619 | 714 | 800 | 896 | | | | | | | | | | |
| Total Achieved | 31 | 62 | 107 | 167 | 235 | 299 | 348 | 456 | 532 | 575 | 658 | 743 | 801 | 903 | 1,037 | 1,271 | 1,360 | | | | | | | | | | |
| Plan (incentive-based programs only) | - | 50 | 86 | 138 | 195 | 252 | 279 | 327 | 350 | 435 | 491 | 544 | 603 | 634 | 713 | 782 | 879 | 1,002 | 1,098 | 1,191 | 1,274 | 1,358 | 1,438 | 1,514 | 1,590 | 1,638 | 1,705 |
| Plan | | | | | | 281 | 336 | 422 | 466 | 602 | 686 | 810 | 891 | 970 | 1,088 | 1,199 | 1,350 | 1,530 | 1,680 | 1,828 | 1,964 | 2,099 | 2,231 | 2,357 | 2,483 | 2,580 | 2,695 |

**Average Winter Demand Savings - Power Smart Portfolio**

Total Savings Achieved vs. Plan

*at generation*



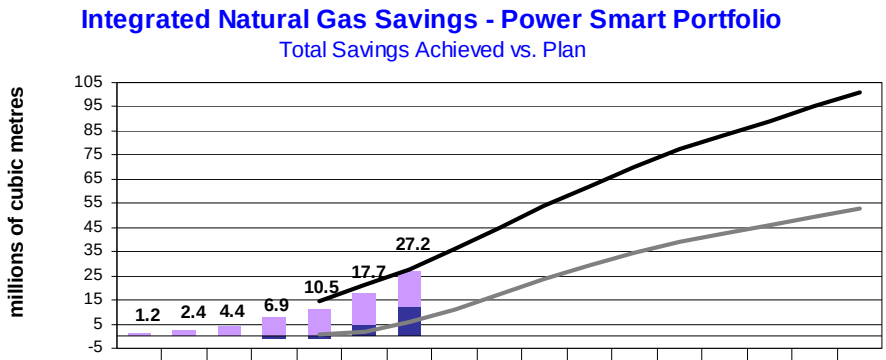

| | 89-92 | 92/93 | 93/94 | 94/95 | 95/96 | 96/97 | 97/98 | 98/99 | 99/00 | 00/01 | 01/02 | 02/03 | 03/04 | 04/05 | 05/06 | 06/07 | 07/08 | 08/09 | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Customer Service Initiatives | | | | | | | | | | | 1 | 1 | 2 | 3 | 3 | 4 | 6 | | | | | | | | | | |
| Codes and Standards | - | 1 | 2 | 4 | 6 | 10 | 15 | 23 | 32 | 40 | 49 | 59 | 64 | 70 | 76 | 82 | 89 | | | | | | | | | | |
| Incentive-based - Customer Self Gen | | | | | | | | | | | | | | | 16 | 16 | 16 | | | | | | | | | | |
| Incentive-based - Efficiency | 4 | 10 | 17 | 26 | 34 | 41 | 46 | 86 | 91 | 93 | 105 | 113 | 119 | 131 | 146 | 161 | 179 | | | | | | | | | | |
| Incentive-based - Rate/Load | - | - | 45 | 51 | 27 | 36 | 88 | 53 | 64 | 63 | 75 | 121 | 163 | 169 | 208 | 202 | 199 | | | | | | | | | | |
| Total Achieved | 4 | 10 | 64 | 80 | 67 | 87 | 149 | 162 | 186 | 196 | 230 | 294 | 348 | 373 | 449 | 465 | 488 | | | | | | | | | | |
| Plan (incentive-based programs only) | | 12 | 18 | 75 | 114 | 101 | 104 | 110 | 105 | 136 | 166 | 183 | 200 | 296 | 394 | 429 | 449 | 477 | 499 | 520 | 539 | 559 | 579 | 596 | 613 | 628 | 641 |
| Plan | | | | | | 108 | 118 | 134 | 135 | 178 | 216 | 249 | 273 | 385 | 491 | 535 | 564 | 601 | 632 | 662 | 691 | 720 | 749 | 776 | 802 | 826 | 848 |

For Manitoba Hydro's electric incentive based programs, the Total Resource Cost (TRC) ratio of the energy savings achieved to the end of 2007/08 was 2.5 and the Rate Impact Measure (RIM) ratio was 1.1.

## *5.3 Natural Gas Integration*

Since purchasing Centra Gas in 1999, Manitoba Hydro has been successful in integrating natural gas into all of the Corporation's Power Smart customer service initiatives and incentive based programs. Several programs have even been designed to achieve conservation in natural gas, electricity and water consumption. Water conservation is often achieved as a by-product of efforts targeting electricity and natural gas conservation (e.g. hot water tank usage).

In fiscal year 2007/08 Manitoba Hydro saved approximately 11.9 million cubic meters of natural gas as a direct result of Power Smart incentive based efforts. Natural gas savings due to Power Smart programs since 2007 are displayed below.




| | 01/02 | 02/03 | 03/04 | 04/05 | 05/06 | 06/07 | 07/08 | 08/09 | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Customer Service Initiatives | 1.2 | 2.4 | 4.3 | 7.7 | 11.3 | 13.2 | 15.3 | | | | | | | | | | |
| Incentive-Based Integrated | 0.0 | 0.1 | 0.1 | -0.8 | -0.8 | 4.5 | 11.9 | | | | | | | | | | |
| Total Achieved | 1.2 | 2.4 | 4.4 | 6.9 | 10.5 | 17.7 | 27.2 | | | | | | | | | | |
| Integrated Plan (incentive-based programs only) | | | | | 0.8 | 1.9 | 5.7 | 11.2 | 17.4 | 23.9 | 29.1 | 34.6 | 39.3 | 42.6 | 46.0 | 49.4 | 52.8 |
| Integrated Plan | | | | | 14.8 | 21.5 | 27.9 | 36.1 | 44.9 | 54.1 | 62.1 | 70.2 | 77.3 | 83.1 | 89.1 | 95.1 | 101.1 |

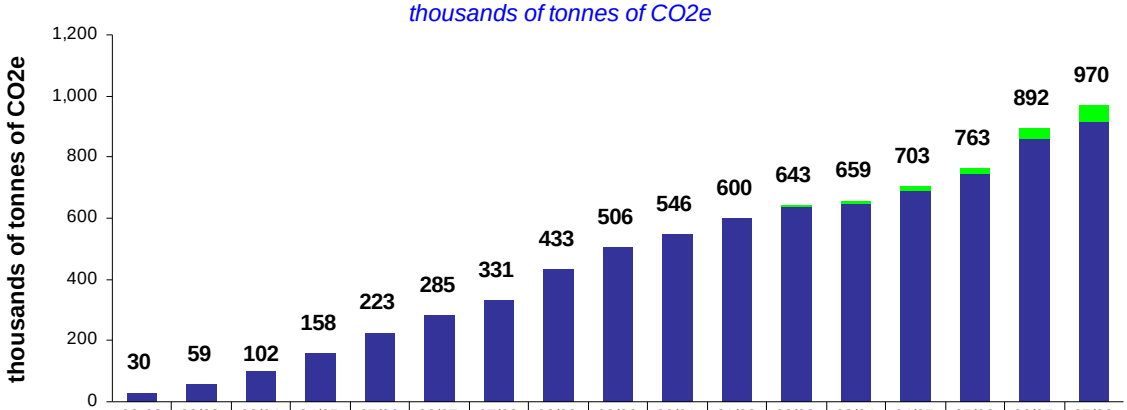
For Manitoba Hydro's natural gas incentive based programs, the Total Resource Cost (TRC) ratio of the energy savings achieved to the end of 2007/08 was 1.5 and the Rate Impact Measure (RIM) ratio was 0.7:1.

### *5.4 Greenhouse Gas Emission Reductions*

As a result of Power Smart electricity conservation efforts, the 1,360 GW.h savings achieved to date has resulted in greenhouse gas reductions of approximately 918,000 tonnes of carbon dioxide equivalent emissions in 2007/08 and a cumulative reduction of 7,783,000 since 1989. In addition, as a result of Power Smart natural gas conservation efforts, the 15.3 million cubic meters of natural gas savings achieved to date has resulted in greenhouse gas reductions of approximately 52,000 tonnes of carbon dioxide equivalent emissions in 2007/08 and a cumulative reduction of 134,000 since 1989. In total Power Smart has cumulatively reduced greenhouse gas emissions by 7,917,000 tonnes of carbon dioxide since 1989 or the equivalent to removing 2,262,034 vehicles off the road for one full year. Greenhouse gas reductions due to Power Smart program savings since 1989 are illustrated below.

## Total Annual Greenhouse Gas Emission Reductions
## Due to Electric & Natural Gas Savings

*thousands of tonnes of CO2e*




| | 89-92 | 92/93 | 93/94 | 94/95 | 95/96 | 96/97 | 97/98 | 98/99 | 99/00 | 00/01 | 01/02 | 02/03 | 03/04 | 04/05 | 05/06 | 06/07 | 07/08 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Natural Gas | | | | | | | | | | | 2 | 5 | 8 | 13 | 20 | 34 | 52 |
| Electric | 30 | 59 | 102 | 158 | 223 | 285 | 331 | 433 | 506 | 546 | 598 | 639 | 650 | 690 | 743 | 858 | 918 |
| Total | 30 | 59 | 102 | 158 | 223 | 285 | 331 | 433 | 506 | 546 | 600 | 643 | 659 | 703 | 763 | 892 | 970 |

# 6 The 2009 Power Smart Plan

Manitoba Hydro's 2009 Power Smart Plan provides a roadmap for the future direction of the Corporation's energy conservation programs. It includes a detailed plan to achieve electricity savings of 644 MW and 2,053 GW.h, natural gas savings of 137 million cubic meters and greenhouse gas emission reductions of 1,646,000 tonnes by 2024/25. The estimated cost of achieving the electricity and natural gas savings is $ 458.8 million and $134.1 million respectively.

Combined with savings achieved to date, total electrical savings of 915 MW and 3,271 GW.h, total natural gas savings of 172 million cubic meters and greenhouse gas emission reductions of 2,535,000 tonnes and are expected to be achieved in 2024/25. The estimated cost of achieving the electricity and natural gas savings is $733.3 million and $173.1 million respectively.

The plan includes:

- A detailed view of the 2009 Power Smart Residential, Commercial and Industrial portfolios. These sections will identify current program offerings, report planned targets and identify strategies for achieving electricity and natural gas savings which reflect updated information on energy efficiency opportunities available in the respective markets.

- An in-depth look at the Lower Income Energy Efficiency Program (LIEEP) designed to bring Power Smart and energy efficient measures to qualifying Manitoba lower income households. This section will identify the programs' objectives, target market, target DSM measures and delivery approach. Moreover, the section will also include a description of program incentives, funding sources and forecasted cost-effectiveness.

- A detailed view of the 2009 Power Smart Load Management and Customer Self-Generation plans. These sections will identify current program offerings, report planned targets and identify strategies for achieving electricity and natural gas savings which reflect updated information on energy efficiency opportunities available in the respective markets.

- A section outlining the additional electric and natural gas savings derived from Manitoba Hydro's on-going efforts towards impacting Energy Efficient Codes and Standards on both residential and commercial levels.

- A summary of Manitoba Hydro's Electric and Natural Gas DSM initiatives including total targeted savings and greenhouse gas emission reductions, utility investment and customer bill reductions.

- An analysis Manitoba Hydro's Other Internal Funding including the specific initiatives supported the Affordable Energy Fund and the Lower Income Natural Gas Furnace Replacement Budget, along with an overall view of Manitoba Hydro's Total Internal DSM Budget forecast and cost-effectiveness.

- An additional analysis of Power Smart programs that are supported by Other External Funding.

## 6.1 Power Smart – Residential Plan

### 6.1.1 Power Smart Residential – Programs

The existing ***Power Smart Residential Portfolio*** consists of the following programs:

### *Customer Service Initiatives and Cost-Recovery Programs*

***Home Comfort & Energy Savings Program***
The Home Comfort & Energy Savings Program encourages homeowners to make energy efficient renovations to increase comfort and reduce home heating bills. The following services are offered under this customer service program:

- ecoENERGY Program - In Home Energy Evaluation Program ^
- Power Smart Do-It-Yourself Home Assessments
  - Mail-in Energy Assessment Survey
  - Online Home Comfort & Energy Assessment
- WISE (Wisdom In Saving Energy) Program
- Existing Homes Energy Workshops
- Consumer Information Services
- Power Smart "Energy Expert"
- Power Smart Residential Loan *(Cost-Recovery program)*^

***Residential Earth Power Program ^***

The Residential Earth Power Program's primary objective is to maximize the adoption of geothermal heat pump technology to offset the use of conventional electric heating. Due to the nature of the technology, the program attempts to mitigate the market barriers of customer awareness, underdeveloped industry infrastructure and high capital costs. Mitigation of capital costs is achieved through a cost-recovery financing component - The Earth Power Loan Program. Here, Manitoba Hydro provides residential consumers the opportunity to finance a geothermal heat pump installation through the Earth Power Loan Program.

***Solar Water Heating Program ^***

The Solar Water Heating Program encourages harnessing the sun's power and transferring the energy into your home to preheat water for your water tank. Due to the nature of the technology, the program attempts to mitigate the market barriers of customer awareness and high capital costs. Mitigation of capital costs is achieved through a cost-recovery financing component - The Earth Power Loan Program.

*Note: ^ Program classified as Customer Service Initiative in Appendices.*

In addition, Manitoba Hydro also provides customers with basic information on the energy saving opportunities via the following initiatives:

- Residential Air Conditioning
- Residential Seasonal LED Program
- Standby Power

*Note: (See Appendix E.1 Program Concept)*

## *Incentive Based Programs*

***New Home Program***

The New Home Program provides customers in the residential new construction market with prescriptive Power Smart standards and incentives to implement energy savings features and construction techniques into the construction of new homes. These standards incorporate cost-effective energy upgrades to achieve maximum economically achievable opportunities of the baseline new home.

***Home Insulation Program***

The Home Insulation Program encourages existing homeowners to upgrade the insulation in their attics, walls, and foundations to Power Smart recommended levels. Informational material and financial incentives are offered to encourage customer participation in upgrade activities.

***Water and Energy Saver Program***

The Water and Energy Saver Program encourages customers to replace their existing inefficient showerheads and faucet aerators with low-flow energy efficient showerheads and faucet aerators.

***Compact Fluorescent Lighting Program***

The CFL Lighting Program encourages the replacement of residential incandescent lights with CFLs. An instant rebate program, bulk purchase program for property managers, and an educational give-away program will be used to encourage customers to adopt this technology and advance market transformation.

***Residential Appliance Program***

The Appliance Program encourages customers to buy energy efficient appliances for their homes. The ENERGY STAR symbol identifies the models that meet or exceed technical specification that is meant to ensure that they are among the most energy efficient in their class and do not compromise performance.

*Note: Incentives end on March 31, 2009. Future savings are estimated as a result of Market Transformation.*

***Lower Income Energy Efficiency Program (LIEEP)***

The Lower Income Energy Efficiency Program (LIEEP) is designed to bring Power Smart and energy efficient measures to qualifying Manitoba lower income households. The program leverages Manitoba Hydro Power Smart programs, the Affordable Energy Fund, the Natural Gas Furnace Replacement Budget, the Federal Government ecoENERGY Program, provincial government programs and existing community-based infrastructures. Energy efficiency measures include pre and post in-home energy evaluations, installation of basic energy efficiency items such as CFLs and low-flow showerheads, insulation upgrades, and natural gas furnace upgrades.

*Note: (See Section 6.1.4 Lower Income Energy Efficiency Program for detail)*

***Energy Efficient Light Fixtures Program***

The Energy Efficient Light Fixtures program encourages the replacement of residential incandescent and halogen fixtures with ENERGY STAR qualified fixtures and installation of other energy efficient devices including dimmer switches and LED night lights.

***High Efficiency Natural Gas Furnace & Boiler Program***

The High Efficiency Natural Gas Furnace & Boiler Program encourages residential customers to retrofit their current natural gas heating system to either a ≥92% AFUE ENERGY STAR qualified natural gas furnace with a DC variable speed motor or a ≥85% AFUE ENERGY STAR qualified boiler.

***Refrigerator Recycling Program***

The Refrigerator Recycling Program will provide a pick-up and recycling service for Manitoba Hydro customers to remove their old and working secondary fridges and freezers earlier than their expected end of life. This will be supported by a marketing

campaign promoting the benefits of removing the older working appliance as well as a financial incentive to encourage customers to give up their appliance. The program will be implemented through a third party service provider specializing in appliance removal and recycling.

### *6.1.2 Power Smart Residential – Targets*

The overall objective of the Power Smart Residential marketing strategy is to pursue all economic energy efficient opportunities in the residential market. This objective will be met by pursuing a residential-specific strategy that builds on Power Smart's high-level strategies to pursue conservation of electricity and natural gas and reductions in greenhouse gas emissions.

## Electricity

### *Incentive Based Programs*

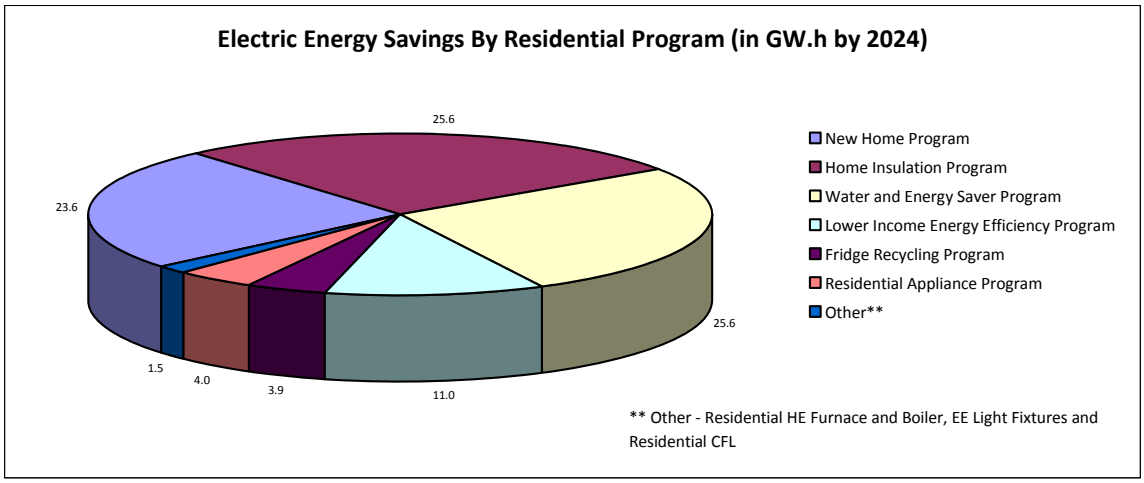
As a result of Incentive Based Programs, the 2009 Power Smart Residential Plan forecasts achieving capacity savings of 28.6 MW and energy savings of 108.5 GW.h annually by 2024/25 at a total utility investment of $33.4 million. As a result of these savings, a greenhouse gas emissions reduction of 73,264 tonnes is expected by 2024/25.

| Residential Incentive Based Programs | Energy and Demand Savings (2024/25) | | | Cumulative Utility Costs (Millions in 2009$) | Annual CO2 Reductions (Tonnes) (2024/25) |
|---|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | | |
| New Home Program | 4.2 | 0.3 | 23.6 | $1.8 | 18,183 |
| Home Insulation Program | 12.5 | 0.0 | 25.6 | $9.1 | 19,687 |
| Water and Energy Saver Program | 4.2 | 2.4 | 25.6 | $4.3 | 19,678 |
| Lower Income Energy Efficiency Program* | 2.9 | 0.0 | 11.0 | $1.4 | 8,489 |
| Residential HE Furnace & Boiler Program | 0.2 | 0.2 | 0.6 | $0.0 | 479 |
| EE Light Fixtures | 0.2 | 0.1 | 0.8 | $1.5 | 650 |
| Residential CFL Program | 0.0 | 0.0 | 0.0 | $5.0 | 0 |
| Fridge Recycling Program | 0.3 | 0.7 | 3.9 | $10.1 | 2,990 |
| Residential Appliance Program | 0.7 | 0.8 | 4.0 | $0.3 | 3,109 |
| Total (@ Meter) | 25.1 | 4.4 | 95.2 | | |
| **Total (@ Generation)** | **28.6** | **5.0** | **108.5** | **$33.4** | **73,264** |

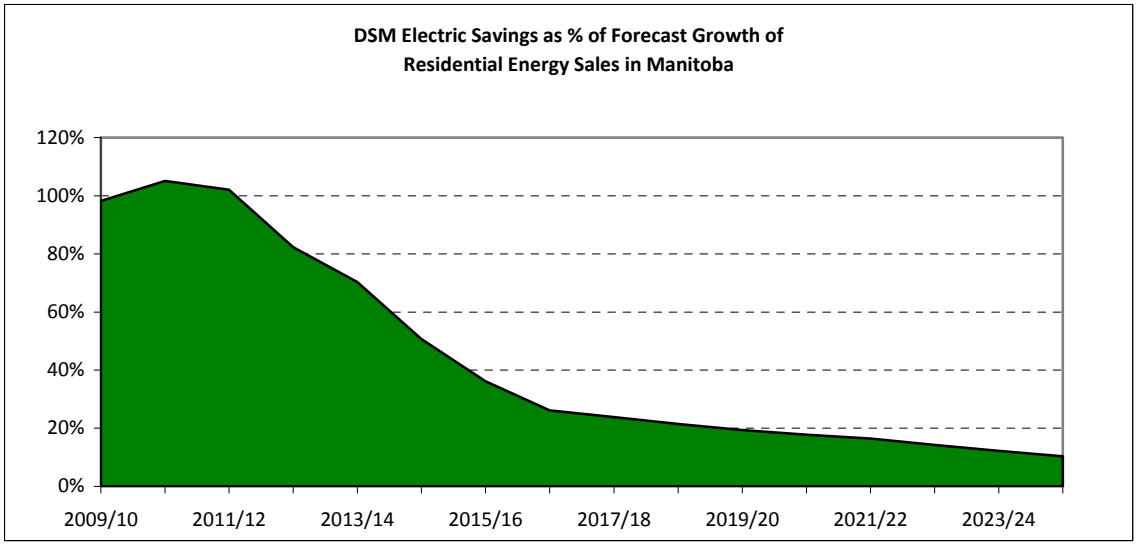
*Note:*
** Residential HE Furnace & Boiler Program - Electric savings are derived from the installation of a qualified natural gas furnace with a DC variable speed motor. Utility costs are funded by the Natural Gas budget.*

***Residential CFL Program - Due to the expected product life of the technology (ie. 4.5 years) and the short duration of incentive payments (ie. last year of rebated sales 2011/12), savings do not persist to the benchmark year of 2024/25.*

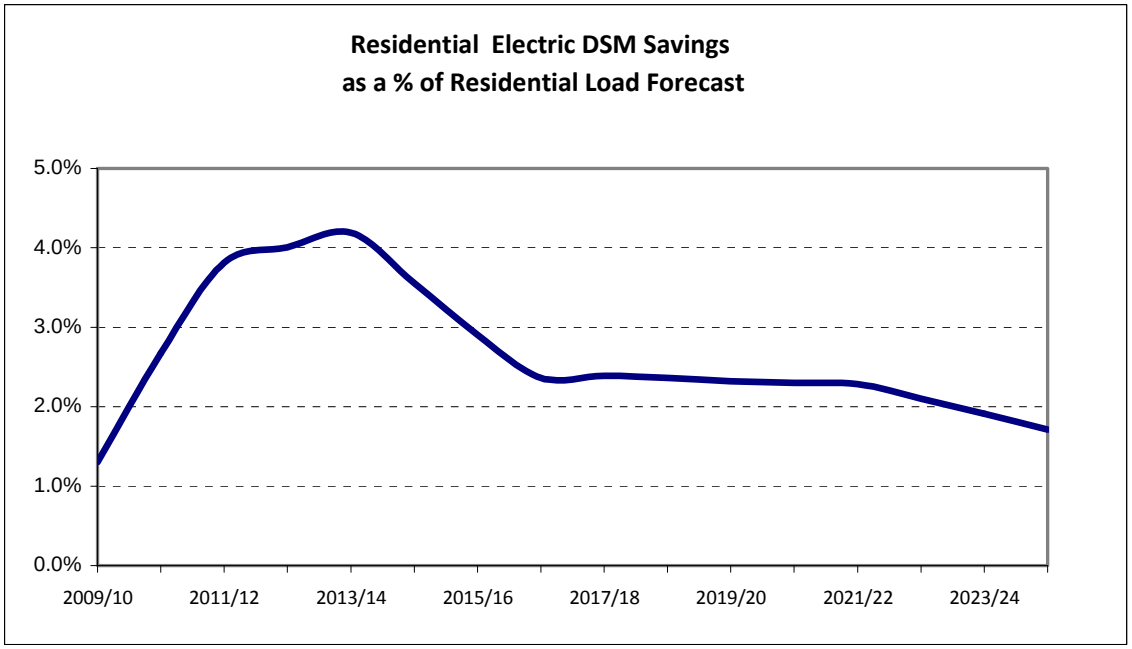
The following chart depicts electric energy savings by Residential Incentive Based program in GW.h by 2024/25:




This activity represents approximately 10% of the forecasted growth in energy use for the residential sector at the benchmark year.



This activity represents approximately 1.7% of the residential load forecast at the benchmark year.




### *Customer Service Initiatives / Cost-Recovery Programs*

The residential forecast is further augmented by the savings expected to be achieved through residentially driven Customer Service Initiatives and Cost-Recovery Programs as shown in the table below:

| Customer Service Initiatives | Energy and Demand Savings (2024/25) | | | Cumulative Utility Costs (Millions in 2009$) | Annual CO2 Reductions (Tonnes) (2024/25) |
|---|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | | |
| Power Smart Residential Loan Program | 5.4 | n/a | 10.2 | $.0 | 7,880 |
| ecoEnergy | 0.0 | 0.0 | 0.0 | $.3 | 0 |
| Residential Earth Power Program | 4.5 | 0.2 | 16.2 | $3.2 | 12,429 |
| Solar Water Heaters | 0.0 | 0.1 | 0.3 | $.0 | 225 |
| Total (@ Meter) | 9.9 | 0.2 | 26.7 | | |
| **Total (@ Generation)** | **11.3** | **0.2** | **30.4** | **$3.5** | **20,534** |

## *Summary*

In summary, the 2009 Power Smart Residential Plan projects saving a total of 39.9 MW, 139.0 GW.h and a global greenhouse gas emission reduction of 93,797 tonnes from 2009/10 to 2024/25, at a total utility investment of $37.0 million.

Combined with savings achieved to date, total electrical savings of 61.8 MW and 235.5 GW.h and global greenhouse gas emission reductions for 158,913 tonnes by 2024/25 are expected to be achieved at a cost of $68.5 million.

| Residential Incentive Based Programs | Energy and Demand Savings (2024/25) | | | Cumulative Utility Costs (Millions in 2009$) | Annual CO2 Reductions (Tonnes) (2024/25) |
|---|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | | |
| | | | | | |
| Incentive Based Programs | 25.1 | 4.4 | 95.2 | | |
| Customer Service Initiatives | 9.9 | 0.2 | 26.7 | | |
| 2009 Power Smart Residential Plan (2009-2024) | 35.1 | 4.7 | 121.9 | | |
| Savings to Date (1989-2024) | 19.2 | 1.6 | 84.6 | | |
| Total (@ Meter) | 54.3 | 6.3 | 206.5 | | |
| Incentive Based Programs | 28.6 | 5.0 | 108.5 | $33.4 | 73,264 |
| Customer Service Initiatives | 11.3 | 0.2 | 30.4 | $3.5 | 20,534 |
| **2009 Power Smart Residential Plan (2009-2024)** | **39.9** | **5.3** | **139.0** | **$37.0** | **93,797** |
| Savings to Date (1989-2024) | 21.9 | 1.9 | 96.5 | $31.6 | 65,115 |
| **Total Savings Projected (@ Generation)** | **61.8** | **7.2** | **235.5** | **$68.5** | **158,913** |

## *Cost-Effectiveness*

This activity is cost-effective with an expected TRC ratio of 3.4 and RIM ratio of 1.2.

| Residential Incentive Based Programs | Benefit / Cost Ratios | | Levelized Utility Cost (¢/kW.h) | Participating Customer (PC) | Customer Payback (Years) |
|---|---|---|---|---|---|
| | TRC | RIM | | | |
| New Home Program | 1.9 | 1.4 | 0.6 | 1.4 | 7.6 |
| Home Insulation Program | 4.4 | 1.6 | 2.2 | 3.4 | 1.8 |
| Water and Energy Saver Program*^ | 9.6 | 1.1 | 1.3 | 10.7 | n/a |
| Lower Income Energy Efficiency Program* | 1.9 | 1.4 | 0.6 | 1.4 | 6.3 |
| Residential HE Furnace & Boiler Program | 0.8 | 1.9 | 0.0 | 0.4 | n/a |
| EE Light Fixtures^ | 1.8 | 0.7 | 5.3 | 27.1 | n/a |
| Residential CFL Program^ | 15.3 | 1.3 | 0.8 | 23.2 | n/a |
| Fridge Recycling Program | 1.6 | 0.8 | 2.5 | 2.2 | 2.7 |
| Residential Appliance Program* | 4.0 | 1.2 | 0.7 | 4.1 | 2.6 |
| **Total Residential Portfolio** | **3.4** | **1.2** | **1.4** | **3.2** | **1.7** |

*Note:*

** TRC, Customer Payback and PC ratios include water saving benefits.*

*^ Program with low or nil net customer costs.*

## Natural Gas

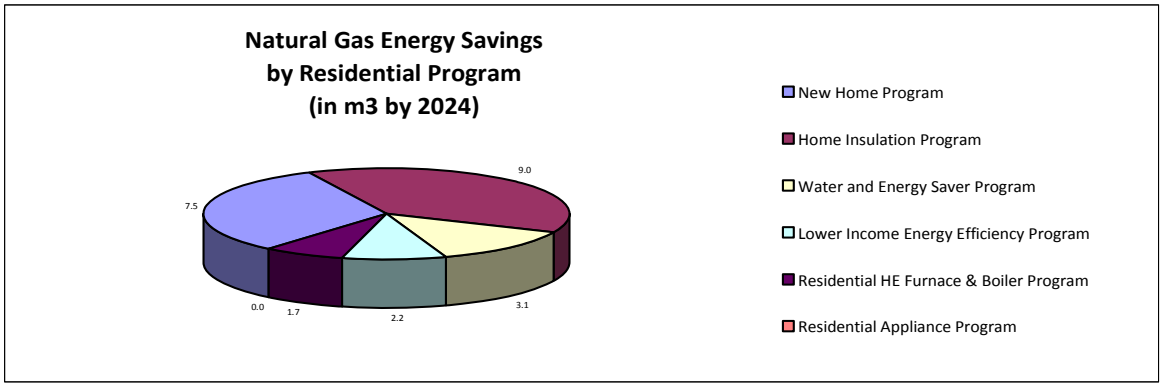
### *Incentive Based Programs*

As a result of Incentive Based Programs, the 2009 Power Smart Residential Plan forecasts achieving natural gas savings of 23.1 million cubic meters annually by 2024/25 at a total utility investment of $30.3 million. As a result of these savings, a greenhouse gas emissions reduction of 43,868 tonnes is expected by 2024/25.

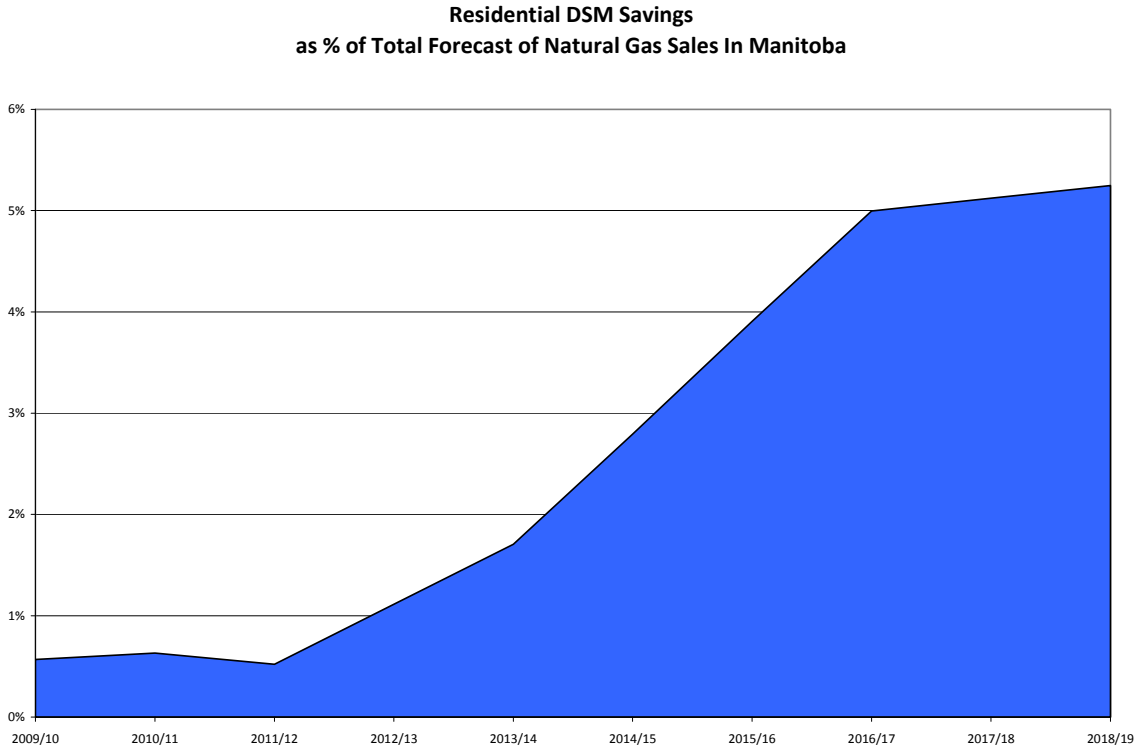
| Residential Incentive Based Programs (Natural Gas) | Annual Gas Savings (Millions m3) 2024/25 | Annual CO2 Reductions (Tonnes) 2024/25 | Cumulative Utility Costs (Millions in 2009$) |
|---|---|---|---|
| | | | |
| New Home Program | 7.5 | 14,281 | $0.9 |
| Home Insulation Program | 9.0 | 17,172 | $21.6 |
| Water and Energy Saver Program | 3.1 | 5,875 | $3.9 |
| Lower Income Energy Efficiency Program | 2.2 | 4,135 | $2.7 |
| Residential HE Furnace & Boiler Program | 1.7 | 3,177 | $1.1 |
| Residential Gas Total | 23.5 | 44,640 | |
| **Total (with Interactive Effects) *** | **23.1** | **43,868** | **$30.3** |

*Note:*
** Natural gas interactive effects have been accounted for in the following: 1) Residential CFL program, 2) Residential Appliance program, 3) EE Light Fixtures program, 4) Residential New Homes program and 5) Refrigerator Recycling Program.*

The following chart depicts natural gas energy savings by Residential Incentive Based program in cubic meters by 2024/25:



This activity represents approximately 5.25% of the forecasted Natural Gas Sales in Manitoba by 2018 as shown below:




### *Customer Service Initiatives / Cost-Recovery Programs*

The residential forecast is further augmented by the natural gas savings expected to be achieved through residentially driven Customer Service Initiatives and Cost-Recovery Programs as shown in the chart below:

| Customer Service Initiatives (Natural Gas) | Annual Gas Savings (Millions m3) 2024/25 | Annual CO2 Reductions (Tonnes) 2024/25 | Cumulative Utility Costs (Millions in 2009$) |
|---|---|---|---|
| | | | |
| Power Smart Residential Loan Program | 11.7 | 22,260 | $.0 |
| ecoEnergy | 0.0 | 0 | $1.0 |
| Residential Earth Power Program | 0.0 | 0 | $.0 |
| Solar Water Heaters | 0.0 | 49 | $.0 |
| **Total** | **11.7** | **22,309** | |
| **Total (with Interactive Effects)** | **11.7** | **22,309** | **$1.0** |

### *Summary*

In summary, the 2009 Power Smart Residential Plan projects saving a total of 34.8 million cubic meters and a global greenhouse gas emission reduction of 66,177 tonnes from 2009/10 to 2024/25, at a total utility investment of $31.3 million.

Combined with savings achieved to date, total natural gas savings of 63.8 million cubic meters and global greenhouse gas emission reductions of 121,373 tonnes by 2024/25 are expected to be achieved at a cost of $53.9 million.

| Residential Incentive Based Programs (Natural Gas) | Energy Savings | | Cumulative Utility Costs (Millions in 2009$) |
|---|---|---|---|
| | Annual Gas Savings (million m3) | Annual CO2 Reductions (tonnes) | |
| Incentive Based Programs | 23.1 | 43,868 | $30.3 |
| Customer Service Initiatives | 11.7 | 22,309 | $1.0 |
| **2009 Power Smart Residential Plan (2009-2024)** | **34.8** | **66,177** | **$31.3** |
| Savings to Date (2001-2024) | 29.0 | **55,196** | $22.6 |
| **Total Savings Projected** | **63.8** | **121,373** | **$53.9** |

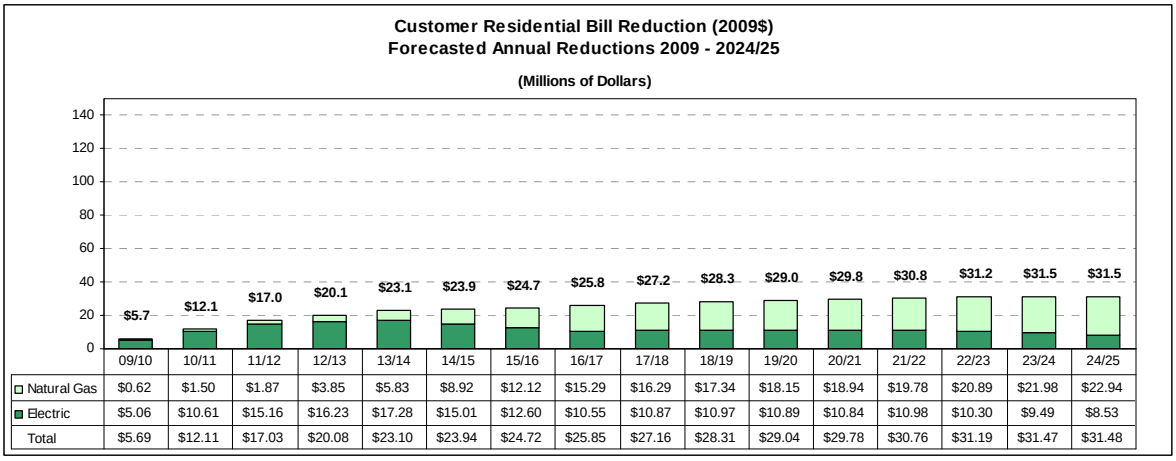
## *Cost-Effectiveness*

This activity is cost-effective with an expected TRC Ratio of 1.6 and RIM Ratio of 0.8.

| Residential Incentive Based Programs (Natural Gas) | Benefit / Cost Ratios | | Levelized Utility Cost (¢/kW.h) | Participating Customer (PC) | Customer Payback (Years) |
|---|---|---|---|---|---|
| | TRC | RIM | | | |
| New Home Program | 1.2 | 1.0 | 1.0 | 1.3 | 7.3 |
| Home Insulation Program | 1.9 | 0.7 | 17.3 | 3.4 | 1.0 |
| Water and Energy Saver Program | 6.9 | 0.7 | 11.4 | 10.0 | n/a |
| Lower Income Energy Efficiency Program | 0.8 | 0.6 | 20.2 | 1.3 | n/a |
| Residential HE Furnace & Boiler Program | 3.4 | 0.8 | 6.7 | 4.6 | 8.1 |
| **Residential Gas Total** | **1.6** | **0.8** | **11.4** | **2.3** | **0.9** |

## *Customer Bill Reductions - Electric & Natural Gas (Combined)*

The following graph depicts customer bill reductions resulting from electric and natural gas programs outlined in the 2009 Power Smart Residential Plan. Residential Power Smart programs are expected to save participating customers $31.5 million in 2024/25 and $391.7 million cumulatively by 2024.




| | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Natural Gas | $0.62 | $1.50 | $1.87 | $3.85 | $5.83 | $8.92 | $12.12 | $15.29 | $16.29 | $17.34 | $18.15 | $18.94 | $19.78 | $20.89 | $21.98 | $22.94 |
| Electric | $5.06 | $10.61 | $15.16 | $16.23 | $17.28 | $15.01 | $12.60 | $10.55 | $10.87 | $10.97 | $10.89 | $10.84 | $10.98 | $10.30 | $9.49 | $8.53 |
| Total | $5.69 | $12.11 | $17.03 | $20.08 | $23.10 | $23.94 | $24.72 | $25.85 | $27.16 | $28.31 | $29.04 | $29.78 | $30.76 | $31.19 | $31.47 | $31.48 |

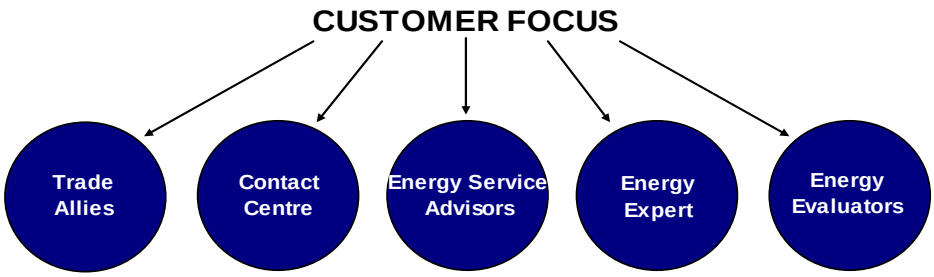
### *6.1.3 Power Smart Residential – Strategies*

#### *Market Focused*

The primary residential market segments are new homebuyers and existing homeowners. Specific marketing strategies have been developed to respond to the unique characteristics of these two segments. The primary consideration is to capture lost opportunities for savings within these two segments. It is estimated that the existing home retrofit market represents 90% of achievable energy savings, while the remaining 10% will be realized from the new home market segment. Although the size of the new home market segment is smaller than existing homes, the savings that can be achieved from this market segment are especially significant. In most cases it is easier and more cost-effective to incorporate energy efficient features into a home at the time of initial construction, and each new house that is built without energy efficient features means that it will be many years before the opportunity to incorporate these features will again present itself.

Further work will be performed to develop marketing strategies for customers with unique characteristics and needs within these two market segments, such as seniors and lower income customers.

The marketing plan for targeting these market segments will continue to use a pull strategy; to induce customers to ask their builder, contractor or retailer about Power Smart energy efficient programs and technologies. Life-cycle costing and non-energy benefits such as increased comfort will continue to be emphasized in order to demonstrate the benefits of energy efficient technologies to homeowners.




In addition to targeting homeowners who are the ultimate users and beneficiaries of energy efficient new and renovated homes, Manitoba Hydro recognizes the critical importance of the primary industry marketing channels: homebuilders, renovation contractors, building supply retailers and other retailers.

These sources can be very influential when it comes to the design and selection of materials for new homes and home renovation projects. In many instances, homeowners rely on these people to recommend or select the type of building material

or technology to install in a new or existing home, based on the homeowner's needs and budget.

The marketing plan for this group will continue to employ a push strategy, complementing the pull strategy being utilized with consumers. Marketing tactics for this group seek to induce them to adopt and promote Power Smart energy efficient measures and products to their customers. These trade allies will be made aware of the specific benefits that supplying and/or installing energy efficient technologies can bring to their business. Building strong relationships with trade allies is critical to the success of Power Smart residential programs, as trade allies are utilized as delivery agents for a number of currently promoted programs and are crucial for the delivery of future programs.

### *Integrated Approach*

Power Smart residential programs are designed to offer eligible Manitoba Hydro residential customers maximum opportunities to save energy. By participating in either one or all of the available programs, customers will be able to maximize benefits when building their new home or retrofitting their existing home. Marketing strategies for all residential programs contain an element of cross-promotion to encourage the use of multiple programs.

In the new home market, Manitoba Hydro continues to partner with Natural Resources Canada (NRCan) to deliver the R2000 and the EnerGuide for New Houses programs. The Power Smart New Home Program is integrated with these federal programs through the use of the EnerGuide for Houses rating system.

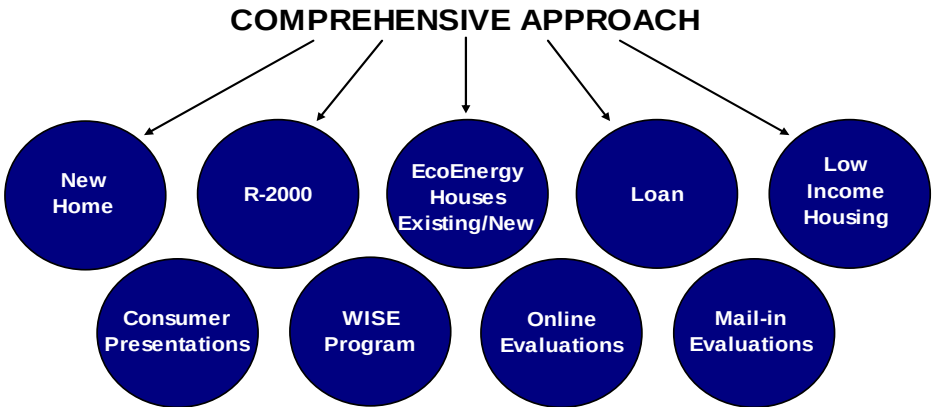
In the existing homes market, Manitoba Hydro continues to partner with NRCan to deliver the ecoENERGY Retrofit for Homes Evaluation Service. Through this partnership and by integrating Manitoba Hydro's other services, a customer may choose to have an energy evaluation to determine energy efficient retrofit opportunities, utilize the Power Smart Residential Loan to finance renovations, obtain a rebate through the various Power Smart programs available and also qualify for a Federal ecoENERGY Grant. Customers completing qualifying renovations between January 27, 2009 and February 1, 2010 are also eligible to claim the federal government's Home Renovation Tax Credit. Renovation spending between $1 000 and $10 000 is eligible for a 15% tax credit on the customer's federal income tax.

### *Comprehensive & Technology Specific Approach*

Manitoba Hydro offers both comprehensive and technology-specific programs to residential customers.

Comprehensive programs advocate the "house as a system" approach to building a new home or renovating an existing home, in order to educate customers regarding the potential effects of changing a single feature of their new or existing home without assessing the implications of such a change.

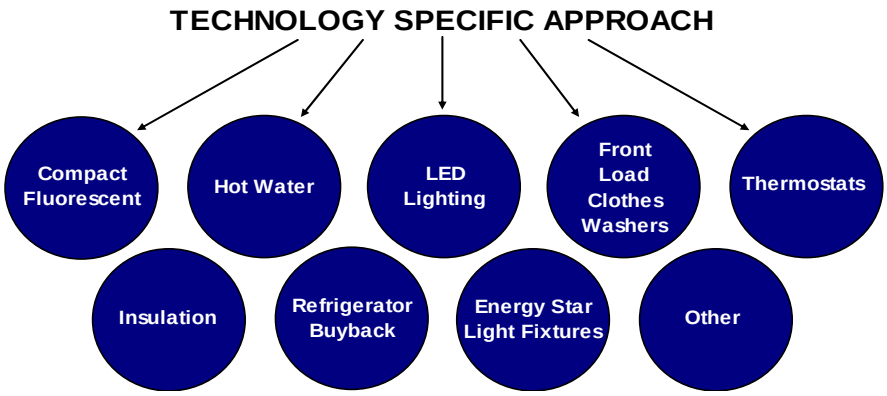
Examples of comprehensive programs for existing homes are the Power Smart Residential Loan and the ecoENERGY In-Home Energy Evaluation Program. Manitoba Hydro will continue to subsidize the costs of the In-Home Energy Evaluation Program in order to encourage customers to take the first step to improving the energy efficiency of their home – identifying their energy usage and retrofit priorities. Also, as a customer service initiative, Manitoba Hydro will continue to offer the highly successful annual Energy Saver presentations for new home and existing home markets at no charge to Manitobans. These programs will continue to be available to all homeowners regardless of the fuel utilized to heat the home, and incorporate a complete range of energy efficient technologies. New technologies will be added as they become known and commercially viable. The Power Smart New Home Program is a comprehensive energy-efficiency program for new homes. In recognition of recent advances in the Manitoba Building Code, an updated Power Smart New Home Program design will be launched in 2009 to ensure that a Power Smart New Home remains on the leading edge of energy efficiency as compared to baseline home construction.




Technology-specific programs supplement the existing comprehensive programs by providing additional technical and/or financial assistance to residential customers to further encourage the use of energy efficient techniques and products identified as having significant energy savings.

Manitoba Hydro currently offers the Power Smart Home Insulation Program, the Power Smart High Efficiency Natural Gas Furnace/Boiler Replacement Program, the Power Smart Compact Fluorescent Lighting Program and the Power Smart Energy Efficient Light Fixtures Program under the technology specific approach. Residential energy efficient technologies identified in the 2003 DSM Market Potential Study are currently

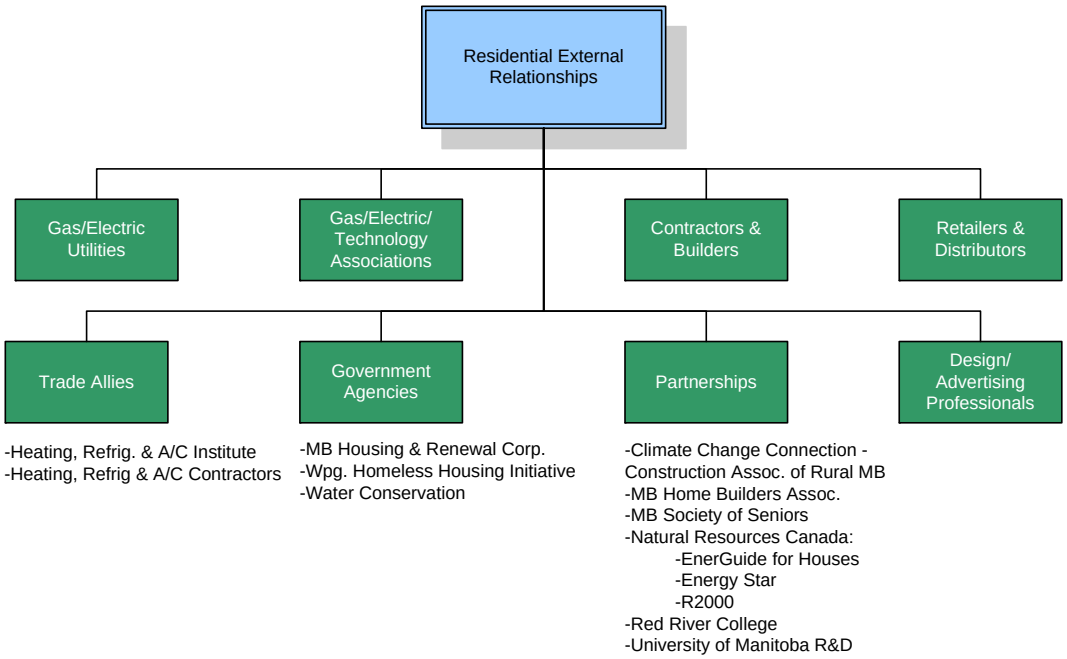
being evaluated to determine specific technologies to be incorporated into future programs. Technologies expected to be addressed in future programs include water heating and retirement of inefficient refrigerators.




### *Collaborative Approach*

Manitoba Hydro currently partners with NRCan to deliver the R2000, EnerGuide for New Houses and ecoENERGY Retrofit for Homes programs. Manitoba Hydro also collaborates with NRCan to promote initiatives such as Energy Star technologies and intends to continue this relationship with these programs and new initiatives in the future. Manitoba Hydro has partnered with the Province of Manitoba Water Stewardship to educate consumers about the benefits of water-saving technologies, to offer financing under the Power Smart Residential Loan for water-saving toilets and to administer Provincial rebates for dual flush toilets installed by homeowners in conjunction with the ecoENERGY in-home evaluation program. Manitoba Hydro will continue to investigate incorporating water conservation technologies and products into Power Smart programs, where applicable. Manitoba Hydro has also developed a relationship with the Natural Resources Institute, University of Manitoba to support ongoing housing research.

All Manitoba Hydro residential program design phases include a component to solicit input from industry stakeholders including the Manitoba Home Builder's Association, the Construction Association of Rural Manitoba, technology manufacturers and community groups where applicable. Programs are also reviewed on an annual basis in order to ensure that they meet the needs of stakeholders and targeted markets. This approach has been extremely effective in developing past programs and will continue to be used in all future designs. Manitoba Hydro also benefits from relationships with utilities across Canada through the DSM Alliance, participating in space heating task force, water heating task force, Standby Power committee, appliance forum, Strategic Lighting Initiative Committee and other national initiatives.




### *Leveraging Non-Energy Benefits*

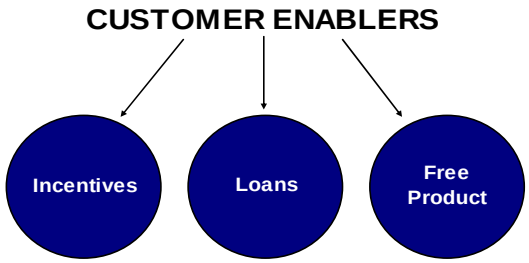
Manitoba Hydro will continue to emphasize home comfort as the primary non-energy benefit to customers who increase the energy efficiency of their homes. Program promotion will continue to include information on the benefits of energy efficient products including reducing drafts, increased home resale value, reducing entry of exterior noise, increasing indoor air quality and maintaining healthy living environments. While energy savings translate into dollar savings for residential customers, benefits to the environment achieved through energy conservation will also continue to be communicated.

### *Leveraging the Power Smart and Energy Star Brand*

Manitoba Hydro promotes Energy Star technologies as being Power Smart where appropriate. The bringing together of the Energy Star and Power Smart brands results in the ability to communicate energy efficiency messages to a larger portion of the residential market, as there are customers who are familiar with Power Smart but not Energy Star, and vice versa. To avoid confusion in the marketplace, Energy Star is promoted and positioned to consumers with the slogan “Be Power Smart, Choose Energy Star Products”. The linking of these two brands allows Manitoba Hydro to benefit from Energy Star promotional activities undertaken by external parties, such as the federal government and retail chains.

### *Leveraging Financial Tools*

The use of financial tools such as incentives is a powerful enabler that allows Manitoba Hydro to encourage residential customers to purchase and/or install energy efficient products and technologies. Financial incentives and low-interest loans address the most common market barrier to customer participation, the lack of available capital to purchase energy efficient products that are typically more expensive than their non-energy efficient counterparts.




Manitoba Hydro will continue to promote Power Smart financing to homeowners for energy efficient improvements and where appropriate, will continue to use incentives and grants to encourage adoption of energy efficient technologies.

### *Supporting Industry Infrastructure*

Manitoba Hydro currently provides technical expertise to homebuilders, renovators and retailers through technical training sessions and presentations.

As the delivery agent for R2000 and EnerGuide for New Homes and through the Power Smart New Home Program, Manitoba Hydro will continue to provide technical training and technical update sessions on an annual basis to ensure that homebuilders are well informed of energy efficient building techniques and technologies. In addition, Manitoba Hydro will continue to partner with associations such as the International Ground Source Heat Pump Association (IGSHPA) and the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) to support the development of the geothermal heat pump industry in Manitoba. Currently, demand for heat pump installations is greater than the availability of qualified heat pump installers. Through course subsidies and promoting the technology to heating and ventilation contractors in addition to consumers, supply availability will increase along with demand.

Manitoba Hydro will also continue to provide information sessions to industry associations, retailers and renovation contractors regarding the benefits of energy efficient technologies, and promote the benefits of selling and installing energy efficient technologies.

### *Exit Strategy – Codes and Standards*

Manitoba Hydro, through Power Smart programs, will continue to seek industry and market acceptance and adoption of increased energy efficiency standards for houses and equipment. Manitoba Hydro will continue to work with federal, provincial, and local agencies to recommend and support the adoption of energy efficient codes and standards on a proactive basis.

Examples of committees on which Manitoba Hydro is currently an active participant and will continue to be so are: Energy Management Task Force, Steering Committee on Performance, Energy Efficiency and Renewables (SCOPEER), Illuminating Engineering Society of America, International Ground Source Heat Pump Association, Manitoba Building Standards Board, American Society of Heating Refrigeration and Air Conditioning Engineers, Canadian Electrical Association.

### *Creating Future Opportunities – R & D*

Manitoba Hydro's Power Smart Residential Group is sponsoring and/or participating in a number of research and development projects, both through the Manitoba Hydro Research and Development Board, and through other partners.

Manitoba Hydro will continue to initiate, participate in and support research and development activities related to residential energy efficient products and installation methods and utilize the findings of such studies to determine the most effective program offerings to address market needs.

### *Leveraging the Corporation's Extensive Infrastructure and Broad Outreach Capabilities*

Power Smart's residential programs have been able to take advantage of Manitoba Hydro's outreach capabilities in a number of ways. The advent of the internet has allowed the communication of program information and the offering of programs via the corporate web site. Today, a customer can find information on any Power Smart residential program on the website, can utilize the Home Energy Calculator to obtain information on the energy usage of their home, can fill out an on-line in-home assessment form or email the Power Smart Energy Expert to gain answers to energy-related questions. Trade allies offering the Power Smart Residential Loan are able to submit customer applications online and receive immediate application approvals. As internet technology advances further, Manitoba Hydro will utilize this technology to promote, deliver and increase participation in existing and future programs.

Manitoba Hydro's Contact Centre personnel, Energy Service Advisors, District personnel and ecoENERGY Evaluators throughout the province are the primary "front line" points of contact for residential customers to learn about and obtain information on Power Smart programs. District offices are utilized as distribution points for additional energy efficiency information and as specific promotional campaign outlets. Manitoba Hydro

will continue to build upon this community presence to promote energy efficient products and services.

### *6.1.4 Lower Income Energy Efficiency Program*

The following section provides an in-depth view of the Lower Income Energy Efficiency Program.

#### *Program Objective*

The Lower Income Energy Efficiency Program (LIEEP) is designed to bring Power Smart and energy efficient measures to qualifying Manitoba lower income households.

Qualified lower income households are eligible for energy efficient retrofits that will:

- save energy;
- lower energy bills; and
- improve home comfort.

The program takes a comprehensive and broad-based approach to achieving energy savings and assisting lower income consumers by leveraging existing Power Smart programs, Manitoba Hydro's internal Affordable Energy Fund and Furnace Replacement Program, the federal ecoENERGY Program, various provincial government programs and existing community-based infrastructures.

By March 2011, the program is expected to assist an estimated 5,650 lower income households (gas and electric).

#### *Target Market/Eligibility*

The program targets lower income Manitoban homeowners and tenants. In the case of lower income tenants, participants must pay their utility bills in order to receive the benefits associated with the retrofit measures.

Non-profit social housing organizations, including Manitoba Housing Authority (MHA), are eligible to participate in the program. Currently, Manitoba Hydro is in the process of further developing the program to allow for private landlords to participate.

Targeted buildings include single-detached homes, semi-detached homes (duplex, multiplex, or townhome) and mobile/modular homes on a permanent foundation.

Eligibility guidelines are determined based on 125% of the low income levels established by the Federal Government Low Income Cut Off (LICO).

### *Targeted DSM Measures*

Energy efficiency measures include:

- an in-home pre and post energy evaluation conducted by trained energy advisors;
- installation of low- and no-cost basic energy measures such as compact fluorescent light bulbs, low-flow showerheads, faucet aerators, pipe wrap, hot water tank set back, caulking/air sealing;
- an insulation upgrade to the attic, basement, crawlspace and wall cavity; and
- incentives for high-efficiency heating system upgrade - natural gas furnaces or boiler.

### *Program Delivery*

Manitoba Hydro delivers the program through a community-based approach and through individual participation. Both approaches require pre- and post-evaluations, which serve to identify energy efficiency opportunities and verify the completion of work.

a) Community-Based Approach

The community-based approach is modeled after the Centennial and Brandon Pilot Low-Income Projects. This approach leverages existing municipal or provincial government infrastructures and community agencies, organizations and/or special interest groups. This approach involves a community organization developing a Community Energy Efficiency Business Plan and managing the program in their community. With this approach, customer contact will be primarily through the community organization.

b) Individual Approach

Manitoba Hydro works directly with the eligible lower income homeowners or landlords. The lower income customer is provided with a list of contractors that have been engaged by Manitoba Hydro to do the retrofit work. For those customers residing in areas where Manitoba Hydro has not developed a list of contractors, Manitoba Hydro will work directly with the customer and local contractor to facilitate the required upgrades.

c) First Nation Communities

Manitoba Hydro is working directly with First Nation Communities to assist them in taking advantage of energy efficiency upgrades available through the Lower Income Program.

### *Program Description and Incentives*

Incentives are available from Manitoba Hydro's Power Smart programs, the Affordable Energy Fund, Furnace Replacement Program and from the ecoENERGY Retrofit Program. In addition, organizations are encouraged to pursue support from other sources, including local organizations. The following reviews the components to the Program and how Manitoba Hydro's incentives and ecoENERGY grants will be applied towards the costs of the upgrades:

1. **In-home Energy Evaluation and Installation of Basic Energy Efficiency Items**

   **a) Home Evaluations:**

   - For owner-occupied homes, Manitoba Hydro pays the customer's portion of the ecoENERGY home audit cost.
   - For rental properties, the landlord is required to pay the customer's portion of the ecoENERGY home audit cost.

   **b) Low-Cost/No-Cost Measures:**

   - Under the community approach, the community organization implements these measures and is eligible for incentives through Manitoba Hydro's Lower Income Energy Efficiency Program which covers the cost of materials. Under the individual approach, the ecoENERGY advisor implements the measures at no cost to the customer.

2. **Insulation Upgrades (attic, basement, crawlspace and wall cavity):**

   - Under the community approach, an incentive structure has been developed which is expected to cover the cost of materials through the Manitoba Hydro incentive and the cost of labour being covered through ecoENERGY grants and other provincial training funding.
   - Under the individual approach, the cost of qualifying eligible insulation upgrades is expected to be covered (both materials and labour) through a combination of Manitoba Hydro's incentives and ecoENERGY grants.

3. **Natural Gas Standard Efficiency Furnace Upgrades:**

   - Lower income homeowners can upgrade their natural gas standard efficiency furnace to a qualified high efficiency ENERGY STAR furnace for the cost of $19 per month over five years (a total of $1,140); or upgrade their boiler to a qualified high efficiency ENERGY STAR boiler and receive a Manitoba Hydro rebate of $2,500.
   - Only landlords are eligible for the Power Smart furnace/boiler rebate of $245.

### *Community Groups*

Manitoba Hydro is currently working with BUILD (a Winnipeg neighborhood group) and Brandon Neighborhood Renewal Corporation through the community approach. In addition, Manitoba Hydro is working with several other community groups to help promote the program and provide feedback on how best to approach potential customers in their areas, including:

- Spence Neighborhood Association;
- West Broadway Renewal Corporation;
- Manitoba Urban Native Housing Association;
- Winnipeg Harvest;
- Consumers Association of Canada;
- North End Community Renewal Corporation;
- Westminster Housing Society; and
- Salvation Army.

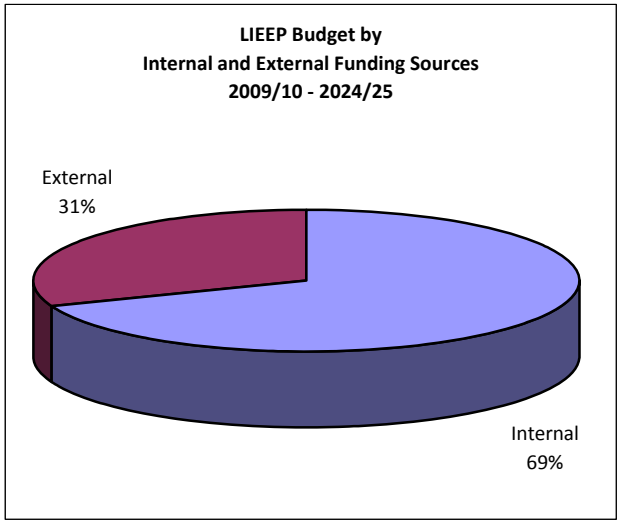
### *Budget Forecast*

The following table outlines the total projected budget for the LIEEP including all internal and external sources of funding to 2024/25 (in millions):

| | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|
| **Electric** | | | | |
| Electric Power Smart | 0.65 | 0.76 | - | 1.41 |
| Affordable Energy Fund | 3.22 | 3.49 | - | 6.71 |
| External Funding | 1.48 | 2.02 | - | 3.50 |
| **Annual Electric Budget** | **5.35** | **6.27** | **-** | **11.62** |
| **Natural Gas** | | | | |
| Natural Gas Power Smart | 1.33 | 1.34 | - | 2.67 |
| Affordable Energy Fund | 4.68 | 4.92 | - | 9.60 |
| Lower Income Furnace Replacement Budget | 2.83 | 2.45 | - | 5.27 |
| External Funding | 4.09 | 3.72 | - | 7.81 |
| **Annual Natural Gas Budget** | **12.92** | **12.43** | **-** | **25.35** |
| **Other Fuels** | | | | |
| Affordable Energy Fund | 0.65 | 0.63 | - | 1.29 |
| External Funding | 0.39 | 0.34 | - | 0.73 |
| **Annual Other Fuels Budget** | **1.04** | **0.97** | **-** | **2.01** |
| **Lower Income Annual Budget (Internal & External Funding)** | **19.3** | **19.7** | **-** | **39.0** |
| **Cumulative Budget, 2009-2024** | **$19.3** | **$39.0** | **$39.0** | **$39.0** |

The following table and chart break down the LIEEP forecasted cumulative budget by internal and external sources of funding to 2024/25.

| Funding Source | Cumulative Budget | % |
|---|---|---|
| Internal | 26.9 | 69% |
| External | 12.0 | 31% |
| **Total** | **$39.0** | **100%** |




## *Cost-Effectiveness*

This activity is cost-effective with an expected combined TRC Ratio of 1.2

| | Benefit / Cost Ratios | | Levelized Utility Cost (¢/kW.h) |
|---|---|---|---|
| | **TRC** | **RIM** | |
| **Electric** | | | |
| LIEEP *(with Power Smart, AEF & External Funding)* | **1.9** | | |
| LIEEP * | | **1.4** | **0.6** |
| LIEEP *(with AEF)* | | **1.0** | **3.7** |
| **Natural Gas** | | | |
| LIEEP *(with Power Smart, AEF, NG Operating & External Funding )* | **0.8** | | |
| LIEEP * | | **0.8** | **20.2** |
| LIEEP *(with AEF)* | | **0.5** | **44.4** |
| LIEEP *(without Furnace Replacement Program)* | 0.9 | **0.5** | **33.5** |
| LIEEP *(Furnace Replacement Program Only) ** | 0.8 | **0.3** | **92.9** |
| **Combined** | **1.2** | | |

** Without funding from the Affordable Energy Fund*

## 6.2 Power Smart – Commercial Plan

### 6.2.1 Power Smart Commercial – Programs

The existing ***Power Smart Commercial Portfolio*** consists of the following programs:

### *Incentive Based Programs*

***Commercial Lighting Program***
The Commercial Lighting Program encourages commercial customers to install cost-effective energy efficient lighting systems as well as provide assistance to lighting distributors, installers, contractors and manufacturers with helping customers save electricity.

***Custom Measures Program***
The Commercial Custom Measures Program encourages commercial customers who are renovating, undergoing expansions or building new facilities to improve system performance by installing or upgrading technologies such as direct digital controllers, variable frequency drives and heat recovery ventilation systems. The program is designed for energy efficient projects that are not included in any of the existing POWER SMART programs.

***Commercial Building Envelope - Windows and Insulation Program***
This program encourages building owners to incorporate window systems and/or insulation that meets POWER SMART levels into their renovation or new building plans and helps to reduce air leakage that leads to heat loss.

***Commercial HVAC Program - Chillers, Boilers & Furnaces***

The Commercial HVAC Program promotes the use of higher efficiency heating and cooling systems in commercial buildings such as high efficiency furnaces, near-condensing and condensing boilers, variable speed drives and energy efficient water-cooled chillers.

***Commercial Parking Lot Controller Program***

The Commercial Parking Lot Controller Program encourages commercial building and property managers to implement parking lot controller technology to effectively manage electricity usage in their parking lots.

***City of Winnipeg Agreement Power Smart Agreement***

The City of Winnipeg Power Smart Agreement (PSA) encourages, promotes and implements energy saving measures to improve the efficiency of City-owned facilities

***Commercial Rinse & Save Program***

The Commercial Rinse & Save Program offers customers who operate a restaurant or a food services business the free installation of a new low-flow pre-rinse spray valve. The old spray valve is recycled by Manitoba Hydro so that it cannot re-enter the market.

***Commercial Refrigeration Program***

The Commercial Refrigeration Program encourages retail stores and restaurants to install energy efficient refrigeration equipment for their walk-ins, display cases and mechanical rooms to reduce energy consumption and create a more comfortable environment for their customers.

***Commercial Earth Power Program***

The Commercial Earth Power Program provides information and financial incentives to customers who install a geothermal heat pump to offset a conventional electric heating system in either new construction or existing commercial buildings.

***Commercial New Construction Program***

The Commercial New Construction Program promotes the integrated design, construction and commissioning of energy efficient commercial buildings through financial incentives and promotional activities while focusing heavily on increasing the training and education levels of local industry stakeholders.

***Commercial Building Optimization Program***

The Commercial Building Optimization Program encourages commercial customers with existing buildings to use an investigation process known as “retrocommissioning” to help return their buildings to their design intent. The goal is to identify energy conservation opportunities with short payback periods.

***Internal Retrofit Program***
The Internal Retrofit Program encourages energy efficiency in Manitoba Hydro buildings by retrofitting existing and constructing new buildings to POWER SMART levels.

***Agricultural Heat Pad Program***
The Agricultural Heat Pad Program helps barns realize energy and demand savings by using energy efficient heat pads over traditional heat lamps in hog farrowing crates.

***Power Smart Energy Manager Program***
The Power Smart Energy Manager Program is designed to achieve savings by educating school divisions on the benefits of reducing their energy use through a comprehensive training program on how to identify energy savings in their facilities.

***Commercial Kitchen Appliance Program***
The Commercial Kitchen Appliance Program promotes the installation of ENERGY STAR commercial natural gas and electric steam cookers and natural gas fryers.

***Network Energy Management Program***
The Network Energy Management Program is a software-technology based program targeted at commercial customers utilizing personal computers (PCs) in a network setting.

***Power Smart Shops Program***
The Power Smart Shops Program is a designation program that promotes energy efficiency to small independent commercial customers. The program customers to fully convert their buildings to a Power Smart Shop efficiency level by providing expertise, competitive pricing and through the installation of no/low cost energy efficient products including lighting, refrigeration, hot water, and kitchen upgrades.

***Commercial CO2 Sensor Program***
The Commercial CO2 Sensor Program promotes the installation of carbon dioxide demand-controlled ventilation sensors through financial incentives and promotional activities, as well as increasing the levels of education to customers and channel intermediaries.

***Commercial Clothes Washers***
The Commercial Clothes Washer Program promotes ENERGY STAR® qualified front-loading commercial clothes washers (Washers) while raising awareness of lower operating costs and increased water savings.

In addition, Manitoba Hydro also provides commercial customers with basic information on the energy saving opportunities via the following initiatives:

- Power Smart Recreation Facility Survey
- Religious Buildings Initiatives

*Note: (See Appendix E.1 Program Concept)*

### *6.2.2 Power Smart Commercial – Targets*

The overall objective of the Power Smart Commercial marketing strategy is to pursue all economic energy efficient opportunities in the commercial market. This objective will be met by pursuing a commercial-specific strategy that builds on Power Smart's high-level strategies to pursue conservation of electricity and natural gas and reductions in greenhouse gas emissions.

## Electricity

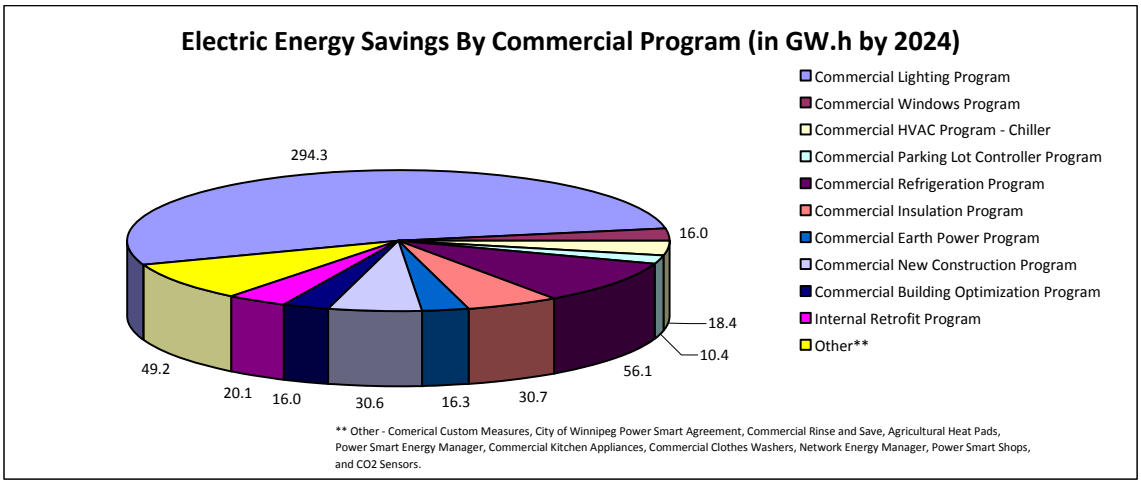
#### *Incentive Based Programs*

As a result of Incentive Based Programs, the 2009 Power Smart Commercial Plan forecasts capacity savings of 156.6 MW and energy savings of 636.3 GW.h annually by 2024/25 at a total utility investment of $154.2 million. As a result of these savings, a greenhouse gas emissions reduction of 429,494 tonnes is expected by 2024/25.

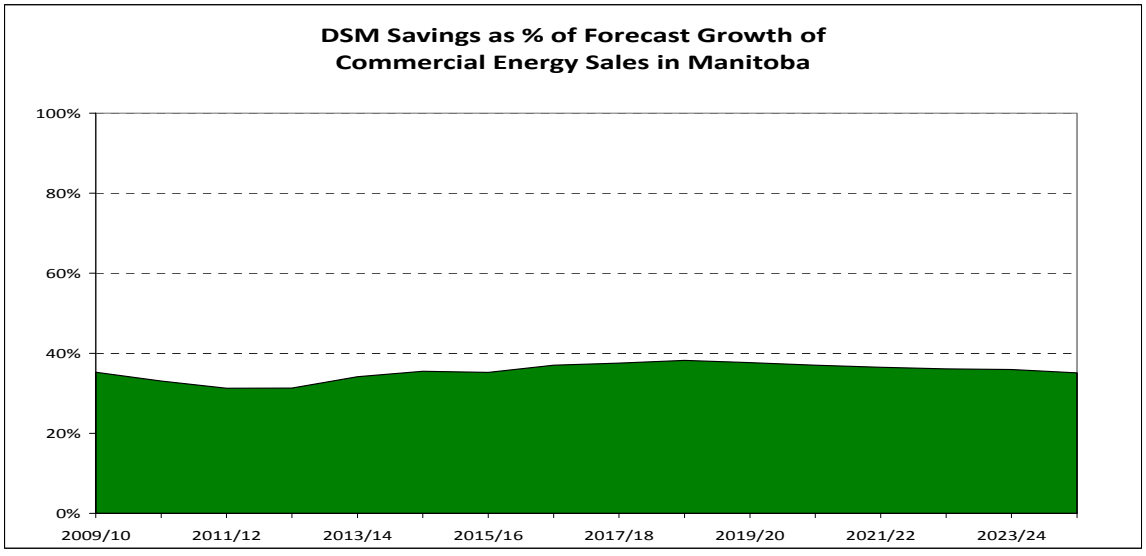
| Commercial Incentive Based Programs | Energy and Demand Savings (2024/25) | | | Cumulative Utility Costs (Millions in 2009$) | Annual CO2 Reductions (Tonnes) (2024/25) |
|---|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | | |
| Commercial Lighting Program | 75.9 | 70.5 | 294.3 | $83.6 | 226,493 |
| Commercial Custom Measures Program | 1.3 | 1.0 | 8.7 | $3.0 | 6,691 |
| Commercial Windows Program | 6.5 | 0.4 | 16.0 | $10.7 | 12,310 |
| Commercial HVAC Program - Chiller | 0.0 | 1.5 | 18.4 | $2.2 | 14,174 |
| Commercial Parking Lot Controller Program | 0.0 | 0.0 | 10.4 | $0.5 | 7,992 |
| City of Winnipeg Power Smart Agreement* | 0.0 | 0.0 | 0.0 | $0.1 | 0 |
| Commercial Rinse & Save Program** | 0.0 | 0.0 | 0.0 | $0.0 | 0 |
| Commercial Refrigeration Program | 6.3 | 5.7 | 56.1 | $4.7 | 43,205 |
| Commercial Insulation Program | 15.2 | 4.8 | 30.7 | $11.3 | 23,637 |
| Commercial Earth Power Program | 6.8 | 0.8 | 16.3 | $5.1 | 12,506 |
| Commercial New Construction Program | 5.9 | 8.7 | 30.6 | $14.6 | 23,530 |
| Commercial Building Optimization Program | 5.3 | 2.7 | 16.0 | $2.9 | 12,282 |
| Internal Retrofit Program | 7.1 | 2.9 | 20.1 | $7.1 | 15,498 |
| Agricultural Heat Pad Program | 0.7 | 0.7 | 7.2 | $0.2 | 5,521 |
| Power Smart Energy Manager Program | 0.2 | 0.1 | 3.9 | $1.1 | 3,000 |
| Commercial Kitchen Appliance Program | 1.1 | 1.1 | 3.4 | $1.2 | 2,593 |
| Commercial Clothes Washers Program | 1.9 | 1.9 | 2.5 | $0.8 | 1,911 |
| Network Energy Management Program | 2.0 | 2.0 | 12.7 | $2.3 | 9,741 |
| Power Smart Shops | 1.2 | 1.4 | 9.9 | $2.8 | 7,596 |
| CO2 Sensors | 0.0 | 0.0 | 1.1 | $0.1 | 813 |
| Total (@ Meter) | 137.3 | 106.4 | 558.1 | | |
| **Total (@ Generation)** | **156.6** | **121.3** | **636.3** | **$154.2** | **429,494** |

*Note:*
** Due to the expected product life for traffic signals (ie. 12 years) and short program life, savings do not persist to the benchmark year of 2024/25.*
***Due to the expected product life of the spray valve technology (ie. 10 years) and short program life, savings do not persist to the benchmark year of 2024/25. Cumulative utility cost in 2009 is approx. $30,000.*

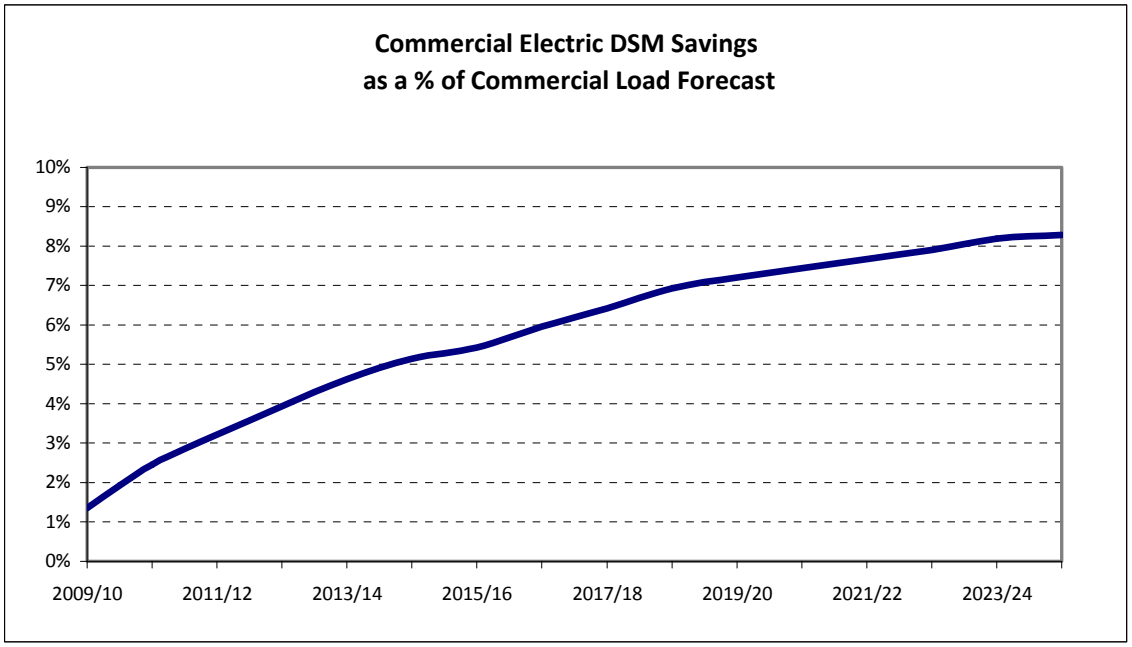
The following chart conveys the energy savings forecast to be achieved from incentive based commercial programs by 2024:




This increased activity represents approximately 34% of the forecasted growth in energy use for the commercial sector during this period.



This activity represents approximately 8.3% of the commercial load forecast at the benchmark year.




### *Summary*

In summary, the 2009 Power Smart Commercial Plan projects saving a total of 156.6 MW, 636.3 GW.h and a global greenhouse gas emission reduction of 429,494 tonnes from 2009/10 to 2024/25, at a total utility investment of $154.2 million.

Combined with savings achieved to date, total electrical savings of 238.2 MW and 1,072.9 GW.h and global greenhouse gas emission reductions for 724,175 tonnes by 2024/25 are expected to be achieved at a cost of $258.2 million.

| Commercial Incentive Based Programs | Energy and Demand Savings (2024/25) | | | Cumulative Utility Costs (Millions in 2009$) | Annual CO2 Reductions (Tonnes) 2024/25 |
|---|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | | |
| | | | | | |
| 2009 Power Smart Commercial Plan (2009-2024) | 137.3 | 106.4 | 558.1 | | |
| Savings To Date (1989-2024) | 71.6 | 61.9 | 383.0 | | |
| Total (@ Meter) | 208.9 | 168.3 | 941.1 | | |
| Incentive Based Programs | 156.6 | 121.3 | 636.3 | $154.2 | 429,494 |
| **2009 Power Smart Commercial Plan (2009-2024)** | **156.6** | **121.3** | **636.3** | **$154.2** | **429,494** |
| Savings To Date (1989-2024) | 81.6 | 70.6 | 436.6 | $104.0 | 294,681 |
| **Total Savings Projected (@ Generation)** | **238.2** | **191.9** | **1,072.9** | **$258.2** | **724,175** |

### *Cost-Effectiveness*

This activity is cost-effective with an expected TRC ratio of 2.5 and RIM ratio of 1.4.

| Commercial Incentive Based Programs | Benefit / Cost Ratios | | Levelized Utility Cost (¢/kW.h) | Participating Customer (PC) | Customer Payback (Years) |
|---|---|---|---|---|---|
| | TRC | RIM | | | |
| Commercial Lighting Program | 2.5 | 1.4 | 1.7 | 1.9 | 3.4 |
| Commercial Custom Measures Program | 2.5 | 1.2 | 2.5 | 2.5 | 3.0 |
| Commercial Windows Program | 2.3 | 1.2 | 4.5 | 3.3 | 1.6 |
| Commercial HVAC Program - Chiller | 1.7 | 1.1 | 1.0 | 1.6 | 5.1 |
| Commercial Parking Lot Controller Program | 3.7 | 1.7 | 0.5 | 2.3 | 1.2 |
| City of Winnipeg Power Smart Agreement | 8.2 | 1.5 | 1.1 | 5.9 | 0.1 |
| Commercial Rinse & Save Program*^ | 62.6 | 1.4 | 0.3 | 95.8 | n/a |
| Commercial Refrigeration Program | 5.8 | 1.4 | 0.6 | 4.8 | 2.1 |
| Commercial Insulation Program | 3.2 | 1.6 | 2.5 | 2.5 | 4.6 |
| Commercial Earth Power Program | 2.7 | 1.6 | 2.3 | 1.8 | 6.0 |
| Commercial New Construction Program | 1.5 | 1.1 | 3.2 | 1.4 | 0.0 |
| Commercial Building Optimization Program | 5.0 | 1.7 | 1.4 | 3.5 | 1.5 |
| Internal Retrofit Program | 1.1 | 1.1 | 2.2 | 1.0 | 0.0 |
| Agricultural Heat Pad Program** | 143.9 | 1.8 | 0.2 | 0.0 | n/a |
| Power Smart Energy Manager Program | 3.1 | 1.5 | 0.6 | 2.6 | 3.1 |
| Commercial Kitchen Appliance Program^ | 3.5 | 1.3 | 2.6 | 3.1 | 1.0 |
| Commercial Clothes Washers Program ^ | 2.0 | 1.6 | 3.1 | 1.5 | 4.8 |
| Network Energy Management Program | 3.5 | 1.1 | 1.4 | 3.3 | 0.1 |
| Power Smart Shops^ | 1.9 | 1.0 | 2.1 | 2.3 | 2.1 |
| CO2 Sensors | 4.9 | 1.4 | 0.7 | 4.0 | 0.0 |
| **Total Commercial Portfolio** | **2.5** | **1.4** | **1.8** | **2.0** | **2.8** |

*Note:*
** Low administrative costs coupled with additional water benefits results in a high TRC. The PC is high due to the water savings that are achieved.*
*** The TRC is high due to a low life-cycle cost and low administrative costs.*
*^ TRC, Customer Payback and PC ratios include water saving benefits.*

## Natural Gas

### *Incentive Based Programs*

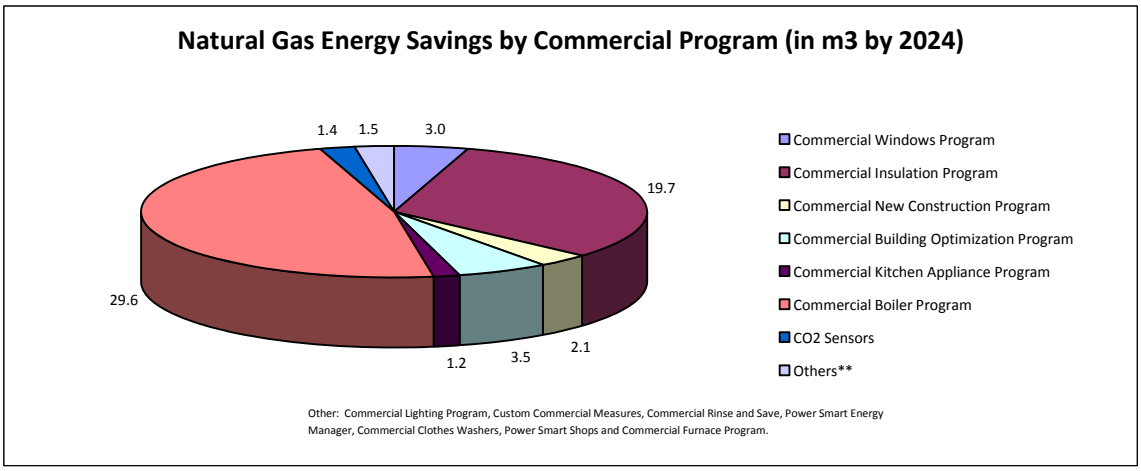
As a result of Incentive Based Programs, the 2009 Power Smart Commercial Plan forecasts achieving natural gas savings of 62.3 million cubic meters annually by 2024/25 at a total utility investment of $52.6 million. As a result of these savings, a greenhouse gas emissions reduction of 118,500 tonnes is expected by 2024/25.

| Commercial Incentive Based Programs (Natural Gas) | Annual Gas Savings (Millions m3) 2024/25 | Annual CO2 Reductions (Tonnes) 2024/25 | Cumulative Utility Costs (Millions in 2009$) |
|---|---|---|---|
| | | | |
| Commercial Custom Measures Program | 0.7 | 1,390 | $1.4 |
| Commercial Windows Program | 3.0 | 5,721 | $4.9 |
| Commercial Rinse & Save Program* | 0.0 | 0 | $0.1 |
| Commercial Insulation Program | 19.7 | 37,539 | $23.3 |
| Commercial New Construction Program | 2.1 | 4,060 | $1.6 |
| Commercial Building Optimization Program | 3.5 | 6,612 | $5.6 |
| Power Smart Energy Manager Program | 0.3 | 548 | $0.4 |
| Commercial Kitchen Appliance Program | 1.2 | 2,238 | $0.9 |
| Commercial Clothes Washers Program | 0.2 | 322 | $0.0 |
| Power Smart Shops | 0.2 | 389 | $0.1 |
| Commercial Furnace Program | 0.1 | 158 | $0.0 |
| Commercial Boiler Program | 29.6 | 56,271 | $13.2 |
| CO2 Sensors | 1.4 | 2,664 | $1.2 |
| Commercial Gas Total | **62.0** | **117,913** | |
| **Total (with Interactive Effects) **** | **62.3** | **118,500** | **$52.6** |

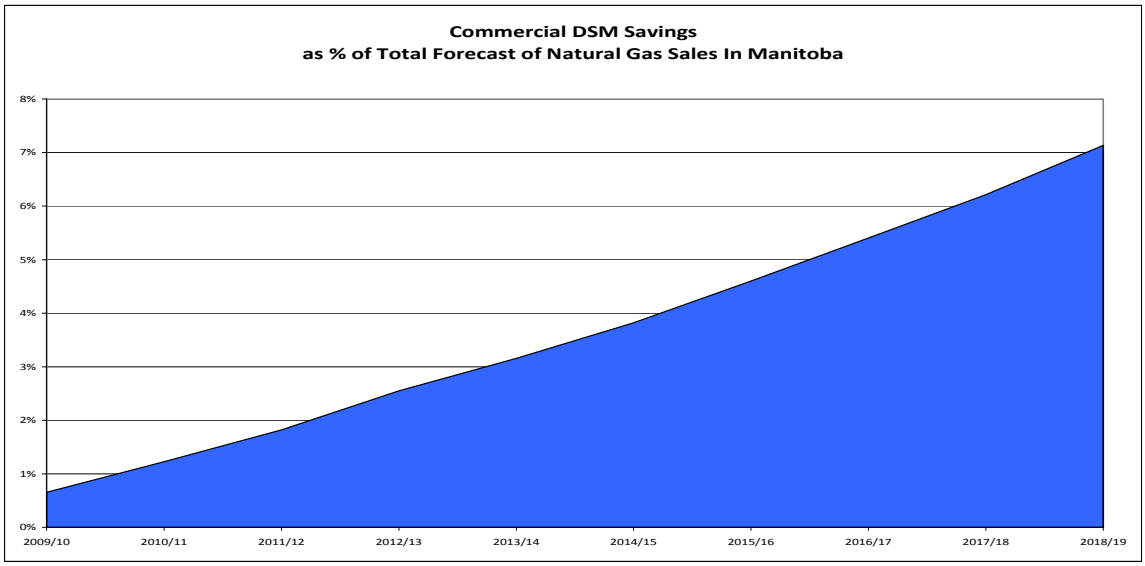
*Note:*
** Due to the expected product life of the spray valve technology (i.e. 10 years) and short program life, savings do not make the benchmark year of 2024/25.*

*** Natural gas interactive effects have been accounted for in the following: 1) Commercial Network Manager program, 2) Commercial Lighting program and 3) Power Smart Shops program. In addition, the Commercial Refrigeration program results in a net positive natural gas effects, reducing natural gas consumption by 2.36 million cubic meters (m3) by the year 2024/25.*

The following chart depicts natural gas energy savings by Commercial Incentive Based program in cubic meters by 2024/25:




This activity represents approximately 7.1% of the forecasted Natural Gas Sales in Manitoba by 2018 as shown below:



### *Summary*

In summary, the 2009 Power Smart Commercial Plan projects saving a total of 62.3 million cubic meters and a global greenhouse gas emission reduction of 118,500 tonnes from 2009/10 to 2024/25, at a total utility investment of $52.6 million.

Combined with savings achieved to date, total natural gas savings of 67.4 million cubic meters and global greenhouse gas emission reductions of 128,172 tonnes by 2024/25 are expected to be achieved at a cost of $61.3 million.

| Commercial Incentive Based Programs (Natural Gas) | Annual Gas Savings (Millions m3) 2024/25 | Annual CO2 Reductions (Tonnes) 2024/25 | Cumulative Utility Costs (Millions in 2009$) |
|---|---|---|---|
| | | | |
| Commercial Gas Total | 62.3 | 118,500 | $52.6 |
| **2009 Power Smart Commercial Plan (2009-2024)** | **62.3** | **118,500** | **$52.6** |
| Savings to Date (2001-2024) | 5.1 | 9,672 | $8.8 |
| **Total Savings Projected** | **67.4** | **128,172** | **$61.3** |

### *Cost-Effectiveness*

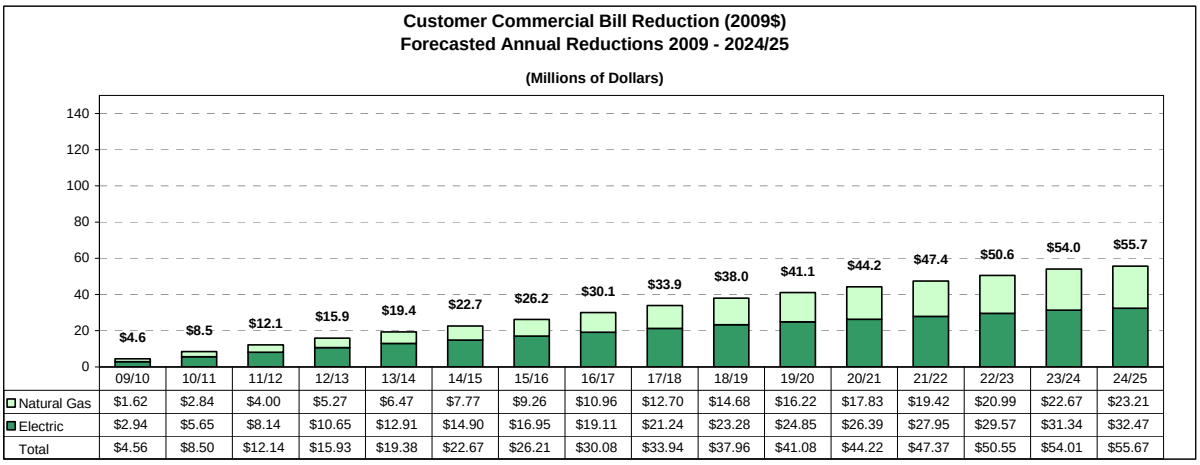
This activity is cost-effective with an expected TRC ratio of 2.0 and RIM ratio of 0.8.

| Commercial Incentive Based Programs (Natural Gas) | Benefit / Cost Ratios | | Levelized Utility Cost (¢/m3) | Participating Customer (PC) | Customer Payback (Years) |
|---|---|---|---|---|---|
| | TRC | RIM | | | |
| Commercial Custom Measures Program | 1.2 | 0.7 | 15.5 | 2.0 | 4.7 |
| Commercial Windows Program | 2.0 | 0.7 | 12.7 | 2.9 | 1.5 |
| Commercial Rinse & Save Program* | 46.6 | 0.9 | 2.6 | 102.4 | n/a |
| Commercial Insulation Program | 1.2 | 0.8 | 9.3 | 1.6 | 6.2 |
| Commercial New Construction Program | 3.2 | 0.9 | 5.7 | 4.0 | 0.0 |
| Commercial Building Optimization Program | 1.6 | 0.7 | 14.7 | 2.6 | 1.6 |
| Power Smart Energy Manager Program | 3.9 | 0.9 | 3.1 | 6.0 | 1.1 |
| Commercial Kitchen Appliance Program | 1.6 | 0.8 | 6.4 | 1.9 | 1.5 |
| Power Smart Shops | 6.1 | 0.8 | 5.4 | 19.2 | 0.0 |
| Commercial Furnace Program | 2.0 | 0.8 | 4.7 | 2.6 | 4.7 |
| Commercial Boiler Program | 3.9 | 0.9 | 4.5 | 4.7 | 0.5 |
| CO2 Sensors | 2.8 | 0.8 | 8.9 | 4.3 | 0.0 |
| **Commercial Gas Total** | **2.0** | **0.8** | **7.2** | **2.6** | **2.2** |

*Note:*
**Low administrative costs coupled with additional water benefits results in a high TRC. The PC is high due to the water savings that are achieved.*

### *Customer Bill Reductions - Electric & Natural Gas (Combined)*

The following graph depicts customer bill reductions resulting from electric and natural gas programs outlined in the 2009 Power Smart Commercial Plan. Commercial Power Smart programs are expected to save participating customers $55.7 million in 2024/25 and $504.2 million cumulatively by 2024.

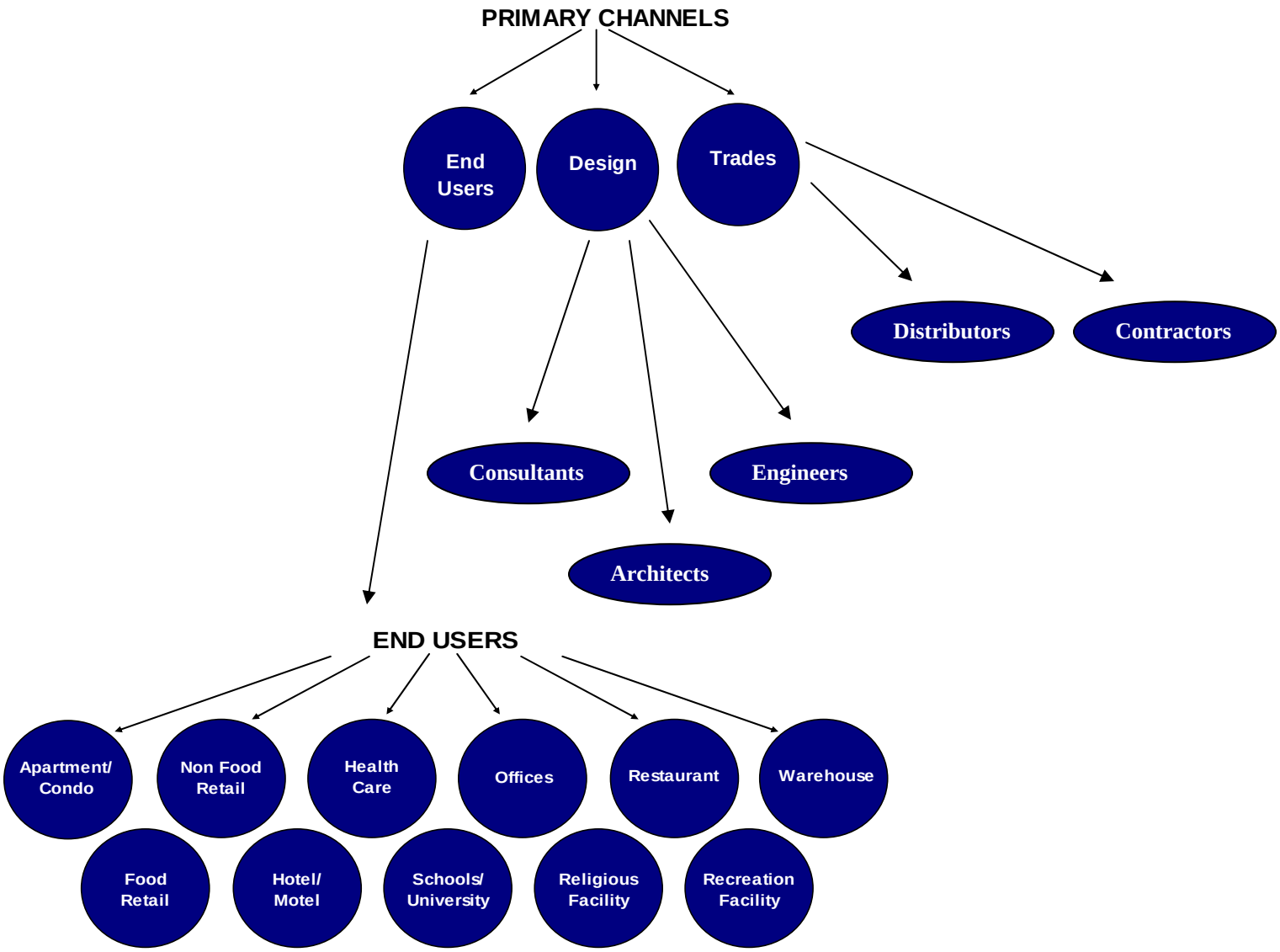



| | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Natural Gas | $1.62 | $2.84 | $4.00 | $5.27 | $6.47 | $7.77 | $9.26 | $10.96 | $12.70 | $14.68 | $16.22 | $17.83 | $19.42 | $20.99 | $22.67 | $23.21 |
| Electric | $2.94 | $5.65 | $8.14 | $10.65 | $12.91 | $14.90 | $16.95 | $19.11 | $21.24 | $23.28 | $24.85 | $26.39 | $27.95 | $29.57 | $31.34 | $32.47 |
| Total | $4.56 | $8.50 | $12.14 | $15.93 | $19.38 | $22.67 | $26.21 | $30.08 | $33.94 | $37.96 | $41.08 | $44.22 | $47.37 | $50.55 | $54.01 | $55.67 |

### *6.2.3 Power Smart Commercial – Strategies*

#### *Market Focused*

Power Smart for Business Programs focus on three market channels: the end user commercial premise; design professionals including consultants, architects and engineers; and lastly, trade channel members including distributors and contractors. Design professionals and trades act as intermediaries between end users and Manitoba Hydro's Power Smart for Business Programs.



### *Promotional Tactics*

Channel promotional strategies for fiscal year 2009/10 include:

- Call-to-action and awareness advertising and direct mail campaigns targeting end user commercial facility decision makers, and business and property owners and managers. Campaigns are supplemented by print materials, website content, a new Power Smart for Business electronic newsletter and Power Smart Sales staff customer intervention.
- Capacity building, awareness and call-to-action advertising, direct communication, education and training for design professionals and trades, supplemented by print materials, website content and a new Power Smart for Business electronic newsletter.

One of the strong messaging themes for marketing materials and advertising campaigns will continue to center on financial benefits of energy savings and the return on investment realized through Power Smart upgrades.

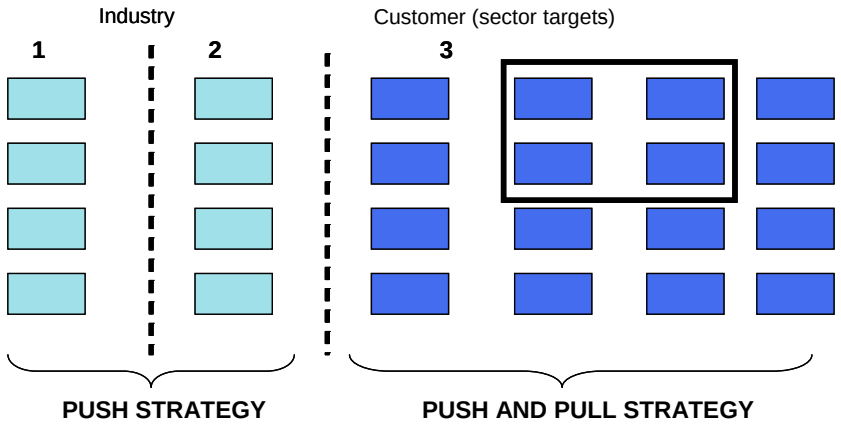
To further build on the Power Smart for Business customer relationship, customer recognition messaging will be incorporated as an additional theme. The goal is to recognize customers for their participation in a Power Smart program and for making an environmentally responsible choice for their business. This messaging will be supported by the growing awareness of commercial customers about the environmental impact of their actions, and the interest of businesses in promoting their environmental initiatives and efforts.

Select customers will be recognized for making a Power Smart upgrade by being featured in Power Smart written profiles, Global Television Winnipeg television vignettes, on-air during the Power Smart for Business sponsored Winnipeg Business Report on CJOB Radio and being provided with a Power Smart participation label that can be affixed to their building. These elements will appeal to the end user target audience by way of:

- providing recognition for choosing environmentally responsible technologies;
- providing a reward to customers by allowing them to communicate their participation in Power Smart programs to their own customers and peers;
- offering an identifiable symbol visible to customers, staff and visitors; and
- reinforcing Power Smart for Business as a tool to gain a competitive advantage for business owners through communication of environmental stewardship.

Exhibit 1

**Power Smart For Business**
**Marketing Channels**




### *Integrated Approach*

Power Smart commercial programs are designed to offer eligible Manitoba Hydro commercial customers maximum opportunities to save energy. Through participation in either one or all of the available programs, customers will be able to maximize benefits when building a new facility or retrofitting an existing operation. The newly approved Power Smart New Buildings program was developed to enable customers to utilize a streamlined process to access incentives and technical support historically available through a number of separate Manitoba Hydro Power Smart programs.

Manitoba Hydro's integrated approach is also demonstrated with the Power Smart Energy Manager Program. This program utilizes a trained Energy Manager to initiate strategies and actions aimed at reducing the use of electricity, natural gas and water for Manitoba School Divisions.

The strategy for delivering both natural gas and electric DSM to commercial customers, which was initially deployed in April 2006, has continued to resonate with customers and has seen continuous growth and expansion. This has been accomplished by two separate approaches. The first approach was integrating gas DSM into existing electricity DSM programs. The second approach involved creating new Power Smart programs for entirely new gas-fuelled technologies that were common to commercial and institutional customers. Programs continue to be added to the comprehensive suite of already available electric prescriptive programs.

Since April 2006, seven new programs have been added, six of which were launched in fiscal year 2008/09. These programs include the New Buildings program, Network Energy Management program, Commercial Kitchen Appliance program, Commercial Clothes Washers program, Commercial CO2 Sensors program and the Power Smart Shops program. Of the seven programs in question, three address both natural gas and

electricity, two address just natural gas alone and two address electricity alone. Additional new Power Smart program development opportunities are identified for the fiscal year 2009/10.

### *Comprehensive & Technology Specific Approach*

The aforementioned newly approved Power Smart New Buildings program was developed to encourage the design and construction of energy efficient commercial buildings in Manitoba. The program focuses on integrated design, building simulation, building commissioning and energy management. This program supports customers and industry professionals with financial incentives and technical support so that they might explore and implement emerging techniques and construct high performance buildings in Manitoba.

The program takes a whole building approach to ensuring that owners undertaking a new construction or a major renovation project achieve a building that will operate at least 33% more efficiently than a facility built to meet the Model National Energy Code for Buildings (MNECB). The program standard of 33% more efficient than MNECB, harmonizes with the Green Building Policy for Government of Manitoba Funded Projects. Furthermore, a dedicated Power Smart team is designated to each new building project to offer guidance throughout the design and construction phases of the new energy efficient building. The program offers greater flexibility by allowing customers to choose one of two paths for their project - a prescriptive path or a custom building design path.

Similarly, the Commercial Building Optimization program utilizes a whole building approach to energy efficiency by recommending strategies identified through an investigation process, with additional focus on documentation and training to realize persistence of savings. The program aims to improve the overall operation and maintenance of building systems to meet the owner's operational needs, while using only as much energy as necessary.

The newly approved Power Smart Shops program also utilizes an integrated design in its efforts to promote energy efficiency to small independent businesses including retail stores, restaurants, services and offices. In addition to promoting energy efficiency, funding from Green Manitoba allows the program to encourage water and waste conservation measures, creating an integrated and full-service offering for customers. The program ultimately culminates with participation in this, and other existing Power Smart for Business programs.

Other comprehensive offerings which Manitoba Hydro promotes include Manitoba Hydro's Recreation Facility Survey Initiative, Recreation Facility Energy Efficiency Guide, Energy Efficiency Guide for Religious Buildings and the newly developed Energy

Efficiency Guide for Commercial Buildings. The aforementioned offerings are all offered free of charge to customers.

Manitoba Hydro's technology-specific or prescriptive programs remain very successful and fulfill a market need within the commercial and institutional customer base, primarily with those customers planning staged retrofits of existing facilities. The April 2006 integration of gas DSM into the applicable existing electricity DSM programs, and the creation of new Power Smart programs for entirely new gas and electricity fuelled technologies, has proven to be a major milestone in the history of Manitoba Hydro's Power Smart for Business suite of Programs. Since April 2006, seven new programs have been added.

| Technology-based programs | Strategic plans |
|---|---|
| **Building Envelope (air barriers, insulation and windows)** | Review incentives, revise channel strategy. |
| **Parking Lot Controllers** | Deploy exit strategy, new technology assessment. |
| **HVAC (water-cooled chillers, boilers, furnaces)** | Review incentives, new technology assessment. |
| **Lighting** | Deploy new incentive structure, revise channel strategy, new technology assessment. |
| **Pre-rinse Spray Valves** | Deploy exit strategy, new technology assessment. |
| **Geothermal Heat Pumps** | Review incentives, revise channel strategy. |
| **Refrigeration** | Review incentives, new technology assessment. |
| **Custom Measures** | Review incentives, revise channel strategy. |
| **Agricultural Heat Pads** | Review incentives, deploy exit strategy, new technology assessment. |
| **Commercial Clothes Washers** | Deploy channel strategy. |

| | |
|---|---|
| **Commercial Kitchen Appliances** | Deploy channel strategy. |
| **Network Energy Manager** | Deploy channel strategy. |
| **CO2 Sensors** | Deploy channel strategy. |
| **Comprehensive programs** | **Strategic plans** |
| **Energy Manager (school division)** | Review incentives, new incentives; revise channel strategy, new technology assessment. |
| **Building Optimization** | Review incentives, new technology assessment. |
| **Design Standards** | Integrated into New Buildings program. |
| **Energy Efficiency Guide for Commercial Buildings** | Deploy channel strategy. |
| **Recreational Facilities** | Update materials. |
| **Religious Buildings** | Update materials. |
| **New Buildings** | Deploy channel strategy. |
| **Municipally Owned Buildings** | Update materials. |
| **Power Smart Shops (small business)** | Deploy channel strategy. |

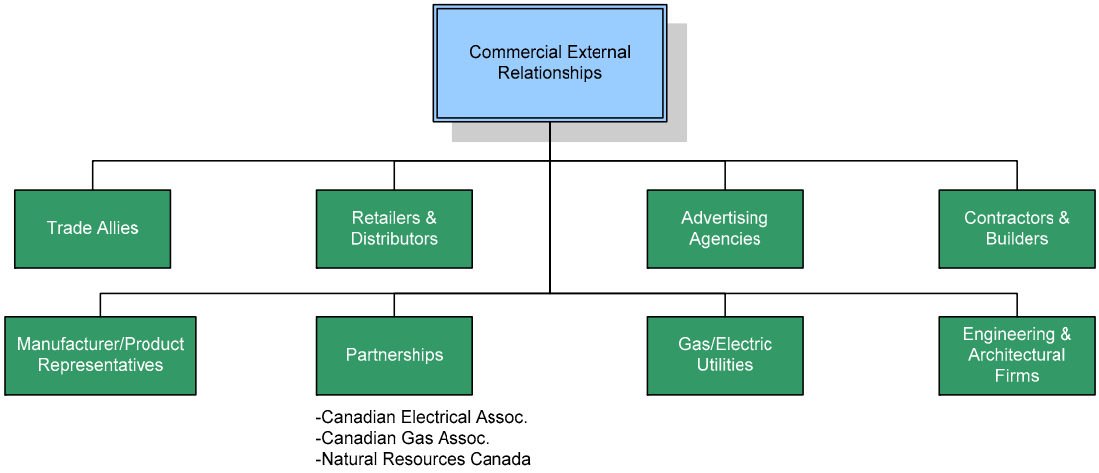
### *Collaborative Approach*

Manitoba Hydro will continue to work closely with Natural Resources Canada (NRCan) and in particular the Office of Energy Efficiency, in the cross-marketing of any new federal commercial incentive programs, to ensure that programs are aligned and harmonized to maximize energy efficient opportunities for the customer, and to leverage available federal monies.

Power Smart for Business was successful in securing funding from NRCan's Office of Energy Efficiency during a recent call for proposals. Manitoba Hydro Power Smart for Business' capacity building training submission was aptly named "Commissioning Process for Existing and New Buildings". The primary objectives of the course are to address the current need for best practice education on the commissioning process in Manitoba, providing continuing education with a focus on effective whole building design and delivery using the commissioning process (CxP), building awareness and preparedness in the marketplace for the inclusion of commissioning in future new building codes, understanding the cost savings and benefits of the CxP, and helping achieve the Corporation's goals of reducing customers' electric and natural gas consumption in Manitoba. The course will be offered in fiscal year 2009/10.

Collaboration will also continue to occur at the provincial level, as is evident with the newly approved Power Smart Shops program. In addition to promoting energy efficiency, funding from Green Manitoba allows the program to encourage water and waste conservation measures, creating an integrated and full-service offering for customers.

Manitoba Hydro initiates ongoing collaboration directly with industry professionals in the reviews of its existing programs and in the development of any new programs. Industry teams are formed and consulted in the redesign or design of any future program offerings; this approach has been extremely effective in developing past programs and will continue to be used in all future designs.



### *Leveraging Non-Energy Benefits*

Power Smart for Business programs will continue to be marketed to customers with an entire benefit package that goes beyond energy savings. For all advertising material produced to date, benefits have communicated that Power Smart will:

- lower maintenance costs;
- facilitate longer equipment life;
- increase customer and worker comfort;
- improve system performance and production rates; and
- facilitate labor savings.

Marketing pieces will also appeal to the business-minded customers by reminding them that saving on energy costs will free up dollars to reinvest in their business. Further, customer recognition messaging will be incorporated as an additional theme. The goal is to recognize customers for their participation in a Power Smart program and for making an environmentally responsible choice for their business.

Building upon the existing Power Smart for Business campaign, a sector specific target marketing campaign will take an even more specific approach regarding non-energy benefits depending on key drivers of the targeted sector (e.g. such as increasing occupancy rates for property managers).

### *Leveraging the Power Smart and Energy Star Brand*

Continued effort is planned to achieve an increased awareness and understanding of Power Smart for Business offerings. The goal being that when a commercial customer is in the market for renovations or undertaking new construction, they will recall that there are energy efficient options available and they will contact Manitoba Hydro.

Power Smart for Business will also continue to target savings available through the adoption of Energy Star qualified equipment. The Energy Star brand will be leveraged through inclusion in Power Smart incentive programs, and promotion through Power Smart Energy Efficiency Guides. Two programs launched in fiscal year 2008/09; the Commercial Kitchen Appliance program and the Commercial Clothes Washers program. Both programs promote the installation of Energy Star qualified equipment. Additional Energy Star qualified equipment has been indentified as new program development opportunities in fiscal year 2009/10.

### *Supporting Industry Infrastructure*

Manitoba Hydro continues to be a key contributor to the training and education of design professionals and trades, both of which are critical to the successful delivery of Power Smart to the end user. Power Smart program staff regularly conduct education and training strategy sessions to ensure that the channels have the tools and

information required to promote Power Smart for Business Programs. These capacity building exercises are critical to program success.

During fiscal year 2008/09, Manitoba Hydro's Power Smart Energy Manager for School Divisions program hosted its first Energy Manager training course for school divisions and other commercial and institutional customers. The four-day workshop focused on helping 26 building operators identify and develop an action plan for implementing energy management opportunities in their facilities. These strategies will help customers reduce energy consumption, lower maintenance costs, improve building comfort and reduce green house gas emissions. Future sessions are being planned for the fiscal year 2009/10.

During fiscal year 2008/09, Manitoba Hydro's Power Smart Commercial HVAC program, hosted two professional development training seminars: "Small Commercial Heat Gain & Heat Loss Calculations Training". Future sessions are being planned for the fiscal year 2009/10.

The Canadian chapter of the International Building Performance Simulation Association (IBPSA-Canada) recently officially accepted Manitoba Hydro's proposal to host eSIM 2010. Consistent with Power Smart program objectives, the four-day conference and workshop in Winnipeg will help develop the local energy modeling industry.

The aforementioned "Commissioning Process for Existing and New Buildings" course to be held in the fiscal year 2009/10 also supports Manitoba Hydro's goals of continuing to be a key contributor to the training and education of design professionals and trades.

### *Exit Strategy – Codes and Standards*

The Power Smart Commercial group will continue to seek industry and market acceptance of increased energy efficiency standards for commercial buildings. Manitoba Hydro will continue to work with federal, provincial and local agencies to recommend and adopt energy efficient codes and standards on a proactive basis.

Examples of committees that Manitoba Hydro is active on and will continue to be active on are: Energy Management Task Force, Steering Committee on Performance, Energy Efficiency and Renewables (SCOPEER), Illuminating Engineering Society of America, International Ground Source Heat Pump Association, Manitoba Building Envelope Council, American Society of Heating Refrigeration and Air Conditioning Engineers and the Canadian Electrical Association.

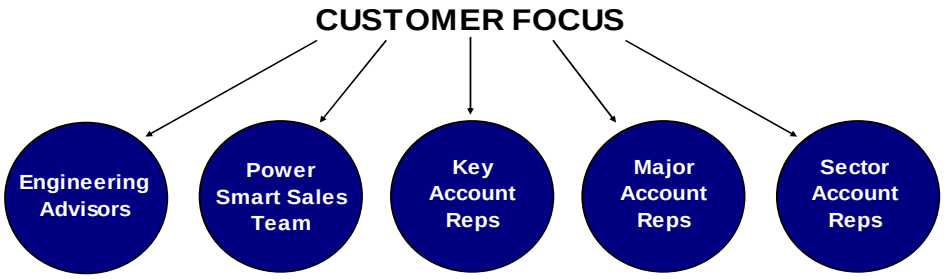
### *Creating Future Opportunities – R & D*

Manitoba Hydro's Power Smart Commercial group will continue to partner with other industry and government stakeholders for research and development projects that will further efficiency standards in Manitoba, such as recent demonstration project ice and curling rinks identified through Manitoba Hydro's work with NRCan and the Refrigeration Action Program for Buildings (RAPB).

Manitoba Hydro will continue to initiate and participate in research and development activities related to commercial energy efficient products and installation methods, and utilize the findings of such studies to determine the most effective program to address market needs.

### *Leveraging the Corporation's Extensive Infrastructure and Broad Outreach Capabilities*

The future success of Power Smart in the commercial sector will rely heavily on the existing infrastructure. Key Account representatives, Major Account representatives, Energy Service Advisors and Power Smart Sales representatives will continue to play a key role in promoting Power Smart initiatives and services to their customers. Customer Engineering Services will continue to provide technical support and services to Power Smart for Business initiatives. The Market Forecast department will provide support through end-use information, market demographics and take up rates for potential program offerings. These internal resources will continue to support future development and delivery of Power Smart for Business Programs.



## 6.3 Power Smart – Industrial Plan

### 6.3.1 Power Smart Industrial – Programs

The existing ***Power Smart Industrial Portfolio*** consists of the following programs:

## *Incentive Based Programs*

***Performance Optimization Program***
The Performance Optimization Program encourages industrial and large commercial customers to study and implement energy efficient measures in their electro-technology processes and motor-driven systems. The program offers Custom Engineered Solutions (inclusive of compressed air, pump, fan and process system initiatives) Eco-efficiency Audits & Feasibility Studies, Energy Management Systems and Waste Stream Thermal Recovery

***Emergency Preparedness Program***
The Industrial & Commercial Emergency Preparedness Program is intended to fulfill a two-fold purpose. The program will provide electrical demand and energy savings in support of the Corporation's Power Smart mandate while providing operational support during a crisis that impacts the availability of supply for the Corporation's customers in the Greater Winnipeg Area.

***Industrial Natural Gas Optimization Program***
The Industrial Natural Gas Optimization Program provides industrial and large commercial customers with technical support and financial incentives necessary to

identify, investigate and implement systematic efficiency improvements throughout their facility.

In addition, the Industrial portfolio consists of the following Customer Service initiatives:

- Consumer Information Sheets
- High Efficiency Motor Market *(See Appendix E for CSI concept)*
- Industrial Technology Workshops
- Engineering Expertise
    - Managing customer energy strategically
    - Building envelope & infrastructure
    - Process & motive power systems
    - On-site generation & heat recovery
    - Power quality analysis

### *6.3.2 Power Smart Industrial – Targets*

The overall objective of the Power Smart Industrial marketing strategy is to pursue all energy efficient opportunities in the industrial market. This objective is intended to be met by pursuing an industrial specific strategy that builds on the Corporation's Power Smart Key Strategies and Key Tactics.

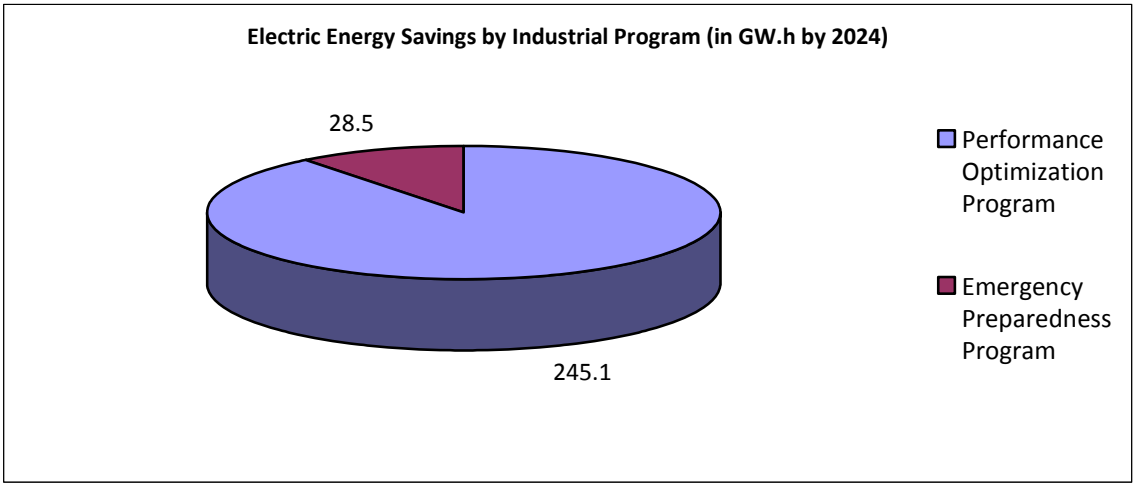
## Electricity

#### *Incentive Based Programs*

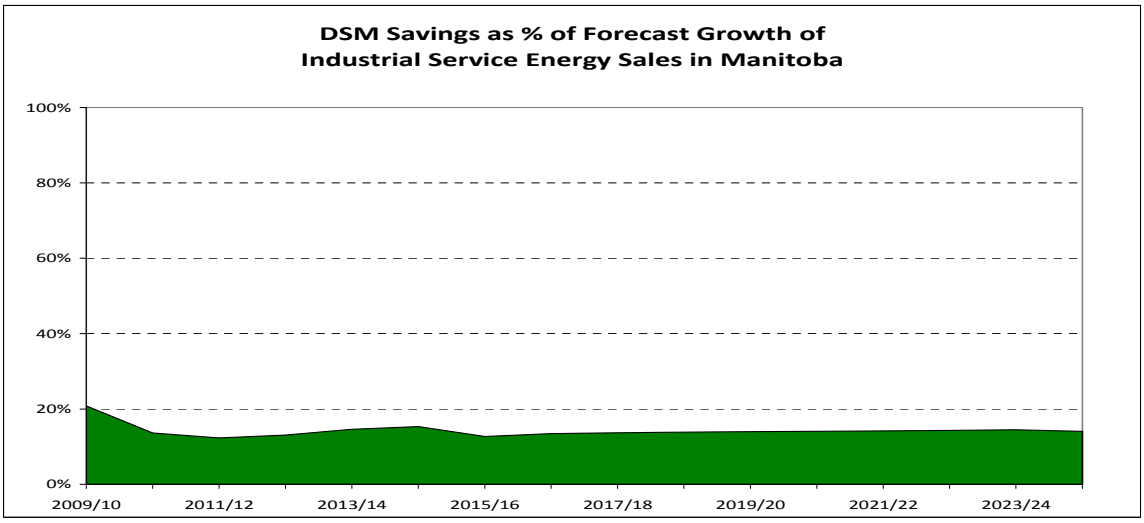
As a result of Incentive Based Programs, the 2009 Power Smart Industrial Plan forecasts achieving capacity savings of 72.1 MW and energy savings of 301.0 GW.h annually by 2024/25 at a total utility investment of $64.8 million. As a result of these savings, a greenhouse gas emissions reduction of 203,148 tonnes is expected by 2024/25.

| Industrial Incentive Based Programs | Energy and Demand Savings (2024/25) | | | Cumulative Utility Costs (Millions in 2009$) | Annual CO2 Reductions (Tonnes) (2024/25) |
|---|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | | |
| Performance Optimization Program | 37.1 | 37.1 | 245.1 | $44.8 | 181,987 |
| Emergency Preparedness Program | 28.5 | 28.5 | 28.5 | $20.0 | 21,161 |
| Total (@ Meter) | 65.6 | 65.6 | 273.6 | | |
| **Total (@ Generation)** | **72.1** | **72.1** | **301.0** | **$64.8** | **203,148** |

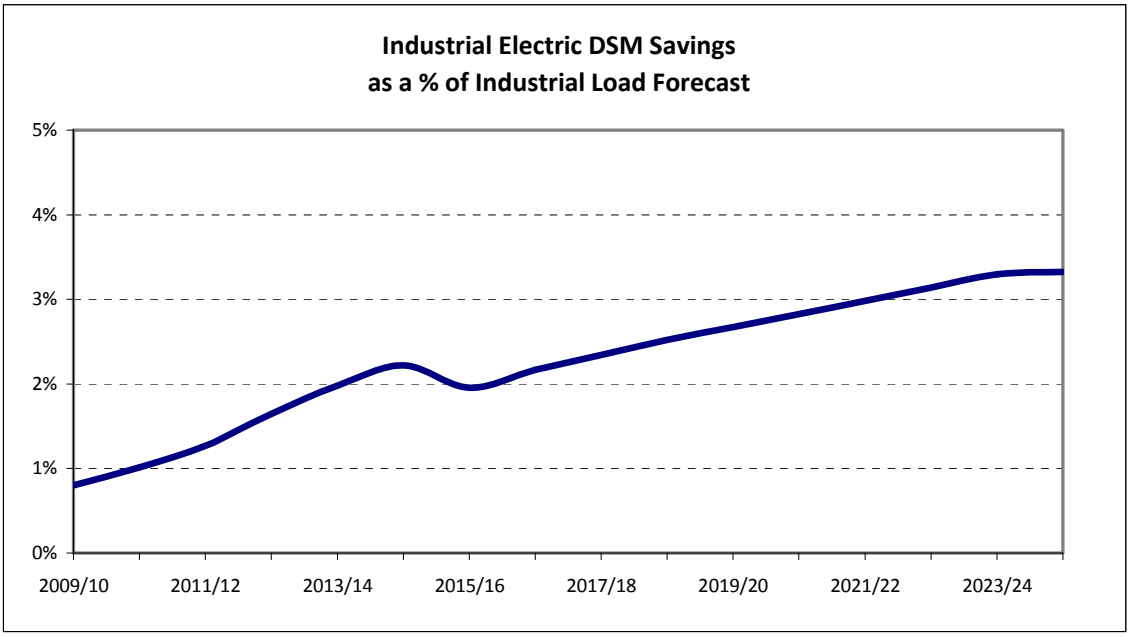
The following chart depicts electric energy savings by Industrial Incentive Based program in GW.h by 2024/25:




This activity represents approximately 14% of the forecasted growth in energy use for the industrial sector at the benchmark year.



This activity represents approximately 3.3% of the industrial load forecast at the benchmark year.



### *Summary*

In summary, the 2009 Power Smart Industrial Plan projects saving a total of 72.1 MW, 301.0 GW.h and a global greenhouse gas emission reduction of 203,148 tonnes from 2009/10 to 2024/25, at a total utility investment of $64.8 million.

Combined with savings achieved to date, total electrical savings of 150.2 MW and 634.3 GW.h and global greenhouse gas emission reductions for 428,152 tonnes by 2024/25 are expected to be achieved at a cost of $92.5 million.

| Industrial Incentive Based Programs | Energy and Demand Savings (2024/25) | | | Cumulative Utility Costs (Millions in 2009$) | Annual CO2 Reductions (Tonnes) |
|---|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | | |
| | | | | | |
| 2009 Power Smart Industrial Plan (2009-2024) | 65.6 | 65.6 | 273.6 | | |
| Savings to Date (1989-2024) | 71.0 | 62.5 | 303.0 | | |
| Total (@ Meter) | 136.6 | 128.0 | 576.6 | | |
| | | | | | |
| **2009 Power Smart Industrial Plan** | **72.1** | **72.1** | **301.0** | **$64.8** | **203,148** |
| Savings to Date (1989-2024) | 78.1 | 68.7 | 333.3 | $27.7 | 225,004 |
| **Total Savings Projected (@ Generation)** | **150.2** | **140.8** | **634.3** | **$92.5** | **428,152** |

### *Cost-Effectiveness*

This activity is cost-effective with an expected TRC ratio of 3.3 and RIM ratio of 1.3.

| Industrial Incentive Based Programs | Benefit / Cost Ratios | | Levelized Utility Cost (¢/kW.h) | Participating Customer (PC) | Customer Payback (Years) |
|---|---|---|---|---|---|
| | TRC | RIM | | | |
| Performance Optimization Program | 3.8 | 1.4 | 1.6 | 3.3 | 1.3 |
| Emergency Preparedness Program | 2.4 | 1.1 | 6.3 | 2.3 | 0.0 |
| **Total Industrial Portfolio** | **3.3** | **1.3** | **2.2** | **2.9** | **1.3** |

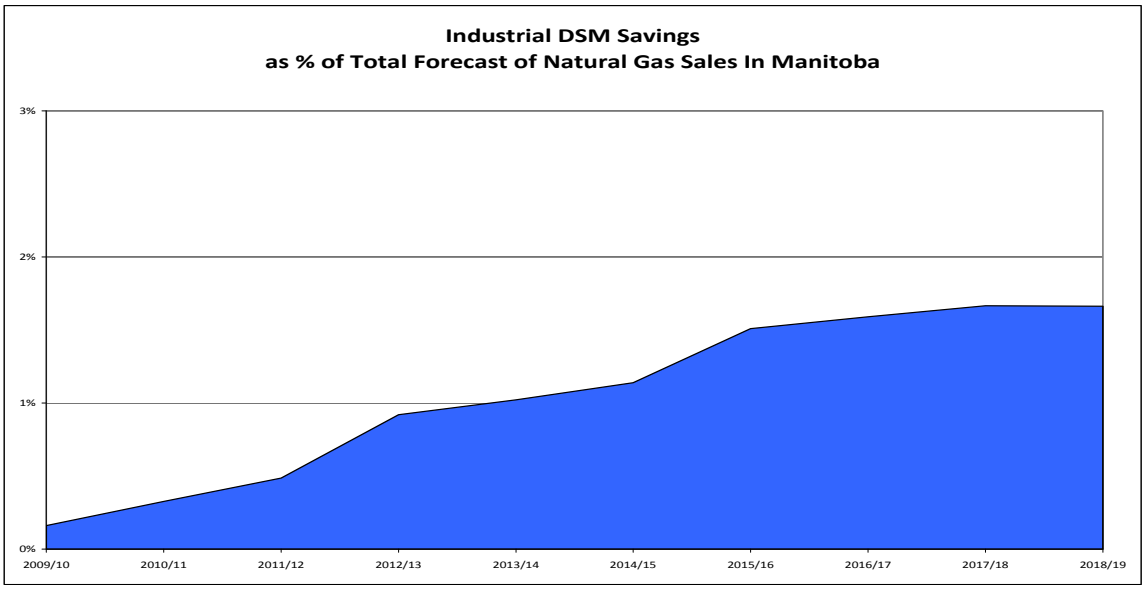
## Natural Gas

### *Incentive Based Programs*

As a result of Incentive Based Programs, the 2009 Power Smart Industrial Plan forecasts achieving natural gas savings of 5 million cubic meters annually by 2024/25 at a total utility investment of $3.6 million. As a result of these savings, a greenhouse gas emissions reduction of 8,823 tonnes is expected by 2024/25.

| Industrial Incentive Based Programs (Natural Gas) | Annual Gas Savings (Millions m3) 2024/25 | Annual CO2 Reductions (Tonnes) 2024/25 | Cumulative Utility Costs (Millions in 2009$) |
|---|---|---|---|
| | | | |
| Industrial Natural Gas Optimization Program | 5 | 8,823 | $3.6 |
| Industrial Gas Total | **5** | **8,823** | |
| **Total (with Interactive Effects)** | **5** | **8,823** | **$3.6** |

This activity represents approximately 1.7% of the forecasted Natural Gas Sales in Manitoba by 2018 as shown below:



### *Summary*

In summary, the 2009 Power Smart Industrial Plan projects saving a total of 5 million cubic meters and a global greenhouse gas emission reduction of 8,823 tonnes from 2009/10 to 2024/25, at a total utility investment of $3.6 million.

Combined with savings achieved to date, total natural gas savings of 6 million cubic meters and global greenhouse gas emission reductions of 11,618 tonnes by 2024/25 are expected to be achieved at a cost of $4.6 million.

| Industrial Incentive Based Programs (Natural Gas) | Annual Gas Savings (Millions m3) 2024/25 | Annual CO2 Reductions (Tonnes) 2024/25 | Cumulative Utility Costs (Millions in 2009$) |
|---|---|---|---|
| | | | |
| Incentive Based Programs | 5 | 8,823 | $3.6 |
| **2009 Power Smart Industrial Plan** | **5** | **8,823** | **$3.6** |
| Savings to Date (2001-2024) | 1 | 2,795 | $1.0 |
| **Total Savings Projected** | **6** | **11,618** | **$4.6** |

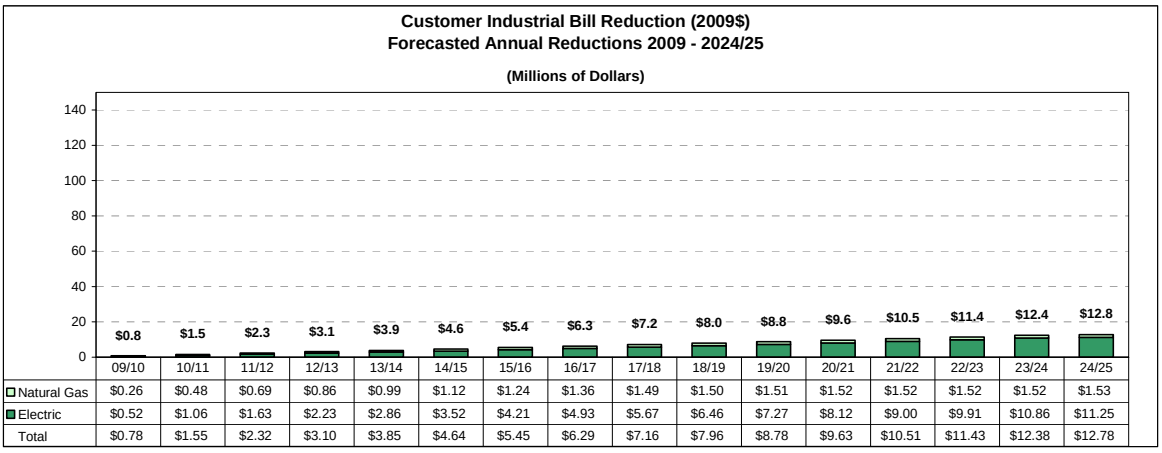
### *Cost-Effectiveness*

This activity is cost-effective with an expected TRC ratio of 1.5 and RIM ratio of 0.9.

| Industrial Incentive Based Programs (Natural Gas) | Benefit / Cost Ratios | | Levelized Utility Cost (¢/m3) | Participating Customer (PC) | Customer Payback (Years) |
|---|---|---|---|---|---|
| | TRC | RIM | | | |
| Industrial Natural Gas Optimization Program | 1.5 | 0.9 | 5.5 | 1.7 | 4.6 |
| **Industrial Gas Total** | **1.5** | **0.9** | **5.5** | **1.7** | **4.6** |

### *Customer Bill Reductions - Electric & Natural Gas (Combined)*

The following graph depicts customer bill reductions resulting from electric and natural gas programs outlined in the 2009 Power Smart Industrial Plan. Industrial Power Smart programs are expected to save participating customers $12.8 million in 2024/25 and $108.6 million cumulatively by 2024.




| | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Natural Gas | $0.26 | $0.48 | $0.69 | $0.86 | $0.99 | $1.12 | $1.24 | $1.36 | $1.49 | $1.50 | $1.51 | $1.52 | $1.52 | $1.52 | $1.52 | $1.53 |
| Electric | $0.52 | $1.06 | $1.63 | $2.23 | $2.86 | $3.52 | $4.21 | $4.93 | $5.67 | $6.46 | $7.27 | $8.12 | $9.00 | $9.91 | $10.86 | $11.25 |
| Total | $0.78 | $1.55 | $2.32 | $3.10 | $3.85 | $4.64 | $5.45 | $6.29 | $7.16 | $7.96 | $8.78 | $9.63 | $10.51 | $11.43 | $12.38 | $12.78 |

### 6.3.3 Power Smart Industrial – Strategies

#### Market Focused

The industrial market segment includes opportunities in both existing customer facilities and those that are related to new and expanding facilities. The primary end uses with energy efficiency potential in these segments include motor driven systems such as pumps, fans and conveyors, process related systems such as heating (furnaces and boilers), cooling and refrigeration, electrochemical, heat recovery, lighting and both stand alone and integrated energy management control systems.

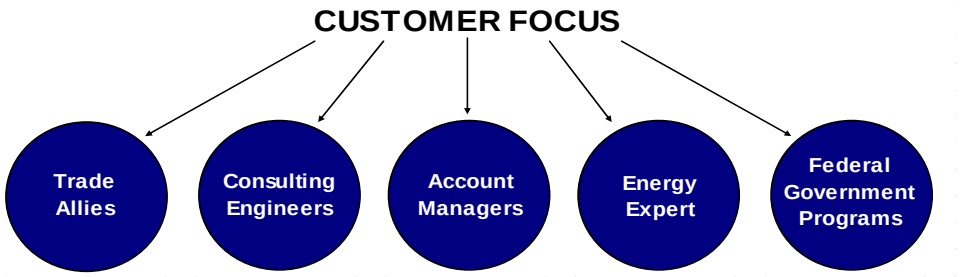
Industrial Power Smart programs are designed to align with the primary business drivers of the industrial customers.

Key opportunities for technology solutions are market orientated in that they emerge from a customer focused effort toward identifying and solving operating and production problems in an energy efficient way and provide the user value in the form of increased efficiency and product competitiveness.

Capital rationing decisions in this sector include energy benefits, but normally are not solely driven by them. Thus, other related production and process benefits must be quantified to enable the creation of financially attractive business cases for project implementation.

Optimal savings for this sector are based upon a "systems approach" that focuses on reducing the end user requirement for quantities and run times first, then addresses the potential improvements in the facility infrastructure (piping, ducting, insulation and building envelope). This approach concludes with enhancements to electrical and mechanical supply equipment and their respective or integrated control systems. This approach can commonly lead to reductions in energy requirement and operating costs of 10 to 50%, depending on the system.

Manitoba Hydro works closely with trade allies and professional associations to support the Industrial Power Smart programs by enhancing their ability to deliver services to industrial customers.



Manitoba Hydro's well respected Customer Relationship Management effort and its existing delivery network of business and technical specialists builds customer loyalty and credibility for its energy efficiency efforts and leads to best-in-class performance from the perspective of implementation and delivery efficiency and cost-effectiveness.

Customers' knowledge of Power Smart opportunities and benefits will also be increased through workshops, seminars and personal training by Manitoba Hydro technical experts.

In order to effectively integrate all project benefits into the efficiency project analysis, the customer needs to trust and have confidence in the technical abilities of Manitoba Hydro's technical staff to assist them with their industrial processes. In order to achieve this, technical experts must have both broad and specific knowledge in their area of expertise that is world class. Manitoba Hydro will be positioned as a leading authority in energy efficiency initiatives and will attract, train and retain the best engineers and technologists to gain the confidence and support of customers, market allies and other stakeholders.

In many instances reliability and the quality of power supplied is more important to industrial customers than the efficient use of electricity. Power Quality and short term or long-term reliability issues can lead to significant downtime and lost production and profits.

In order to meet this business driver, a team of Power Quality engineers and technologists provide expert advice for new and existing systems on avoiding electrical production related problems proactively or mitigating these problems after they occur. There is a perception that many of the energy efficient technologies can create power quality and reliability problems and these experts are involved in industrial product testing and evaluation to assist in reducing this problem.

In order to mitigate the production losses associated with power interruptions and in some cases at the insistence of their insurance companies, many power sensitive industrial and commercial customers are installing standby generators. There are numerous operating and maintenance issues associated with reliable operation of these generators. This provides Manitoba Hydro with an opportunity to assist these customers to meet their business driver and at the same time provide demand response benefits to Manitoba Hydro through the use of technology solutions to aggregate the operation of many small generators to achieve a large block of power that can be curtailed from the system by Manitoba Hydro and contribute to Power Smart demand targets.

### *Integrated Approach*

Development of a lean energy approach for the Industrial Power Smart Performance Optimization program enables the identification of efficiency opportunities that enhance the benefits and value available to the customer. A Power Smart lean approach refers to improvement efforts related to energy (electric, natural gas and others), water, wastewater, solid waste and emissions.

The opportunity for an integrated strategy for delivering both natural gas and electric DSM to industrial customers is currently delivering promising results. This is demonstrated through combined customized analysis of electric and gas fueled technologies and systems with recommendations for both electric and gas incentives for implementation of eligible energy efficient measures and system improvements.

### *Comprehensive & Technology Specific Approach*

Market focused strategies for this sector includes a mix of comprehensive programs, technology specific programs and customer service programs.

Comprehensive programs, complete with custom incentives, are utilized to help customers fully realize the benefits available from using the "system approach" and to provide a consistent basis for making capital rationing decisions between projects. In many cases, a customer may be aware of a significant number of potential opportunities but they may not feel confident in setting priorities based on energy savings.

The custom incentive for studies assists the customer in quantifying the benefits of the project, and the custom incentive for implementing the project helps encourage the maximum amount of energy efficiency savings to be realized. The monetary amount of the incentive is based on amount of energy saved but also includes the value of non-energy benefits in the calculations. The Performance Optimization, Natural Gas Optimization, and Bioenergy Optimization programs are comprehensive offerings.

Technology specific program elements are used for customer simplicity, positive reinforcement of stand-alone measures and where appropriate to reinforce Power Smart branding with a monetary value. These usually entail a prescribed incentive of a fixed amount for a specific measure.

Technology specific program concepts are currently used in the lighting program, are being considered for an enhanced high efficiency motors program and for a small variable speed drive program.

### *Customer Service Programs - Technical Business Services*

Manitoba Hydro offers five specialized services to help businesses manage their energy and three specialized services to help customers grow their businesses strategically:

### *a) Managing Customer Energy Strategically*

*Energy Monitoring, Analysis and Control* – the knowledge customers require. Energy systems staff can develop customized energy monitoring, analysis and control systems for unique facility operations.

*Building Envelope and Infrastructure* – the technologies to apply. Commercial systems staff can advise on the most energy efficient technologies for new construction and renovation building projects.

*Process and Motive Power Systems* – the efficiency customers will achieve. Industrial systems staff can improve the operating efficiency of energy consuming processes and electric motor-driven equipment. Through the Performance Optimization Program, Manitoba Hydro specialists can help facilities realize significant cost savings and productivity gains.

*On-site Generation and Recovery* – the environment customers will benefit. Biosystems and technology development staff specialize in supporting unique opportunities to convert waste product streams into useful heat and power. Through process integration techniques, industrial specialists can show how existing waste product streams can be used for co-generation or recovered to avoid energy purchases and waste disposal costs.

*Power Quality* – the reliability customers demand. Power quality systems staff can advise on the causes of electrical disturbances and benchmark the condition of a facility's electrical distribution system. Through sophisticated measuring and analysis instruments, our specialists can isolate problems and suggest cost-effective mitigation to guard against production downtime and equipment damage and ensure reliable operation of production and energy efficient equipment.

### *b) Growing Customer Business Strategically*

*Applied Research and Development* – opening doors to the future. Manitoba Hydro sponsors R&D projects in partnership with other firms to optimize new and energy efficient applications.

*Process Technology Evaluation* – create optimal efficiencies. Manitoba Hydro specializes in identifying and assessing the technical and financial attractiveness of new and innovative applications of technologies in key processes.

*Integrated Manufacturing* – the key to sustainable development. Manitoba Hydro specializes in identifying sustainable development opportunities where process by-products can be recovered and utilized to produce value added products; good for the environment and the company's bottom line.

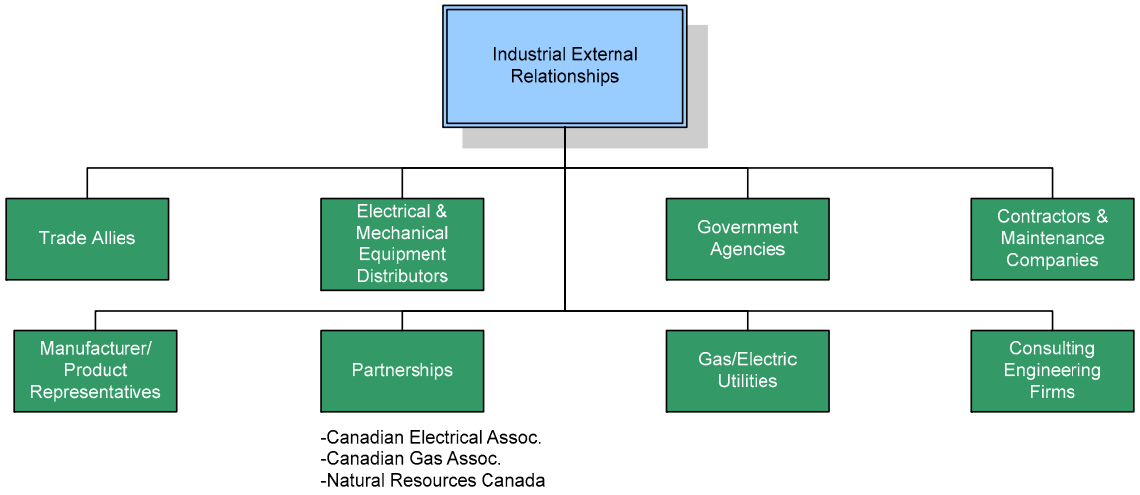
### *Collaborative Approach*

The industrial programs are building upon earlier collaborative efforts with provincial and Canadian partners in the pilot Eco-Efficiency program.

Customers can now lever study incentives offered in the Performance Optimization program with study incentives offered in NRCan's CIPEC program.

By working together, customers feel they are not missing any opportunities to maximize their investment benefits for energy efficiency.

Manitoba Hydro also uses a collaborative effort in regards to R&D related to end use electric and gas measures (expanded further in R & D sectors).




### *Exit Strategy & Codes & Standards*

The exit strategy for the industrial programs is two fold. The primary strategy is that as the market transforms, the incremental cost of the technologies is reduced, and as the non-energy process benefits are better quantified, there is less of an incentive required for the project to be implemented. Following this, Manitoba Hydro will continue to work with Federal, Provincial and local agencies to recommend energy efficiency codes and standards on a proactive basis. Some specific energy efficiency codes and standards under consideration include high efficiency motors, high efficiency pumps and high intensity lighting.

### *Leveraging Non-Energy Benefits*

The cost of electricity does not normally form a major component of an industry's operating costs, and as a result, improvement projects focused solely on electricity do not normally receive the required capital for the project to be implemented. To overcome this market barrier, the scope of the analysis is expanded to include all non-energy benefits of which electricity cost savings is only one of many factors that improves the customer's competitiveness.

### *Creating Future Opportunities – R&D*

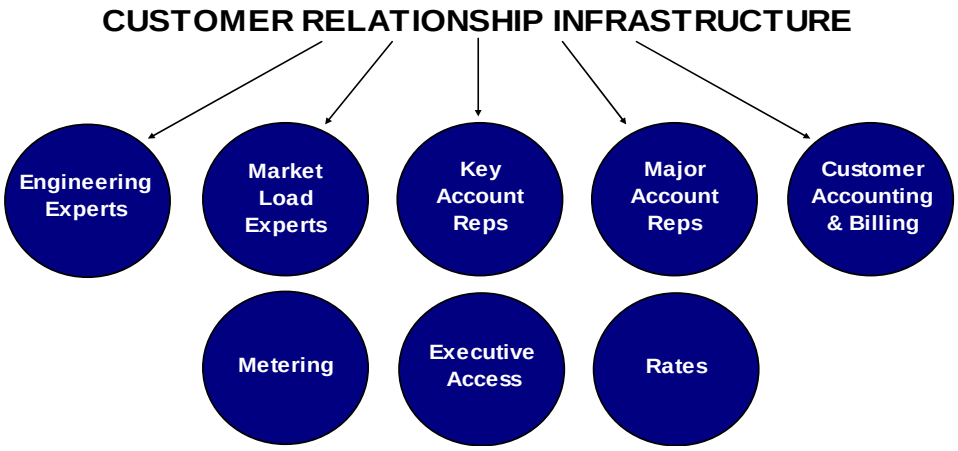
Manitoba Hydro Power Smart Industrial staff will continue to partner with other industry and governmental stakeholders for research and development projects that will further efficiency standards in Manitoba such as the bio-pharmaceutical lighting system project and the jet spouted drying project.

Manitoba Hydro will continue to initiate and participate in research and development activities related to industrial energy efficient products and installation methods and utilize the findings of such studies to determine the most effective program to address market needs.

The Canadian Electricity Association, the Canadian Gas Association and Gas Technology Centre, NRCan, and Manitoba Hydro R&D initiatives are the main sponsoring and funding sources. In almost all cases, significant customer or end user group participation is required.

### *Leveraging the Corporation's Extensive Infrastructure and Broad Outreach Capabilities*

The future success of Power Smart in the Industrial Sector will rely heavily on the existing infrastructure. Key Account Representatives, Major Account Representatives and Energy Service Advisors will continue to play a key role in promoting Power Smart initiatives and services to their customers. Customer Engineering Services will continue to provide technical support and services to Industrial Power Smart initiatives. Customer Accounting and the Billing Department will provide support for the development and implementation of financing strategies. The Market Forecast department will provide support through end-use information, market demographics and take up rates for potential program offerings. These and other internal resources will continue to support future development and delivery of Industrial Power Smart Programs.



## *6.4 Load Management*

### *6.4.1 Load Management - Programs*

The existing ***Power Smart Load Management Portfolio*** consists of the following program:

## *Incentive Based Programs*

***Curtailable Rates Program***

Under the Curtailable Rate Program (CRP), Manitoba Hydro gives qualifying customers a monthly credit on load (kW) which can be curtailed on notice from Hydro.

The CRP has been in existence since November, 1993; first as a 5 year experimental program, and as of December 1, 1998 as a permanent rate offering. The Terms and Conditions of the program were last revised effective Apri1 1, 2005 to introduce a new Curtailment option which would assist Manitoba Hydro in meeting the Corporations Operating Reserve requirements under the Mid-Continent Area Power Pool Generation Reserve Sharing Pool (MAPP GRSP). Under the new curtailment option, Option R, customers are required to guarantee curtailable load and have such load available within a 5-minute time-frame. Customers selecting this option are, in addition to the monthly kW credit, also compensated by receiving a kW.h credit for the amount of energy curtailed during an Option R curtailment.

The target market consists of large industrial loads with a minimum of 5 MW of load which can be curtailed for several hours on five minutes and/or 1 hour notice, dependent on the curtailment option selected, from Manitoba Hydro.

There are currently four curtailable customers who provide 229.5 MW of nominal curtailable load at meter under Options A and C, and 40 MW of guaranteed curtailable load at meter under Option R. Manitoba Hydro has capped the level of curtailable load under all options, with Options A and C combined capped at 230 MW at meter and Option R capped at 100 MW at meter.

## *6.4.2 Load Management – Targets*

## *Electricity*

### *Incentive Based Programs*

As a result of the Curtailable Rates Program, winter capacity savings of 194.6 MW and summer capacity savings of 194.6 will be achieved annually by 2024/25 at a total utility investment of $101.8 million.

| Load Management Incentive Based Programs | Energy and Demand Savings (2024/25) | | | Cumulative Utility Costs (Millions in 2009$) | Annual CO2 Reductions (Tonnes) |
|---|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | | |
| | | | | | |
| Curtailable Rate Program | 176.9 | 176.9 | 0.0 | $101.8 | 0 |
| Total (@ Meter) | **176.9** | **176.9** | **0.0** | | |
| **Total (@ Generation)** | **194.6** | **194.6** | **0.0** | **$101.8** | **0** |

### *Cost-Effectiveness*

Due to the nature of the Curtailable Rates Program, the economic indicators of TRC, RIM and LUC are not conducive to calculating cost-effectiveness.

### *Summary*

Combined with savings achieved to date, total electrical savings of 194.6 MW to be achieved in 2024/25 at a cost of $160.9 million.

| Load Management Incentive Based Programs | Energy and Demand Savings (2024/25) | | | Cumulative Utility Costs (Millions in 2009$) | Annual CO2 Reductions (Tonnes) |
|---|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | | |
| | | | | | |
| 2009 Power Smart Load Managment Plan (2009-2024) | 176.9 | 176.9 | 0.0 | | |
| Savings to Date (1989-2024) | 0.0 | 0.0 | 0.0 | | |
| Total (@ Meter) | 176.9 | 176.9 | 0.0 | | |
| Incentive Based Programs | 194.6 | 194.6 | 0.0 | | |
| **2009 Power Smart Load Management Plan** | **194.6** | **194.6** | **0.0** | **$101.8** | **0** |
| Savings to Date (1989-2024) | 0.0 | 0.0 | 0.0 | $59.1 | |
| **Total Savings Projected (@ Generation)** | **194.6** | **194.6** | **0.0** | **$160.9** | **0** |

## 6.5 Power Smart - Customer Self-Generation

### 6.5.1 Power Smart Customer Self-Generation – Programs

At this time Manitoba Hydro is delivering the following customer self-generation program:

### Incentive Based Program

#### Bioenergy Optimization Program

The Bioenergy Optimization program encourages customer self-generation through the use of cost-effective biomass to energy conversion systems. The program targets large agricultural and industrial customers with low cost readily available sources of biomass, continual needs for heat and power and operation capability. As the market for biomass to energy conversion systems mature and customers become more focused on sustainable manufacturing and the impacts of climate change, the target market will be expanded.

## *6.5.2 Power Smart – Targets*

## *Electricity*

### *Incentive Based Programs*

As a result of the Bioenergy Optimization program, savings of 10.3 MW and 82.2 GW.h will be achieved annually by 2024/25 at a total utility investment of $24.6 million. As a result of these savings, a greenhouse gas emissions reduction of 55,518 tonnes is expected by 2024/25.

| Self Generation Incentive Based Programs | Energy and Demand Savings (2024/25) | | | Cumulative Utility Costs (Millions in 2009$) | Annual CO2 Reductions (Tonnes) |
|---|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | | |
| Bioenergy Optimization Program | 9.4 | 9.4 | 74.8 | $24.6 | 55,518 |
| Total (@ Meter) | **9.4** | **9.4** | **74.8** | | |
| **Total (@ Generation)** | **10.3** | **10.3** | **82.2** | **$24.6** | **55,518** |

### *Summary*

Combined with savings achieved to date, total electrical savings of 10.3 MW and 82.2 GW.h and global greenhouse gas emission reductions for 55,518 tonnes by 2024/25 are expected to be achieved at a cost of $30 million.

| Self Generation Incentive Based Programs | Energy and Demand Savings (2024/25) | | | Cumulative Utility Costs (Millions in 2009$) | Annual CO2 Reductions (Tonnes) |
|---|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | | |
| 2009 Power Smart Customer Self-Generation Plan (2009-2024) | 9.4 | 9.4 | 74.8 | | |
| Savings to Date (1989-2024) | 0.0 | 0.0 | 0.0 | | |
| Total (@ Meter) | 9.4 | 9.4 | 74.8 | | |
| | | | | | |
| **2009 Power Smart Customer Self Generation Plan** | **10.3** | **10.3** | **82.2** | **$24.6** | **55,518** |
| Savings to Date (1989-2024) | 0.0 | 0.0 | 0.0 | $5.4 | 0 |
| **Total Savings Projected (@ Generation)** | **10.3** | **10.3** | **82.2** | **$30.0** | **55,518** |

### *Cost-Effectiveness*

This activity is cost-effective with an expected TRC ratio of 1.6 and RIM ratio of 1.4.

| Self Generation Incentive Based Programs | Benefit / Cost Ratios | | Levelized Utility Cost (¢/kW.h) | Participating Customer (PC) | Customer Payback (Years) |
|---|---|---|---|---|---|
| | TRC | RIM | | | |
| Bioenergy Optimization Program | 1.6 | 1.4 | 1.6 | 1.2 | 1.8 |
| **Total Self Generation Portfolio** | **1.6** | **1.4** | **1.6** | **1.2** | **1.8** |

## *Natural Gas*

### *Incentive Based Programs*

As a result of the Bioenergy Optimization program, the 2009 Long Rang Plan forecasts achieving natural gas savings of 4 million cubic meters annually by 2024/25 at a total utility investment of $1.6 million. As a result of these savings, a greenhouse gas emissions reduction of 6,906 tonnes is expected by 2024/25.

| Self Generation Incentive Based Programs (Natural Gas) | Annual Gas Savings (Millions m3) 2024/25 | Annual CO2 Reductions (Tonnes) 2024/25 | Cumulative Utility Costs (Millions in 2009$) |
|---|---|---|---|
| | | | |
| Bioenergy Optimization Program | 4 | 6,906 | $1.6 |
| **Customer Self Generation Gas Total** | **4** | **6,906** | **$1.6** |

### *Summary*

Combined with savings achieved to date, total natural gas savings of 4 million cubic meters and global greenhouse gas emission reductions of 6,906 tonnes by 2024/25 are expected to be achieved at a cost of $ 1.7 million.

| Self Generation Incentive Based Programs (Natural Gas) | Annual Gas Savings (Millions m3) 2024/25 | Annual CO2 Reductions (Tonnes) 2024/25 | Cumulative Utility Costs (Millions in 2009$) |
|---|---|---|---|
| | | | |
| Incentive Based Programs | 4 | 6,906 | $1.6 |
| **2009 Power Smart Self Generation Plan** | **4** | **6,906** | **$1.6** |
| Savings to Date (2001-2024) | 0 | 0 | $0.1 |
| **Total Savings Projected** | **4** | **6,906** | **$1.7** |

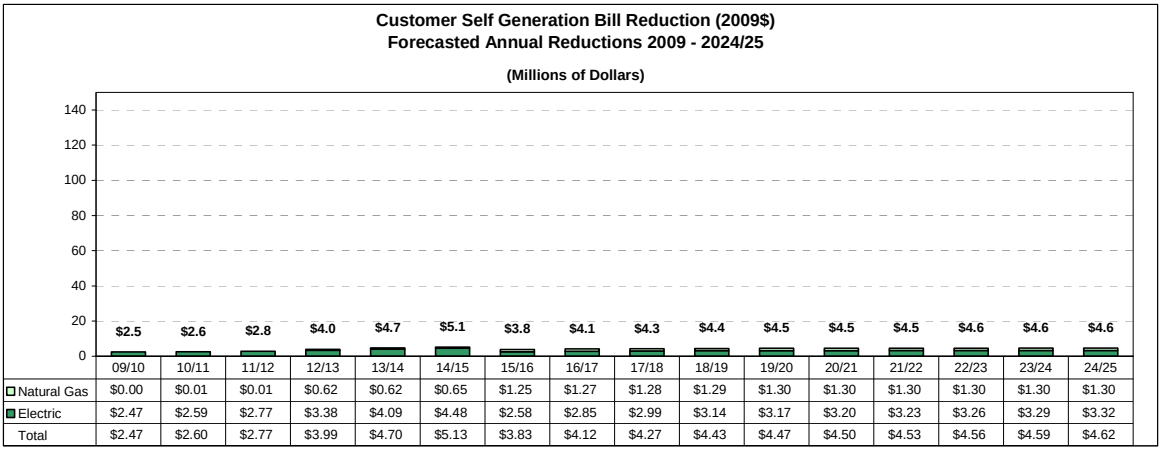
### *Cost-Effectiveness*

This activity is cost-effective with an expected TRC ratio of 5.1and RIM ratio of 0.9.

| Self Generation Incentive Based Programs (Natural Gas) | Benefit / Cost Ratios | | Levelized Utility Cost (¢/m3) | Participating Customer (PC) | Customer Payback (Years) |
|---|---|---|---|---|---|
| | TRC | RIM | | | |
| Bioenergy Optimization Program | 5.1 | 0.9 | 3.3 | 6.2 | 0.0 |
| **Customer Self Generation Gas Total** | **5.1** | **0.9** | **3.3** | **6.2** | **0.0** |

### *Customer Bill Reductions - Electric & Natural Gas (Combined)*

The following graph depicts customer bill reductions resulting from electric and natural gas programs outlined in the 2009 Power Smart Customer Self-Generation. The Bioenergy Optimization program is expected to save participating customers $4.6 million in 2024/25 and $65.6 million cumulatively by 2024.




| | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Natural Gas | $0.00 | $0.01 | $0.01 | $0.62 | $0.62 | $0.65 | $1.25 | $1.27 | $1.28 | $1.29 | $1.30 | $1.30 | $1.30 | $1.30 | $1.30 | $1.30 |
| Electric | $2.47 | $2.59 | $2.77 | $3.38 | $4.09 | $4.48 | $2.58 | $2.85 | $2.99 | $3.14 | $3.17 | $3.20 | $3.23 | $3.26 | $3.29 | $3.32 |
| Total | $2.47 | $2.60 | $2.77 | $3.99 | $4.70 | $5.13 | $3.83 | $4.12 | $4.27 | $4.43 | $4.47 | $4.50 | $4.53 | $4.56 | $4.59 | $4.62 |

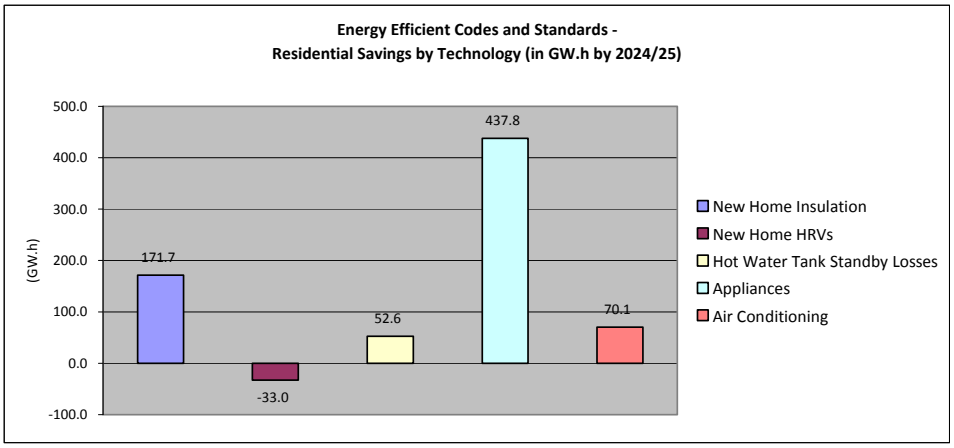
## 6.6 Energy Efficient Codes and Standards

Manitoba Hydro's strategy to affect change in codes and standards involves being an aggressive and active participant and in many cases, a driving force on a number of provincial and national energy efficiency codes and standards committees.

### 6.6.1 Residential Code Savings

#### Electricity

Currently, electric impacts for Codes and Standards are recognized due to Manitoba Hydro's on-going efforts in the areas of home insulation, heat recovery ventilation, hot water tank standby losses, appliances and air conditioning as shown in the graph below:




#### Code Details

***New Home Insulation***

*This includes codes and standards for electric space heating for new single detached homes, new duplexes and new townhouses. In addition, Manitoba Hydro influenced the Manitoba Building Code to shore up existing insulation practices that had begun to erode and improve insulation practices in new housing north of the 53rd parallel, and worked with the Manitoba Building Standards Board to adopt a minimum rating of R20 for all basement foundations in Manitoba.*

***New Home Heat Recovery Ventilators***

*This includes codes and standards for heat recovery ventilators (HRVs) installed in new homes. In 1997/98, HRVs were installed in approximately 12% of new standard homes. This is assumed to have grown to 25% by 2000/01 with the increased ventilation requirements of the National Building Code. Then it will rise to 75% in 2015/16 and to 95% in 2016/17 due to its requirement by the National Energy Code.*

### *Hot Water Tank Standby Losses*

*This includes the water heated for use by dishwashers and clothes washers. A higher insulation standard is expected to take effect in 2010/11. This C191 standard will reduce standby losses to 527 kW.h per year for a 40 gallon tank and to 670 kW.h per year for a 60 gallon tank.*

### *Residential Appliances*

*Manitoba Hydro is a key player on the Canadian Standards Association's Strategic Steering Committee on Performance, Energy Efficiency and Renewables (SCOPEER). SCOPEER is responsible for changes to provincial and national performance standards and legislation which have resulted in the improvement of energy utilization of numerous appliances.*

*Dishwashers - Includes the motor load and heat boost of dishwashers. The Department of Energy (DOE) standard is to reduce the motor and water heating requirements by 10% by 2027/28. Canadian standards have been proposed to increase the energy efficiency for dishwashers in 2010, based on CAN/CSA-C373-04, Energy Consumption Test Methods and Limits for Household Dishwashers.*

*Clothes Washers - Includes only the motor load of clothes washers. The DOE standard is to reduce the motor and water heating requirements by10% by 2027/28. Canadian standards have been harmonized with American standards since 2004.*

*Clothes Dryers - includes standards for electric clothes dryers.*

*Refrigerators - Includes all refrigerators in use at a residence. This forecast assumes that new fridges use an average of 664 kW.h per year and that this will decrease by approximately 2 kW.h per year until 2029/30.*

*Freezers - Includes all freezers that are in use at a residence. This forecast assumes that new freezers use an average of 565 kW.h per year and that this will decrease by approximately 4 kW.h per year until 2029/30.*

*Ranges/Stoves/Cooktops - Some improvement in insulation and heating element conductivity is still expected to be possible, and a 5% reduction in annual use of new stoves is assumed by the end of the forecast.*

*Electric Water Heaters (Same as above)*

*Central Air Conditioning - This category includes the outdoor compressor of central air-conditioning units. The furnace fan usage while the air-conditioning is running is not included. SEER rating requirements increased from 9 to 10 in 1998/99. SEER ratings are assumed to increase to 13 in January 2006, so installations will begin in the 2006/07 fiscal year.*

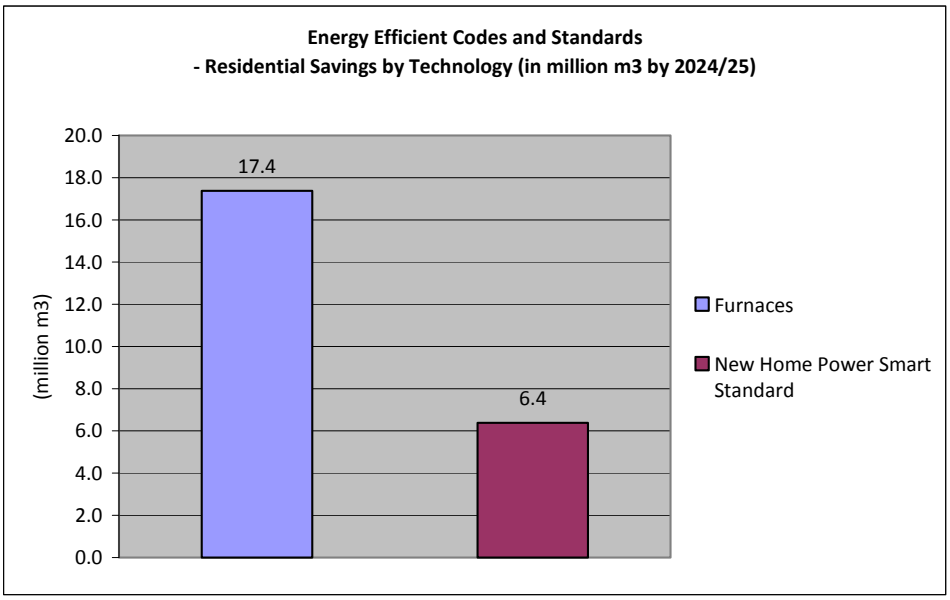
## *Summary*

As a result of Energy Efficient Codes and Standards, the 2009 Power Smart Residential Plan forecasts achieving capacity savings of 137.9 and energy savings of 797.1 GW.h annually by 2024/25. As a result of these savings, a greenhouse gas emissions reduction of 538,055 tonnes is expected by 2024/25.

| Residential Codes and Standards | Energy and Demand Savings (2024/25) | | | Annual CO2 Reductions |
|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | |
| | | | | |
| Total (@ Meter) | 120.9 | 71.9 | 699.2 | |
| **Total (@ Generation)** | **137.9** | **82.0** | **797.1** | **538,055** |

## *Natural Gas*

Currently, natural gas energy impacts for Codes and Standards are recognized due to Manitoba Hydro's on-going efforts in the areas of high-efficiency furnaces and new home Power Smart standards as shown in the graph below:




## *Code Details*

### *Residential High - Efficiency Furnaces*

*A Provincial regulation requiring a minimum efficiency of 92% AFUE for furnaces is expected shortly. Manitoba Hydro's incentive program will end upon introduction of efficiency regulations. A federal regulation requiring high efficiency furnaces with a minimum AFUE of 90% will take effect December 31, 2009.*

### *New Home Power Smart Standard*

*The New Home program will support the voluntary adoption of the Power Smart standards and work to have these standards adopted into the National Energy Code for Housing in Manitoba, until mandatory adoption in 2010. Every customer who builds a certified Power Smart Gold Home will receive a financial incentive. Technologies include building envelope measures and high-efficiency furnaces (ie. 92% AFUE).*

### *Summary*

As a result of Energy Efficient Codes and Standards, the 2009 Power Smart Residential Plan forecasts achieving natural gas savings of 23.8 million cubic meters and a global greenhouse gas emission reduction of 45,198 tonnes from 2009/10 to 2024/25.

| Residential Codes and Standards (Natural Gas) | Annual Gas Savings (Millions m3) 2024/25 | Annual CO2 Reductions (Tonnes) 2024/25 |
|---|---|---|
| | | |
| Codes and Standards | 23.8 | 45,198 |
| Total | 23.8 | 45,198 |

## 6.6.2 Commercial Code Savings

### Electricity

Manitoba Hydro's strategy to affect change in codes and standards involves being an aggressive and active participant and in many cases, a driving force on a number of provincial and national energy efficiency codes and standards committees. Currently, Commercial energy impacts for Codes and Standards are recognized due to Manitoba Hydro's on-going efforts in the area of commercial lighting.

### Code Details

***Commercial Lighting***

*Activities involved in developing lighting standards include:*

- *In collaboration with other utilities, identify necessary research*
- *Work with Canadian Electrical Association*
- *Liaise with manufacturers to encourage the development and improvement of energy efficient lighting*
- *Product testing*
- *Liaise with National Research Council*
- *Participation on the CSA Standards Setting Committee*
- *Participation on the Canadian Lighting Industry Collaborative*

### Summary

As a result of Energy Efficient Codes and Standards, the 2009 Power Smart Commercial plan forecasts achieving capacity savings of 32.3 MW and energy savings of 97.4 GW.h annually by 2024/25. As a result of these savings, a greenhouse gas emissions reduction of 65,715 tonnes is expected by 2024/25.

| Commercial Codes and Standards | Energy and Demand Savings (2024/25) | | | Annual CO2 Reductions (Tonnes) (2024/25) |
|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | |
| | | | | |
| Total (@ Meter) | 28.3 | 28.3 | 85.4 | |
| **Total (@ Generation)** | **32.3** | **32.3** | **97.4** | **65,715** |

### *Natural Gas*

Currently, natural gas energy impacts for Codes and Standards are recognized due to Manitoba Hydro's on-going efforts in the area of new construction.

### *Code Details*

#### *New Construction*

*In 2012, it is anticipated that code will be implemented requiring all new commercial buildings meet a minimum efficiency of 25% above MNEC. At this time the Commercial New Construction Program requirements will be changed requiring eligible buildings to meet a minimum efficiency of 40% above MNEC. Savings between 2013 and 2017 represent the difference between 25% and 40%.*

### *Summary*

As a result of Energy Efficient Codes and Standards, the 2009 Power Smart Commercial plan forecasts achieving natural gas savings of 7.6 million cubic meters and a global greenhouse gas emission reduction of 14,516 tonnes from 2009/10 to 2024/25.

| Commercial Codes and Standards (Natural Gas) | Annual Gas Savings (Millions m3) 2024/25 | Annual CO2 Reductions (Tonnes) 2024/25 |
|---|---|---|
| | | |
| Codes and Standards | 7.6 | 14,516 |
| Total | 7.6 | 14,516 |

# 7 Demand Side Management Summary

## 7.1 Electric Demand Side Management

### 7.1.1 Electric DSM Targets

In summary, the 2009 Power Smart Plan forecasts achieving capacity savings of 643.7 MW, energy savings of 2,052.7 GW.h and a global greenhouse gas emission reduction of 1,385,728 tonnes from 2009/10 to 2024/25 at a total utility investment of $457.6 million.

The following table shows detailed savings and costs associated with the Power Smart Plan by sector to 2024.

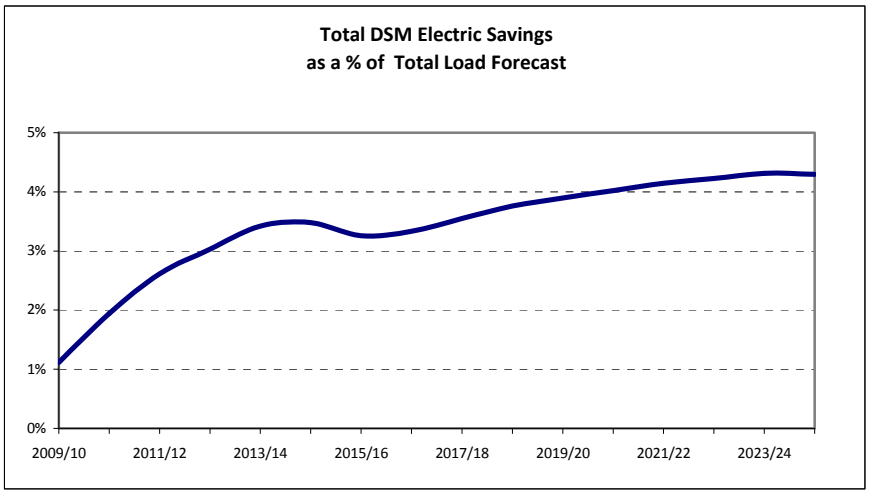
**2009 Power Smart Plan**
**2009/10 - 2024/25**

| | Energy and Demand Savings | | | | | | Annual C02 Reductions | Cummulative Untility Cost | |
|---|---|---|---|---|---|---|---|---|---|
| | Winter MW | % | Summer MW | % | Annual GW.h | % | (Tonnes) | (Millions, 2009$) | % |
| **Residential Plan** | | | | | | | | | |
| Incentive Based Programs | 25.1 | 6% | 4.4 | 1% | 95.2 | 9% | 73,264 | $ 33.4 | 9% |
| Customer Service Initiatives | 9.9 | 2% | 0.2 | 0% | 26.7 | 3% | 20,534 | $ 3.5 | 1% |
| **2009 Residential Power Smart Plan - Subtotal** | **35.0** | **8%** | **4.6** | **1%** | **121.9** | **12%** | **93,797** | **$ 37.0** | **10%** |
| **Commercial Plan** | | | | | | | | | |
| Incentive Based Programs | 137.3 | 32% | 106.4 | 29% | 558.1 | 54% | 429,494 | $ 154.2 | 40% |
| **2009 Commercial Power Smart Plan - Subtotal** | **137.3** | **32%** | **106.4** | **29%** | **558.1** | **54%** | **429,494** | **$ 154.2** | **40%** |
| **Industrial Plan** | | | | | | | | | |
| Incentive Based Programs | 65.6 | 15% | 65.6 | 18% | 273.6 | 27% | 203,148 | $ 64.8 | 17% |
| **2009 Industrial Power Smart Plan - Subtotal** | **65.6** | **15%** | **65.6** | **18%** | **273.6** | **27%** | **203,148** | **$ 64.8** | **17%** |
| | | | | | | | | | |
| **Energy Efficient - Subtotal** | **237.9** | **56%** | **176.6** | **49%** | **953.6** | **93%** | **726,439** | **$ 255.9** | **67%** |
| **Load Management Plan** | | | | | | | | | |
| Incentive Based Programs | 176.9 | 42% | 176.9 | 49% | 0.0 | 0% | - | $ 101.8 | 27% |
| **2009 Load Management Power Smart Plan - Subtotal** | **176.9** | **42%** | **176.9** | **49%** | **0.0** | **0%** | **-** | **$ 101.8** | **27%** |
| **Customer Self-Generation Plan** | | | | | | | | | |
| Incentive Based Programs | 9.4 | 2% | 9.4 | 3% | 74.8 | 7% | 55,518 | $ 24.6 | 6% |
| **2009 Customer Self-Generation Power Smart Plan - Subtotal** | **9.4** | **2%** | **9.4** | **3%** | **74.8** | **7%** | **55,518** | **$ 24.6** | **6%** |
| | | | | | | | | | |
| **2009 Power Smart Plan (@ meter)** | **424.2** | **100%** | **362.9** | **100%** | **1028.4** | **100%** | **781,957** | **$ 382.4** | **100%** |
| Additional Savings: | | | | | | | | | |
| Energy Efficiency Codes and Standards (@ meter) | 149.2 | | 100.2 | | 784.6 | | 603,770 | | |
| Additional Costs: | | | | | | | | | |
| Customer Information, Standard Development & Customer Service | | | | | | | | $ 40.3 | |
| Incremental Support & Contingency | | | | | | | | $ 34.9 | |
| **2009 Power Smart Plan (@ generation)** | **643.7** | | **518.0** | | **2,052.7** | | **1,385,728** | **$ 457.6** | |

Most notably, the Curtailable Rates Program offers the most significant demand reductions of all DSM programs with approximately 42% of winter capacity savings, with the commercial sector accounting for approximately an additional 32%.

Moreover, the commercial sector accounts for the largest proportion of forecast energy savings (54%). The industrial sector offers the second largest area for efficiency savings, followed by the residential sector.

This activity represents approximately 4.3% of the estimated load forecast at the benchmark year.



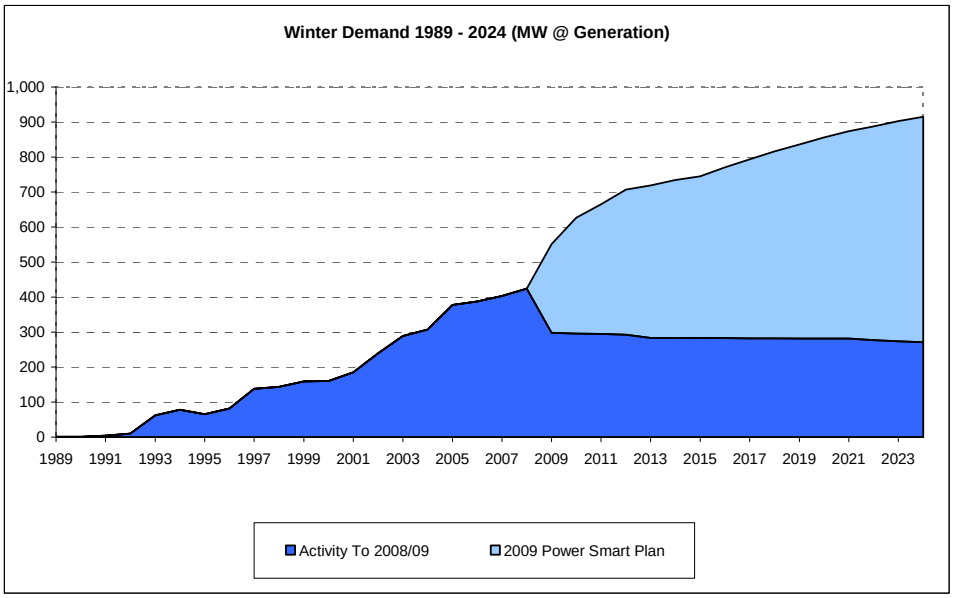

In combination with savings to date, the 2009 Power Smart Plan forecasts achieving capacity savings of 914.7 MW, energy savings of 3,270.6 GW.h and a global greenhouse gas emission reduction of 2,207,668 tonnes to 2024/25 at a total utility investment of $733.3 million as per the table below:

**2009 Power Smart Plan with Savings to Date**
**1989/90 - 2024**

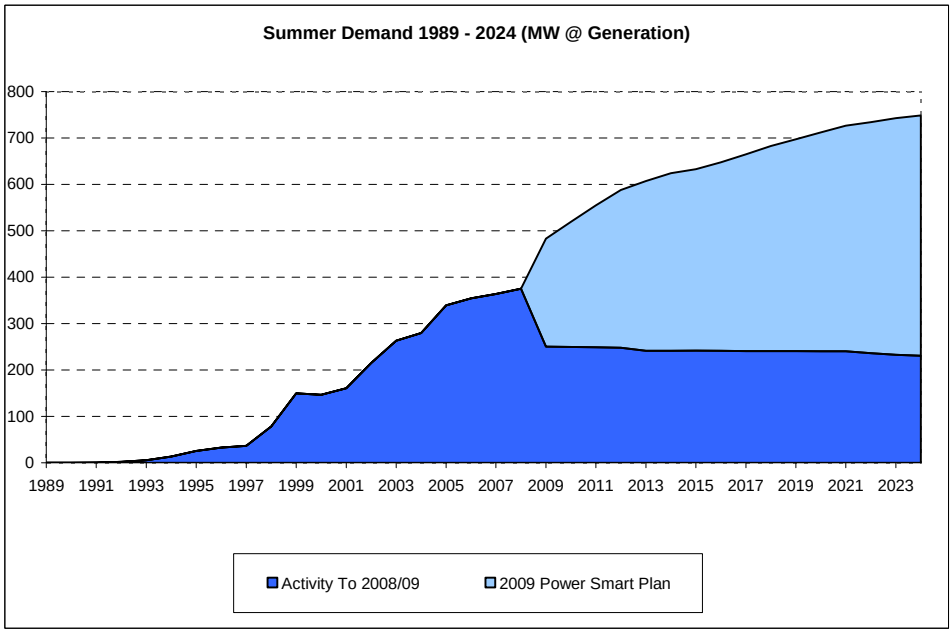
| | Energy and Demand Savings | | | Annual C02 Reductions | Cummulative Untility Cost |
|---|---|---|---|---|---|
| | Winter MW | Summer MW | Annual GW.h | (Tonnes) | (Millions, 2009$) |
| 2009 Power Smart Plan (@ generation) | 643.7 | 518.0 | 2052.7 | 1,385,728 | 457.6 |
| Savings Achieved to 2008/09 (1989-2024) | 271.0 | 230.7 | 1217.9 | 821,940 | 275.8 |
| **Totals Projected to 2024/25** | **914.7** | **748.6** | **3270.6** | **2,207,668** | **$ 733.3** |

The following three charts graphically represent the demand and energy savings achieved to date and the savings anticipated from future DSM activity for the 2009 Power Smart Plan:

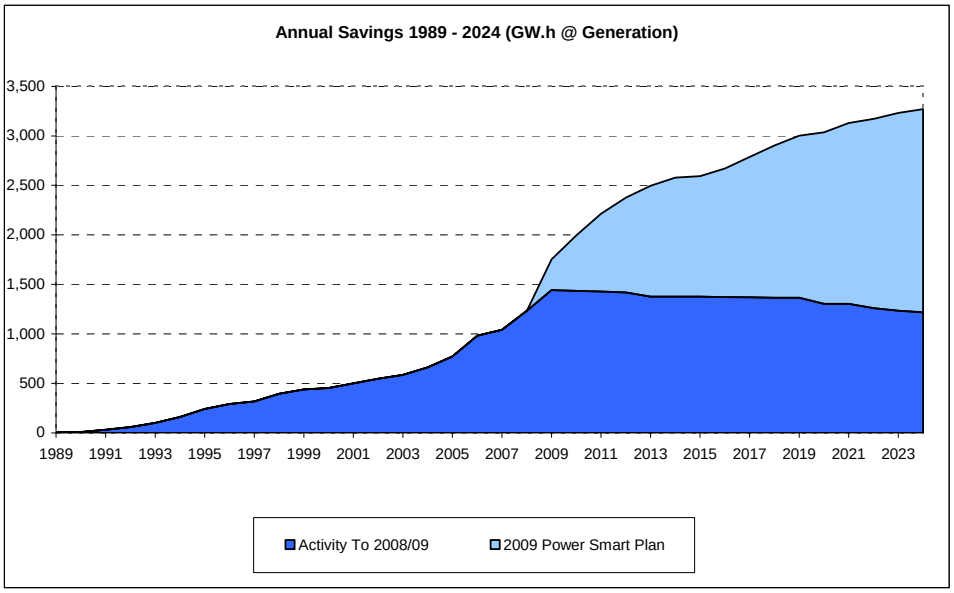
### *Winter Capacity Savings 1989-2024*




### *Summer Capacity Savings 1989-2024*



## *Annual Energy Savings 1989-2024*



### *7.1.2 Electric DSM Utility Investment*

The following table provides the projected annual electric DSM investment and cumulative totals to 2024/25 broken down by market sector and cost basis. It is expected that by 2024/25, a cumulative amount of $733.3 million will have been invested on Power Smart electric programs.

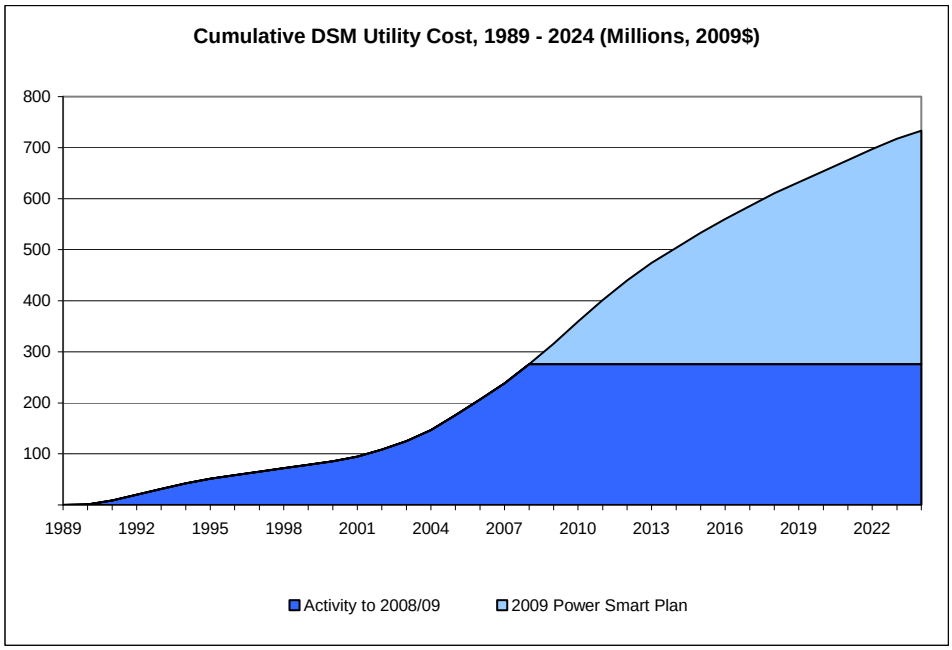
**Electric Power Smart Utility Budget, 2009/10 - 2024/25**
**(Millions, 2009 $)**

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 |
|---|---|---|---|---|---|---|---|---|
| Residential | 8.9 | 9.1 | 8.4 | 2.1 | 2.0 | 1.0 | 0.9 | 0.9 |
| Customer Service Initiatives | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| Commercial | 15.6 | 15.5 | 12.7 | 11.3 | 10.9 | 10.6 | 10.8 | 11.0 |
| Industrial | 2.7 | 5.7 | 7.5 | 9.4 | 5.3 | 3.9 | 3.5 | 3.0 |
| Rate/Load Management | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 |
| Customer Self Generation | 2.7 | 2.3 | 2.6 | 4.3 | 4.4 | 3.2 | 2.7 | 1.1 |
| Support & Contingency | 0.8 | 0.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| Information, Codes & Standards | 2.8 | 2.7 | 2.7 | 2.7 | 2.6 | 2.5 | 2.5 | 2.5 |
| **Annual Costs** | **40.3** | **43.0** | **42.5** | **38.4** | **33.9** | **29.9** | **29.0** | **27.1** |
| | | | | | | | | |
| **Cumulative Cost, 2009-2024** | **$40.3** | **$83.3** | **$125.8** | **$164.2** | **$198.1** | **$228.0** | **$257.0** | **$284.0** |
| **Cumulative Cost, 1989-2024** | **$316.1** | **$359.1** | **$401.6** | **$439.9** | **$473.9** | **$503.8** | **$532.7** | **$559.8** |

| | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 |
|---|---|---|---|---|---|---|---|---|
| Residential | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Customer Service Initiatives | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Commercial | 10.8 | 9.7 | 6.9 | 6.8 | 6.7 | 6.6 | 6.5 | 1.9 |
| Industiral | 3.0 | 3.1 | 3.1 | 3.2 | 3.2 | 3.3 | 2.5 | 2.5 |
| Rate/Load Management | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 |
| Customer Self Generation | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Support & Contingency | 1.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 |
| Information, Codes & Standards | 2.5 | 2.5 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| **Annual Costs** | **25.6** | **25.1** | **21.8** | **21.6** | **21.5** | **21.4** | **20.6** | **16.0** |
| | | | | | | | | |
| **Cumulative Cost, 2009-2024** | **$309.6** | **$334.7** | **$356.5** | **$378.1** | **$399.6** | **$421.0** | **$441.6** | **$457.6** |
| **Cumulative Cost, 1989-2024** | **$585.4** | **$610.4** | **$632.3** | **$653.8** | **$675.3** | **$696.8** | **$717.3** | **$733.3** |

The following graph provides the cumulative electric DSM utility cost for electric DSM from 1989/90 through to 2024/25. Electric expenditures to date comprise 38% of the projected cumulative electricity expenditures for 2024/25.

### *Cumulative DSM Utility Costs 1989-2024*



### *7.1.3 Electric DSM Cost-Effectiveness*

The following table outlines the cost-effectiveness of the electric program offerings provided in the 2009 Power Smart Plan.

**Power Smart Plan Economic Cost-Effectiveness Ratios and Costs, 2009/10 - 2037/38**

| Programs<br>Energy Efficiency Programs: | Total Resource Cost (TRC) | Rate Impact Measure (RIM) | Levelized Utility Cost (¢/kW.h) | Participating Customer (PC) | Customer Payback (Years) |
|---|---|---|---|---|---|
| **Residential:** | | | | | |
| New Home Program | 1.9 | 1.4 | 0.6 | 1.4 | 7.6 |
| Home Insulation Program | 4.4 | 1.6 | 2.2 | 3.4 | 1.8 |
| Water and Energy Saver Program | 9.6 | 1.1 | 1.3 | 10.7 | n/a |
| Lower Income Energy Efficiency Program | 1.9 | 1.4 | 0.6 | 1.4 | 6.3 |
| Residential HE Furnace & Boiler Program* | 0.8 | 1.9 | 0.0 | 0.4 | n/a |
| EE Light Fixtures | 1.8 | 0.7 | 5.3 | 27.1 | n/a |
| Residential CFL Program | 15.3 | 1.3 | 0.8 | 23.2 | n/a |
| Fridge Recycling Program | 1.6 | 0.8 | 2.5 | 2.2 | 2.7 |
| Residential Appliance Program* | 4.0 | 1.2 | 0.7 | 4.1 | 2.6 |
| **Total (@ Meter)** | **3.4** | **1.2** | **1.4** | **3.2** | **1.7** |
| | | | | | |
| **Commercial:** | | | | | |
| Commercial Lighting Program* | 2.5 | 1.4 | 1.7 | 1.9 | 3.4 |
| Commercial Custom Measures Program | 2.5 | 1.2 | 2.5 | 2.5 | 3.0 |
| Commercial Windows Program | 2.3 | 1.2 | 4.5 | 3.3 | 1.6 |
| Commercial HVAC Program - Chiller* | 1.7 | 1.1 | 1.0 | 1.6 | 5.1 |
| Commercial Parking Lot Controller Program | 3.7 | 1.7 | 0.5 | 2.3 | 1.2 |
| City of Winnipeg Power Smart Agreement | 8.2 | 1.5 | 1.1 | 5.9 | 0.1 |
| Commercial Rinse & Save Program | 62.6 | 1.4 | 0.3 | 95.8 | n/a |
| Commercial Refrigeration Program | 5.8 | 1.4 | 0.6 | 4.8 | 2.1 |
| Commercial Insulation Program | 3.2 | 1.6 | 2.5 | 2.5 | 4.6 |
| Commercial Earth Power Program | 2.7 | 1.6 | 2.3 | 1.8 | 6.0 |
| Commercial New Construction Program | 1.5 | 1.1 | 3.2 | 1.4 | 0.0 |
| Commercial Building Optimization Program | 5.0 | 1.7 | 1.4 | 3.5 | 1.5 |
| Internal Retrofit Program | 1.1 | 1.1 | 2.2 | 1.0 | 0.0 |
| Agricultural Heat Pad Program* | 143.9 | 1.8 | 0.2 | 0.0 | n/a |
| Power Smart Energy Manager Program* | 3.1 | 1.5 | 0.6 | 2.6 | 3.1 |
| Commercial Kitchen Appliance Program* | 3.5 | 1.3 | 2.6 | 3.1 | 1.0 |
| Commercial Clothes Washers Program* | 2.0 | 1.6 | 3.1 | 1.5 | 4.8 |
| Network Energy Management Program* | 3.5 | 1.1 | 1.4 | 3.3 | 0.1 |
| Power Smart Shops* | 1.9 | 1.0 | 2.1 | 2.3 | 2.1 |
| CO2 Sensors* | 4.9 | 1.4 | 0.7 | 4.0 | 0.0 |
| **Total (@ Meter)** | **2.5** | **1.4** | **1.8** | **2.0** | **2.8** |
| | | | | | |
| **Industrial:** | | | | | |
| Performance Optimization Program | 3.8 | 1.4 | 1.6 | 3.3 | 1.3 |
| Emergency Preparedness Program | 2.4 | 1.1 | 6.3 | 2.3 | 0.0 |
| **Total (@ Meter)** | **3.3** | **1.3** | **2.2** | **2.9** | **1.3** |
| | | | | | |
| ***Load Management Programs:*** | | | | | |
| *Curtailable Rate Program* | *n/a* | *n/a* | *n/a* | *n/a* | *n/a* |
| | | | | | |
| **Customer Self-Generation Programs:** | | | | | |
| **Bioenergy Optimization Program*** | **1.6** | **1.4** | **1.6** | **1.2** | **1.8** |
| | | | | | |
| **Overall Benefit / Cost Ratio (2009 to 2024)** | **2.5** | **1.3** | | **2.1** | **2.0** |
| **Overall Utility Cost (¢/kW.h)** | | | **1.9** | | |

*Notes:*

** Program assumption includes future Market Transformation and/or Participant Re-investment.*

*1) Overall TRC, RIM and levelized utility cost do not include Curtailable Rates.*

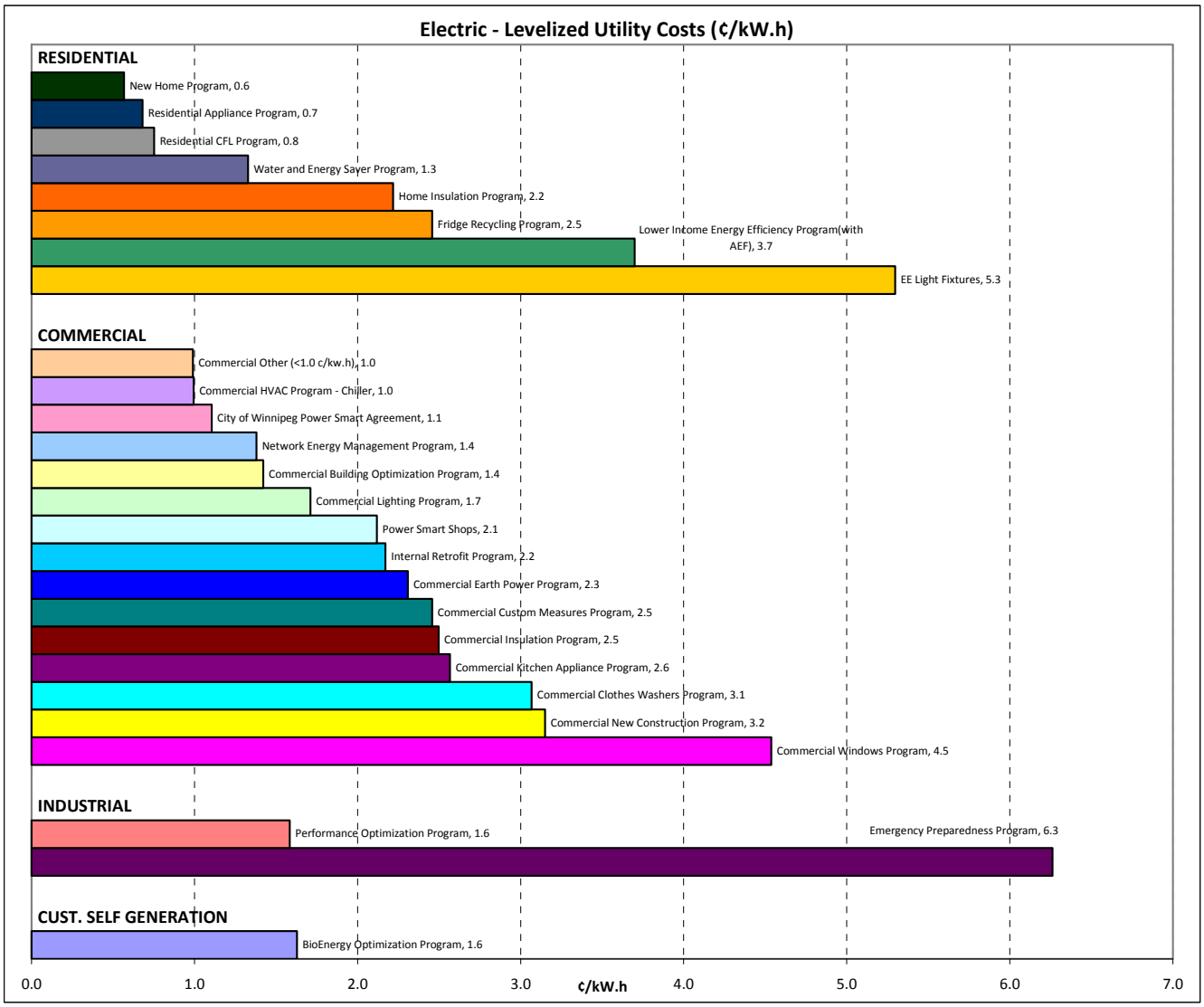
*2) Overall TRC and RIM Ratios do not include savings due to Customer Service Initiatives.*

*3) Overall benefit/cost ratios and utility costs include support and contingency costs.*

For electricity, the overall Total Resource Cost (TRC) benefit/cost ratio for the 2009 Power Smart Plan is 2.5, and the Rate Impact Measure (RIM) benefit/cost ratio is 1.3. All programs have a positive TRC ratio with a value greater than or equal to one.

Most notably, the Agriculture Heat Pad program and the Commercial Rinse & Save program have high TRC ratios. The Heat Pad program has very low life-cycle product costs and the Spray Valve program has low administrative costs coupled with additional water benefits which result in high TRC ratios. The overall utility cost ratio for electric programs including support and contingency costs is 1.9 cents per kW.h.

The following chart compares the Levelized Utility Cost of the electric program offerings provided in the 2009 Power Smart Plan.



## 7.2 Natural Gas Demand Side Management

### 7.2.1 Natural Gas DSM Targets

In summary, the 2009 Power Smart Plan forecasts achieving natural gas savings of 136.7 million cubic meters and a global greenhouse gas emission reduction of 260,305 tonnes from 2009/10 to 2024/25 at a total utility investment of $134.1 million.

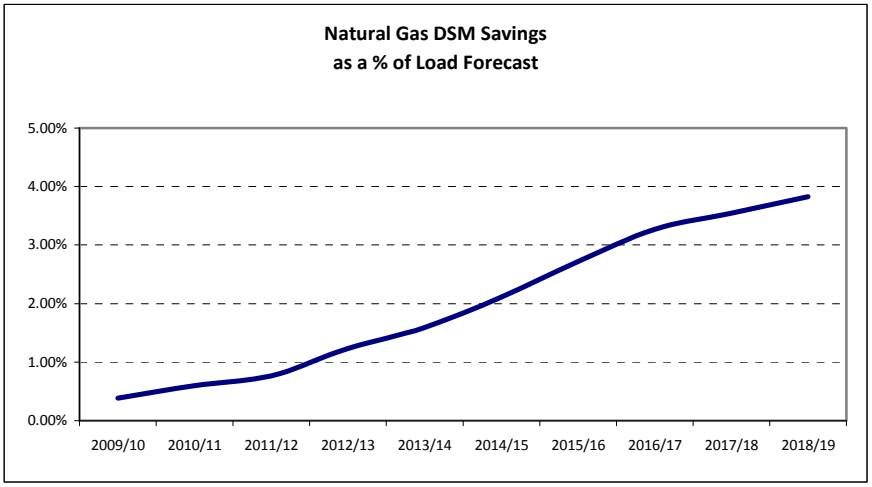
The following table shows detailed savings and costs associated with the Power Smart Plan by sector to 2024:

| | Energy Savings | | Annual C02 Reductions | Cummulative Utility Cost | |
|---|---|---|---|---|---|
| | Annual Natural Gas Savings (Million m3) | % | (Tonnes) | (Millions, 2009$) | % |
| **Residential Plan** | | | | | |
| Incentive Based Programs | 23.5 | 22% | 44,640 | $30.3 | 34% |
| Customer Service Initiatives | 11.7 | 11% | 22,309 | $1.0 | 1% |
| **2009 Residential Power Smart Plan - Subtotal** | **35.2** | 33% | **66,949** | $31.3 | **35%** |
| **Commercial Plan** | | | | | |
| Incentive Based Programs | 62.0 | 59% | 117,913 | $52.6 | 59% |
| **2009 Commercial Power Smart Plan - Subtotal** | **62.0** | 59% | **117,913** | $52.6 | **59%** |
| **Industrial Plan** | | | | | |
| Incentive Based Programs | 4.6 | 4% | 8,823 | $3.6 | 4% |
| **2009 Industrial Power Smart Plan - Subtotal** | **4.6** | 4% | **8,823** | $3.6 | **4%** |
| | | 0% | | | |
| **Energy Efficient - Subtotal** | **101.8** | 97% | **193,685** | $87.4 | **98%** |
| **Load Management Plan** | | | | | |
| Incentive Based Programs | 0.0 | | - | $0.0 | 0% |
| **2009 Load Management Power Smart Plan - Subtotal** | **0.0** | | **-** | $0.0 | **0%** |
| **Customer Self-Generation Plan** | | | | | |
| Incentive Based Programs | 3.6 | 3% | 6,906 | $1.6 | 2% |
| **2009 Customer Self-Generation Power Smart Plan - Subtotal** | **3.6** | 3% | **6,906** | $1.6 | **2%** |
| | | | | | |
| **2009 Power Smart Plan Activity** | **105.4** | 100% | **200,592** | $89.0 | **100%** |
| Additional Savings: | | | | | |
| Energy Efficiency Codes and Standards | 31.4 | | 59,714 | | |
| Additional Costs: | | | | | |
| Customer Information, Standard Development & Customer Service | | | | $17.4 | |
| Incremental Support & Contingency | | | | $27.7 | |
| **2009 Power Smart Plan (Total)** | **136.7** | | **260,305** | $134.1 | |

*Notes:*
*1) Overall benefit/cost ratios and utility costs include support and contingency costs.*

Most notably, the Commercial sector offers the most significant contribution with approximately 59% of natural gas savings, with the residential sector accounting for an additional 33%.

This activity represents approximately 3.8% of the estimated load forecast at the benchmark year.



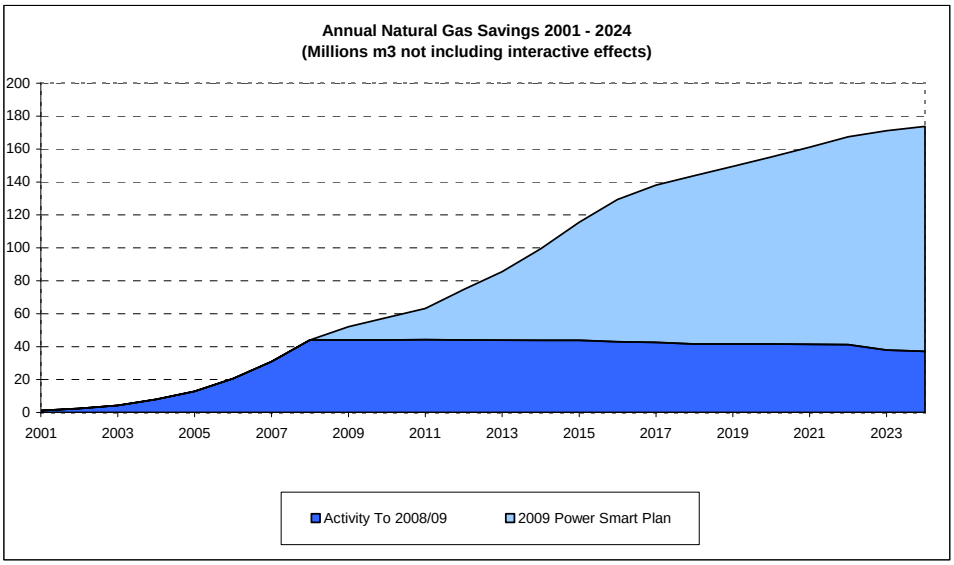

In combination with savings to date, the 2009 Power Smart Plan forecasts achieving natural gas savings of 172.3 million cubic meters and global greenhouse gas emission reduction of 327,968 tonnes to 2024/25 at a total utility investment of $173.1 million as per the table below:

**2009 Power Smart Plan with Savings to Date**
**2001- 2024**

| | Energy Savings | | Annual C02 Reductions | Cummulative Untility Cost | |
|---|---|---|---|---|---|
| | Annual Natural Gas Savings (cubic meters) | | (Tonnes) | (Millions, 2009$) | |
| **2009 Power Smart Plan (Total)** | 136.7 | | 260,305 | $134.1 | |
| Savings Achieved to 2008/09 (2001-2024) | 35.6 | | 67,663 | $38.9 | |
| **Totals Projected to 2024/25** | **172.3** | | **327,968** | $173.1 | |

The following chart graphically represents the natural gas savings achieved to date and the savings anticipated from future DSM activity for the 2009 Power Smart Plan:

### *Annual Natural Gas Savings 2001-2024*



### *7.2.2 Natural Gas DSM Utility Investment*

The following table provides the projected annual natural gas DSM investment and cumulative totals to 2024/25 broken down by market sector and cost basis. It is expected that by 2024/25, a cumulative amount of $173.1 million will have been invested on Power Smart natural gas programs.

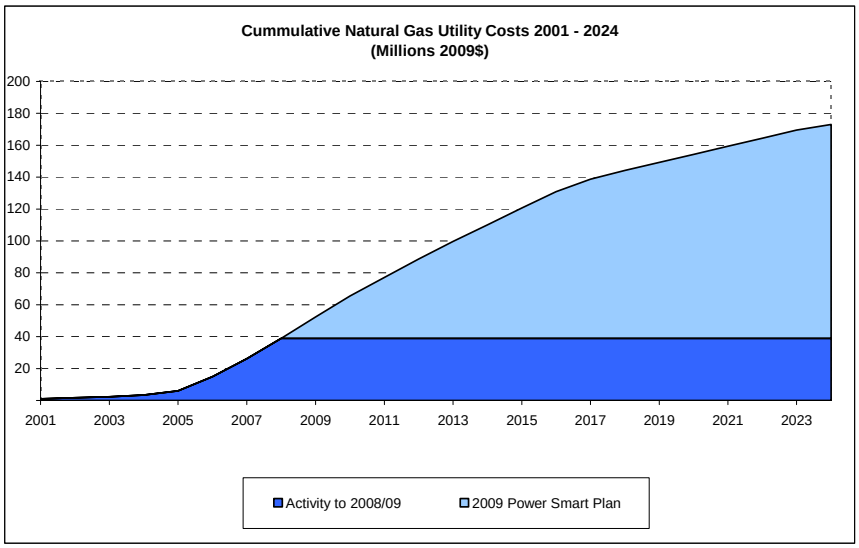
**Natural Gas Power Smart Utility Budget, 2009/10 - 2024/25**
**(Millions, 2009 $)**

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 |
|---|---|---|---|---|---|---|---|---|
| Residential | 6.1 | 5.4 | 4.1 | 3.6 | 3.5 | 2.6 | 2.5 | 2.5 |
| Customer Service Initiatives | 0.5 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Commercial | 4.3 | 3.8 | 3.9 | 4.0 | 4.0 | 4.1 | 4.2 | 4.5 |
| Industrial | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 |
| Rate/Load Management | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Customer Self Generation | 0.2 | 0.1 | 0.0 | 0.6 | 0.0 | 0.1 | 0.5 | 0.0 |
| Support & Contingency | 0.7 | 1.8 | 1.9 | 2.0 | 2.0 | 1.9 | 1.9 | 1.8 |
| Information, Codes & Standards | 1.2 | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| **Annual Costs** | **13.5** | **13.1** | **11.6** | **11.7** | **11.1** | **10.2** | **10.6** | **10.3** |
| | | | | | | | | |
| **Cumulative Cost, 2009-2024** | **13.5** | **26.6** | **38.1** | **49.8** | **60.9** | **71.0** | **81.7** | **92.0** |
| **Cumulative Cost, 1989-2024** | **52.4** | **65.5** | **77.1** | **88.7** | **99.8** | **110.0** | **120.6** | **130.9** |

| | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 |
|---|---|---|---|---|---|---|---|---|
| Residential | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Customer Service Initiatives | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Commercial | 4.4 | 2.6 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 1.7 |
| Industrial | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rate/Load Management | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Customer Self Generation | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Support & Contingency | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 0.8 |
| Information, Codes & Standards | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| **Annual Costs** | **7.7** | **5.5** | **5.1** | **5.1** | **5.0** | **5.1** | **5.1** | **3.6** |
| | | | | | | | | |
| **Cumulative Cost, 2009-2024** | **99.8** | **105.2** | **110.3** | **115.3** | **120.4** | **125.5** | **130.6** | **134.1** |
| **Cumulative Cost, 1989-2024** | **138.7** | **144.2** | **149.2** | **154.3** | **159.3** | **164.4** | **169.5** | **173.1** |

The following graph provides the cumulative natural gas DSM utility cost for natural gas DSM from 2001/02 through to 2024/25. Electric expenditures to date comprise 22% of the projected cumulative electricity expenditures for 2024/25.

### *Cumulative DSM Utility Costs 2001-2024*



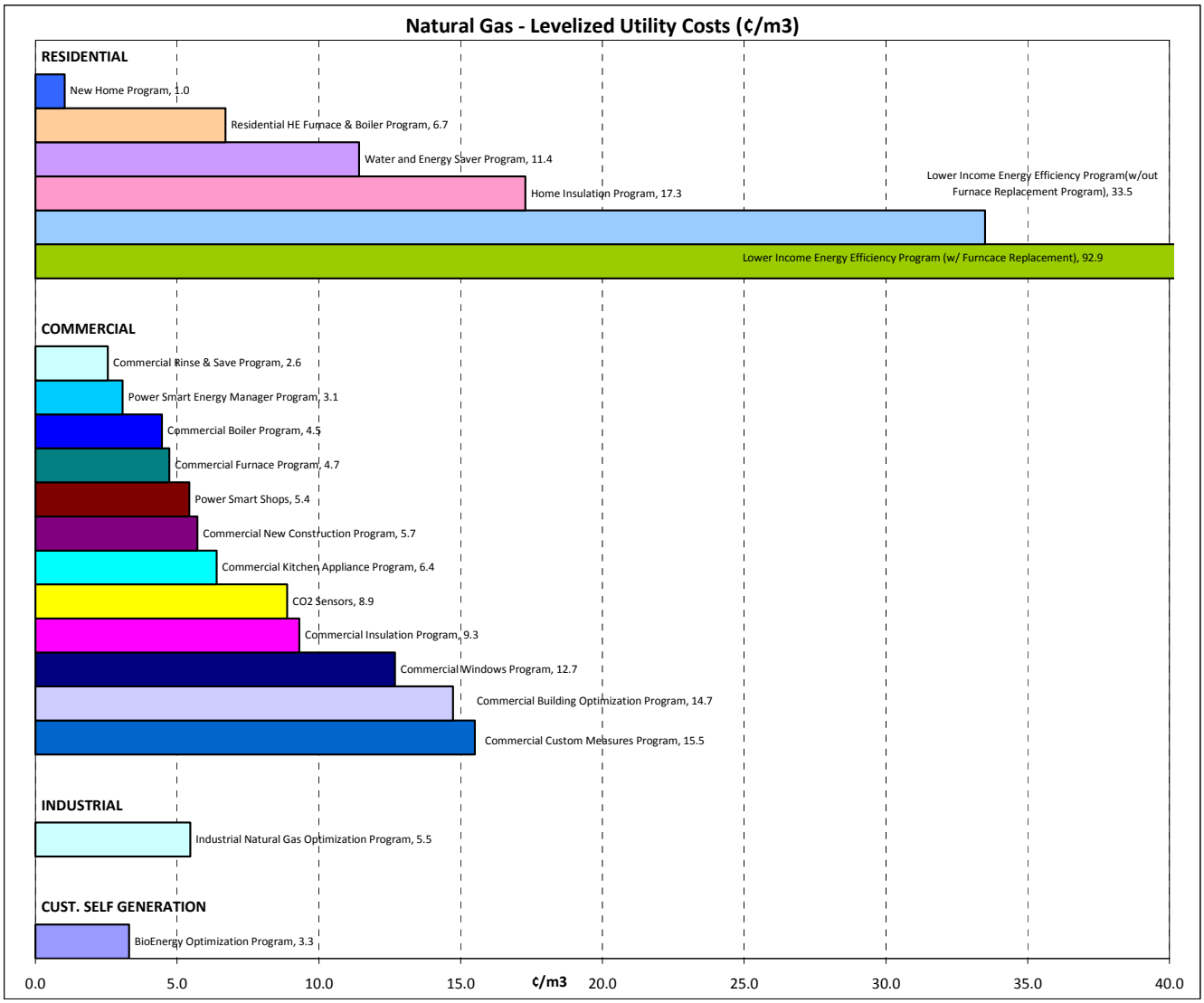
### *7.2.3 Natural Gas DSM Cost-Effectiveness*

The following table outlines the cost-effectiveness of the natural gas program offerings provided in the Power Smart Plan.

| | Benefit / Cost Ratios | | | | |
|---|---|---|---|---|---|
| **Programs**<br>**Energy Efficiency Programs:** | **Total Resource Cost (TRC)** | **Rate Impact Measure (RIM)** | **Levelized Utility Cost (¢/kW.h)** | **Participating Customer (PC)** | **Customer Payback (Years)** |
| **Residential:** | | | | | |
| New Home Program | 1.2 | 1.0 | 1.0 | 1.3 | 7.3 |
| Home Insulation Program | 1.9 | 0.7 | 17.3 | 3.4 | 1.0 |
| Water and Energy Saver Program | 6.9 | 0.7 | 11.4 | 10.0 | n/a |
| Lower Income Energy Efficiency Program | 0.8 | 0.6 | 20.2 | 1.3 | n/a |
| Residential HE Furnace & Boiler Program* | 3.4 | 0.8 | 6.7 | 4.6 | 8.1 |
| **Total (@ Meter)** | **1.6** | **0.8** | **11.4** | **2.3** | **0.9** |
| **Commercial:** | | | | | |
| Commercial Lighting Program* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Commercial Custom Measures Program | 1.2 | 0.7 | 15.5 | 2.0 | 4.7 |
| Commercial Windows Program | 2.0 | 0.7 | 12.7 | 2.9 | 1.5 |
| Commercial Rinse & Save Program | 46.6 | 0.9 | 2.6 | 102.4 | n/a |
| Commercial Insulation Program | 1.2 | 0.8 | 9.3 | 1.6 | 6.2 |
| Commercial New Construction Program | 3.2 | 0.9 | 5.7 | 4.0 | 0.0 |
| Commercial Building Optimization Program | 1.6 | 0.7 | 14.7 | 2.6 | 1.6 |
| Power Smart Energy Manager Program* | 3.9 | 0.9 | 3.1 | 6.0 | 1.1 |
| Commercial Kitchen Appliance Program* | 1.6 | 0.8 | 6.4 | 1.9 | 1.5 |
| Power Smart Shops* | 6.1 | 0.8 | 5.4 | 19.2 | 0.0 |
| Commercial Furnace Program* | 2.0 | 0.8 | 4.7 | 2.6 | 4.7 |
| Commercial Boiler Program* | 3.9 | 0.9 | 4.5 | 4.7 | 0.5 |
| CO2 Sensors* | 2.8 | 0.8 | 8.9 | 4.3 | 0.0 |
| **Total (@ Meter)** | **2.0** | **0.8** | **7.2** | **2.6** | **2.2** |
| **Industrial:** | | | | | |
| Industrial Natural Gas Optimization Program* | 1.5 | 0.9 | 5.5 | 1.7 | 4.6 |
| **Total (@ Meter)** | **1.5** | **0.9** | **5.5** | **1.7** | **4.6** |
| **Customer Self-Generation Programs:** | | | | | |
| Bioenergy Optimization Program* | 5.1 | 0.9 | 3.3 | 6.2 | 0.0 |
| **Total (@ Meter)** | **5.1** | **0.9** | **3.3** | **6.2** | **0.0** |
| | | | | | |
| **Overall Benefit / Cost Ratio without Interactive Effects from Electric DSM** | **1.8** | **0.8** | | | |
| **Overall Benefit / Cost Ratio with Interactive Effects from Electric DSM** | **1.7** | **0.7** | | | |
| **Overall Utility Cost Overall Utility Cost (¢/kW.h) without Interactive Effects** | | | **8.8** | | |
| **Overall Utility Cost Overall Utility Cost (¢/kW.h) with Interactive Effects** | | | **9.5** | | |

*Notes:*
** Program assumption includes future Market Transformation and/or Participant Re-investment.*
*1) Overall benefit/cost ratios and utility costs include support and contingency costs.*

The following chart compares the Levelized Utility Cost of the natural gas program offerings provided in the 2009 Power Smart Plan.



## 7.3 Combined Demand Side Management

### 7.3.1 Combined DSM Utility Investment

The following table provides the projected annual Power Smart investment and cumulative totals to 2024/25 for electric and natural gas DSM portfolios combined. Annual investment is broken down on a market sector and cost basis. It is expected that by 2024/25 a cumulative amount of $906.4 million will have been invested on all Power Smart programs.

**Combined Power Smart Budget, 2009/10 - 2024/25**
**(Millions, 2009$)**

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 |
|---|---|---|---|---|---|---|---|---|
| Residential | 15.0 | 14.5 | 12.6 | 5.7 | 5.5 | 3.6 | 3.5 | 3.4 |
| Customer Service Intiatives | 0.9 | 1.0 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| Commercial | 19.9 | 19.2 | 16.6 | 15.2 | 14.9 | 14.7 | 15.0 | 15.5 |
| Industrial | 3.2 | 6.2 | 7.9 | 9.9 | 5.7 | 4.3 | 3.8 | 3.3 |
| Rate/Load Management | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 |
| Customer Self-Generation | 2.8 | 2.4 | 2.6 | 4.9 | 4.5 | 3.3 | 3.2 | 1.1 |
| Support & Contingency | 1.5 | 2.6 | 3.8 | 3.9 | 3.9 | 3.7 | 3.7 | 3.7 |
| Information, Codes & Standards | 4.0 | 3.9 | 3.8 | 3.8 | 3.7 | 3.6 | 3.6 | 3.6 |
| **Annual Costs** | **53.8** | **56.1** | **54.1** | **50.0** | **45.0** | **40.1** | **39.6** | **37.4** |
| | | | | | | | | |
| **Cumulative Costs 2009-2024** | **$53.8** | **$109.9** | **$163.9** | **$214.0** | **$259.0** | **$299.0** | **$338.6** | **$376.0** |
| **Cumulative Costs 1989-2024** | **$368.5** | **$424.6** | **$478.6** | **$528.7** | **$573.7** | **$613.7** | **$653.3** | **$690.7** |

| | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 |
|---|---|---|---|---|---|---|---|---|
| Residential | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Customer Service Intiatives | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Commercial | 15.2 | 12.3 | 9.1 | 9.0 | 8.9 | 8.8 | 8.7 | 3.6 |
| Industrial | 3.4 | 3.1 | 3.1 | 3.2 | 3.2 | 3.3 | 2.5 | 2.5 |
| Rate/Load Management | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 |
| Customer Self-Generation | 0.6 | 0.6 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Support & Contingency | 3.7 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | 3.7 |
| Information, Codes & Standards | 3.6 | 3.5 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| **Annual Costs** | **33.3** | **30.6** | **26.9** | **26.6** | **26.5** | **26.5** | **25.6** | **19.6** |
| | | | | | | | | |
| **Cumulative Costs 2009-2024** | **$409.3** | **$439.9** | **$466.8** | **$493.4** | **$519.9** | **$546.5** | **$572.1** | **$591.7** |
| **Cumulative Costs 1989-2024** | **$724.0** | **$754.6** | **$781.5** | **$808.1** | **$834.6** | **$861.2** | **$886.8** | **$906.4** |

### *7.3.2 Combined DSM Cost-Effectiveness*

The following table outlines the cost-effectiveness of all program offerings provided in the Power Smart Plan.

**Combined DSM Cost-Effectiveness TRC Ratios, 2009/10 – 2037/38**

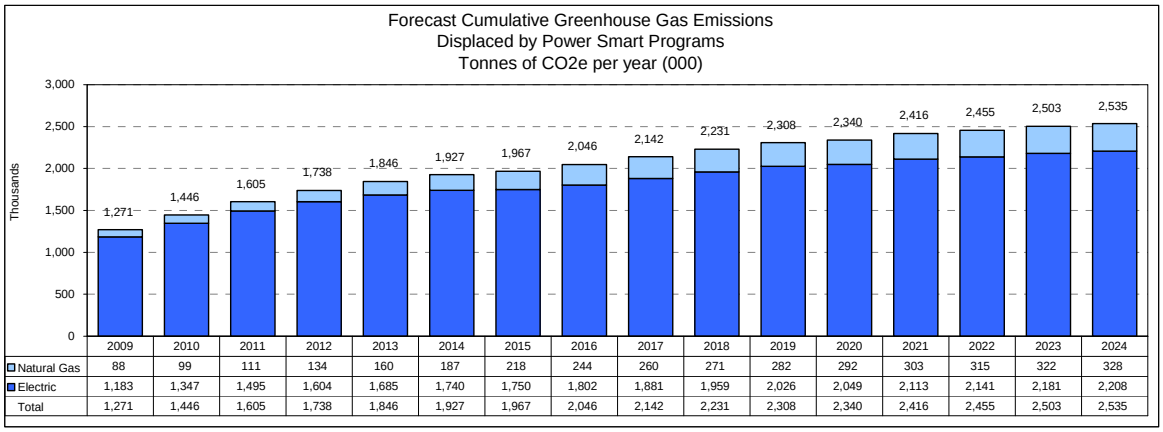
| DSM Program | Combined TRC Ratio |
|---|---|
| **Residential** | |
| New Home Program | 1.4 * |
| Home Insulation Program | 2.7 |
| Water and Energy Saver Program | 8.4 ^ |
| Lower Income Energy Efficiency Program | 1.2 ^ |
| Residential HE Furnace & Boiler Program | 2.3 |
| EE Light Fixtures | 1.5 * |
| Residential CFL Program | 9.7 * |
| Fridge Recycling Program | 1.0 * |
| Residential Appliance Program | 4.1 *^ |
| **Commercial** | |
| Commercial Lighting Program | 2.4 * |
| Commercial Custom Measures Program | 2.0 |
| Commercial Windows Program | 2.2 |
| Commercial HVAC Program - Chiller | 1.7 |
| Commercial Parking Lot Controller Program | 3.7 |
| City of Winnipeg Power Smart Agreement | 8.2 |
| Commercial Rinse & Save Program | 51.7 ^ |
| Commercial Refrigeration Program | 6.8 |
| Commercial Insulation Program | 1.6 |
| Commercial Earth Power Program | 2.7 |
| Commercial New Construction Program | 1.7 |
| Commercial Building Optimization Program | 2.7 |
| Internal Retrofit Program | 1.1 |
| Agricultural Heat Pad Program | 143.9 |
| Power Smart Energy Manager Program | 3.3 |
| Commercial Kitchen Appliance Program | 2.4 ^ |
| Commercial Clothes Washers Program | 2.2 ^ |
| Network Energy Management Program | 3.2 * |
| Power Smart Shops | 1.9 *^ |
| Commercial Furnace Program | 2.0 |
| Commercial Boiler Program | 3.9 |
| CO2 Sensors | 2.9 |
| **Industrial** | |
| Performance Optimization Program | 3.8 |
| Emergency Preparedness Program | 2.4 |
| **Customer Self-Generation** | |
| Bioenergy Optimization Program | 1.8 |
| **Overall Benefit Cost Ratio** | **2.3** |

Note:
* Includes Interactive effects with Electric DSM
^ Includes Water Saving Benefits

## *7. 4 Total Global Greenhouse Gas Emissions Reduction*

The following chart and graph depict the aggregate global greenhouse gas emissions reductions resulting from the electricity and natural gas DSM programs outlined in the 2009 Power Smart Plan, including greenhouse gas emission reductions resulting from Manitoba Hydro's Power Smart efforts since 1989. Global greenhouse gas emission reductions of 1,646,000 tonnes are forecast to be achieved due to energy savings outlined in the Power Smart Plan. Including reductions achieved to date, approximately 2,535,000 tonnes are forecast to be realized due to Manitoba Hydro's Power Smart efforts by 2024/25.

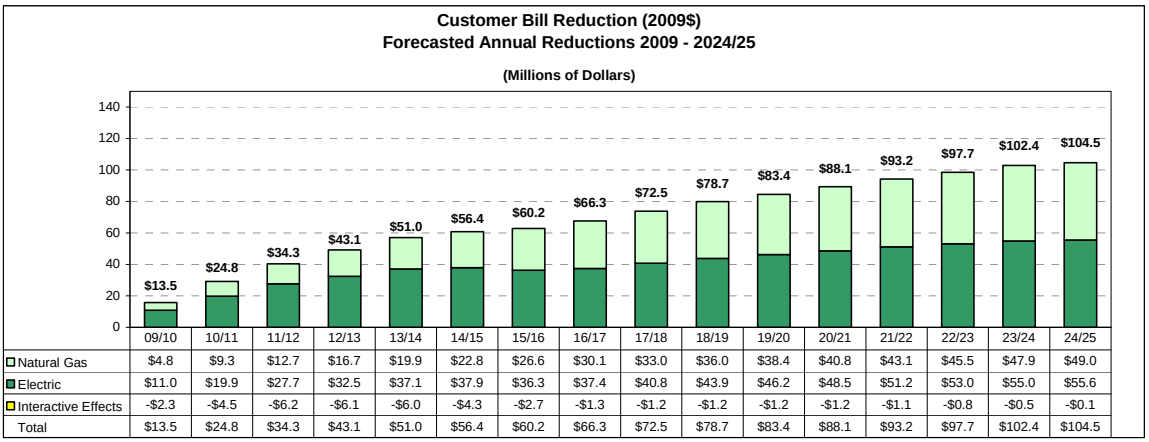
| | **Annual C02 Reductions (Tonnes)** |
|---|---|
| C02 Reductions - Electric | 1,385,581 |
| C02 Reductions - Natural Gas | 260,120 |
| **2009 Power Smart Plan (2009-2024)** | **1,645,701** |
| | |
| C02 Reductions Achieved to Date - Electric | 822,087 |
| C02 Reductions Achieved to Date - Natural Gas | 67,663 |
| **Savings Achieved to 2008/09 (1989-2024)** | **889,750** |
| | |
| **Totals Projected to 2024/25** | **2,535,451** |




| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Natural Gas | 88 | 99 | 111 | 134 | 160 | 187 | 218 | 244 | 260 | 271 | 282 | 292 | 303 | 315 | 322 | 328 |
| Electric | 1,183 | 1,347 | 1,495 | 1,604 | 1,685 | 1,740 | 1,750 | 1,802 | 1,881 | 1,959 | 2,026 | 2,049 | 2,113 | 2,141 | 2,181 | 2,208 |
| Total | 1,271 | 1,446 | 1,605 | 1,738 | 1,846 | 1,927 | 1,967 | 2,046 | 2,142 | 2,231 | 2,308 | 2,340 | 2,416 | 2,455 | 2,503 | 2,535 |

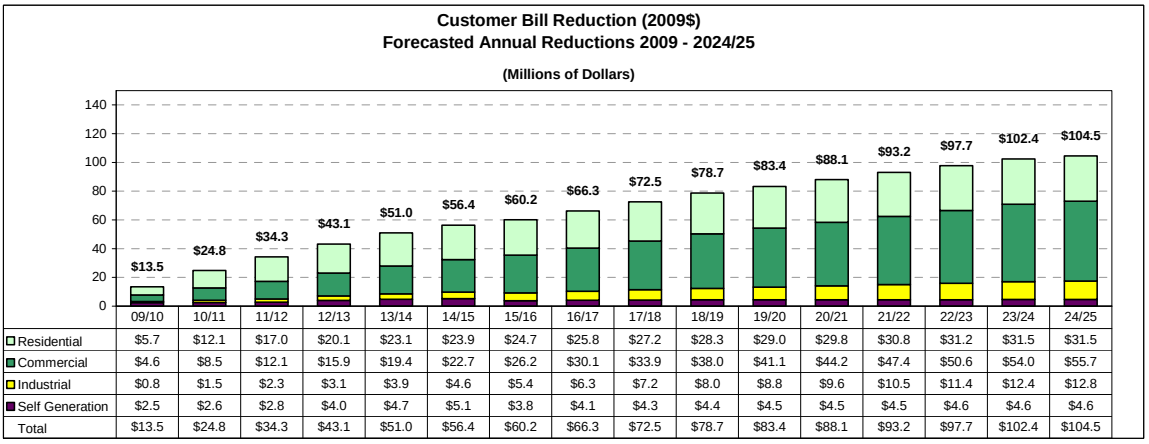
## *7.5 Customer Bill Reductions*

The following graph depicts customer bill reductions resulting from electric and natural gas programs outlined in the 2009 Power Smart Plan. Power Smart programs are expected to save participating customers $104.5 million in 2024/25 and $1.07 billion cumulatively by 2024.




| | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Natural Gas | $4.8 | $9.3 | $12.7 | $16.7 | $19.9 | $22.8 | $26.6 | $30.1 | $33.0 | $36.0 | $38.4 | $40.8 | $43.1 | $45.5 | $47.9 | $49.0 |
| Electric | $11.0 | $19.9 | $27.7 | $32.5 | $37.1 | $37.9 | $36.3 | $37.4 | $40.8 | $43.9 | $46.2 | $48.5 | $51.2 | $53.0 | $55.0 | $55.6 |
| Interactive Effects | -$2.3 | -$4.5 | -$6.2 | -$6.1 | -$6.0 | -$4.3 | -$2.7 | -$1.3 | -$1.2 | -$1.2 | -$1.2 | -$1.2 | -$1.1 | -$0.8 | -$0.5 | -$0.1 |
| Total | $13.5 | $24.8 | $34.3 | $43.1 | $51.0 | $56.4 | $60.2 | $66.3 | $72.5 | $78.7 | $83.4 | $88.1 | $93.2 | $97.7 | $102.4 | $104.5 |

The following graph depicts customer bill reductions resulting from electric and natural gas programs outlined in the 2009 Power Smart Plan by sector:




| | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 21/22 | 22/23 | 23/24 | 24/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential | $5.7 | $12.1 | $17.0 | $20.1 | $23.1 | $23.9 | $24.7 | $25.8 | $27.2 | $28.3 | $29.0 | $29.8 | $30.8 | $31.2 | $31.5 | $31.5 |
| Commercial | $4.6 | $8.5 | $12.1 | $15.9 | $19.4 | $22.7 | $26.2 | $30.1 | $33.9 | $38.0 | $41.1 | $44.2 | $47.4 | $50.6 | $54.0 | $55.7 |
| Industrial | $0.8 | $1.5 | $2.3 | $3.1 | $3.9 | $4.6 | $5.4 | $6.3 | $7.2 | $8.0 | $8.8 | $9.6 | $10.5 | $11.4 | $12.4 | $12.8 |
| Self Generation | $2.5 | $2.6 | $2.8 | $4.0 | $4.7 | $5.1 | $3.8 | $4.1 | $4.3 | $4.4 | $4.5 | $4.5 | $4.5 | $4.6 | $4.6 | $4.6 |
| Total | $13.5 | $24.8 | $34.3 | $43.1 | $51.0 | $56.4 | $60.2 | $66.3 | $72.5 | $78.7 | $83.4 | $88.1 | $93.2 | $97.7 | $102.4 | $104.5 |

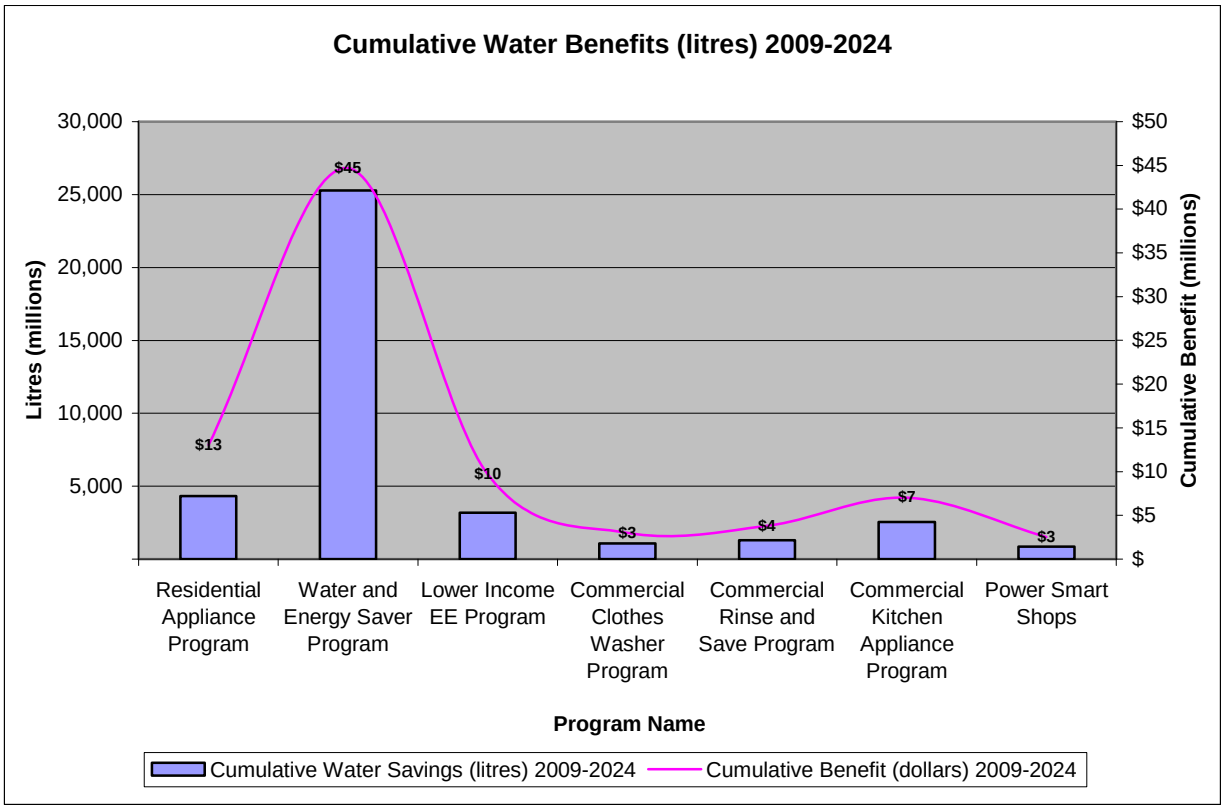
When combined with bill reductions to date, Power Smart programs are expected to save participating customers $152 million in 2024/25 and over $2.4 billion cumulatively by 2024/25.

## *7.6 Additional Non-Energy Benefits*

As part of the 2009 Long Range Plan, the following residential and commercial programs have captured additional water saving benefits:

- Residential Appliance Program
- Water and Energy Saver Program
- Lower Income Energy Efficiency Program
- Commercial Clothes Washer Program
- Commercial Rinse and Save Program
- Commercial Kitchen Appliance Program
- Power Smart Shops Program

The following graph depicts cumulative water savings in litres and cumulative customer bill (dollar) savings for each of the programs. It is estimated that savings of approximately 38.5 billion liters of water and $83.7 million in savings will be achieved from 2009/10 to 2024/25.



# 8 Other Internal Demand Side Management Funding

## 8.1 Affordable Energy Fund

The Affordable Energy Fund is an internal fund established as a result of the Winter Heating Cost Control Act and it supports Manitoba Hydro's sustainable development initiatives. The purpose of the Fund is to provide support for programs and services that achieve specific objectives including encouraging energy efficiency and conservation through programs and services for rural and northern Manitobans, low income customers and seniors and encouraging the use of alternative energy sources such as renewable energy.

### 8.1.1 Affordable Energy Fund - Budget

Manitoba Hydro established the Affordable Energy Fund following the passing of the Winter Heating Cost Control Act on November 20, 2006 in the Manitoba Legislature. The Affordable Energy Fund supports Manitoba Hydro's sustainable development initiatives.

The following projects and associated funding levels have been approved for support by the Affordable Energy Fund:

| | Total Budget |
|---|---|
| **Lower Income Program** | 19.0 |
| **Geothermal Support** | 6.0 |
| **Community Energy Development** | 8.0 |
| **Community Support and Outreach** | 0.8 |
| **Oil and Propane Heated Homes** | 0.3 |
| **Special Projects** | |
| Residential ecoEnergy Audits | 0.5 |
| Oil and Propane Furnace Replacement | 0.2 |
| Solar Water Heaters | 0.3 |
| Residential Loan | 0.6 |
| Undefined Projects | 0.4 |
| **TOTALS** | $36.0 |

* Unassigned projects include interest earned on the balance of the Affordable Energy Fund. As of March 31st, 2009, approximately $1,022.622 in interest was earned. Of this amount, $600,000 has been allocated to the Residential Loan Program AEF Budget, with the remaining $422,622 in unassigned projects to be allocated at a later date.

As of March 31st, 2009 approximately $2.9 million of the Affordable Energy Fund had been spent, leaving the remaining $33.1 to be allocated over the 2009/10 to 2024/25 horizon.

| | Total Budget | *Total Spent to Date* | Remaining Budget |
|---|---|---|---|
| **Lower Income Program** | 19.0 | *1.4* | 17.6 |
| **Geothermal Support** | 6.0 | *1.0* | 5.0 |
| **Community Energy Development** | 8.0 | *0.0* | 8.0 |
| **Community Support and Outreach** | 0.8 | *0.0* | 0.8 |
| **Oil and Propane Heated Homes** | 0.3 | *0.2* | 0.1 |
| **Special Projects** | | | |
| Residential ecoEnergy Audits | 0.5 | *0.3* | 0.2 |
| Oil and Propane Furnace Replacement | 0.2 | *0.0* | 0.2 |
| Solar Water Heaters | 0.3 | *0.1* | 0.2 |
| Residential Loan | 0.6 | *0.0* | 0.6 |
| Undefined Projects | 0.4 | *0.0* | 0.4 |
| **TOTALS** | $36.0 | *$2.9* | $33.1 |

The following table identifies the programs and associated funding levels that the Affordable Energy Fund will support over the Power Smart Planning horizon.

**Affordable Energy Fund, 2009/10 - 2024-25**
**(Millions, 2009$)**

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 |
|---|---|---|---|---|---|---|---|---|
| **Lower Income Program** | 8.5 | 9.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Geothermal Support** | 0.4 | 0.5 | 1.4 | 1.4 | 0.4 | 0.3 | 0.1 | 0.1 |
| **Community Energy Development** | 0.2 | 1.5 | 1.5 | 1.5 | 1.5 | 1.8 | 0.0 | 0.0 |
| **Community Support and Outreach** | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 |
| **Oil and Porpane Heated Homes** | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Special Projects** | | | | | | | | |
| Residential ecoEnergy Audits | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Oil and Propane Furnace Replacement | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Solar Water Heaters | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Residential Loan | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Undefined Projects | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **TOTALS** | 10.1 | 11.7 | 3.2 | 3.2 | 2.1 | 2.1 | 0.1 | 0.1 |
| | | | | | | | | |
| **Annual Budget** | **$10.1** | **$11.7** | **$3.2** | **$3.2** | **$2.1** | **$2.1** | **$0.1** | **$0.1** |
| **Cumulative Budget, 2009-2024** | **$10.1** | **$21.8** | **$25.0** | **$28.2** | **$30.3** | **$32.4** | **$32.5** | **$32.6** |

| | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Lower Income Program** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 17.6 |
| **Geothermal Support** | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 |
| **Community Energy Development** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.0 |
| **Community Support and Outreach** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 |
| **Oil and Porpane Heated Homes** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| **Special Projects** | | | | | | | | | |
| Residential ecoEnergy Audits | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| Oil and Propane Furnace Replacement | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| Solar Water Heaters | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| Residential Loan | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |
| Undefined Projects | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| **Annual Budget** | **$0.1** | **$0.1** | **$0.1** | **$0.1** | **$0.0** | **$0.0** | **$0.0** | **$0.0** | |
| **Cumulative Budget, 2009-2024** | **$32.8** | **$32.9** | **$33.0** | **$33.0** | **$33.1** | **$33.1** | **$33.1** | **$33.1** | **$33.1** |

The Affordable Energy Fund supports the Lower Income Energy Efficiency Program with a cumulative investment of $17.6 million for the period of 2009/10 to 2024/25.

The Affordable Energy Fund provides funding to subsidize the interest rate for Residential Earth Power Loan participants. The Fund is being used to reduce the interest rate for program participants from 6.5 to 4.9 percent for the first five years of the loan term. The Fund is expected to provide a cumulative investment of $5.0 million over the period of 2009/10 to 2024/25.

The Affordable Energy Fund provides support for community energy development. This project, currently in the planning stage, will encourage the development of 5 MW of community-based energy projects in Manitoba. The Fund is expected to provide a cumulative investment of $8.0 million over the period of 2009/10 to 2024/25.

The Affordable Energy Fund provides funding for additional resources for the purpose of encouraging rural and northern customers to participate in Power Smart initiatives. The Fund is expected to provide a cumulative investment of $0.75 million over the period of 2009/10 to 2024/25.

The Affordable Energy Fund provides incentives to customers with wood, oil or propane heating who install insulation in their homes. The incremental costs associated with these customers participating in the Home Insulation Program will be allocated to the Affordable Energy Fund. The Fund is expected to provide a cumulative investment of $0.1 million over the period of 2009/10 to 2024/25. The estimated savings of the other fuel types resulting from the installation of insulation in customer homes are provided in section 8.1.2 of this report.

The Affordable Energy Fund contributes the incremental costs associated with providing Manitoba Hydro's In-home Energy Assessment service under the Federal ecoENERGY Retrofit program to rural and northern Manitobans. The Fund is expected to provide a cumulative investment of $0.2 million over the period of 2009/10 to 2024/25.

Manitoba Hydro extended the eligibility for the Power Smart Furnace Replacement Program to those customers upgrading an oil or propane furnace to a high efficiency electric or natural gas furnace. The Affordable Energy Fund will contribute $0.2 million to support the extension of this program over the period of 2009/10 to 2024/25.

Manitoba Hydro is partnering with Natural Resources Canada to deliver a residential solar water heating initiative in Manitoba. The Affordable Energy Fund will contribute $0.2 million to this initiative over the period of 2009/10 to 2024/25.

The interest rate for the Power Smart Residential Loan has been reduced from a cost-recovery rate of 5.5% to a rate of 4.9% for a one-year period. The Affordable Energy

Fund will contribute funding of $0.6 million to subsidize the reduced interest rate over the period of 2009/10 to 2024/25.

### *8.1.2 Affordable Energy Fund - Other Fuel Savings*

Through funding from the Affordable Energy Fund, residential customers using heating sources other than natural gas and electricity are eligible to participate in the Home Insulation and Lower Income Programs. The following table provides the oil and propane fuel savings estimated to be achieved through this funding.

**Affordable Energy Fund Other Fuel Savings, 2009/10 - 2024/25**
**(000s, litres)**

Affordable Energy Fund Other Fuel Savings, 2009-2024 (000s, litres)

| | 2009/10 | 2010/11 | 2011/12 - 2024/25 |
|---|---|---|---|
| **Fuel Oil Savings:** | | | |
| Home Insulation Program | 34.4 | 34.4 | |
| Lower Income Program | 11.7 | 11.7 | |
| Oil & Propane Furnance Replacement | 116.5 | 116.5 | 116.5 |
| **Annual Fuel Oil Savings** | 162.6 | 162.6 | 116.5 |
| **Cumulative Fuel Oil Savings, 2009-2024** | **162.6** | **325.1** | **441.6** |
| | | | |
| **Propane Savings:** | | | |
| Home Insulation Program | 6.3 | 6.3 | |
| Lower Income Program | 12.0 | 12.0 | |
| Oil & Propane Furnance Replacement | 119.6 | 119.6 | 113.3 |
| **Annual Propane Savings** | 137.8 | 137.8 | 113.3 |
| **Cumulative Popane Savings, 2009-2024** | **137.8** | **275.6** | **388.9** |

It is estimated that savings of 441,600 litres of fuel oil and 388,900 litres of propane will be achieved from 2009/10 to 2024/25.

## *8.2 Lower Income Natural Gas Furnace Replacement*

The Lower Income Natural Gas Furnace Replacement budget is an internal budget established as a result of Public Utility Board Order 99/07. The purpose of the budget is to establish and administer a Furnace Replacement Program for low income customers.

### *8.2.1 Lower Income Natural Gas Furnace Replacement - Budget*

The following table outlines the planned expenditures totalling $5.3 million:

**Lower Income Natural Gas Furnace Replacement Budget, 2009/10 - 2024/25**
**(Millions, 2009$)**

| | 2009/10 | 2010/11 | 2011/12 - 2023/24 |
|---|---|---|---|
| **Lower Income Program** | | | |
| Furnace Replacement | 2.8 | 2.4 | |
| **Annual Budget** | 2.8 | 2.4 | 0.0 |
| **Cumulative Budget, 2009-2024** | **$2.8** | **$5.3** | **$5.3** |

# 9 Total Internal Demand Side Management Budget

The Total Internal Demand Side Management Budget includes the following internal sources:

- Electric Power Smart Utility Budget *(as outlined in Section 7.1.2)*
- Natural Gas Power Smart Utility Budget *(as outlined in Section 7.2.2)*
- Affordable Energy Fund Budget *(as outlined in Section 8.1.1)*
- Lower Income Furnace Replacement Budget *(as outlined in Section 8.2.1)*

The following table outlines the total projected DSM budget including all internal sources of funding to 2024/25. A total investment of $622.1 million is planned for the period of 2009/10 to 2024/25.

**Total DSM Budget, 2009/10 - 2024/25**
**(Millions, 2009$)**

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 |
|---|---|---|---|---|---|---|---|---|
| **Electric DSM** | | | | | | | | |
| Electric Power Smart | 40.3 | 43.0 | 42.5 | 38.4 | 33.9 | 29.9 | 29.0 | 27.1 |
| Affordable Energy Fund | 4.3 | 4.3 | 1.5 | 1.5 | 0.4 | 0.2 | 0.1 | 0.1 |
| **Annual Electric Budget** | **44.7** | **47.3** | **43.9** | **39.8** | **34.3** | **30.1** | **29.1** | **27.1** |
| | | | | | | | | |
| **Natural Gas DSM** | | | | | | | | |
| Natural Gas Power Smart | 13.5 | 13.1 | 11.6 | 11.7 | 11.1 | 10.2 | 10.6 | 10.3 |
| Affordable Energy Fund | 4.9 | 5.2 | 0.3 | 0.3 | 0.2 | 0.1 | 0.1 | 0.0 |
| Lower Income Furnace Replacement Budget | 2.8 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Annual Natural Gas Budget** | **21.1** | **20.8** | **11.8** | **11.9** | **11.3** | **10.3** | **10.7** | **10.4** |
| | | | | | | | | |
| **Oil and Propane DSM** | | | | | | | | |
| Affordable Energy Fund | 0.7 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Annual Oil and Propane Budget** | **0.7** | **0.7** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** |
| | | | | | | | | |
| **MANITOBA HYDRO ANNUAL BUDGET** | **$66.5** | **$68.7** | **$55.8** | **$51.7** | **$45.6** | **$40.3** | **$39.8** | **$37.5** |
| | | | | | | | | |
| **Cumulative Budget, 2009-2024** | **$66.5** | **$135.3** | **$191.0** | **$242.8** | **$288.3** | **$328.7** | **$368.4** | **$406.0** |

| | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| **Electric DSM** | | | | | | | | | |
| Electric Power Smart | 25.6 | 25.1 | 21.8 | 21.6 | 21.5 | 21.4 | 20.6 | 16.0 | 457.6 |
| Affordable Energy Fund | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.6 |
| **Annual Electric Budget** | **25.6** | **25.2** | **21.9** | **21.6** | **21.5** | **21.4** | **20.6** | **16.0** | **470.2** |
| | | | | | | | | | |
| **Natural Gas DSM** | | | | | | | | | |
| Natural Gas Power Smart | 7.7 | 5.5 | 5.1 | 5.1 | 5.0 | 5.1 | 5.1 | 3.6 | 134.1 |
| Affordable Energy Fund | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.1 |
| Lower Income Furnace Replacement Budget | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.3 |
| **Annual Natural Gas Budget** | **7.8** | **5.5** | **5.1** | **5.1** | **5.1** | **5.1** | **5.1** | **3.6** | **150.6** |
| | | | | | | | | | |
| **Oil and Propane DSM** | | | | | | | | | |
| Affordable Energy Fund | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.4 |
| **Annual Oil and Propane DSM** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **1.4** |
| | | | | | | | | | |
| **MANITOBA HYDRO ANNUAL BUDGET** | **$33.4** | **$30.7** | **$27.0** | **$26.7** | **$26.6** | **$26.5** | **$25.6** | **$19.6** | |
| | | | | | | | | | |
| **Cumulative Budget, 2009-2024** | **$439.4** | **$470.1** | **$497.0** | **$523.7** | **$550.3** | **$576.8** | **$602.5** | **$622.0** | **$622.1** |

# *10 Other External Demand Side Management Funding*

Two of Manitoba Hydro's Power Smart programs are supported by funding from external organizations as outlined in the following table. The Lower Income Energy Efficiency Program includes partnership funding from the Provincial Government. This external funding is expected to total $12.0 million over the period of 2009/10 to 2024/25. External funding is also provided by the Provincial Government to support the cost of providing residential home audits under the ecoENERGY Audit Program. This funding is expected to total $0.4 million over the period of 2009/10 to 2024/25

**External Funding Budget, 2009/10 - 2024/25**
**(Millions, 2009$)**

| | 2009/10 | 2010/11 | 2011/12 - 2024/25 | Cumulative, 2009-2024 |
|---|---|---|---|---|
| **Lower Income Program:** | | | | |
| Electric Measures | $1.5 | $2.0 | $0.0 | $3.5 |
| Natural Gas Measures | $4.1 | $3.7 | $0.0 | $7.8 |
| Other Fuel Measures | $0.4 | $0.3 | $0.0 | $0.7 |
| **Total Lower Income Program** | **$6.0** | **$6.0** | **$0.0** | **$12.0** |
| **ecoEnergy Audits** | | | | |
| Electric Measures | $0.1 | $0.0 | $0.0 | $0.1 |
| Natural Gas Measures | $0.2 | $0.2 | $0.0 | $0.4 |
| **Total ecoEnergy Audits** | **$0.3** | **$0.2** | **$0.0** | **$0.4** |
| | | | | |
| **Annual Budget** | $6.2 | $6.2 | $0.0 | |
| **Cumulative Budget, 2009-2024** | $6.2 | $12.4 | $12.4 | $12.4 |

## APPENDIX A - 2009 Power Smart Plan Electric

Appendix A.1 - Winter Capacity Savings (MW)
Appendix A.2 - Summer Capacity Savings (MW)
Appendix A.3 - Annual Energy Savings (GW.h)
Appendix A.4 - Annual Total Resource Cost
Appendix A.5 - Annual Program Budgets (Utility Cost)
Appendix A.6 - Annual Program Administration Budgets
Appendix A.7 - Incentives

**Winter Capacity Savings (MW)**
**2009 Option 2**

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | | MW at Generation 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | | | | | | | | | |
| New Home Program | **0.6** | 1.0 | 1.9 | 2.3 | 2.7 | 3.1 | 3.5 | 3.8 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | **4.2** | | 4.8 |
| Home Insulation Program | **2.1** | 4.1 | 5.8 | 7.5 | 8.9 | 10.2 | 11.4 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | 12.5 | **12.5** | | 14.2 |
| Water and Energy Saver Program | **0.4** | 1.3 | 2.4 | 3.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | **4.2** | | 4.7 |
| Residential CFL Program | **11.0** | 22.4 | 32.3 | 32.3 | 32.3 | 21.2 | 9.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| Residential Appliance Program | **0.4** | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | **0.7** | | 0.8 |
| Lower Income Energy Efficiency Program | **1.7** | 3.7 | 3.7 | 3.7 | 3.7 | 3.4 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 2.9 | **2.9** | | 3.3 |
| EE Light Fixtures | **0.1** | 0.3 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | **0.2** | | 0.2 |
| Residential HE Furnace & Boiler Program | **0.2** | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | **0.2** | | 0.2 |
| Fridge Recycling Program | **1.1** | 2.2 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 2.3 | 1.3 | **0.3** | | 0.4 |
| ***Subtotal*** | ***17.6*** | ***35.9*** | ***50.9*** | ***54.0*** | ***56.9*** | ***47.3*** | ***37.1*** | ***28.7*** | ***29.0*** | ***28.9*** | ***28.6*** | ***28.6*** | ***28.6*** | ***27.6*** | ***26.5*** | ***25.1*** | ***6%*** | ***28.6*** |
| **Customer Service Initiatives** | | | | | | | | | | | | | | | | | | |
| Power Smart Residential Loan Program | **0.3** | 0.7 | 1.0 | 1.4 | 1.7 | 2.0 | 2.4 | 2.7 | 3.1 | 3.4 | 3.7 | 4.1 | 4.4 | 4.8 | 5.1 | **5.4** | | 6.2 |
| ecoEnergy | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| Residential Earth Power Program | **0.5** | 1.0 | 1.6 | 2.2 | 2.7 | 3.1 | 3.5 | 4.0 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | **4.5** | | 5.1 |
| Solar Water Heaters | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| ***Subtotal*** | ***0.9*** | ***1.7*** | ***2.7*** | ***3.6*** | ***4.4*** | ***5.2*** | ***6.0*** | ***6.8*** | ***7.6*** | ***7.9*** | ***8.2*** | ***8.6*** | ***8.9*** | ***9.3*** | ***9.6*** | ***9.9*** | ***2%*** | ***11.3*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | |
| Commercial Lighting Program | **8.6** | 15.5 | 21.7 | 27.5 | 33.1 | 38.4 | 43.4 | 48.0 | 52.3 | 56.4 | 60.2 | 63.8 | 67.3 | 70.5 | 73.5 | **75.9** | | 86.5 |
| Commercial Custom Measures Program | **0.1** | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.0 | 1.1 | 1.2 | 1.2 | 1.3 | **1.3** | | 1.5 |
| Commercial Windows Program | **0.6** | 1.0 | 1.4 | 1.8 | 2.2 | 2.6 | 3.0 | 3.4 | 3.8 | 4.2 | 4.5 | 4.9 | 5.3 | 5.7 | 6.1 | **6.5** | | 7.4 |
| Commercial HVAC Program - Chiller | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| Commercial Parking Lot Controller Program | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| City of Winnipeg Power Smart Agreement | **0.1** | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.0 | **0.0** | | 0.0 |
| Commercial Rinse & Save Program | **0.2** | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| Commercial Refrigeration Program | **0.2** | 0.4 | 0.7 | 0.9 | 1.2 | 1.6 | 1.9 | 2.3 | 2.7 | 3.1 | 3.5 | 4.0 | 4.5 | 5.0 | 5.6 | **6.3** | | 7.2 |
| Commercial Insulation Program | **1.0** | 2.1 | 3.1 | 4.1 | 5.1 | 6.1 | 7.0 | 8.0 | 8.9 | 9.8 | 10.8 | 11.7 | 12.6 | 13.5 | 14.3 | **15.2** | | 17.3 |
| Commercial Earth Power Program | **0.7** | 1.3 | 2.0 | 2.6 | 3.3 | 4.1 | 5.0 | 5.9 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | **6.8** | | 7.7 |
| Commercial New Construction Program | **0.0** | 0.4 | 0.9 | 1.6 | 2.0 | 2.5 | 3.2 | 4.0 | 4.9 | 5.9 | 5.9 | 5.9 | 5.9 | 5.9 | 5.9 | **5.9** | | 6.7 |
| Commercial Building Optimization Program | **0.3** | 0.6 | 0.9 | 1.5 | 2.1 | 2.6 | 3.1 | 4.0 | 4.4 | 4.9 | 5.1 | 5.4 | 5.6 | 5.6 | 5.8 | **5.3** | | 6.1 |
| Internal Retrofit Program | **0.6** | 6.5 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | **7.1** | | 8.1 |
| Agricultural Heat Pad Program | **0.2** | 0.3 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | **0.7** | | 0.8 |
| Power Smart Energy Manager Program | **0.1** | 0.3 | 0.5 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.5 | 0.3 | 0.2 | 0.2 | **0.2** | | 0.2 |
| Commercial Kitchen Appliance Program | **0.1** | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.7 | 0.8 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | **1.1** | | 1.3 |
| Commercial Clothes Washers Program | **0.2** | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 1.0 | 1.1 | 1.3 | 1.5 | 1.5 | 1.5 | 1.7 | 1.8 | **1.9** | | 2.2 |
| Network Energy Management Program | **0.8** | 1.6 | 2.2 | 2.5 | 2.8 | 2.3 | 1.9 | 1.7 | 1.5 | 1.4 | 1.4 | 1.6 | 1.8 | 2.1 | 2.4 | **2.0** | | 2.3 |
| Power Smart Shops | **0.1** | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 1.2 | **1.2** | | 1.4 |
| CO2 Sensors | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| ***Subtotal*** | ***13.8*** | ***31.1*** | ***42.3*** | ***52.7*** | ***62.5*** | ***71.2*** | ***80.0*** | ***89.2*** | ***97.8*** | ***105.4*** | ***111.3*** | ***117.0*** | ***122.6*** | ***128.0*** | ***133.7*** | ***137.3*** | ***32%*** | ***156.6*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | **2.0** | 4.0 | 6.0 | 8.2 | 10.4 | 12.7 | 15.0 | 17.4 | 19.9 | 22.4 | 25.0 | 27.7 | 30.4 | 33.2 | 36.1 | **37.1** | | 40.8 |
| Emergency Preparedness Program | **0.0** | 4.5 | 12.0 | 22.5 | 26.3 | 27.8 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | **28.5** | | 31.4 |
| ***Subtotal*** | ***2.0*** | ***8.5*** | ***18.0*** | ***30.7*** | ***36.7*** | ***40.4*** | ***43.5*** | ***45.9*** | ***48.4*** | ***50.9*** | ***53.5*** | ***56.2*** | ***58.9*** | ***61.7*** | ***64.6*** | ***65.6*** | ***15%*** | ***72.1*** |
| ***CONSERVATION SUBTOTAL*** | ***34.1*** | ***77.2*** | ***113.9*** | ***141.0*** | ***160.4*** | ***164.1*** | ***166.7*** | ***170.6*** | ***182.7*** | ***193.0*** | ***201.7*** | ***210.4*** | ***219.1*** | ***226.6*** | ***234.4*** | ***237.9*** | ***56%*** | ***268.6*** |
| **RATES** | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | **176.9** | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | **176.9** | | 194.6 |
| ***LOAD MANAGEMENT SUBTOTAL*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***42%*** | ***194.6*** |
| **CUSTOMER SELF-GENERATION** | | | | | | | | | | | | | | | | | | |
| BioEnergy Optimization Program | **7.3** | 7.6 | 8.1 | 10.0 | 12.1 | 13.2 | 8.0 | 8.7 | 9.0 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | **9.4** | | 10.3 |
| ***CUSTOMER SELF-GENERATION SUBTOTAL*** | ***7.3*** | ***7.6*** | ***8.1*** | ***10.0*** | ***12.1*** | ***13.2*** | ***8.0*** | ***8.7*** | ***9.0*** | ***9.4*** | ***9.4*** | ***9.4*** | ***9.4*** | ***9.4*** | ***9.4*** | ***9.4*** | ***2%*** | ***10.3*** |
| ***Program Impacts (at meter)*** | ***218*** | ***262*** | ***299*** | ***328*** | ***349*** | ***354*** | ***352*** | ***356*** | ***369*** | ***379*** | ***388*** | ***397*** | ***405*** | ***413*** | ***421*** | ***424*** | ***100%*** | |
| ***Program Impacts (at generation)*** | ***241*** | ***291*** | ***333*** | ***365*** | ***389*** | ***395*** | ***392*** | ***397*** | ***411*** | ***423*** | ***433*** | ***443*** | ***452*** | ***461*** | ***469*** | ***474*** | | |
| \+ Option 1 - Supporting Codes & Standards (at meter) | **10** | 20 | 30 | 40 | 50 | 60 | 70 | 79 | 88 | 98 | 107 | 115 | 124 | 133 | 141 | **149** | | |
| ***POWER SMART 2009 to 2024 Impacts (at meter)*** | ***229*** | ***282*** | ***329*** | ***368*** | ***399*** | ***414*** | ***421*** | ***435*** | ***457*** | ***477*** | ***495*** | ***512*** | ***529*** | ***546*** | ***562*** | ***574*** | | |
| ***POWER SMART 2009 to 2024 Impacts (at generation)*** | **253** | **313** | **367** | **411** | **446** | **463** | **471** | **487** | **512** | **534** | **554** | **574** | **594** | **612** | **630** | **644** | | |
| **POWER SMART SAVINGS TO DATE** | | | | | | | | | | | | | | | | | | |
| Incentive Based Program Impacts (at meter) | **180** | 178 | 177 | 175 | 167 | 167 | 167 | 167 | 166 | 166 | 166 | 166 | 166 | 162 | 159 | **157** | | |
| Incentive Based Program Impacts (at generation) | **202** | 200 | 199 | 197 | 187 | 187 | 187 | 187 | 186 | 186 | 186 | 186 | 186 | 181 | 178 | **176** | | |
| Customer Service Initiatives Program Impacts (at meter) | **6** | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 5 | 5 | 5 | **5** | | |
| Customer Service Initiatives Program Impacts (at generation) | **6** | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | **6** | | |
| Impacts of Codes & Standards (at meter) | **79** | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | **79** | | |
| Impacts of Codes & Standards (at generation) | **89** | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | **89** | | |
| ***TOTAL MW (at meter)*** | ***492*** | ***544*** | ***590*** | ***628*** | ***651*** | ***665*** | ***672*** | ***686*** | ***707*** | ***727*** | ***745*** | ***762*** | ***779*** | ***791*** | ***804*** | ***814*** | | |
| ***TOTAL MW (at generation)*** | ***551*** | ***609*** | ***662*** | ***703*** | ***729*** | ***746*** | ***754*** | ***770*** | ***794*** | ***816*** | ***836*** | ***856*** | ***875*** | ***889*** | ***904*** | ***915*** | | |

NOTE: Figures may not add due to rounding

**Summer Capacity Savings (MW)**
**2009 Option 2**

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | | MW at Generation 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | | | | | | | | | |
| New Home Program | **0.1** | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | **0.3** | | 0.4 |
| Home Insulation Program | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| Water and Energy Saver Program | **0.2** | 0.7 | 1.4 | 2.0 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | **2.4** | | 2.7 |
| Residential CFL Program | **3.6** | 7.3 | 10.6 | 10.6 | 10.6 | 7.0 | 3.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| Residential Appliance Program | **0.4** | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | **0.8** | | 0.9 |
| Lower Income Energy Efficiency Program | **0.2** | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.0 | **0.0** | | 0.0 |
| EE Light Fixtures | **0.0** | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | **0.1** | | 0.1 |
| Residential HE Furnace & Boiler Program | **0.2** | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | **0.2** | | 0.2 |
| Fridge Recycling Program | **2.3** | 4.6 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 4.8 | 2.7 | **0.7** | | 0.8 |
| ***Subtotal*** | ***7.0*** | ***14.3*** | ***20.8*** | ***21.4*** | ***22.0*** | ***18.3*** | ***14.6*** | ***11.3*** | ***11.3*** | ***11.2*** | ***11.1*** | ***11.1*** | ***11.1*** | ***8.9*** | ***6.7*** | ***4.4*** | ***1%*** | ***5.0*** |
| **Customer Service Initiatives** | | | | | | | | | | | | | | | | | | |
| Power Smart Residential Loan Program | **n/a** | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | **n/a** | | 0.0 |
| ecoEnergy | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| Residential Earth Power Program | **0.0** | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | **0.2** | | 0.2 |
| Solar Water Heaters | **0.0** | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | **0.1** | | 0.1 |
| ***Subtotal*** | ***0.1*** | ***0.1*** | ***0.1*** | ***0.1*** | ***0.1*** | ***0.2*** | ***0.2*** | ***0.2*** | ***0.2*** | ***0.2*** | ***0.2*** | ***0.2*** | ***0.2*** | ***0.2*** | ***0.2*** | ***0.2*** | ***0%*** | ***0.2*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | |
| Commercial Lighting Program | **8.3** | 14.8 | 20.5 | 25.9 | 31.2 | 36.1 | 40.7 | 44.9 | 48.8 | 52.6 | 56.1 | 59.4 | 62.6 | 65.5 | 68.3 | **70.5** | | 80.4 |
| Commercial Custom Measures Program | **0.1** | 0.2 | 0.2 | 0.3 | 0.4 | 0.5 | 0.5 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.9 | 0.9 | 1.0 | **1.0** | | 1.1 |
| Commercial Windows Program | **0.0** | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | **0.4** | | 0.5 |
| Commercial HVAC Program - Chiller | **0.1** | 0.2 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.6 | 0.7 | 0.8 | 1.0 | 1.1 | 1.3 | 1.4 | 1.5 | **1.5** | | 1.8 |
| Commercial Parking Lot Controller Program | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| City of Winnipeg Power Smart Agreement | **0.1** | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.0 | **0.0** | | 0.0 |
| Commercial Rinse & Save Program | **0.2** | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| Commercial Refrigeration Program | **0.2** | 0.4 | 0.6 | 0.8 | 1.1 | 1.4 | 1.7 | 2.1 | 2.4 | 2.8 | 3.2 | 3.6 | 4.1 | 4.6 | 5.1 | **5.7** | | 6.5 |
| Commercial Insulation Program | **0.3** | 0.7 | 1.0 | 1.3 | 1.6 | 1.9 | 2.2 | 2.5 | 2.8 | 3.1 | 3.4 | 3.7 | 4.0 | 4.2 | 4.5 | **4.8** | | 5.5 |
| Commercial Earth Power Program | **0.1** | 0.2 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | **0.8** | | 1.0 |
| Commercial New Construction Program | **0.0** | 0.6 | 1.3 | 2.4 | 3.0 | 3.8 | 4.7 | 6.0 | 7.3 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | 8.7 | **8.7** | | 9.9 |
| Commercial Building Optimization Program | **0.1** | 0.3 | 0.5 | 0.8 | 1.1 | 1.3 | 1.5 | 2.0 | 2.2 | 2.5 | 2.6 | 2.7 | 2.8 | 2.8 | 2.9 | **2.7** | | 3.0 |
| Internal Retrofit Program | **0.3** | 2.7 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | **2.9** | | 3.3 |
| Agricultural Heat Pad Program | **0.2** | 0.3 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | **0.7** | | 0.8 |
| Power Smart Energy Manager Program | **0.1** | 0.3 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.2 | 0.1 | 0.1 | **0.1** | | 0.1 |
| Commercial Kitchen Appliance Program | **0.1** | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.7 | 0.8 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | **1.1** | | 1.3 |
| Commercial Clothes Washers Program | **0.2** | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 1.0 | 1.1 | 1.3 | 1.5 | 1.5 | 1.5 | 1.7 | 1.8 | **1.9** | | 2.2 |
| Network Energy Management Program | **0.8** | 1.6 | 2.2 | 2.5 | 2.8 | 2.3 | 1.9 | 1.7 | 1.5 | 1.4 | 1.4 | 1.6 | 1.8 | 2.1 | 2.4 | **2.0** | | 2.3 |
| Power Smart Shops | **0.1** | 0.2 | 0.4 | 0.5 | 0.6 | 0.7 | 0.9 | 1.0 | 1.1 | 1.2 | 1.2 | 1.3 | 1.3 | 1.4 | 1.4 | **1.4** | | 1.6 |
| CO2 Sensors | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| ***Subtotal*** | ***11.2*** | ***23.0*** | ***31.8*** | ***40.3*** | ***47.9*** | ***54.6*** | ***61.4*** | ***68.4*** | ***75.1*** | ***81.6*** | ***86.2*** | ***90.7*** | ***95.0*** | ***99.3*** | ***103.7*** | ***106.4*** | ***29%*** | ***121.3*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | **2.0** | 4.0 | 6.0 | 8.2 | 10.4 | 12.7 | 15.0 | 17.4 | 19.9 | 22.4 | 25.0 | 27.7 | 30.4 | 33.2 | 36.1 | **37.1** | | 40.8 |
| Emergency Preparedness Program | **0.0** | 4.5 | 12.0 | 22.5 | 26.3 | 27.8 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | **28.5** | | 31.4 |
| ***Subtotal*** | ***2.0*** | ***8.5*** | ***18.0*** | ***30.7*** | ***36.7*** | ***40.4*** | ***43.5*** | ***45.9*** | ***48.4*** | ***50.9*** | ***53.5*** | ***56.2*** | ***58.9*** | ***61.7*** | ***64.6*** | ***65.6*** | ***18%*** | ***72.1*** |
| ***CONSERVATION SUBTOTAL*** | ***20.2*** | ***45.9*** | ***70.8*** | ***92.6*** | ***106.7*** | ***113.6*** | ***119.7*** | ***125.8*** | ***135.0*** | ***144.0*** | ***151.1*** | ***158.2*** | ***165.3*** | ***170.2*** | ***175.2*** | ***176.6*** | | ***198.7*** |
| **RATES** | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | **176.9** | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | 176.9 | **176.9** | | 194.6 |
| ***LOAD MANAGEMENT SUBTOTAL*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***176.9*** | ***49%*** | ***194.6*** |
| **CUSTOMER SELF-GENERATION** | | | | | | | | | | | | | | | | | | |
| BioEnergy Optimization Program | **7.0** | 7.3 | 7.8 | 9.7 | 11.8 | 12.9 | 8.0 | 8.7 | 9.0 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | **9.4** | | 10.3 |
| ***CUSTOMER SELF-GENERATION SUBTOTAL*** | ***7.0*** | ***7.3*** | ***7.8*** | ***9.7*** | ***11.8*** | ***12.9*** | ***8.0*** | ***8.7*** | ***9.0*** | ***9.4*** | ***9.4*** | ***9.4*** | ***9.4*** | ***9.4*** | ***9.4*** | ***9.4*** | ***3%*** | ***10.3*** |
| ***Demand Impacts (at meter)*** | ***204*** | ***230*** | ***255*** | ***279*** | ***295*** | ***303*** | ***305*** | ***311*** | ***321*** | ***330*** | ***337*** | ***345*** | ***352*** | ***357*** | ***362*** | ***363*** | ***100%*** | |
| ***Demand Impacts (at generation)*** | ***225*** | ***255*** | ***283*** | ***310*** | ***328*** | ***337*** | ***338*** | ***346*** | ***356*** | ***367*** | ***375*** | ***383*** | ***391*** | ***396*** | ***402*** | ***404*** | | |
| \+ Option 1 - Supporting Codes & Standards (at meter) | **7** | 13 | 20 | 27 | 33 | 40 | 47 | 53 | 59 | 66 | 72 | 78 | 84 | 89 | 95 | **100** | | |
| ***POWER SMART 2009 to 2024 Impacts (at meter)*** | ***211*** | ***243*** | ***276*** | ***306*** | ***329*** | ***343*** | ***351*** | ***365*** | ***380*** | ***396*** | ***409*** | ***422*** | ***435*** | ***446*** | ***456*** | ***463*** | | |
| ***POWER SMART 2009 to 2024 Impacts (at generation)*** | ***233*** | ***270*** | ***306*** | ***340*** | ***366*** | ***382*** | ***391*** | ***406*** | ***424*** | ***442*** | ***457*** | ***472*** | ***486*** | ***498*** | ***510*** | ***518*** | | |
| **POWER SMART SAVINGS TO DATE** | | | | | | | | | | | | | | | | | | |
| Incentive Based Program Impacts (at meter) | **143** | 143 | 142 | 141 | 136 | 136 | 136 | 136 | 135 | 135 | 135 | 135 | 135 | 131 | 128 | **126** | | |
| Incentive Based Program Impacts (at generation) | **161** | 160 | 159 | 158 | 152 | 152 | 152 | 152 | 151 | 151 | 151 | 151 | 151 | 146 | 143 | **141** | | |
| Customer Service Initiatives To-Date Impacts (at meter) | **0** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** | | |
| Customer Service Initiatives To-Date Impacts (at generation) | **0** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** | | |
| Impacts of Codes & Standards (at meter) | **79** | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | 79 | **79** | | |
| Impacts of Codes & Standards (at generation) | **89** | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | **89** | | |
| ***TOTAL MW (at meter)*** | ***433*** | ***465*** | ***496*** | ***526*** | ***543*** | ***558*** | ***566*** | ***579*** | ***594*** | ***610*** | ***623*** | ***636*** | ***648*** | ***655*** | ***663*** | ***668*** | | |
| ***TOTAL MW (at generation)*** | ***483*** | ***519*** | ***555*** | ***588*** | ***608*** | ***624*** | ***633*** | ***648*** | ***665*** | ***683*** | ***697*** | ***712*** | ***727*** | ***734*** | ***743*** | ***749*** | | |

NOTE: Figures may not add due to rounding

**Annual Energy Savings (GW.h)**
**2009 Option 2**

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | | GW.h at Generation 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | | | | | | | | | |
| New Home Program | **1.7** | 4.0 | 8.2 | 10.8 | 13.6 | 16.5 | 19.3 | 22.1 | 23.6 | 23.6 | 23.6 | 23.6 | 23.6 | 23.6 | 23.6 | **23.6** | | 26.9 |
| Home Insulation Program | **4.4** | 8.4 | 12.0 | 15.3 | 18.3 | 21.0 | 23.4 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | **25.6** | | 29.2 |
| Water and Energy Saver Program | **2.2** | 8.0 | 15.0 | 21.4 | 27.8 | 27.8 | 27.8 | 27.8 | 27.8 | 27.8 | 27.8 | 27.8 | 27.8 | 27.8 | 27.8 | **25.6** | | 29.2 |
| Residential CFL Program | **44.4** | 90.2 | 130.6 | 130.6 | 130.6 | 86.3 | 40.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| Residential Appliance Program | **2.0** | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | **4.0** | | 4.6 |
| Lower Income Energy Efficiency Program | **7.5** | 16.2 | 16.2 | 16.2 | 16.2 | 15.0 | 13.7 | 13.7 | 13.7 | 13.7 | 13.4 | 12.9 | 12.9 | 12.3 | 11.4 | **11.0** | | 12.6 |
| EE Light Fixtures | **0.6** | 1.5 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 2.6 | 2.0 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | **0.8** | | 1.0 |
| Residential HE Furnace & Boiler Program | **0.6** | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | **0.6** | | 0.7 |
| Fridge Recycling Program | **12.6** | 25.3 | 37.9 | 37.9 | 37.9 | 37.9 | 37.9 | 37.9 | 37.9 | 37.9 | 37.9 | 37.9 | 37.9 | 26.5 | 15.2 | **3.9** | | 4.4 |
| ***Subtotal*** | ***76.0*** | ***158.2*** | ***227.7*** | ***240.0*** | ***252.2*** | ***212.2*** | ***170.3*** | ***134.9*** | ***135.9*** | ***135.3*** | ***133.8*** | ***133.3*** | ***133.3*** | ***121.4*** | ***109.1*** | ***95.2*** | ***9%*** | ***108.5*** |
| **Customer Service Initiatives** | | | | | | | | | | | | | | | | | | |
| Power Smart Residential Loan Program | **0.6** | 1.3 | 1.9 | 2.6 | 3.2 | 3.8 | 4.5 | 5.1 | 5.8 | 6.4 | 7.0 | 7.7 | 8.3 | 9.0 | 9.6 | **10.2** | | 11.7 |
| ecoEnergy | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| Residential Earth Power Program | **1.8** | 3.7 | 5.8 | 8.1 | 9.6 | 11.2 | 12.8 | 14.5 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | **16.2** | | 18.4 |
| Solar Water Heaters | **0.2** | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | **0.3** | | 0.3 |
| ***Subtotal*** | ***2.4*** | ***5.0*** | ***7.8*** | ***10.6*** | ***12.8*** | ***15.0*** | ***17.3*** | ***19.6*** | ***21.9*** | ***22.6*** | ***23.2*** | ***23.8*** | ***24.5*** | ***25.1*** | ***25.8*** | ***26.7*** | ***3%*** | ***30.4*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | |
| Commercial Lighting Program | **32.6** | 59.7 | 83.7 | 106.3 | 128.1 | 148.6 | 167.9 | 185.7 | 202.5 | 218.3 | 233.3 | 247.4 | 260.7 | 273.2 | 285.1 | **294.3** | | 335.5 |
| Commercial Custom Measures Program | **0.7** | 1.4 | 2.1 | 2.8 | 3.5 | 4.1 | 4.6 | 5.2 | 5.8 | 6.4 | 6.8 | 7.3 | 7.8 | 8.2 | 8.7 | **8.7** | | 9.9 |
| Commercial Windows Program | **1.5** | 2.4 | 3.4 | 4.4 | 5.4 | 6.4 | 7.4 | 8.3 | 9.3 | 10.3 | 11.2 | 12.2 | 13.2 | 14.1 | 15.1 | **16.0** | | 18.2 |
| Commercial HVAC Program - Chiller | **1.0** | 1.9 | 2.8 | 3.8 | 4.7 | 5.7 | 6.6 | 7.6 | 8.5 | 10.2 | 11.9 | 13.6 | 15.2 | 16.8 | 18.4 | **18.4** | | 21.0 |
| Commercial Parking Lot Controller Program | **1.9** | 2.3 | 2.3 | 3.7 | 4.9 | 6.0 | 6.9 | 7.8 | 8.6 | 9.3 | 10.0 | 10.5 | 11.1 | 11.5 | 12.0 | **10.4** | | 11.8 |
| City of Winnipeg Power Smart Agreement | **0.2** | 0.5 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.5 | 0.2 | 0.0 | **0.0** | | 0.0 |
| Commercial Rinse & Save Program | **1.4** | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| Commercial Refrigeration Program | **1.6** | 3.6 | 5.8 | 8.3 | 11.0 | 13.9 | 17.0 | 20.3 | 24.0 | 27.4 | 31.3 | 35.4 | 39.9 | 44.8 | 50.2 | **56.1** | | 64.0 |
| Commercial Insulation Program | **2.1** | 4.2 | 6.2 | 8.3 | 10.3 | 12.2 | 14.2 | 16.1 | 18.0 | 19.9 | 21.8 | 23.6 | 25.4 | 27.2 | 29.0 | **30.7** | | 35.0 |
| Commercial Earth Power Program | **1.6** | 3.2 | 4.7 | 6.3 | 8.0 | 9.9 | 11.9 | 14.1 | 16.3 | 16.3 | 16.3 | 16.3 | 16.3 | 16.3 | 16.3 | **16.3** | | 18.5 |
| Commercial New Construction Program | **0.0** | 0.0 | 2.1 | 4.5 | 8.4 | 10.4 | 13.2 | 16.6 | 21.0 | 30.6 | 30.6 | 30.6 | 30.6 | 30.6 | 30.6 | **30.6** | | 34.9 |
| Commercial Building Optimization Program | **0.9** | 1.7 | 2.8 | 4.6 | 6.3 | 7.7 | 9.3 | 12.0 | 13.2 | 14.7 | 15.4 | 16.2 | 16.7 | 16.8 | 17.4 | **16.0** | | 18.2 |
| Internal Retrofit Program | **2.8** | 17.7 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | **20.1** | | 23.0 |
| Agricultural Heat Pad Program | **1.6** | 3.4 | 3.9 | 4.4 | 4.9 | 5.2 | 5.5 | 5.8 | 6.0 | 6.2 | 6.4 | 6.5 | 6.6 | 6.7 | 6.8 | **7.2** | | 8.2 |
| Power Smart Energy Manager Program | **1.9** | 7.8 | 12.7 | 16.6 | 16.6 | 16.6 | 16.6 | 16.6 | 16.6 | 16.6 | 15.6 | 10.7 | 6.8 | 3.9 | 3.9 | **3.9** | | 4.4 |
| Commercial Kitchen Appliance Program | **0.2** | 0.4 | 0.6 | 0.9 | 1.2 | 1.5 | 1.9 | 2.4 | 2.8 | 2.8 | 2.8 | 3.1 | 3.2 | 3.3 | 3.3 | **3.4** | | 3.8 |
| Commercial Clothes Washers Program | **0.3** | 0.4 | 0.5 | 0.6 | 0.7 | 0.9 | 1.1 | 1.3 | 1.5 | 1.7 | 1.9 | 1.9 | 2.0 | 2.1 | 2.3 | **2.5** | | 2.8 |
| Network Energy Management Program | **5.2** | 9.9 | 13.6 | 15.8 | 17.4 | 14.5 | 12.1 | 10.4 | 9.4 | 8.9 | 9.0 | 9.6 | 10.9 | 12.8 | 15.0 | **12.7** | | 14.4 |
| Power Smart Shops | **0.8** | 1.7 | 2.5 | 3.4 | 4.3 | 5.1 | 5.9 | 6.7 | 7.5 | 8.2 | 8.5 | 8.8 | 9.1 | 9.4 | 9.6 | **9.9** | | 11.3 |
| CO2 Sensors | **0.0** | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.9 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | **1.1** | | 1.2 |
| ***Subtotal*** | ***58.4*** | ***123.6*** | ***172.3*** | ***217.0*** | ***258.2*** | ***291.3*** | ***325.0*** | ***359.8*** | ***394.0*** | ***431.1*** | ***454.6*** | ***475.7*** | ***497.1*** | ***519.2*** | ***544.7*** | ***558.1*** | ***54%*** | ***636.3*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | **12.9** | 26.2 | 40.0 | 54.2 | 68.8 | 83.9 | 99.3 | 115.2 | 131.6 | 148.4 | 165.6 | 183.2 | 201.2 | 219.7 | 238.7 | **245.1** | | 269.6 |
| Emergency Preparedness Program | **0.0** | 4.5 | 12.0 | 22.5 | 26.3 | 27.8 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 | **28.5** | | 31.4 |
| ***Subtotal*** | ***12.9*** | ***30.7*** | ***52.0*** | ***76.7*** | ***95.1*** | ***111.6*** | ***127.8*** | ***143.7*** | ***160.1*** | ***176.9*** | ***194.1*** | ***211.7*** | ***229.7*** | ***248.2*** | ***267.2*** | ***273.6*** | ***27%*** | ***301.0*** |
| ***CONSERVATION SUBTOTAL*** | ***149.7*** | ***317.4*** | ***459.7*** | ***544.3*** | ***618.3*** | ***630.1*** | ***640.4*** | ***658.0*** | ***711.9*** | ***765.8*** | ***805.7*** | ***844.5*** | ***884.6*** | ***913.9*** | ***946.7*** | ***953.6*** | ***93%*** | ***1076.2*** |
| **RATES** | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | **0.0** | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | | 0.0 |
| ***LOAD MANAGEMENT SUBTOTAL*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0%*** | ***0.0*** |
| **CUSTOMER SELF-GENERATION** | | | | | | | | | | | | | | | | | | |
| BioEnergy Optimization Program | **67.0** | 69.6 | 73.4 | 87.9 | 104.6 | 113.6 | 62.9 | 68.8 | 71.8 | 74.8 | 74.8 | 74.8 | 74.8 | 74.8 | 74.8 | **74.8** | | 82.2 |
| ***CUSTOMER SELF-GENERATION SUBTOTAL*** | ***67.0*** | ***69.6*** | ***73.4*** | ***87.9*** | ***104.6*** | ***113.6*** | ***62.9*** | ***68.8*** | ***71.8*** | ***74.8*** | ***74.8*** | ***74.8*** | ***74.8*** | ***74.8*** | ***74.8*** | ***74.8*** | ***7%*** | ***82.2*** |
| ***GW.h Impacts (at meter)*** | **217** | **387** | **533** | **632** | **723** | **744** | **703** | **727** | **784** | **841** | **880** | **919** | **959** | **989** | **1021** | **1028** | ***100%*** | |
| ***GW.h Impacts (at generation)*** | **244** | **437** | **603** | **714** | **816** | **839** | **794** | **820** | **884** | **948** | **993** | **1036** | **1081** | **1114** | **1151** | **1158** | | |
| \+ Option 1 - Supporting Codes & Standards (at meter) | **59** | 109 | 162 | 215 | 267 | 319 | 370 | 420 | 469 | 517 | 564 | 610 | 656 | 700 | 743 | **785** | | |
| ***POWER SMART 2009 to 2024 Impacts (at meter)*** | **276** | **496** | **695** | **847** | **990** | **1062** | **1073** | **1146** | **1252** | **1357** | **1444** | **1529** | **1615** | **1688** | **1764** | **1813** | | |
| ***POWER SMART 2009 to 2024 Impacts (at generation)*** | **311** | **561** | **787** | **959** | **1120** | **1202** | **1216** | **1298** | **1418** | **1537** | **1636** | **1732** | **1829** | **1912** | **1997** | **2053** | | |
| **POWER SMART SAVINGS TO DATE** | | | | | | | | | | | | | | | | | | |
| Incentive Based Program Impacts (at meter) | **950** | 943 | 937 | 930 | 894 | 894 | 895 | 891 | 888 | 885 | 885 | 831 | 830 | 792 | 769 | **759** | | |
| Incentive Based Program Impacts (at generation) | **1069** | 1061 | 1054 | 1046 | 1006 | 1005 | 1006 | 1002 | 998 | 995 | 995 | 933 | 932 | 890 | 865 | **853** | | |
| Customer Service Initiatives To-Date Impacts (at meter) | **19** | 19 | 18 | 18 | 17 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 15 | **12** | | |
| Customer Service Initiatives To-Date Impacts (at generatio | **22** | 22 | 21 | 20 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 18 | 17 | **13** | | |
| Impacts of Codes & Standards (at meter) | **309** | 309 | 309 | 309 | 309 | 309 | 309 | 309 | 309 | 309 | 309 | 309 | 309 | 309 | 309 | **309** | | |
| Impacts of Codes & Standards (at generation) | **352** | 352 | 352 | 352 | 352 | 352 | 352 | 352 | 352 | 352 | 352 | 352 | 352 | 352 | 352 | **352** | | |
| ***TOTAL GW.h (at meter)*** | **1554** | **1767** | **1960** | **2103** | **2210** | **2282** | **2293** | **2363** | **2466** | **2568** | **2655** | **2685** | **2770** | **2805** | **2858** | **2893** | | |
| ***TOTAL GW.h (at generation)*** | **1753** | **1995** | **2214** | **2377** | **2497** | **2577** | **2592** | **2670** | **2787** | **2903** | **3001** | **3035** | **3131** | **3171** | **3231** | **3271** | | |

NOTE: Figures may not add due to rounding

**Annual Total Resource Cost**
**2009 Option 2**
(1000s in 2009 $)



| | | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | Total to 2024 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | | | | | | | | | | |
| New Home Program | | **$1,339** | $1,846 | $3,484 | $1,924 | $2,030 | $2,030 | $2,023 | $2,023 | $1,280 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $17,979 | |
| Home Insulation Program | | **$1,917** | $1,781 | $1,652 | $1,531 | $1,417 | $1,310 | $1,208 | $1,113 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $11,930 | |
| Water and Energy Saver Program | | **$449** | $905 | $1,053 | $930 | $933 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $4,270 | |
| Residential CFL Program | | **$1,190** | $1,208 | $1,120 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $3,517 | |
| Residential Appliance Program | | **$1,569** | $1,570 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $3,139 | |
| Lower Income Energy Efficiency Program | | **$5,501** | $6,616 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $12,117 | |
| EE Light Fixtures | | **$337** | $383 | $425 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,145 | |
| Residential HE Furnace & Boiler Program | | **$1,341** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,341 | |
| Fridge Recycling Program | | **$5,724** | $5,303 | $5,303 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $16,329 | |
| | ***Subtotal*** | ***$19,367*** | ***$19,610*** | ***$13,036*** | ***$4,385*** | ***$4,380*** | ***$3,340*** | ***$3,232*** | ***$3,136*** | ***$1,280*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$71,766*** | ***14%*** |
| **Customer Service Initiatives** | | | | | | | | | | | | | | | | | | | |
| Power Smart Residential Loan Program | | | | | | | | | | | | | | | | | | | |
| ecoEnergy | | | | | | | | | | | | | | | | | | | |
| Residential Earth Power Program | | | | | | | | | | | | | | | | | | | |
| Solar Water Heaters | | | | | | | | | | | | | | | | | | | |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | |
| Commercial Lighting Program | | **$14,839** | $12,403 | $11,427 | $11,055 | $10,701 | $10,189 | $9,726 | $9,287 | $8,847 | $8,452 | $8,073 | $7,720 | $7,386 | $7,069 | $6,776 | **$4,069** | $148,020 | |
| Commercial Custom Measures Program | | **$291** | $287 | $287 | $287 | $287 | $256 | $252 | $252 | $252 | $256 | $218 | $218 | $218 | $218 | $218 | **$0** | $3,799 | |
| Commercial Windows Program | | **$890** | $749 | $749 | $749 | $749 | $749 | $749 | $742 | $742 | $742 | $742 | $742 | $742 | $736 | $736 | **$736** | $12,042 | |
| Commercial HVAC Program - Chiller | | **$386** | $367 | $369 | $362 | $373 | $368 | $370 | $358 | $345 | $651 | $641 | $647 | $629 | $618 | $599 | **$0** | $7,084 | |
| Commercial Parking Lot Controller Program | | **$542** | $113 | $5 | $272 | $245 | $221 | $198 | $179 | $161 | $145 | $130 | $117 | $105 | $95 | $85 | **$77** | $2,690 | |
| City of Winnipeg Power Smart Agreement | | **$38** | $25 | $19 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $82 | |
| Commercial Rinse & Save Program | | **$29** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $29 | |
| Commercial Refrigeration Program | | **$353** | $416 | $450 | $497 | $526 | $564 | $593 | $637 | $685 | $660 | $724 | $765 | $826 | $886 | $968 | **$1,071** | $10,622 | |
| Commercial Insulation Program | | **$1,313** | $1,300 | $1,293 | $1,281 | $1,268 | $1,261 | $1,248 | $1,236 | $1,231 | $1,218 | $1,216 | $1,201 | $1,199 | $1,184 | $1,169 | **$1,169** | $19,786 | |
| Commercial Earth Power Program | | **$1,056** | $1,018 | $1,022 | $1,026 | $1,158 | $1,204 | $1,294 | $1,341 | $1,388 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $10,506 | |
| Commercial New Construction Program | | **$522** | $1,324 | $1,427 | $2,084 | $2,374 | $3,145 | $3,820 | $4,726 | $4,861 | $5,401 | $0 | $0 | $0 | $0 | $0 | **$0** | $29,685 | |
| Commercial Building Optimization Program | | **$213** | $213 | $240 | $338 | $338 | $294 | $320 | $501 | $207 | $263 | $264 | $278 | $278 | $307 | $359 | **$0** | $4,413 | |
| Internal Retrofit Program | | **$2,474** | $24,557 | $2,125 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $29,156 | |
| Agricultural Heat Pad Program | | **$30** | $21 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $51 | |
| Power Smart Energy Manager Program | | **$358** | $767 | $657 | $550 | $81 | $81 | $81 | $81 | $81 | $0 | $102 | $102 | $102 | $102 | $0 | **$0** | $3,144 | |
| Commercial Kitchen Appliance Program | | **$108** | $129 | $144 | $167 | $190 | $211 | $233 | $251 | $272 | $0 | $0 | $145 | $150 | $155 | $165 | **$170** | $2,488 | |
| Commercial Clothes Washers Program | | **$380** | $138 | $155 | $173 | $194 | $215 | $237 | $261 | $285 | $311 | $271 | $0 | $399 | $326 | $337 | **$362** | $4,045 | |
| Network Energy Management Program | | **$574** | $523 | $429 | $278 | $223 | $220 | $226 | $197 | $118 | $111 | $225 | $290 | $317 | $301 | $326 | **$0** | $4,358 | |
| Power Smart Shops | | **$496** | $463 | $465 | $466 | $426 | $423 | $399 | $391 | $359 | $342 | $329 | $330 | $328 | $325 | $319 | **$312** | $6,174 | |
| CO2 Sensors | | **$8** | $8 | $8 | $8 | $9 | $10 | $11 | $12 | $14 | $15 | $4 | $5 | $5 | $6 | $6 | **$7** | $135 | |
| | ***Subtotal*** | ***$24,900*** | ***$44,819*** | ***$21,271*** | ***$19,593*** | ***$19,140*** | ***$19,410*** | ***$19,756*** | ***$20,451*** | ***$19,848*** | ***$18,568*** | ***$12,940*** | ***$12,561*** | ***$12,685*** | ***$12,327*** | ***$12,064*** | ***$7,973*** | ***$298,308*** | ***58%*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | | **$3,250** | $3,325 | $3,400 | $3,475 | $3,550 | $3,625 | $3,700 | $3,775 | $3,850 | $3,925 | $4,000 | $4,075 | $4,150 | $4,225 | $3,450 | **$3,525** | $59,303 | |
| Emergency Preparedness Program | | **$150** | $3,175 | $5,025 | $7,100 | $3,000 | $1,588 | $1,088 | $575 | $575 | $575 | $575 | $575 | $575 | $575 | $575 | **$575** | $26,300 | |
| | ***Subtotal*** | ***$3,400*** | ***$6,500*** | ***$8,425*** | ***$10,575*** | ***$6,550*** | ***$5,213*** | ***$4,788*** | ***$4,350*** | ***$4,425*** | ***$4,500*** | ***$4,575*** | ***$4,650*** | ***$4,725*** | ***$4,800*** | ***$4,025*** | ***$4,100*** | ***$85,603*** | ***17%*** |
| | ***CONSERVATION SUBTOTAL*** | ***$47,668*** | ***$70,930*** | ***$42,733*** | ***$34,553*** | ***$30,070*** | ***$27,963*** | ***$27,776*** | ***$27,938*** | ***$25,553*** | ***$23,068*** | ***$17,515*** | ***$17,211*** | ***$17,410*** | ***$17,127*** | ***$16,089*** | ***$12,073*** | ***$455,677*** | |
| **RATES** | | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | | **$4** | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | **$4** | $56 | |
| | ***LOAD MANAGEMENT SUBTOTAL*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$56*** | ***0%*** |
| **CUSTOMER SELF-GENERATION** | | | | | | | | | | | | | | | | | | | |
| BioEnergy Optimization Program | | **$7,051** | $4,638 | $5,117 | $9,069 | $9,705 | $6,974 | $6,285 | $2,703 | $1,775 | $1,808 | $876 | $748 | $748 | $748 | $748 | **$748** | $59,739 | |
| | ***CUSTOMER SELF-GENERATION SUBTOTAL*** | ***$7,051*** | ***$4,638*** | ***$5,117*** | ***$9,069*** | ***$9,705*** | ***$6,974*** | ***$6,285*** | ***$2,703*** | ***$1,775*** | ***$1,808*** | ***$876*** | ***$748*** | ***$748*** | ***$748*** | ***$748*** | ***$748*** | ***$59,739*** | ***12%*** |
| | ***Subtotal of Programs*** | ***$54,722*** | ***$75,571*** | ***$47,853*** | ***$43,625*** | ***$39,779*** | ***$34,940*** | ***$34,065*** | ***$30,645*** | ***$27,331*** | ***$24,880*** | ***$18,395*** | ***$17,963*** | ***$18,161*** | ***$17,879*** | ***$16,840*** | ***$12,824*** | ***$515,472*** | ***100%*** |
| + | Incremental Support Activity | **$776** | $820 | $890 | $925 | $945 | $875 | $875 | $862 | $862 | $862 | $862 | $862 | $862 | $862 | $862 | **$862** | $13,862 | |
| + | Contingency | **$0** | $0 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $2,000 | $2,000 | $2,000 | $2,000 | $2,000 | $2,000 | **$2,000** | $21,000 | |
| | ***Incremental TRC (2009 to 2024)*** | ***$55,498*** | ***$76,390*** | ***$49,743*** | ***$45,550*** | ***$41,724*** | ***$36,815*** | ***$35,940*** | ***$32,507*** | ***$29,193*** | ***$27,742*** | ***$21,257*** | ***$20,824*** | ***$21,023*** | ***$20,741*** | ***$19,702*** | ***$15,686*** | ***$550,334*** | |
| + | Customer Service & Standards Support | **$3,258** | $3,203 | $3,044 | $3,015 | $2,967 | $2,884 | $2,891 | $2,899 | $2,906 | $2,474 | $2,430 | $2,378 | $2,378 | $2,378 | $2,378 | **$2,378** | $43,858 | |
| | ***TRC (2009 to 2024)*** | ***$58,756*** | ***$79,594*** | ***$52,786*** | ***$48,565*** | ***$44,691*** | ***$39,699*** | ***$38,831*** | ***$35,405*** | ***$32,099*** | ***$30,216*** | ***$23,686*** | ***$23,202*** | ***$23,401*** | ***$23,118*** | ***$22,080*** | ***$18,064*** | ***$594,192*** | |
| **COMMITTED TO DATE:** | | | | | | | | | | | | | | | | | | | |
| Activity cumulative to 2007/08 | **$309,926** | **$1,524** | $1,862 | $1,415 | $2,770 | $3,652 | $2,674 | $3,890 | $8,529 | $4,267 | $5,572 | $10,178 | $4,405 | $5,000 | $3,078 | $5,827 | **$9,037** | **$383,608** | |
| Current Year Estimate (2008/09) | **$43,667** | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$43,667** | |
| | ***$353,594*** | ***$1,524*** | ***$1,862*** | ***$1,415*** | ***$2,770*** | ***$3,652*** | ***$2,674*** | ***$3,890*** | ***$8,529*** | ***$4,267*** | ***$5,572*** | ***$10,178*** | ***$4,405*** | ***$5,000*** | ***$3,078*** | ***$5,827*** | ***$9,037*** | ***$427,276*** | |
| ***TRC (1989 to 2024)*** | ***$353,594*** | ***$60,280*** | ***$81,455*** | ***$54,202*** | ***$51,335*** | ***$48,343*** | ***$42,373*** | ***$42,721*** | ***$43,934*** | ***$36,367*** | ***$35,788*** | ***$33,864*** | ***$27,608*** | ***$28,401*** | ***$26,196*** | ***$27,907*** | ***$27,100*** | ***$1,021,468*** | |

NOTE: Figures may not add due to rounding

Total Resource Costs for Customer Service Initiatives (CSI) are not tracked because they do not fall under the standard form of programming. Utility costs CSI's for that flow into total resource costs are included within Customer Service & Standards Support.

**Annual Program Budgets (Utility Cost)**
**2009 Option 2**
(1000s in 2009 $)

| | | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | Cumulative Total to 2024 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | |
| Incentive Based | | | | | | | | | | | | | | | | | | | |
| New Home Program | | **$538** | $583 | $665 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,786 | |
| Home Insulation Program | | **$1,429** | $1,335 | $1,246 | $1,162 | $1,083 | $1,009 | $939 | $873 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $9,076 | |
| Water and Energy Saver Program | | **$451** | $909 | $1,057 | $934 | $938 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $4,288 | |
| Residential CFL Program | | **$1,631** | $1,701 | $1,668 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $5,000 | |
| Residential Appliance Program | | **$198** | $136 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $335 | |
| Lower Income Energy Efficiency Program | | **$651** | $756 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,407 | |
| EE Light Fixtures | | **$400** | $477 | $599 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,476 | |
| Residential HE Furnace & Boiler Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Fridge Recycling Program | | **$3,637** | $3,215 | $3,215 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $10,068 | |
| | ***Subtotal*** | ***$8,935*** | ***$9,113*** | ***$8,449*** | ***$2,097*** | ***$2,021*** | ***$1,009*** | ***$939*** | ***$873*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$33,434*** | ***9%*** |
| **Customer Service Initiatives** | | | | | | | | | | | | | | | | | | | |
| Power Smart Residential Loan Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| ecoEnergy | | **$118** | $139 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $256 | |
| Residential Earth Power Program | | **$333** | $339 | $346 | $353 | $360 | $367 | $375 | $382 | $390 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $3,245 | |
| Solar Water Heaters | | **$0** | $0 | $18 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $18 | |
| | ***Subtotal*** | ***$450*** | ***$478*** | ***$364*** | ***$353*** | ***$360*** | ***$367*** | ***$375*** | ***$382*** | ***$390*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$3,520*** | ***1%*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | |
| Commercial Lighting Program | | **$8,687** | $6,684 | $6,273 | $6,108 | $5,962 | $5,750 | $5,552 | $5,366 | $5,187 | $5,016 | $4,863 | $4,717 | $4,574 | $4,448 | $4,329 | **$107** | $83,624 | |
| Commercial Custom Measures Program | | **$205** | $201 | $201 | $201 | $201 | $205 | $201 | $201 | $201 | $205 | $201 | $201 | $201 | $201 | $201 | **$0** | $3,022 | |
| Commercial Windows Program | | **$763** | $665 | $665 | $665 | $665 | $665 | $665 | $660 | $660 | $660 | $660 | $660 | $660 | $656 | $656 | **$656** | $10,677 | |
| Commercial HVAC Program - Chiller | | **$229** | $227 | $232 | $231 | $241 | $247 | $252 | $254 | $261 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $2,173 | |
| Commercial Parking Lot Controller Program | | **$451** | $92 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $548 | |
| City of Winnipeg Power Smart Agreement | | **$36** | $23 | $17 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $76 | |
| Commercial Rinse & Save Program | | **$31** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $31 | |
| Commercial Refrigeration Program | | **$188** | $205 | $216 | $230 | $240 | $254 | $263 | $277 | $293 | $301 | $321 | $337 | $360 | $381 | $409 | **$444** | $4,720 | |
| Commercial Insulation Program | | **$728** | $724 | $722 | $718 | $714 | $712 | $708 | $704 | $702 | $698 | $696 | $692 | $691 | $686 | $682 | **$682** | $11,255 | |
| Commercial Earth Power Program | | **$522** | $538 | $543 | $558 | $563 | $579 | $584 | $600 | $616 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $5,104 | |
| Commercial New Construction Program | | **$522** | $847 | $970 | $1,313 | $1,204 | $1,435 | $1,750 | $2,026 | $2,161 | $2,341 | $0 | $0 | $0 | $0 | $0 | **$0** | $14,569 | |
| Commercial Building Optimization Program | | **$146** | $146 | $159 | $209 | $209 | $208 | $220 | $314 | $146 | $175 | $176 | $184 | $184 | $199 | $217 | **$0** | $2,892 | |
| Internal Retrofit Program | | **$1,735** | $3,802 | $1,573 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $7,110 | |
| Agricultural Heat Pad Program | | **$123** | $117 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $240 | |
| Power Smart Energy Manager Program | | **$163** | $182 | $169 | $160 | $81 | $81 | $81 | $81 | $81 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,078 | |
| Commercial Kitchen Appliance Program | | **$73** | $86 | $98 | $113 | $129 | $143 | $159 | $171 | $186 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,159 | |
| Commercial Clothes Washers Program | | **$112** | $57 | $59 | $63 | $67 | $72 | $78 | $84 | $90 | $97 | $0 | $0 | $0 | $0 | $0 | **$0** | $779 | |
| Network Energy Management Program | | **$548** | $539 | $483 | $371 | $337 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $2,278 | |
| Power Smart Shops | | **$348** | $310 | $311 | $311 | $272 | $270 | $250 | $247 | $221 | $211 | $0 | $0 | $0 | $0 | $0 | **$0** | $2,752 | |
| CO2 Sensors | | **$8** | $8 | $8 | $7 | $7 | $8 | $8 | $8 | $9 | $10 | $0 | $0 | $0 | $0 | $0 | **$0** | $80 | |
| | ***Subtotal*** | ***$15,617*** | ***$15,451*** | ***$12,702*** | ***$11,256*** | ***$10,891*** | ***$10,628*** | ***$10,769*** | ***$10,992*** | ***$10,814*** | ***$9,714*** | ***$6,917*** | ***$6,790*** | ***$6,670*** | ***$6,570*** | ***$6,493*** | ***$1,888*** | ***$154,164*** | ***40%*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | | **$2,555** | $2,602 | $2,649 | $2,696 | $2,743 | $2,790 | $2,838 | $2,885 | $2,932 | $2,979 | $3,026 | $3,073 | $3,120 | $3,167 | $2,364 | **$2,411** | $44,831 | |
| Emergency Preparedness Program | | **$150** | $3,100 | $4,825 | $6,725 | $2,563 | $1,125 | $613 | $100 | $100 | $100 | $100 | $100 | $100 | $100 | $100 | **$100** | $20,000 | |
| | ***Subtotal*** | ***$2,705*** | ***$5,702*** | ***$7,474*** | ***$9,421*** | ***$5,306*** | ***$3,915*** | ***$3,450*** | ***$2,985*** | ***$3,032*** | ***$3,079*** | ***$3,126*** | ***$3,173*** | ***$3,220*** | ***$3,267*** | ***$2,464*** | ***$2,511*** | ***$64,831*** | ***17%*** |
| | ***CONSERVATION SUBTOTAL*** | ***$27,708*** | ***$30,744*** | ***$28,990*** | ***$23,127*** | ***$18,578*** | ***$15,919*** | ***$15,532*** | ***$15,232*** | ***$14,236*** | ***$12,793*** | ***$10,043*** | ***$9,963*** | ***$9,890*** | ***$9,837*** | ***$8,957*** | ***$4,400*** | ***$255,948*** | |
| **RATES** | | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | | **$6,363** | $6,363 | $6,363 | $6,363 | $6,363 | $6,363 | $6,363 | $6,363 | $6,363 | $6,363 | $6,363 | $6,363 | $6,363 | $6,363 | $6,363 | **$6,363** | $101,800 | |
| | ***LOAD MANAGEMENT SUBTOTAL*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$6,363*** | ***$101,800*** | ***27%*** |
| **CUSTOMER SELF-GENERATION** | | | | | | | | | | | | | | | | | | | |
| BioEnergy Optimization Program | | **$2,675** | $2,338 | $2,573 | $4,281 | $4,420 | $3,231 | $2,693 | $1,081 | $590 | $594 | $128 | $0 | $0 | $0 | $0 | **$0** | $24,604 | |
| | ***CUSTOMER SELF-GENERATION SUBTOTAL*** | ***$2,675*** | ***$2,338*** | ***$2,573*** | ***$4,281*** | ***$4,420*** | ***$3,231*** | ***$2,693*** | ***$1,081*** | ***$590*** | ***$594*** | ***$128*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$24,604*** | ***6%*** |
| | ***Subtotal of Programs*** | ***$36,746*** | ***$39,444*** | ***$37,925*** | ***$33,770*** | ***$29,361*** | ***$25,513*** | ***$24,587*** | ***$22,676*** | ***$21,188*** | ***$19,749*** | ***$16,534*** | ***$16,326*** | ***$16,252*** | ***$16,200*** | ***$15,320*** | ***$10,762*** | ***$382,353*** | ***100%*** |
| + | Support Activity | **$776** | $820 | $890 | $925 | $945 | $875 | $875 | $862 | $862 | $862 | $862 | $862 | $862 | $862 | $862 | **$862** | $13,862 | |
| + | Contingency | **$0** | $0 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $2,000 | $2,000 | $2,000 | $2,000 | $2,000 | $2,000 | **$2,000** | $21,000 | |
| | ***Utility Cost (2009 to 2024)*** | ***$37,521*** | ***$40,263*** | ***$39,815*** | ***$35,695*** | ***$31,306*** | ***$27,388*** | ***$26,463*** | ***$24,538*** | ***$23,050*** | ***$22,611*** | ***$19,396*** | ***$19,188*** | ***$19,114*** | ***$19,062*** | ***$18,182*** | ***$13,624*** | ***$417,215*** | |
| + | Option 1 -Customer Service & Standards Support | **$2,808** | $2,726 | $2,680 | $2,662 | $2,606 | $2,517 | $2,516 | $2,516 | $2,516 | $2,474 | $2,430 | $2,378 | $2,378 | $2,378 | $2,378 | **$2,378** | $40,338 | |
| | ***Utility Cost (2009 to 2024)*** | ***$40,329*** | ***$42,989*** | ***$42,494*** | ***$38,356*** | ***$33,912*** | ***$29,904*** | ***$28,979*** | ***$27,054*** | ***$25,567*** | ***$25,085*** | ***$21,825*** | ***$21,566*** | ***$21,492*** | ***$21,439*** | ***$20,559*** | ***$16,002*** | ***$457,553*** | |
| | **COMMITTED TO DATE:** | | | | | | | | | | | | | | | | | | |
| | Activity prior to 2007/08 $238,061 | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | $0 | $238,061 | |
| | Current Year Estimate (2008/0 $37,715 | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | $0 | $37,715 | |
| | **$275,776** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | $0 | **$275,776** | |
| ***UTILITY COST (1989 to 2024)*** | ***$275,776*** | ***$40,329*** | ***$42,989*** | ***$42,494*** | ***$38,356*** | ***$33,912*** | ***$29,904*** | ***$28,979*** | ***$27,054*** | ***$25,567*** | ***$25,085*** | ***$21,825*** | ***$21,566*** | ***$21,492*** | ***$21,439*** | ***$20,559*** | ***$16,002*** | ***$733,329*** | |

NOTE: Figures may not add due to rounding

**Annual Program Administration Budgets**
**2009 Option 2**
(1000s in 2009 $)

| | | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | Cumulative Total to 2024 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | | | | | | | | | | |
| New Home Program | | **$404** | $415 | $433 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,252 | |
| Home Insulation Program | | **$357** | $355 | $353 | $351 | $349 | $348 | $346 | $344 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $2,803 | |
| Water and Energy Saver Program | | **$335** | $613 | $694 | $612 | $610 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $2,864 | |
| Residential CFL Program | | **$604** | $604 | $604 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,812 | |
| Residential Appliance Program | | **$198** | $136 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $335 | |
| Lower Income Energy Efficiency Program | | **$170** | $178 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $348 | |
| EE Light Fixtures | | **$324** | $363 | $390 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,078 | |
| Residential HE Furnace & Boiler Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Fridge Recycling Program | | **$2,862** | $2,440 | $2,440 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $7,743 | |
| | ***Subtotal*** | ***$5,255*** | ***$5,104*** | ***$4,915*** | ***$963*** | ***$959*** | ***$348*** | ***$346*** | ***$344*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$18,234*** | ***19%*** |
| **Customer Service Initiatives** | | | | | | | | | | | | | | | | | | | |
| Power Smart Residential Loan Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| ecoEnergy | | **$118** | $139 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $256 | |
| Residential Earth Power Program | | **$333** | $339 | $346 | $353 | $360 | $367 | $375 | $382 | $390 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $3,245 | |
| Solar Water Heaters | | **$0** | $0 | $18 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $18 | |
| | ***Subtotal*** | ***$450*** | ***$478*** | ***$364*** | ***$353*** | ***$360*** | ***$367*** | ***$375*** | ***$382*** | ***$390*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$3,520*** | ***4%*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | |
| Commercial Lighting Program | | **$1,846** | $1,831 | $1,829 | $1,823 | $1,823 | $1,823 | $1,823 | $1,823 | $1,823 | $1,817 | $1,817 | $1,817 | $1,813 | $1,813 | $1,813 | **$107** | $27,442 | |
| Commercial Custom Measures Program | | **$84** | $80 | $80 | $80 | $80 | $84 | $80 | $80 | $80 | $84 | $80 | $80 | $80 | $80 | $80 | **$0** | $1,209 | |
| Commercial Windows Program | | **$453** | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | **$453** | $7,253 | |
| Commercial HVAC Program - Chiller | | **$14** | $14 | $12 | $9 | $9 | $9 | $7 | $7 | $7 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $87 | |
| Commercial Parking Lot Controller Program | | **$147** | $32 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $183 | |
| City of Winnipeg Power Smart Agreement | | **$2** | $2 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $6 | |
| Commercial Rinse & Save Program | | **$12** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $12 | |
| Commercial Refrigeration Program | | **$95** | $93 | $94 | $94 | $97 | $96 | $96 | $97 | $100 | $99 | $100 | $100 | $103 | $102 | $104 | **$105** | $1,575 | |
| Commercial Insulation Program | | **$453** | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | $453 | **$453** | $7,253 | |
| Commercial Earth Power Program | | **$209** | $213 | $217 | $222 | $226 | $231 | $235 | $240 | $245 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $2,037 | |
| Commercial New Construction Program | | **$522** | $354 | $317 | $281 | $349 | $310 | $310 | $271 | $271 | $271 | $0 | $0 | $0 | $0 | $0 | **$0** | $3,256 | |
| Commercial Building Optimization Program | | **$73** | $73 | $72 | $70 | $70 | $70 | $69 | $68 | $36 | $36 | $38 | $38 | $38 | $38 | $20 | **$0** | $810 | |
| Internal Retrofit Program | | **$604** | $606 | $606 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,815 | |
| Agricultural Heat Pad Program | | **$30** | $21 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $51 | |
| Power Smart Energy Manager Program | | **$154** | $153 | $145 | $141 | $81 | $81 | $81 | $81 | $81 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $996 | |
| Commercial Kitchen Appliance Program | | **$16** | $16 | $15 | $15 | $13 | $13 | $13 | $11 | $11 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $124 | |
| Commercial Clothes Washers Program | | **$40** | $28 | $25 | $22 | $21 | $19 | $19 | $18 | $18 | $17 | $0 | $0 | $0 | $0 | $0 | **$0** | $228 | |
| Network Energy Management Program | | **$66** | $66 | $66 | $66 | $66 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $328 | |
| Power Smart Shops | | **$258** | $219 | $218 | $218 | $179 | $179 | $161 | $161 | $139 | $133 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,863 | |
| CO2 Sensors | | **$4** | $4 | $3 | $2 | $2 | $2 | $1 | $1 | $1 | $1 | $0 | $0 | $0 | $0 | $0 | **$0** | $22 | |
| | ***Subtotal*** | ***$5,083*** | ***$4,709*** | ***$4,611*** | ***$3,949*** | ***$3,922*** | ***$3,822*** | ***$3,802*** | ***$3,765*** | ***$3,718*** | ***$3,365*** | ***$2,941*** | ***$2,942*** | ***$2,941*** | ***$2,940*** | ***$2,923*** | ***$1,119*** | ***$56,551*** | ***58%*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | | **$1,000** | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $150 | **$150** | $14,303 | |
| Emergency Preparedness Program | | **$150** | $325 | $200 | $250 | $250 | $200 | $150 | $100 | $100 | $100 | $100 | $100 | $100 | $100 | $100 | **$100** | $2,425 | |
| | ***Subtotal*** | ***$1,150*** | ***$1,325*** | ***$1,200*** | ***$1,250*** | ***$1,250*** | ***$1,200*** | ***$1,150*** | ***$1,100*** | ***$1,100*** | ***$1,100*** | ***$1,100*** | ***$1,100*** | ***$1,100*** | ***$1,100*** | ***$250*** | ***$250*** | ***$16,728*** | ***17%*** |
| | ***CONSERVATION SUBTOTAL*** | ***$11,939*** | ***$11,616*** | ***$11,090*** | ***$6,516*** | ***$6,491*** | ***$5,737*** | ***$5,673*** | ***$5,591*** | ***$5,208*** | ***$4,465*** | ***$4,041*** | ***$4,042*** | ***$4,041*** | ***$4,040*** | ***$3,173*** | ***$1,369*** | ***$95,032*** | |
| **RATES** | | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | | **$4** | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | $4 | **$4** | $56 | |
| | ***LOAD MANAGEMENT SUBTOTAL*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$4*** | ***$56*** | ***0%*** |
| **CUSTOMER SELF-GENERATION** | | | | | | | | | | | | | | | | | | | |
| BioEnergy Optimization Program | | **$1,000** | $261 | $293 | $356 | $162 | $148 | $177 | $142 | $121 | $124 | $128 | $0 | $0 | $0 | $0 | **$0** | $2,912 | |
| | ***CUSTOMER SELF-GENERATION SUBTOTAL*** | ***$1,000*** | ***$261*** | ***$293*** | ***$356*** | ***$162*** | ***$148*** | ***$177*** | ***$142*** | ***$121*** | ***$124*** | ***$128*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$2,912*** | ***3%*** |
| | ***Subtotal of Programs*** | ***$12,943*** | ***$11,880*** | ***$11,386*** | ***$6,875*** | ***$6,656*** | ***$5,889*** | ***$5,853*** | ***$5,737*** | ***$5,332*** | ***$4,593*** | ***$4,172*** | ***$4,045*** | ***$4,044*** | ***$4,043*** | ***$3,177*** | ***$1,372*** | ***$98,000*** | ***100%*** |
| + | Support Activity | **$776** | $820 | $890 | $925 | $945 | $875 | $875 | $862 | $862 | $862 | $862 | $862 | $862 | $862 | $862 | **$862** | $13,862 | |
| + | Contingency | **$0** | $0 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $2,000 | $2,000 | $2,000 | $2,000 | $2,000 | $2,000 | **$2,000** | $21,000 | |
| | ***Administration Cost (2009 to 2024)*** | ***$13,718*** | ***$12,700*** | ***$13,276*** | ***$8,800*** | ***$8,601*** | ***$7,764*** | ***$7,728*** | ***$7,599*** | ***$7,194*** | ***$7,455*** | ***$7,034*** | ***$6,907*** | ***$6,906*** | ***$6,905*** | ***$6,039*** | ***$4,234*** | ***$132,862*** | |
| + | Option 1 (Customer Service & Standards Support) | **$2,808** | **$2,726** | **$2,680** | **$2,662** | **$2,606** | **$2,517** | **$2,516** | **$2,516** | **$2,516** | **$2,474** | **$2,430** | **$2,378** | **$2,378** | **$2,378** | **$2,378** | **$2,378** | $40,338 | |
| | ***Administration Cost (2009 to 2024)*** | ***$16,526*** | ***$15,425*** | ***$15,955*** | ***$11,461*** | ***$11,208*** | ***$10,280*** | ***$10,245*** | ***$10,116*** | ***$9,710*** | ***$9,929*** | ***$9,464*** | ***$9,285*** | ***$9,284*** | ***$9,283*** | ***$8,416*** | ***$6,612*** | ***$173,200*** | |
| **COMMITTED TO DATE:** | | | | | | | | | | | | | | | | | | | |
| Activity prior to 2007/08 | $113,330 | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $113,330 | |
| Current Year Estimate (2008/09) | $14,849 | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $14,849 | |
| | ***$128,179*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$128,179*** | |
| ***ADMIN. (1989 to 2024)*** | ***$128,179*** | ***$16,526*** | ***$15,425*** | ***$15,955*** | ***$11,461*** | ***$11,208*** | ***$10,280*** | ***$10,245*** | ***$10,116*** | ***$9,710*** | ***$9,929*** | ***$9,464*** | ***$9,285*** | ***$9,284*** | ***$9,283*** | ***$8,416*** | ***$6,612*** | ***$301,379*** | |

NOTE: Figures may not add due to rounding

**Incentives**
**2009 Option 2**
(1000s in 2009 $)

| | | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | Cumulative Total to 2024 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | | | | | | | | | | |
| New Home Program | | **$134** | $169 | $231 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $534 | |
| Home Insulation Program | | **$1,072** | $980 | $893 | $811 | $734 | $661 | $593 | $528 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $6,272 | |
| Water and Energy Saver Program | | **$116** | $296 | $363 | $322 | $328 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,424 | |
| Residential CFL Program | | **$1,027** | $1,097 | $1,064 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $3,188 | |
| Residential Appliance Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Lower Income Energy Efficiency Program | | **$481** | $578 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,058 | |
| EE Light Fixtures | | **$76** | $114 | $208 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $398 | |
| Residential HE Furnace & Boiler Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Fridge Recycling Program | | **$775** | $775 | $775 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $2,325 | |
| | ***Subtotal*** | ***$3,680*** | ***$4,009*** | ***$3,535*** | ***$1,133*** | ***$1,062*** | ***$661*** | ***$593*** | ***$528*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$15,200*** | ***5%*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | |
| Commercial Lighting Program | | **$6,840** | $4,853 | $4,444 | $4,285 | $4,139 | $3,927 | $3,729 | $3,543 | $3,364 | $3,198 | $3,046 | $2,900 | $2,761 | $2,635 | $2,516 | **$0** | $56,181 | |
| Commercial Custom Measures Program | | **$121** | $121 | $121 | $121 | $121 | $121 | $121 | $121 | $121 | $121 | $121 | $121 | $121 | $121 | $121 | **$0** | $1,813 | |
| Commercial Windows Program | | **$310** | $211 | $211 | $211 | $211 | $211 | $211 | $207 | $207 | $207 | $207 | $207 | $207 | $202 | $202 | **$202** | $3,424 | |
| Commercial HVAC Program - Chiller | | **$215** | $213 | $219 | $221 | $232 | $238 | $245 | $247 | $254 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $2,085 | |
| Commercial Parking Lot Controller Program | | **$304** | $61 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $365 | |
| City of Winnipeg Power Smart Agreement | | **$34** | $21 | $15 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $70 | |
| Commercial Rinse & Save Program | | **$18** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $18 | |
| Commercial Refrigeration Program | | **$93** | $112 | $122 | $136 | $143 | $158 | $167 | $180 | $193 | $203 | $221 | $237 | $257 | $278 | $306 | **$339** | $3,145 | |
| Commercial Insulation Program | | **$274** | $271 | $268 | $264 | $261 | $258 | $254 | $251 | $248 | $244 | $243 | $238 | $237 | $233 | $228 | **$228** | $4,002 | |
| Commercial Earth Power Program | | **$314** | $325 | $325 | $337 | $337 | $348 | $348 | $360 | $372 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $3,066 | |
| Commercial New Construction Program | | **$0** | $493 | $653 | $1,031 | $855 | $1,125 | $1,440 | $1,755 | $1,890 | $2,070 | $0 | $0 | $0 | $0 | $0 | **$0** | $11,313 | |
| Commercial Building Optimization Program | | **$72** | $72 | $87 | $139 | $139 | $137 | $151 | $246 | $110 | $139 | $139 | $146 | $146 | $161 | $197 | **$0** | $2,082 | |
| Internal Retrofit Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Agricultural Heat Pad Program | | **$93** | $96 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $189 | |
| Power Smart Energy Manager Program | | **$10** | $29 | $24 | $19 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $81 | |
| Commercial Kitchen Appliance Program | | **$56** | $70 | $83 | $98 | $116 | $130 | $146 | $159 | $175 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,034 | |
| Commercial Clothes Washers Program | | **$72** | $29 | $35 | $40 | $46 | $53 | $59 | $66 | $72 | $80 | $0 | $0 | $0 | $0 | $0 | **$0** | $552 | |
| Network Energy Management Program | | **$482** | $473 | $418 | $305 | $272 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,950 | |
| Power Smart Shops | | **$89** | $92 | $93 | $93 | $93 | $92 | $89 | $86 | $83 | $79 | $0 | $0 | $0 | $0 | $0 | **$0** | $889 | |
| CO2 Sensors | | **$4** | $4 | $4 | $5 | $5 | $6 | $7 | $7 | $8 | $9 | $0 | $0 | $0 | $0 | $0 | **$0** | $58 | |
| | ***Subtotal*** | ***$9,402*** | ***$7,547*** | ***$7,124*** | ***$7,307*** | ***$6,970*** | ***$6,805*** | ***$6,967*** | ***$7,228*** | ***$7,096*** | ***$6,349*** | ***$3,976*** | ***$3,849*** | ***$3,729*** | ***$3,630*** | ***$3,570*** | ***$769*** | ***$92,319*** | ***33%*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | | **$1,555** | $1,602 | $1,649 | $1,696 | $1,743 | $1,790 | $1,837 | $1,884 | $1,932 | $1,979 | $2,026 | $2,073 | $2,120 | $2,167 | $2,214 | **$2,261** | $30,528 | |
| Emergency Preparedness Program | | **$0** | $2,775 | $4,625 | $6,475 | $2,313 | $925 | $463 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $17,575 | |
| | ***Subtotal*** | ***$1,555*** | ***$4,377*** | ***$6,274*** | ***$8,171*** | ***$4,056*** | ***$2,715*** | ***$2,300*** | ***$1,884*** | ***$1,932*** | ***$1,979*** | ***$2,026*** | ***$2,073*** | ***$2,120*** | ***$2,167*** | ***$2,214*** | ***$2,261*** | ***$48,103*** | ***17%*** |
| | ***CONSERVATION SUBTOTAL*** | ***$14,637*** | ***$15,932*** | ***$16,932*** | ***$16,611*** | ***$12,087*** | ***$10,182*** | ***$9,860*** | ***$9,640*** | ***$9,028*** | ***$8,328*** | ***$6,002*** | ***$5,922*** | ***$5,849*** | ***$5,797*** | ***$5,784*** | ***$3,031*** | ***$155,622*** | |
| **RATES** | | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | | **$6,359** | $6,359 | $6,359 | $6,359 | $6,359 | $6,359 | $6,359 | $6,359 | $6,359 | $6,359 | $6,359 | $6,359 | $6,359 | $6,359 | $6,359 | **$6,359** | $101,744 | |
| | ***LOAD MANAGEMENT SUBTOTAL*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$6,359*** | ***$101,744*** | ***36%*** |
| **CUSTOMER SELF-GENERATION** | | | | | | | | | | | | | | | | | | | |
| BioEnergy Optimization Program | | **$1,675** | $2,076 | $2,281 | $3,925 | $4,259 | $3,083 | $2,516 | $939 | $469 | $469 | $0 | $0 | $0 | $0 | $0 | **$0** | $21,693 | |
| | ***CUSTOMER SELF-GENERATION SUBTOTAL*** | ***$1,675*** | ***$2,076*** | ***$2,281*** | ***$3,925*** | ***$4,259*** | ***$3,083*** | ***$2,516*** | ***$939*** | ***$469*** | ***$469*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$21,693*** | ***8%*** |
| | ***Incentives Cost (2009 to 2024)*** | ***$22,671*** | ***$24,368*** | ***$25,572*** | ***$26,895*** | ***$22,705*** | ***$19,624*** | ***$18,734*** | ***$16,938*** | ***$15,857*** | ***$15,156*** | ***$12,361*** | ***$12,281*** | ***$12,208*** | ***$12,156*** | ***$12,143*** | ***$9,390*** | ***$279,058*** | ***100%*** |
| **COMMITTED TO DATE:** | | | | | | | | | | | | | | | | | | | |
| Activity prior to 2007/08 | $124,731 | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $124,731 | |
| Current Year Estimate (2008/( | $22,867 | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $22,867 | |
| | ***$147,598*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$147,598*** | |
| ***INCENTIVES TOTAL (1989 to 2024)*** | ***$147,598*** | ***$22,671*** | ***$24,368*** | ***$25,572*** | ***$26,895*** | ***$22,705*** | ***$19,624*** | ***$18,734*** | ***$16,938*** | ***$15,857*** | ***$15,156*** | ***$12,361*** | ***$12,281*** | ***$12,208*** | ***$12,156*** | ***$12,143*** | ***$9,390*** | ***$426,656*** | |

NOTE: Figures may not add due to rounding
There are no incentives for Customer Service Initiatives

## APPENDIX B - Historical MW/GW.h Savings & Costs by Program (Savings to Date)

Appendix B.1 - Capacity Savings (MW)
Appendix B.2 - Summer Capacity Savings (MW)
Appendix B.3 - Annual Energy Savings (GW.h)
Appendix B.4 - Annual Total Resource Cost
Appendix B.5 - Annual Program Budgets (Utility Cost)
Appendix B.6 - Annual Program Administration Budgets
Appendix B.7 - Incentives

**Winter Capacity Savings (MW)**
**Savings to Date (1989/90 - 2008/09)**

| | 1989/90 | 1990/91 | 1991/92 | 1992/93 | 1993/94 | 1994/95 | 1995/96 | 1996/97 | 1997/98 | 1998/99 | 1999/00 | 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | Interim Est. 2008/09 | At Generation 2008/09 | 2024/25 | At Generation 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | | | | | |
| Incentive Based | | | | | | | | | | | | | | | | | | | | | | | |
| Residential Retrofit | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| New Home Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.4 | 0.7 | **1.0** | **1.1** | **1.0** | **1.1** |
| Water Heater Rental | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Home Insulation Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 2.0 | 5.2 | 8.0 | **9.0** | **10.3** | **9.0** | **10.3** |
| Residential Geothermal | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Residential Hot Water | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | **0.1** | **0.1** | **0.1** | **0.1** |
| Power Saver Cord | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Outdoor Timer | 0.3 | 0.5 | 0.9 | 1.2 | 1.5 | 1.9 | 2.0 | 2.3 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | **2.4** | **2.7** | **2.4** | **2.7** |
| Residential CFL Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 | 3.1 | 4.2 | 5.7 | **13.9** | **15.8** | **0.0** | **0.0** |
| Refrigerator Buy-Back | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Fridge Recycling Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Residential Appliance Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 1.0 | **1.8** | **2.0** | **0.0** | **0.0** |
| Residential Thermostat Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Residential High Effiiciency Furnace (ECM) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.8** | **0.9** | **0.8** | **0.9** |
| Electronically Commutated Motors | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Lower Income Energy Efficiency Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | **0.3** | **0.3** | **0.3** | **0.3** |
| Aboriginal | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | **0.1** | **0.1** | **0.1** | **0.1** |
| Residential SLED Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | **0.1** | **0.1** | **0.1** | **0.1** |
| Residential Light Fixtures | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | **0.5** | **0.6** | **0.5** | **0.5** |
| Water & Energy Saver Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| ***Subtotal*** | ***0.3*** | ***0.5*** | ***1.0*** | ***1.3*** | ***1.6*** | ***1.9*** | ***2.1*** | ***2.4*** | ***2.5*** | ***2.5*** | ***2.5*** | ***2.5*** | ***2.5*** | ***2.5*** | ***2.5*** | ***5.0*** | ***7.9*** | ***12.9*** | ***18.4*** | ***30.0*** | ***34.2*** | ***14.3*** | ***16.3*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | | | | | |
| Commercial Lighting Program | 0.0 | 0.0 | 0.0 | 0.5 | 2.6 | 5.7 | 9.2 | 10.8 | 11.6 | 15.1 | 16.4 | 17.4 | 18.5 | 19.7 | 21.7 | 24.2 | 27.7 | 31.1 | 34.1 | **40.2** | **45.8** | **40.1** | **45.8** |
| Commercial Comprehensive | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | **0.2** | **0.2** | **0.2** | **0.2** |
| Commerical Custom Measures Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.4 | 0.5 | 0.5 | 0.5 | 0.9 | 0.9 | 0.9 | 1.0 | 1.1 | **1.2** | **1.4** | **1.2** | **1.4** |
| Commerical HVAC Program - Air Barrier | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | **0.3** | **0.3** | **0.3** | **0.3** |
| Commerical Windows Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 0.6 | 0.8 | 1.1 | 1.5 | 1.7 | 1.8 | **2.1** | **2.4** | **1.9** | **2.2** |
| Commerical HVAC Program - Air Conditioning BIS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commercial HVAC Program - Chillers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commerical Parking Lot Controller Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| City of Wpg PSA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 1.4 | 1.8 | 2.0 | **2.1** | **2.3** | **0.5** | **0.5** |
| Commercial Rinse & Save Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commercial Refrigeration Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.8 | **0.8** | **1.0** | **0.1** | **0.2** |
| Commercial Insulation Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.7 | **1.9** | **2.2** | **1.9** | **2.2** |
| Commercial Geothermal Heating | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.8 | 1.1 | 1.5 | 1.7 | 2.0 | 2.4 | 3.8 | 4.2 | 5.4 | 7.4 | 8.7 | **9.1** | **10.3** | **9.1** | **10.3** |
| Power Smart Energy Manager Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commercial New Construction Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commercial Building Optimization Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Internal Retrofit Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.6 | 0.6 | 0.7 | 0.9 | 1.0 | 1.1 | 1.2 | 1.3 | 1.4 | 1.7 | 2.2 | 2.4 | 2.8 | 3.0 | **3.3** | **3.6** | **3.1** | **3.4** |
| Livestock Waterer | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | **0.1** | **0.1** | **0.0** | **0.0** |
| Agricultural Heat Pad Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 1.0 | 1.2 | 1.6 | 2.0 | 2.2 | 2.6 | 2.7 | 2.8 | 3.2 | **3.3** | **3.8** | **2.8** | **3.2** |
| Agricultural Demand Controller | 0.0 | 0.0 | 0.0 | 0.7 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | **1.0** | **1.1** | **1.0** | **1.1** |
| Infrared Heat Lamp | 0.0 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | **0.6** | **0.7** | **0.6** | **0.7** |
| Roadway Lighting | 0.0 | 0.0 | 0.9 | 3.1 | 5.4 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | **7.0** | **7.9** | **7.0** | **7.9** |
| Sentinel Lighting | 0.0 | 0.0 | 0.5 | 1.1 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | **1.8** | **2.0** | **1.8** | **2.0** |
| Commercial Kitchen | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commercial Clothes Washer | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| PS Shops | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Network Energy Manager | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| C02 Sensors | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| ***Subtotal*** | ***0.0*** | ***0.0*** | ***2.2*** | ***6.3*** | ***11.9*** | ***16.9*** | ***20.5*** | ***22.5*** | ***24.2*** | ***29.1*** | ***31.5*** | ***33.2*** | ***35.2*** | ***37.5*** | ***42.1*** | ***46.2*** | ***52.9*** | ***59.9*** | ***66.4*** | ***75.0*** | ***85.3*** | ***71.6*** | ***81.5*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 1.1 | 4.6 | 5.8 | 37.4 | 39.1 | 39.5 | 48.4 | 52.9 | 54.1 | 57.6 | 61.7 | 63.2 | 66.2 | **68.2** | **75.1** | **63.1** | **69.4** |
| High Efficiency Motors Market | 0.0 | 0.0 | 0.1 | 0.7 | 1.3 | 1.8 | 2.3 | 3.0 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | **3.8** | **4.2** | **3.8** | **4.2** |
| Internal Retrofit Program | 0.0 | 0.0 | 0.0 | 0.3 | 0.4 | 1.6 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | **4.3** | **4.8** | **4.1** | **4.5** |
| Quality Motor Repair Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| ***Subtotal*** | ***0.0*** | ***0.0*** | ***0.1*** | ***1.0*** | ***1.7*** | ***3.7*** | ***7.7*** | ***11.9*** | ***13.9*** | ***45.5*** | ***47.3*** | ***47.6*** | ***56.5*** | ***61.1*** | ***62.2*** | ***65.8*** | ***69.8*** | ***71.3*** | ***74.4*** | ***76.4*** | ***84.0*** | ***71.0*** | ***78.1*** |
| **CONSERVATION SUBTOTAL** | ***0*** | ***1*** | ***3*** | ***9*** | ***15*** | ***23*** | ***30*** | ***37*** | ***41*** | ***77*** | ***81*** | ***83*** | ***94*** | ***101*** | ***107*** | ***117*** | ***131*** | ***144*** | ***159*** | ***181*** | ***204*** | ***157*** | ***176*** |
| **RATES** | | | | | | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | 0.0 | 0.0 | 0.0 | 0.0 | 40.7 | 46.4 | 24.7 | 32.7 | 80.0 | 48.2 | 58.0 | 57.1 | 68.0 | 110.3 | 148.5 | 153.8 | 189.1 | 183.3 | 180.6 | **176.9** | **194.6** | **0.0** | **0.0** |
| ***RATES SUBTOTAL*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***40.7*** | ***46.4*** | ***24.7*** | ***32.7*** | ***80.0*** | ***48.2*** | ***58.0*** | ***57.1*** | ***68.0*** | ***110.3*** | ***148.5*** | ***153.8*** | ***189.1*** | ***183.3*** | ***180.6*** | ***176.9*** | ***194.6*** | ***0.0*** | ***0.0*** |
| **CUSTOMER SELF GENERATION** | | | | | | | | | | | | | | | | | | | | | | | |
| Power Smart Bioenergy Optimization Program/Tolko | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 14.3 | 14.3 | 14.3 | **14.3** | **15.7** | **0.0** | **0.0** |
| ***SELF GENERATION SUBTOTAL*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***14.3*** | ***14.3*** | ***14.3*** | ***14.3*** | ***15.7*** | ***0.0*** | ***0.0*** |
| **CODES & STANDARDS** | **0.0** | **0.0** | **0.0** | **0.5** | **1.6** | **3.3** | **5.4** | **8.4** | **13.6** | **20.4** | **28.0** | **35.2** | **42.9** | **52.0** | **56.1** | **61.8** | **66.9** | **72.0** | **78.6** | **78.6** | **89.5** | **78.6** | **89.5** |
| **OPTION 2 CUSTOMER SERVICE INITIATIVES** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.5** | **1.0** | **1.5** | **2.2** | **2.9** | **3.6** | **5.0** | **5.7** | **6.5** | **4.9** | **5.6** |
| **TOTAL IMPACTS GW.h (at meter)** | **0** | **1** | **3** | **9** | **58** | **72** | **60** | **78** | **134** | **146** | **167** | **176** | **206** | **264** | **313** | **335** | **404** | **417** | **438** | **457** | **510** | **240** | **271** |
| **TOTAL IMPACTS GW.h (at generation)** | **0** | **1** | **4** | **10** | **64** | **80** | **67** | **87** | **149** | **162** | **186** | **196** | **230** | **294** | **348** | **373** | **449** | **465** | **488** | **510** | | **271** | |

NOTE: Subtotals may not be exact due to rounding

## Summer Capacity Savings (MW)
## Savings to Date (1989/90 - 2008/09)

| | 1989/90 | 1990/91 | 1991/92 | 1992/93 | 1993/94 | 1994/95 | 1995/96 | 1996/97 | 1997/98 | 1998/99 | 1999/00 | 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | Interim Est. 2008/09 | At Generation 2008/09 | 2024/25 | At Generation 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | | | | | |
| Incentive Based | | | | | | | | | | | | | | | | | | | | | | | |
| Residential Retrofit | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| New Home Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | **0.3** | **0.3** | **0.3** | **0.3** |
| Water Heater Rental | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | **0.1** | **0.1** | **0.1** | **0.1** |
| Home Insulation | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.2 | **0.2** | **0.2** | **0.2** | **0.2** |
| Residential Geothermal | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Residential Hot Water | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | **0.1** | **0.1** | **0.1** | **0.1** |
| Power Saver Cord | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Outdoor Timer | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Residential CFL Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 1.4 | 1.8 | 2.5 | **8.0** | **9.1** | **0.0** | **0.0** |
| Refrigerator Buy-Back | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Fridge Recycling Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Residential Appliance Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 1.2 | **2.0** | **2.3** | **0.1** | **0.1** |
| Residential Thermostat Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Residential High Effiiciency Furnace (ECM) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.7** | **0.8** | **0.7** | **0.8** |
| Electronically Commutated Motors | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Lower Income Energy Efficiency Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Aboriginal | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Residential SLED Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Residential Light Fixtures | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | **0.2** | **0.2** | **0.2** | **0.2** |
| Water & Energy Saver Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| ***Subtotal*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.1*** | ***0.1*** | ***0.1*** | ***0.1*** | ***0.1*** | ***0.1*** | ***0.1*** | ***0.9*** | ***1.6*** | ***2.8*** | ***4.4*** | ***11.5*** | ***13.1*** | ***1.5*** | ***1.7*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | | | | | |
| Commercial Lighting | 0.0 | 0.0 | 0.0 | 0.4 | 2.8 | 6.7 | 11.1 | 13.2 | 14.4 | 19.1 | 20.5 | 21.8 | 23.1 | 24.2 | 27.0 | 30.5 | 35.2 | 40.1 | 44.2 | **50.3** | **57.4** | **50.3** | **57.3** |
| Commercial Comprehensive | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | **0.1** | **0.1** | **0.1** | **0.1** |
| Commerical Custom Measures Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.4 | 0.5 | 0.5 | 0.8 | 0.8 | 0.8 | 0.9 | 1.1 | **1.1** | **1.3** | **1.0** | **1.2** |
| Commerical HVAC Program - Air Barrier | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | **0.1** | **0.1** | **0.1** | **0.1** |
| Commerical Windows Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | **0.5** | **0.6** | **0.5** | **0.5** |
| Commerical HVAC Program - Air Conditioning BIS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | **0.2** | **0.2** | **0.2** | **0.2** |
| Commercial HVAC Program - Chillers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | 1.4 | 1.7 | 1.9 | **2.0** | **2.3** | **2.0** | **2.3** |
| Commerical Parking Lot Controller Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| City of Wpg PSA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 1.3 | 1.6 | 1.7 | **1.8** | **2.0** | **0.3** | **0.3** |
| Commercial Rinse & Save Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commercial Refrigeration Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.5 | **0.5** | **0.6** | **0.1** | **0.1** |
| Commercial Insulation Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | **1.0** | **1.1** | **1.0** | **1.1** |
| Commercial Geothermal Heating | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.9 | 1.0 | **1.0** | **1.2** | **1.0** | **1.2** |
| Power Smart Energy Manager Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commercial New Construction Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commercial Building Optimization Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Internal Retrofit Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.4 | 0.5 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 1.4 | 2.0 | 2.7 | 2.9 | 3.1 | **3.2** | **3.7** | **3.0** | **3.4** |
| Livestock Waterer | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Agricultural Heat Pad Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.7 | 0.9 | 1.2 | 1.6 | 1.7 | 2.0 | 2.2 | 2.2 | 2.8 | **3.0** | **3.4** | **2.2** | **2.6** |
| Agricultural Demand Controller | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Infrared Heat Lamp | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | **0.1** | **0.1** | **0.1** | **0.1** |
| Roadway Lighting | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Sentinel Lighting | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commercial Kitchen | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commercial Clothes Washer | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| PS Shops | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Network Energy Manager | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| C02 Sensors | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| ***Subtotal*** | ***0.0*** | ***0.0*** | ***0.2*** | ***0.6*** | ***3.2*** | ***7.3*** | ***11.7*** | ***14.1*** | ***15.3*** | ***20.6*** | ***22.7*** | ***24.4*** | ***26.2*** | ***27.9*** | ***31.9*** | ***37.5*** | ***44.9*** | ***51.1*** | ***57.4*** | ***65.0*** | ***74.1*** | ***61.9*** | ***70.6*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 1.1 | 4.6 | 5.8 | 38.2 | 40.6 | 40.9 | 41.4 | 44.4 | 45.8 | 49.2 | 53.3 | 54.6 | 57.4 | **59.3** | **65.3** | **54.5** | **59.9** |
| High Efficiency Motors Market | 0.0 | 0.0 | 0.1 | 0.8 | 1.4 | 1.9 | 2.4 | 3.2 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | **4.1** | **4.5** | **4.1** | **4.5** |
| Internal Retrofit Program | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 1.4 | 3.9 | 3.9 | 3.9 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | **4.0** | **4.4** | **4.0** | **4.4** |
| Quality Motor Repair Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| ***Subtotal*** | ***0.0*** | ***0.0*** | ***0.1*** | ***0.9*** | ***1.7*** | ***3.6*** | ***7.5*** | ***11.8*** | ***13.8*** | ***46.2*** | ***48.6*** | ***48.9*** | ***49.4*** | ***52.4*** | ***53.9*** | ***57.3*** | ***61.4*** | ***62.6*** | ***65.5*** | ***67.4*** | ***74.1*** | ***62.5*** | ***68.7*** |
| **CONSERVATION SUBTOTAL** | ***0*** | ***0*** | ***0*** | ***2*** | ***5*** | ***11*** | ***19*** | ***26*** | ***29*** | ***67*** | ***71*** | ***73*** | ***76*** | ***80*** | ***86*** | ***96*** | ***108*** | ***117*** | ***127*** | ***144*** | ***161*** | ***126*** | ***141*** |
| **RATES** | | | | | | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 60.0 | 55.2 | 65.7 | 110.3 | 148.5 | 153.5 | 181.2 | 186.1 | 183.9 | **176.9** | **194.6** | **0.0** | **0.0** |
| ***RATES SUBTOTAL*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***60.0*** | ***55.2*** | ***65.7*** | ***110.3*** | ***148.5*** | ***153.5*** | ***181.2*** | ***186.1*** | ***183.9*** | ***176.9*** | ***194.6*** | ***0.0*** | ***0.0*** |
| **CUSTOMER SELF GENERATION** | | | | | | | | | | | | | | | | | | | | | | | |
| Power Smart Bioenergy Optimization Program/Tolko | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 13.6 | 13.6 | 13.6 | **13.6** | **15.0** | **0.0** | **0.0** |
| ***SELF GENERATION SUBTOTAL*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***13.6*** | ***13.6*** | ***13.6*** | ***13.6*** | ***15.0*** | ***0.0*** | ***0.0*** |
| **CODES & STANDARDS** | **0.0** | **0.0** | **0.0** | **0.5** | **1.6** | **3.3** | **5.4** | **8.4** | **13.6** | **20.4** | **28.0** | **35.2** | **42.9** | **52.0** | **56.1** | **61.8** | **66.9** | **72.0** | **78.6** | **78.6** | **89.5** | **78.6** | **89.5** |
| **OPTION 2 CUSTOMER SERVICE INITIATIVES** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.1** | **0.2** | **0.2** | **0.2** | **0.3** | **0.3** | **0.3** | **0.4** | **0.1** | **0.1** |
| **POWER SMART MW IMPACTS (at meter)** | **0** | **0** | **0** | **2** | **6** | **14** | **25** | **34** | **43** | **87** | **159** | **164** | **184** | **243** | **291** | **311** | **370** | **389** | **404** | **413** | **461** | **205** | **231** |
| **POWER SMART MW IMPACTS (at generation)** | **0** | **0** | **0** | **2** | **7** | **16** | **28** | **39** | **48** | **98** | **177** | **182** | **206** | **270** | **323** | **346** | **411** | **433** | **449** | **461** | | **231** | |

NOTE: Subtotals may not be exact due to rounding

## Energy Savings (GW.h)
## Savings to Date (1989/90 - 2008/09)

| | 1989/90 | 1990/91 | 1991/92 | 1992/93 | 1993/94 | 1994/95 | 1995/96 | 1996/97 | 1997/98 | 1998/99 | 1999/00 | 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | Interim Est. 2008/09 | At Generation 2008/09 | 2024/25 | At Generation 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | | | | | |
| Incentive Based | | | | | | | | | | | | | | | | | | | | | | | |
| Residential Retrofit | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| New Home Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.6 | 1.9 | 2.9 | **3.5** | **4.0** | **3.5** | **4.0** |
| Water Heater Rental | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | **0.5** | **0.5** | **0.5** | **0.5** |
| Home Insulation Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 4.2 | 10.7 | 16.5 | **22.4** | **25.6** | **22.4** | **25.6** |
| Residential Geothermal | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Residential Hot Water | 0.0 | 0.0 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | **0.6** | **0.7** | **0.5** | **0.6** |
| Power Saver Cord | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Outdoor Timer | 5.0 | 8.9 | 15.3 | 20.6 | 24.8 | 29.2 | 30.9 | 34.7 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | **36.5** | **41.6** | **36.5** | **41.6** |
| Residential CFL Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 8.1 | 15.4 | 20.6 | 28.1 | **62.9** | **71.7** | **0.0** | **0.0** |
| Refrigerator Buy-Back | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Fridge Recycling Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Residential Appliance Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.6 | 7.6 | **12.1** | **13.8** | **0.4** | **0.5** |
| Residential Thermostat Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | **0.2** | **0.3** | **0.2** | **0.3** |
| Residential High Effiiciency Furnace (ECM) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | **2.5** | **2.8** | **2.5** | **2.8** |
| Electronically Commutated Motors | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Lower Income Energy Efficiency Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | **1.3** | **1.5** | **1.3** | **1.5** |
| Aboriginal | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | **0.1** | **0.1** | **0.1** | **0.1** |
| Residential SLED Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 2.2 | **2.9** | **3.3** | **2.9** | **3.3** |
| Residential Light Fixtures | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 1.0 | **2.5** | **2.8** | **2.3** | **2.6** |
| Water & Energy Saver Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| ***Subtotal*** | ***5.0*** | ***8.9*** | ***15.7*** | ***21.0*** | ***25.1*** | ***29.6*** | ***31.3*** | ***35.1*** | ***37.2*** | ***37.5*** | ***37.6*** | ***37.6*** | ***37.6*** | ***37.6*** | ***37.6*** | ***47.5*** | ***57.9*** | ***76.1*** | ***96.9*** | ***148.0*** | ***168.7*** | ***73.1*** | ***83.4*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | | | | | |
| Commercial Lighting Program | 0.0 | 0.0 | 0.0 | 2.9 | 17.0 | 35.9 | 55.0 | 61.2 | 67.4 | 85.4 | 90.8 | 94.9 | 100.2 | 105.6 | 116.2 | 132.6 | 153.1 | 175.8 | 193.9 | **221.3** | **252.3** | **221.2** | **252.1** |
| Commercial Comprehensive | 0.0 | 0.0 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | **1.4** | **1.6** | **1.4** | **1.6** |
| Commerical Custom Measures Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 2.6 | 10.0 | 10.8 | 11.7 | 12.2 | 12.8 | 12.8 | 12.9 | 13.1 | 15.4 | **15.9** | **18.1** | **14.9** | **17.0** |
| Commerical HVAC Program - Air Barrier | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 | **0.8** | **0.9** | **0.8** | **0.9** |
| Commerical Windows Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.4 | 0.6 | 0.7 | 0.9 | 1.0 | 1.4 | 1.8 | 2.3 | 3.2 | 3.9 | 4.5 | **5.2** | **6.0** | **4.9** | **5.6** |
| Commerical HVAC Program - Air Conditioning BIS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | **0.3** | **0.4** | **0.3** | **0.4** |
| Commercial HVAC Program - Chillers | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.5 | 3.7 | 4.1 | 4.3 | **5.0** | **5.7** | **5.0** | **5.7** |
| Commerical Parking Lot Controller Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 1.6 | 3.7 | 4.1 | 4.4 | 5.9 | 6.8 | 8.8 | 11.5 | 20.0 | 27.9 | 30.5 | **32.5** | **37.0** | **27.9** | **31.8** |
| City of Wpg PSA | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.6 | 0.7 | 7.3 | 10.7 | 11.2 | **11.4** | **13.0** | **4.1** | **4.7** |
| Commercial Rinse & Save Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.9 | 2.9 | **4.9** | **5.6** | **0.0** | **0.0** |
| Commercial Refrigeration Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 3.0 | **3.1** | **3.5** | **1.3** | **1.4** |
| Commercial Insulation Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 1.9 | **4.3** | **4.9** | **4.3** | **4.9** |
| Commercial Geothermal Heating | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 1.1 | 1.8 | 2.9 | 3.2 | 4.0 | 5.1 | 7.8 | 8.8 | 11.1 | 15.3 | 18.6 | **19.4** | **22.2** | **19.4** | **22.2** |
| Power Smart Energy Manager Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commercial New Construction Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Commercial Building Optimization Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.2** | **0.2** | **0.0** | **0.0** |
| Internal Retrofit Program | 0.0 | 0.0 | 0.0 | 0.2 | 1.2 | 2.7 | 3.3 | 3.8 | 4.3 | 4.9 | 5.4 | 5.9 | 6.1 | 6.9 | 9.4 | 12.2 | 14.4 | 17.0 | 18.0 | **19.9** | **21.8** | **19.3** | **21.2** |
| Livestock Waterer | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | **0.4** | **0.4** | **0.0** | **0.0** |
| Agricultural Heat Pad Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.5 | 5.5 | 6.7 | 9.2 | 11.6 | 12.9 | 15.4 | 16.4 | 17.0 | 21.8 | **22.7** | **25.9** | **17.0** | **19.4** |
| Agricultural Demand Controller | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Infrared Heat Lamp | 0.0 | 0.0 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | **3.7** | **4.2** | **3.7** | **4.2** |
| Roadway Lighting | 0.0 | 0.0 | 3.9 | 13.5 | 23.2 | 29.9 | 29.9 | 29.9 | 29.9 | 29.9 | 29.9 | 29.9 | 29.9 | 29.9 | 29.9 | 29.9 | 29.9 | 29.9 | 29.9 | **29.9** | **34.0** | **29.9** | **34.0** |
| Sentinel Lighting | 0.0 | 0.0 | 2.3 | 4.7 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | **7.5** | **8.5** | **7.5** | **8.5** |
| Commercial Kitchen | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.2** | **0.2** | **0.0** | **0.0** |
| Commercial Clothes Washer | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **54.1** | **61.7** | **0.0** | **0.0** |
| PS Shops | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| Network Energy Manager | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| C02 Sensors | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| ***Subtotal*** | ***0.0*** | ***0.0*** | ***11.3*** | ***26.5*** | ***54.0*** | ***81.3*** | ***101.1*** | ***109.6*** | ***118.3*** | ***145.5*** | ***162.5*** | ***170.0*** | ***181.7*** | ***193.2*** | ***214.0*** | ***242.5*** | ***286.0*** | ***332.6*** | ***370.0*** | ***464.1*** | ***528.3*** | ***382.9*** | ***435.8*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.4 | 7.2 | 35.1 | 43.5 | 85.9 | 107.7 | 110.8 | 142.9 | 170.5 | 181.5 | 207.6 | 238.6 | 249.3 | 276.4 | **291.4** | **320.5** | **248.6** | **273.4** |
| High Efficiency Motors Market | 0.0 | 0.0 | 0.4 | 4.8 | 7.7 | 10.3 | 13.3 | 17.9 | 21.5 | 21.5 | 21.5 | 21.5 | 21.5 | 21.5 | 21.5 | 21.5 | 21.5 | 21.5 | 21.5 | **21.5** | **23.6** | **21.5** | **23.6** |
| Internal Retrofit Program | 0.0 | 0.0 | 0.0 | 0.1 | 0.7 | 9.7 | 32.7 | 32.7 | 32.7 | 33.1 | 33.1 | 33.1 | 33.1 | 33.1 | 33.1 | 33.1 | 33.1 | 33.1 | 33.0 | **33.0** | **36.3** | **33.0** | **36.3** |
| Quality Motor Repair Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| ***Subtotal*** | ***0.0*** | ***0.0*** | ***0.4*** | ***4.9*** | ***8.3*** | ***22.4*** | ***53.2*** | ***85.7*** | ***97.7*** | ***140.4*** | ***162.2*** | ***165.4*** | ***197.5*** | ***225.1*** | ***236.0*** | ***262.2*** | ***293.1*** | ***303.9*** | ***330.9*** | ***345.9*** | ***380.4*** | ***303.0*** | ***333.3*** |
| ***CONSERVATION SUBTOTAL*** | ***5*** | ***9*** | ***27*** | ***52*** | ***88*** | ***133*** | ***186*** | ***230*** | ***253*** | ***323*** | ***362*** | ***373*** | ***417*** | ***456*** | ***488*** | ***552*** | ***637*** | ***713*** | ***798*** | ***958*** | ***1,077*** | ***759*** | ***852*** |
| **RATES** | | | | | | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | **0.0** | **0.0** | **0.0** | **0.0** |
| ***RATES SUBTOTAL*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** |
| **CUSTOMER SELF GENERATION** | | | | | | | | | | | | | | | | | | | | | | | |
| Power Smart Bioenergy Optimization Program/Tolko | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.3 | 120.1 | 84.2 | **93.9** | **103.3** | **0.0** | **0.0** |
| ***SELF GENERATION SUBTOTAL*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***10.3*** | ***120.1*** | ***84.2*** | ***93.9*** | ***103.3*** | ***0.0*** | ***0.0*** |
| **CODES & STANDARDS** | **0.0** | **0.0** | **0.0** | **1.9** | **6.6** | **13.7** | **22.3** | **35.2** | **55.5** | **81.5** | **110.1** | **137.3** | **166.5** | **200.7** | **217.6** | **240.5** | **261.9** | **284.3** | **309.0** | **309.0** | **351.6** | **309.0** | **351.6** |
| **OPTION 2 CUSTOMER SERVICE INITIATIVES** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **1.6** | **3.4** | **6.0** | **9.3** | **11.7** | **13.8** | **17.2** | **19.1** | **21.8** | **11.5** | **13.1** |
| **TOTAL IMPACTS GW.h (at meter)** | **5** | **9** | **27** | **54** | **94** | **147** | **208** | **266** | **309** | **405** | **472** | **510** | **585** | **660** | **711** | **802** | **921** | **1,131** | **1,208** | **1,380** | **1,554** | **1,080** | **1,217** |
| **TOTAL IMPACTS GW.h (at generation)** | **6** | **10** | **31** | **62** | **107** | **167** | **235** | **299** | **348** | **456** | **532** | **575** | **658** | **743** | **801** | **903** | **1,037** | **1,271** | **1,360** | **1,555** | | **1,218** | |

NOTE: Subtotals may not be exact due to rounding

## Total Resource Cost
## Savings to Date (1989/90 - 2008/09)

| | 1989/90 | 1990/91 | 1991/92 | 1992/93 | 1993/94 | 1994/95 | 1995/96 | 1996/97 | 1997/98 | 1998/99 | 1999/00 | 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | Interim Est. 2008/09 | Cumulative Total 2008/09 | Cumulative Total 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | | | | |
| Incentive Based | | | | | | | | | | | | | | | | | | | | | | |
| Residential Retrofit | $0 | $0 | $91 | $120 | $0 | $0 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $14 | $46 | $0 | $0.00 | **$0** | **$275** | **$275** |
| New Home Program | $0 | $0 | $0 | $39 | $150 | $95 | $214 | $122 | $62 | $33 | $1 | $18 | $131 | $290 | $222 | $366 | $799 | $1,222 | $880.02 | **$511** | **$5,155** | **$5,155** |
| Water Heater Rental | $0 | $0 | $0 | $0 | $0 | $0 | $18 | $394 | $390 | $78 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$0** | **$884** | **$885** |
| Home Insulation Program | $0 | $0 | $0 | $0 | $250 | $382 | $239 | $222 | $401 | $45 | $4 | $45 | $71 | $70 | $137 | $782 | $1,178 | $2,287 | $2,023.95 | **$1,953** | **$10,090** | **$10,090** |
| Residential Geothermal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$0** | **$0** | **$0** |
| Residential Hot Water | $0 | $0 | $189 | $0 | $0 | $0 | $2 | $61 | $25 | $23 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $25 | $0.00 | **$0** | **$330** | **$363** |
| Power Saver Cord | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | ($0) | $0 | $0.00 | **$0** | **$1** | **$1** |
| Outdoor Timer | $903 | $753 | $1,097 | $811 | $616 | $661 | $280 | $578 | $277 | $760 | $535 | $913 | $656 | $552 | $0 | $261 | $575 | $267 | $756.42 | **$535** | **$11,787** | **$19,258** |
| Residential CFL Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $20 | $1,337 | $1,035 | $780 | $972.86 | **$1,653** | **$5,798** | **$5,798** |
| Refrigerator Buy-Back | $0 | $0 | $27 | $12 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $17 | $28 | $5 | $66 | $25 | $0.00 | **$0** | **$179** | **$179** |
| Fridge Recycling Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$0** | **$0** | **$0** |
| Appliances | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $20 | $14 | $10 | $96 | $2,635 | $4,131.52 | **$3,516** | **$10,423** | **$10,423** |
| Thermostats | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 | $4 | $8 | $80 | $39.33 | **$0** | **$140** | **$140** |
| Residential High Effiiciency Furnace (ECM) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$0** | **$0** | **$0** |
| Electronically Commutated Motors | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $0 | $0.00 | **$0** | **$3** | **$3** |
| Lower Income Energy Efficiency Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $43 | $103 | $212.56 | **$133** | **$492** | **$492** |
| Aboriginal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $5 | $14 | $0.00 | **$0** | **$19** | **$19** |
| Residential SLED Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $54 | $233 | $251.00 | **$320** | **$858** | **$858** |
| Residential Light Fixtures | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $138 | $529.77 | **$720** | **$1,387** | **$1,387** |
| Water & Energy Saver Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$43** | **$43** | **$43** |
| ***Subtotal*** | ***$903*** | ***$753*** | ***$1,404*** | ***$982*** | ***$1,016*** | ***$1,138*** | ***$757*** | ***$1,377*** | ***$1,155*** | ***$939*** | ***$550*** | ***$976*** | ***$858*** | ***$948*** | ***$430*** | ***$2,779*** | ***$3,909*** | ***$7,809*** | ***$9,797.42*** | ***$9,385*** | ***$47,864*** | ***$55,369*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | | | | |
| Commercial Lighting | $0 | $0 | $107 | $1,322 | $2,620 | $3,046 | $3,020 | $1,621 | $1,271 | $3,756 | $1,261 | $1,222 | $1,753 | $1,671 | $5,154 | $9,837 | $12,994 | $10,232 | $10,477.51 | **$13,515** | **$84,879** | **$103,313** |
| Commercial Comprehensive | $0 | $64 | $151 | $34 | $4 | $119 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $62 | $0.00 | **$0** | **$433** | **$433** |
| Commerical Custom Measures Program | $0 | $0 | $0 | $0 | $19 | $65 | $120 | $196 | $0 | $970 | $1,555 | $323 | $323 | $451 | $1,469 | $81 | $51 | $393 | $958.37 | **$250** | **$7,225** | **$10,356** |
| Commerical HVAC Program - Air Barrier | $0 | $0 | $0 | $0 | $8 | $28 | $50 | $112 | $79 | $5 | $16 | $63 | $40 | $33 | $36 | $17 | $19 | $0 | $31.97 | **$0** | **$537** | **$537** |
| Commerical Windows Program | $0 | $0 | $0 | $0 | $8 | $26 | $47 | $127 | $146 | $83 | $44 | $102 | $74 | $159 | $208 | $318 | $1,541 | $383 | $362.84 | **$359** | **$3,988** | **$4,062** |
| Commerical HVAC Program - Air Conditioning BIS | $0 | $0 | $0 | $0 | $1 | $2 | $3 | $79 | $75 | $0 | $0 | $0 | $3 | $19 | $0 | $11 | $9 | $0 | $0.00 | **$0** | **$202** | **$203** |
| Commercial HVAC Program - Chillers | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $529 | $317 | $297 | $137.23 | **$547** | **$1,826** | **$1,826** |
| Commerical Parking Lot Controller Program | $0 | $0 | $0 | $0 | $38 | $131 | $240 | $191 | $208 | $479 | $60 | $91 | $283 | $165 | $411 | $538 | $1,384 | $1,260 | $829.91 | **$524** | **$6,833** | **$9,089** |
| City of Wpg PSA | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $77 | $422 | $69 | $3,580 | $1,314 | $214.54 | **$38** | **$5,714** | **$5,714** |
| Commercial Rinse & Save Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $38 | $27.99 | **$34** | **$100** | **$100** |
| Commercial Refrigeration Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $236 | $411 | $481.08 | **$0** | **$1,127** | **$1,319** |
| Commercial Insulation Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $260 | $341.35 | **$403** | **$1,004** | **$1,004** |
| Commercial Geothermal Heating | $0 | $0 | $0 | $0 | $14 | $48 | $88 | $165 | $585 | $321 | $542 | $215 | $339 | $721 | $1,690 | $714 | $1,656 | $4,659 | $1,937.65 | **$468** | **$14,161** | **$18,043** |
| Power Smart Energy Manager Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$0** | **$0** | **$0** |
| Commercial New Construction Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $141.48 | **$0** | **$143** | **$143** |
| Commercial Building Optimization Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $182 | $59 | $40.20 | **$123** | **$404** | **$404** |
| Internal Retrofit Program | $0 | $0 | $116 | $275 | $459 | $553 | $160 | $209 | $176 | $228 | $112 | $297 | $136 | $281 | $621 | $703 | $646 | $1,068 | $697.39 | **$0** | **$6,736** | **$6,736** |
| Livestock Waterer | $0 | $0 | $0 | $0 | $0 | $159 | $168 | $91 | $23 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$0** | **$445** | **$445** |
| Agricultural Heat Pad Program | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $67 | $35 | $40 | $29 | $21 | $23 | $32 | $27 | $80 | $44 | $42 | $38.43 | **$63** | **$544** | **$544** |
| Agricultural Demand Controller | $0 | $0 | $32 | $1,052 | $372 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $605.75 | **$212** | **$2,273** | **$2,273** |
| Infrared Heat Lamp | $0 | $18 | $154 | $33 | $6 | $1 | $1 | $1 | $1 | $1 | $1 | $1 | $1 | $1 | $1 | $1 | $1 | $1 | $0.90 | **$1** | **$224** | **$238** |
| Roadway Lighting | $0 | $111 | $2,030 | $3,651 | $3,447 | $2,592 | $17 | $0 | $46 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$0** | **$11,895** | **$11,895** |
| Sentinel Lighting | $0 | $31 | $1,299 | $1,088 | $1,116 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$0** | **$3,534** | **$3,534** |
| Commercial Kitchen | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$73** | **$73** | **$73** |
| Commercial Clothes Washer | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $55.97 | **$172** | **$228** | **$228** |
| PS Shops | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1.24 | **$34** | **$35** | **$35** |
| Network Energy Manager | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2.53 | **$21** | **$23** | **$23** |
| C02 Sensors | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$1** | **$1** | **$1** |
| ***Subtotal*** | ***$0*** | ***$224*** | ***$3,888*** | ***$7,456*** | ***$8,111*** | ***$6,769*** | ***$3,918*** | ***$2,858*** | ***$2,645*** | ***$5,887*** | ***$3,619*** | ***$2,334*** | ***$2,975*** | ***$3,609*** | ***$10,039*** | ***$12,898*** | ***$22,660*** | ***$20,478*** | ***$17,384*** | ***$16,837*** | ***$154,590*** | ***$182,574*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | $0 | $0 | $86 | $185 | $236 | $1,100 | $1,168 | $3,655 | $1,714 | $10,551 | $297 | $945 | $7,336 | $10,673 | $2,805 | $6,695 | $4,196 | $2,721 | $6,944.13 | **$6,630** | **$67,938** | **$91,218** |
| High Efficiency Motors Market | $0 | $22 | $317 | $828 | $736 | $553 | $483 | $608 | $711 | $46 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $487.17 | **$472** | **$5,266** | **$6,581** |
| Internal Retrofit Program | $0 | $0 | $62 | $375 | $373 | $2,037 | $3,596 | $353 | $324 | $135 | $11 | $4 | $0 | $0 | $0 | $0 | $0 | $38 | $35.19 | **$0** | **$7,343** | **$7,343** |
| Quality Motor Repair Program | $0 | $0 | $0 | $22 | $51 | $20 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$0** | **$97** | **$97** |
| ***Subtotal*** | ***$0*** | ***$22*** | ***$465*** | ***$1,410*** | ***$1,396*** | ***$3,710*** | ***$5,251*** | ***$4,615*** | ***$2,749*** | ***$10,732*** | ***$311*** | ***$949*** | ***$7,336*** | ***$10,673*** | ***$2,805*** | ***$6,695*** | ***$4,196*** | ***$2,759*** | ***$7,466.49*** | ***$7,102*** | ***$80,644*** | ***$105,239*** |
| **CONSERVATION SUBTOTAL** | ***$903*** | ***$999*** | ***$5,757*** | ***$9,848*** | ***$10,523*** | ***$11,617*** | ***$9,927*** | ***$8,850*** | ***$6,550*** | ***$17,557*** | ***$4,480*** | ***$4,259*** | ***$11,168*** | ***$15,230*** | ***$13,273*** | ***$22,372*** | ***$30,765*** | ***$31,046*** | ***$34,648.24*** | ***$33,323*** | ***$283,098*** | ***$343,182*** |
| **RATES** | | | | | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | $0 | $0 | $0 | $85 | $121 | $214 | $74 | $50 | $47 | $34 | $34 | $33 | $9 | $9 | $14 | $17 | $9 | $8 | $9.73 | **$4** | **$772** | **$772** |
| ***RATES SUBTOTAL*** | ***$0*** | ***$0*** | ***$0*** | ***$85*** | ***$121*** | ***$214*** | ***$74*** | ***$50*** | ***$47*** | ***$34*** | ***$34*** | ***$33*** | ***$9*** | ***$9*** | ***$14*** | ***$17*** | ***$9*** | ***$8*** | ***$9.73*** | ***$4*** | ***$772*** | ***$772*** |
| **CUSTOMER SELF GENERATION** | | | | | | | | | | | | | | | | | | | | | | |
| Power Smart Bioenergy Optimization Program/Tolko | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $577 | $6,629 | $4,809.42 | **$5,154** | **$17,170** | **$17,170** |
| ***SELF GENERATION SUBTOTAL*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$577*** | ***$6,629*** | ***$4,809.42*** | ***$5,154*** | ***$17,170*** | ***$17,170*** |
| ***INCENTIVE-BASED SUBTOTAL*** | ***$903*** | ***$999*** | ***$5,757*** | ***$9,933*** | ***$10,644*** | ***$11,831*** | ***$10,000*** | ***$8,900*** | ***$6,597*** | ***$17,591*** | ***$4,514*** | ***$4,292*** | ***$11,178*** | ***$15,240*** | ***$13,287*** | ***$22,389*** | ***$31,352*** | ***$37,683*** | ***$39,467.39*** | ***$38,481*** | ***$301,039*** | ***$361,123*** |
| \+ Customer Service and Support Cost | $0 | $351 | $3,374 | $4,055 | $2,881 | $1,603 | $1,904 | $1,529 | $1,217 | $1,579 | $2,248 | $3,081 | $2,770 | $3,506 | $3,588 | $3,986 | $4,142 | $2,625 | $2,829.89 | **$3,031** | **$50,299** | **$50,299** |
| \+ Contingency | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0.00 | **$0** | **$0** | **$0** |
| **POWER SMART INCREMENTAL TOTAL RESOURCE COST** | ***$903*** | ***$1,350*** | ***$9,131*** | ***$13,987*** | ***$13,525*** | ***$13,433*** | ***$11,904*** | ***$10,429*** | ***$7,814*** | ***$19,170*** | ***$6,762*** | ***$7,373*** | ***$13,948*** | ***$18,746*** | ***$16,875*** | ***$26,375*** | ***$35,494*** | ***$40,308*** | ***$42,297.27*** | ***$41,512*** | ***$351,338*** | ***$411,422*** |

NOTE: Subtotals may not be exact due to rounding

## Annual Program Budgets (Utility Cost)
## Savings to Date (1989/90 - 2008/09)

| | 1989/90 | 1990/91 | 1991/92 | 1992/93 | 1993/94 | 1994/95 | 1995/96 | 1996/97 | 1997/98 | 1998/99 | 1999/00 | 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | Interim Est. 2008/09 | Cumulative Total 2008/09 | Cumulative Total 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | | | | |
| Incentive Based | | | | | | | | | | | | | | | | | | | | | | |
| Residential Retrofit | $0 | $64 | $27 | $120 | $0 | $0 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $14 | $46 | $0 | $0 | **$0** | **$275** | **$275** |
| New Home Program | $0 | $0 | $0 | $39 | $150 | $95 | $214 | $122 | $62 | $33 | $1 | $18 | $131 | $290 | $222 | $303 | $607 | $907 | $651 | **$289** | **$4,134** | **$4,134** |
| Water Heater Rental | $0 | $0 | $0 | $0 | $0 | $0 | $18 | $394 | $390 | $74 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$881** | **$881** |
| Home Insulation Program | $0 | $0 | $0 | $0 | $250 | $382 | $239 | $222 | $401 | $45 | $4 | $45 | $71 | $70 | $137 | $753 | $1,121 | $1,912 | $1,542 | **$1,510** | **$8,704** | **$8,704** |
| Residential Geothermal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Residential Hot Water | $0 | $0 | $173 | $0 | $0 | $0 | $2 | $61 | $25 | $15 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$280** | **$280** |
| Power Saver Cord | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | ($0) | $0 | $0 | **$0** | **$1** | **$1** |
| Outdoor Timer | $196 | $285 | $244 | $190 | $93 | $54 | $19 | $3 | $9 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$1,097** | **$1,097** |
| Residential CFL Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $20 | $793 | $1,026 | $820 | $939 | **$1,608** | **$5,206** | **$5,206** |
| Refrigerator Buy-Back | $0 | $0 | $52 | $12 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $17 | $28 | $5 | $66 | $25 | $0 | **$0** | **$204** | **$204** |
| Fridge Recycling Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Residential Appliance Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $20 | $14 | $10 | $96 | $1,548 | $1,969 | **$1,670** | **$5,327** | **$5,327** |
| Residential Thermostat Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 | $4 | $8 | $71 | $35 | **$0** | **$126** | **$126** |
| Residential High Effiiciency Furnace (ECM) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Electronically Commutated Motors | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $0 | $0 | **$0** | **$3** | **$3** |
| Lower Income Energy Efficiency Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $43 | $103 | $213 | **$133** | **$492** | **$492** |
| Aboriginal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $5 | $14 | $0 | **$0** | **$19** | **$19** |
| Residential SLED Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $85 | $392 | $365 | **$412** | **$1,254** | **$1,254** |
| Residential Light Fixtures | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $156 | $500 | **$603** | **$1,259** | **$1,259** |
| Water & Energy Saver Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $0 | $18 | $0 | $0 | **$43** | **$62** | **$62** |
| ***Subtotal*** | ***$196*** | ***$349*** | ***$495*** | ***$361*** | ***$493*** | ***$531*** | ***$496*** | ***$802*** | ***$888*** | ***$171*** | ***$15*** | ***$63*** | ***$202*** | ***$397*** | ***$430*** | ***$1,882*** | ***$3,125*** | ***$5,948*** | ***$6,213*** | ***$6,268*** | ***$29,323*** | ***$29,323*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | | | | |
| Commercial Lighting | $0 | $0 | $107 | $1,144 | $2,453 | $2,894 | $2,840 | $1,180 | $1,004 | $1,986 | $886 | $649 | $1,007 | $1,193 | $2,694 | $5,305 | $6,398 | $7,334 | $7,579 | **$9,321** | **$55,973** | **$55,973** |
| Commercial Comprehensive | $0 | $64 | $118 | $34 | $4 | $119 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$340** | **$340** |
| Commerical Custom Measures Program | $0 | $0 | $0 | $0 | $19 | $65 | $120 | $78 | $0 | $215 | $522 | $130 | $146 | $81 | $156 | $11 | $8 | $120 | $190 | **$140** | **$2,003** | **$2,003** |
| Commerical HVAC Program - Air Barrier | $0 | $0 | $0 | $0 | $8 | $28 | $50 | $97 | $77 | $3 | $10 | $33 | $21 | $17 | $19 | $7 | $4 | $0 | $5 | **$0** | **$380** | **$380** |
| Commerical Windows Program | $0 | $0 | $0 | $0 | $8 | $26 | $47 | $126 | $167 | $61 | $43 | $75 | $67 | $154 | $119 | $240 | $319 | $397 | $386 | **$464** | **$2,700** | **$2,700** |
| Commerical HVAC Program - Air Conditioning BIS | $0 | $0 | $0 | $0 | $1 | $2 | $3 | $79 | $75 | $0 | $0 | $0 | $7 | $53 | $0 | $136 | $11 | $0 | $0 | **$0** | **$366** | **$366** |
| Commerical HVAC Program - Chillers | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $491 | $177 | $204 | $72 | **$273** | **$1,218** | **$1,218** |
| Commerical Parking Lot Controller Program | $0 | $0 | $0 | $0 | $38 | $131 | $240 | $112 | $100 | $188 | $21 | $51 | $202 | $110 | $286 | $361 | $1,071 | $925 | $594 | **$411** | **$4,841** | **$4,841** |
| City of Wpg PSA | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $77 | $422 | $69 | $3,580 | $1,311 | $190 | **$36** | **$5,685** | **$5,685** |
| Commercial Rinse & Save Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $39 | $28 | **$35** | **$102** | **$102** |
| Commercial Refrigeration Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $236 | $312 | $298 | **$0** | **$846** | **$846** |
| Commercial Insulation Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $216 | $259 | **$274** | **$750** | **$750** |
| Commercial Geothermal Heating | $0 | $0 | $0 | $0 | $14 | $48 | $88 | $65 | $221 | $115 | $132 | $109 | $167 | $283 | $637 | $274 | $512 | $634 | $358 | **$208** | **$3,865** | **$3,865** |
| Power Smart Energy Manager Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $81 | **$86** | **$167** | **$167** |
| Commercial New Construction Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2 | $141 | **$251** | **$394** | **$394** |
| Commercial Building Optimization Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $182 | $59 | $40 | **$74** | **$355** | **$355** |
| Internal Retrofit | $0 | $0 | $116 | $275 | $459 | $553 | $160 | $208 | $172 | $227 | $112 | $288 | $136 | $280 | $616 | $702 | $598 | $791 | $608 | **$4,440** | **$10,739** | **$10,739** |
| Livestock Waterer | $0 | $0 | $0 | $0 | $0 | $152 | $131 | $92 | $23 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$402** | **$402** |
| Agricultural Heat Pad Program | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $67 | $35 | $89 | $89 | $47 | $60 | $68 | $60 | $129 | $73 | $66 | $61 | **$46** | **$893** | **$893** |
| Agricultural Demand Controller | $0 | $0 | $32 | $620 | $211 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$863** | **$863** |
| Infrared Heat Lamp | $0 | $18 | $283 | $32 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$338** | **$338** |
| Roadway Lighting | $0 | $111 | $1,473 | $2,078 | $1,897 | $1,442 | $17 | $0 | $46 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$7,064** | **$7,064** |
| Sentinel Lighting | $0 | $31 | $1,299 | $1,088 | $1,116 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$3,534** | **$3,534** |
| Commercial Kitchen | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$46** | **$46** | **$46** |
| Commercial Clothes Washer | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $56 | **$55** | **$111** | **$111** |
| PS Shops | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | **$34** | **$35** | **$35** |
| Network Energy Manager | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | **$21** | **$23** | **$23** |
| C02 Sensors | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1** | **$1** | **$1** |
| ***Subtotal*** | ***$0*** | ***$224*** | ***$3,428*** | ***$5,272*** | ***$6,233*** | ***$5,458*** | ***$3,700*** | ***$2,103*** | ***$1,920*** | ***$2,889*** | ***$1,816*** | ***$1,383*** | ***$1,812*** | ***$2,315*** | ***$5,009*** | ***$7,724*** | ***$13,170*** | ***$12,412*** | ***$10,952*** | ***$16,214*** | ***$104,034*** | ***$104,034*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | $0 | $0 | $86 | $185 | $236 | $487 | $493 | $444 | $647 | $392 | $261 | $403 | $1,017 | $3,213 | $1,208 | $1,637 | $1,707 | $1,094 | $3,273 | **$3,876** | **$20,660** | **$20,660** |
| High Efficiency Motors Market | $0 | $22 | $307 | $744 | $596 | $473 | $434 | $470 | $633 | $46 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$3,728** | **$3,728** |
| Internal Retrofit Program | $0 | $0 | $62 | $315 | $337 | $606 | $1,041 | $353 | $324 | $83 | $11 | $4 | $0 | $0 | $0 | $0 | $0 | $38 | $0 | **$0** | **$3,175** | **$3,175** |
| Quality Motor Repair Program | $0 | $0 | $0 | $22 | $51 | $20 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$97** | **$97** |
| ***Subtotal*** | ***$0*** | ***$22*** | ***$455*** | ***$1,266*** | ***$1,221*** | ***$1,586*** | ***$1,972*** | ***$1,267*** | ***$1,604*** | ***$522*** | ***$274*** | ***$407*** | ***$1,017*** | ***$3,213*** | ***$1,208*** | ***$1,637*** | ***$1,707*** | ***$1,132*** | ***$3,273*** | ***$3,876*** | ***$27,660*** | ***$27,660*** |
| **CONSERVATION SUBTOTAL** | ***$196*** | ***$596*** | ***$4,378*** | ***$6,898*** | ***$7,947*** | ***$7,576*** | ***$6,168*** | ***$4,172*** | ***$4,411*** | ***$3,582*** | ***$2,105*** | ***$1,853*** | ***$3,031*** | ***$5,924*** | ***$6,648*** | ***$11,243*** | ***$18,002*** | ***$19,492*** | ***$20,438*** | ***$26,358*** | ***$161,016*** | ***$161,016*** |
| **RATES** | | | | | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | $0 | $0 | $0 | $85 | $627 | $1,540 | $1,385 | $1,358 | $1,175 | $1,501 | $1,856 | $2,380 | $3,137 | $4,730 | $6,199 | $6,211 | $6,924 | $6,772 | $6,714 | **$6,490** | **$59,085** | **$59,085** |
| ***RATES SUBTOTAL*** | $0 | $0 | $0 | $85 | $627 | $1,540 | $1,385 | $1,358 | $1,175 | $1,501 | $1,856 | $2,380 | $3,137 | $4,730 | $6,199 | $6,211 | $6,924 | $6,772 | $6,714 | **$6,490** | **$59,085** | **$59,085** |
| **CUSTOMER SELF GENERATION** | | | | | | | | | | | | | | | | | | | | | | |
| Power Smart Bioenergy Optimization Program/Tolko | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $149 | $1,724 | $1,665 | **$1,837** | **$5,376** | **$5,376** |
| ***SELF GENERATION SUBTOTAL*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$149*** | ***$1,724*** | ***$1,665*** | ***$1,837*** | ***$5,376*** | ***$5,376*** |
| **OPTION 2 CUSTOMER SERVICES INITIATIVES** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $53 | $92 | $76 | $120 | $369 | $898 | ($12) | $242 | **$430** | **$2,268** | **$2,268** |
| **Subtotal of Programs** | *$196* | *$596* | *$4,378* | *$6,984* | *$8,574* | *$9,116* | *$7,553* | *$5,530* | *$5,586* | *$5,083* | *$3,961* | *$4,286* | *$6,260* | *$10,731* | *$12,967* | *$17,822* | *$25,974* | *$27,976* | *$29,059* | ***$35,114*** | ***$227,745*** | ***$227,745*** |
| Support Cost | $0 | $351 | $3,374 | $4,055 | $2,881 | $1,603 | $1,904 | $1,529 | $1,217 | $1,579 | $2,248 | $3,027 | $2,679 | $3,430 | $3,468 | $3,617 | $3,244 | $2,637 | $2,588 | **$2,601** | **$48,031** | **$48,031** |
| Contingency | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***TOTAL ACCOUNTING UTILITY COST*** | *$196* | *$946* | *$7,752* | *$11,038* | *$11,455* | *$10,718* | *$9,457* | *$7,059* | *$6,804* | *$6,662* | *$6,209* | *$7,314* | *$8,938* | *$14,161* | *$16,434* | *$21,439* | *$29,219* | *$30,613* | *$31,647* | ***$37,715*** | ***$275,776*** | ***$275,776*** |

NOTE: Subtotals may not be exact due to rounding

**Annual Program Administration Budgets**
**Savings to Date (1989/90 - 2008/09)**

| | 1989/90 | 1990/91 | 1991/92 | 1992/93 | 1993/94 | 1994/95 | 1995/96 | 1996/97 | 1997/98 | 1998/99 | 1999/00 | 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | Interim Est. 2008/09 | Cumulative Total 2008/09 | Cumulative Total 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | | | | |
| Incentive Based | | | | | | | | | | | | | | | | | | | | | | |
| Residential Retrofit | $0 | $64 | $27 | $120 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $14 | $46 | $0 | $0 | **$0** | **$270** | **$270** |
| New Home Program | $0 | $0 | $0 | $39 | $150 | $95 | $214 | $122 | $62 | $33 | $0 | $18 | $131 | $290 | $222 | $292 | $540 | $779 | $538 | **$247** | **$3,772** | **$3,772** |
| Water Heater Rental | $0 | $0 | $0 | $0 | $0 | $0 | $18 | $394 | $390 | $74 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$881** | **$881** |
| Home Insulation Program | $0 | $0 | $0 | $0 | $250 | $382 | $239 | $222 | $401 | $45 | $4 | $45 | $71 | $70 | $137 | $273 | $430 | $288 | $215 | **$204** | **$3,275** | **$3,275** |
| Residential Geothermal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Residential Hot Water | $0 | $0 | $164 | $0 | $0 | $0 | $2 | $61 | $25 | $15 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$271** | **$271** |
| Power Saver Cord | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | ($0) | $0 | $0 | **$0** | **$1** | **$1** |
| Outdoor Timer | $147 | $218 | $185 | $155 | $64 | $54 | $19 | $3 | $9 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$859** | **$859** |
| Residential CFL Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $20 | $635 | $761 | $588 | $685 | **$658** | **$3,347** | **$3,347** |
| Refrigerator Buy-Back | $0 | $0 | $27 | $12 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $17 | $28 | $5 | $66 | $0 | $0 | **$0** | **$155** | **$155** |
| Fridge Recycling Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Residential Appliance Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $20 | $14 | $10 | $96 | $565 | $614 | **$388** | **$1,707** | **$1,707** |
| Residential Thermostat Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $9 | $4 | $8 | $49 | $24 | **$0** | **$93** | **$93** |
| Residential High Effiiciency Furnace (ECM) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Electronically Commutated Motors | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $0 | $0 | **$0** | **$3** | **$3** |
| Lower Income Energy Efficiency Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $43 | $0 | $172 | **$30** | **$245** | **$245** |
| Aboriginal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $5 | $0 | $0 | **$0** | **$5** | **$5** |
| Residential SLED Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $54 | $233 | $251 | **$320** | **$858** | **$858** |
| Residential Light Fixtures | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $62 | $395 | **$499** | **$956** | **$956** |
| Water & Energy Saver Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$43** | **$43** | **$43** |
| ***Subtotal*** | ***$147*** | ***$282*** | ***$402*** | ***$326*** | ***$465*** | ***$531*** | ***$492*** | ***$802*** | ***$888*** | ***$171*** | ***$14*** | ***$63*** | ***$202*** | ***$397*** | ***$430*** | ***$1,233*** | ***$2,053*** | ***$2,564*** | ***$2,894*** | ***$2,389*** | ***$16,742*** | ***$16,742*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | | | | |
| Commercial Lighting Program | $0 | $0 | $107 | $843 | $939 | $778 | $629 | $430 | $558 | $417 | $307 | $329 | $402 | $815 | $1,113 | $1,884 | $1,835 | $2,171 | $2,067 | **$1,781** | **$17,406** | **$17,406** |
| Commercial Comprehensive | $0 | $64 | $89 | $34 | $4 | $119 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$310** | **$310** |
| Commerical Custom Measures Program | $0 | $0 | $0 | $0 | $19 | $65 | $120 | $48 | $0 | $89 | $87 | $79 | $95 | $59 | $63 | $8 | $1 | $79 | $34 | **$107** | **$955** | **$955** |
| Commerical HVAC Program - Air Barrier | $0 | $0 | $0 | $0 | $8 | $28 | $50 | $78 | $75 | $1 | $1 | $17 | $10 | $10 | $9 | $4 | $1 | $0 | $1 | **$0** | **$293** | **$293** |
| Commerical Windows Program | $0 | $0 | $0 | $0 | $8 | $26 | $47 | $78 | $75 | $8 | $1 | $24 | $13 | $42 | $31 | $60 | $53 | $155 | $162 | **$94** | **$878** | **$878** |
| Commerical HVAC Program - Air Conditioning BIS | $0 | $0 | $0 | $0 | $1 | $2 | $3 | $78 | $75 | $0 | $0 | $0 | $3 | $19 | $0 | $11 | $2 | $0 | $0 | **$0** | **$194** | **$194** |
| Commercial HVAC Program - Chillers | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $299 | $71 | $21 | $14 | **$18** | **$423** | **$423** |
| Commerical Parking Lot Controller Program | $0 | $0 | $0 | $0 | $38 | $131 | $240 | $78 | $75 | $67 | $5 | $31 | $154 | $87 | $215 | $283 | $495 | $179 | $118 | **$153** | **$2,350** | **$2,350** |
| City of Wpg PSA | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $61 | $244 | $6 | $478 | $84 | $29 | **$2** | **$903** | **$903** |
| Commercial Rinse & Save Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $13 | $16 | **$9** | **$38** | **$38** |
| Commercial Refrigeration Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $236 | $219 | $196 | **$0** | **$650** | **$650** |
| Commercial Insulation Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $142 | $143 | **$91** | **$377** | **$377** |
| Commercial Geothermal Heating | $0 | $0 | $0 | $0 | $14 | $48 | $88 | $36 | $75 | $27 | $13 | $39 | $79 | $142 | $285 | $146 | $202 | $202 | $215 | **$108** | **$1,718** | **$1,718** |
| Power Smart Energy Manager Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$86** | **$86** | **$86** |
| Commercial New Construction Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Commercial Building Optimization Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $182 | $59 | $40 | **$55** | **$337** | **$337** |
| Internal Retrofit Program | $0 | $0 | $116 | $224 | $201 | $178 | $62 | $66 | $68 | $61 | $44 | $89 | $49 | $103 | $121 | $177 | $190 | $229 | $269 | **$118** | **$2,368** | **$2,368** |
| Livestock Waterer | $0 | $0 | $0 | $0 | $0 | $132 | $114 | $81 | $23 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$353** | **$353** |
| Agricultural Heat Pad Program | $0 | $0 | $0 | $0 | $0 | $0 | $3 | $67 | $35 | $40 | $29 | $21 | $23 | $32 | $27 | $80 | $44 | $42 | $28 | **$19** | **$489** | **$489** |
| Agricultural Demand Controller | $0 | $0 | $32 | $447 | $152 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$630** | **$630** |
| Infrared Heat Lamp | $0 | $18 | $153 | $32 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$208** | **$208** |
| Roadway Lighting | $0 | $111 | $1,473 | $2,078 | $1,897 | $1,442 | $17 | $0 | $46 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$7,064** | **$7,064** |
| Sentinel Lighting | $0 | $31 | $1,299 | $1,088 | $1,116 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$3,534** | **$3,534** |
| Commercial Kitchen | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$5** | **$5** | **$5** |
| Commercial Clothes Washer | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$34** | **$34** | **$34** |
| PS Shops | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$34** | **$34** | **$34** |
| Network Energy Manager | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$21** | **$21** | **$21** |
| C02 Sensors | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1** | **$1** | **$1** |
| ***Subtotal*** | ***$0*** | ***$224*** | ***$3,269*** | ***$4,746*** | ***$4,403*** | ***$2,948*** | ***$1,373*** | ***$1,040*** | ***$1,104*** | ***$715*** | ***$488*** | ***$629*** | ***$829*** | ***$1,369*** | ***$2,109*** | ***$2,960*** | ***$3,790*** | ***$3,596*** | ***$3,331*** | ***$2,736*** | ***$41,659*** | ***$41,659*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | $0 | $0 | $86 | $185 | $236 | $343 | $252 | $295 | $266 | $204 | $219 | $205 | $289 | $1,939 | $401 | $191 | $338 | $398 | $503 | **$2,040** | **$8,389** | **$8,389** |
| High Efficiency Motors Market | $0 | $22 | $270 | $341 | $264 | $231 | $247 | $268 | $340 | $46 | $3 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$2,033** | **$2,033** |
| Internal Retrofit Program | $0 | $0 | $62 | $279 | $284 | $209 | $390 | $353 | $324 | $46 | $11 | $4 | $0 | $0 | $0 | $0 | $0 | $38 | $0 | **$0** | **$1,999** | **$1,999** |
| Quality Motor Repair Program | $0 | $0 | $0 | $22 | $51 | $20 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$97** | **$97** |
| ***Subtotal*** | ***$0*** | ***$22*** | ***$418*** | ***$826*** | ***$835*** | ***$803*** | ***$893*** | ***$916*** | ***$929*** | ***$296*** | ***$233*** | ***$210*** | ***$289*** | ***$1,939*** | ***$401*** | ***$191*** | ***$338*** | ***$436*** | ***$503*** | ***$2,040*** | ***$12,517*** | ***$12,517*** |
| **CONSERVATION SUBTOTAL** | ***$147*** | ***$528*** | ***$4,089*** | ***$5,899*** | ***$5,703*** | ***$4,282*** | ***$2,758*** | ***$2,758*** | ***$2,921*** | ***$1,182*** | ***$734*** | ***$901*** | ***$1,319*** | ***$3,705*** | ***$2,939*** | ***$4,384*** | ***$6,181*** | ***$6,595*** | ***$6,727*** | ***$7,166*** | ***$70,919*** | ***$70,919*** |
| **RATES** | | | | | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | $0 | $0 | $0 | $85 | $121 | $214 | $74 | $50 | $47 | $34 | $34 | $33 | $9 | $9 | $14 | $17 | $9 | $8 | $10 | **$4** | **$772** | **$772** |
| ***RATES SUBTOTAL*** | ***$0*** | ***$0*** | ***$0*** | ***$85*** | ***$121*** | ***$214*** | ***$74*** | ***$50*** | ***$47*** | ***$34*** | ***$34*** | ***$33*** | ***$9*** | ***$9*** | ***$14*** | ***$17*** | ***$9*** | ***$8*** | ***$10*** | ***$4*** | ***$772*** | ***$772*** |
| **CUSTOMER SELF GENERATION** | | | | | | | | | | | | | | | | | | | | | | |
| Power Smart Bioenergy Optimization Program/Tolko | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$77** | **$77** | **$77** |
| ***SELF GENERATION SUBTOTAL*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$77*** | ***$77*** | ***$77*** |
| **OPTION 2 CUSTOMER SERVICES INITIATIVES** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$53*** | ***$92*** | ***$76*** | ***$120*** | ***$369*** | ***$898*** | ***($12)*** | ***$242*** | ***$469*** | ***$2,307*** | ***$2,307*** |
| **Subtotal of Programs** | **$147** | **$528** | **$4,089** | **$5,984** | **$5,824** | **$4,496** | **$2,831** | **$2,808** | **$2,969** | **$1,216** | **$768** | **$988** | **$1,421** | **$3,790** | **$3,073** | **$4,770** | **$7,088** | **$6,591** | **$6,979** | **$7,714** | **$74,074** | **$74,074** |
| Support Cost | $0 | $351 | $3,374 | $4,055 | $2,881 | $1,603 | $1,904 | $1,529 | $1,217 | $1,579 | $2,248 | $3,027 | $2,679 | $3,430 | $3,468 | $3,617 | $3,244 | $2,637 | $2,588 | **$2,601** | **$48,031** | **$48,031** |
| Contingency | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***TOTAL POWER SMART PROGRAM ADMIN BUDGETS*** | ***$147*** | ***$879*** | ***$7,463*** | ***$10,038*** | ***$8,704*** | ***$6,098*** | ***$4,735*** | ***$4,337*** | ***$4,186*** | ***$2,795*** | ***$3,016*** | ***$4,016*** | ***$4,099*** | ***$7,220*** | ***$6,541*** | ***$8,387*** | ***$10,333*** | ***$9,228*** | ***$9,567*** | ***$10,315*** | ***$122,104*** | ***$122,104*** |

## Annual Program Incentives Budgets
## Savings to Date (1989/90 - 2008/09)

| | 1989/90 | 1990/91 | 1991/92 | 1992/93 | 1993/94 | 1994/95 | 1995/96 | 1996/97 | 1997/98 | 1998/99 | 1999/00 | 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | Interim Est. 2008/09 | Cumulative Total 2008/09 | Cumulative Total 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | | | | |
| Incentive Based | | | | | | | | | | | | | | | | | | | | | | |
| Residential Retrofit | $0 | $0 | $0 | $0 | $0 | $0 | $4 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$4** | **$4** |
| New Home Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $11 | $67 | $128 | $113 | **$43** | **$362** | **$362** |
| Water Heater Rental | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Home Insulation Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $480 | $692 | $1,624 | $1,328 | **$1,306** | **$5,430** | **$5,430** |
| Residential Geothermal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Residential Hot Water | $0 | $0 | $9 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$9** | **$9** |
| Power Saver Cord | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Outdoor Timer | $48 | $67 | $59 | $35 | $29 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$238** | **$238** |
| Residential CFL Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $158 | $264 | $232 | $254 | **$950** | **$1,858** | **$1,858** |
| Refrigerator Buy-Back | $0 | $0 | $25 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$25** | **$25** |
| Fridge Recycling Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Residential Appliance Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $983 | $1,355 | **$1,283** | **$3,621** | **$3,621** |
| Residential Thermostat Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $22 | $11 | **$0** | **$32** | **$32** |
| Residential High Effiiciency Furnace (ECM) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Electronically Commutated Motors | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Lower Income Energy Efficiency Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $41 | **$103** | **$143** | **$143** |
| Aboriginal | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Residential SLED Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $31 | $159 | $114 | **$92** | **$396** | **$396** |
| Residential Light Fixtures | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $32 | $105 | **$104** | **$241** | **$241** |
| Water & Energy Saver Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***Subtotal*** | ***$48*** | ***$67*** | ***$93*** | ***$35*** | ***$29*** | ***$0*** | ***$4*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$649*** | ***$1,054*** | ***$3,181*** | ***$3,320*** | ***$3,878*** | ***$12,358*** | ***$12,358*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | | | | |
| Commercial Lighting Program | $0 | $0 | $0 | $301 | $1,514 | $2,116 | $2,211 | $750 | $445 | $1,569 | $579 | $320 | $604 | $378 | $1,581 | $3,421 | $4,564 | $5,163 | $5,512 | **$7,539** | **$38,567** | **$38,567** |
| Commercial Comprehensive | $0 | $0 | $29 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$29** | **$29** |
| Commerical Custom Measures Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $29 | $0 | $126 | $435 | $52 | $51 | $21 | $93 | $3 | $7 | $42 | $156 | **$33** | **$1,048** | **$1,048** |
| Commerical HVAC Program - Air Barrier | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $19 | $2 | $2 | $9 | $16 | $11 | $8 | $9 | $2 | $3 | $0 | $5 | **$0** | **$87** | **$87** |
| Commerical Windows Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $48 | $93 | $53 | $42 | $51 | $54 | $112 | $88 | $180 | $267 | $241 | $224 | **$370** | **$1,822** | **$1,822** |
| Commerical HVAC Program - Air Conditioning BIS | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1 | $0 | $0 | $0 | $0 | $4 | $34 | $0 | $125 | $8 | $0 | $0 | **$0** | **$172** | **$172** |
| Commercial HVAC Program - Chillers | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $192 | $106 | $183 | $59 | **$256** | **$795** | **$795** |
| Commerical Parking Lot Controller Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $34 | $26 | $121 | $16 | $20 | $48 | $23 | $71 | $78 | $576 | $745 | $476 | **$258** | **$2,491** | **$2,491** |
| City of Wpg PSA | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $17 | $178 | $62 | $3,103 | $1,227 | $162 | **$34** | **$4,781** | **$4,781** |
| Commercial Rinse & Save Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $25 | $12 | **$26** | **$64** | **$64** |
| Commercial Refrigeration Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $93 | $103 | **$0** | **$196** | **$196** |
| Commercial Insulation Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $74 | $116 | **$183** | **$373** | **$373** |
| Commercial Geothermal Heating | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $29 | $146 | $88 | $120 | $70 | $88 | $140 | $352 | $127 | $310 | $432 | $143 | **$100** | **$2,147** | **$2,147** |
| Power Smart Energy Manager Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Commercial New Construction Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Commercial Building Optimization Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$18** | **$18** | **$18** |
| Internal Retrofit Program | $0 | $0 | $0 | $51 | $258 | $375 | $98 | $142 | $103 | $165 | $68 | $199 | $87 | $177 | $494 | $524 | $408 | $0 | $0 | **$0** | **$3,149** | **$3,149** |
| Livestock Waterer | $0 | $0 | $0 | $0 | $0 | $20 | $17 | $11 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$48** | **$48** |
| Agricultural Heat Pad Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $49 | $60 | $27 | $37 | $36 | $33 | $49 | $30 | $24 | $33 | **$26** | **$404** | **$404** |
| Agricultural Demand Controller | $0 | $0 | $0 | $174 | $59 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$233** | **$233** |
| Infrared Heat Lamp | $0 | $0 | $130 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$130** | **$130** |
| Roadway Lighting | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Sentinel Lighting | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Commercial Kitchen | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$41** | **$41** | **$41** |
| Commercial Clothes Washer | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$21** | **$21** | **$21** |
| PS Shops | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Network Energy Manager | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| C02 Sensors | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$160*** | ***$525*** | ***$1,830*** | ***$2,510*** | ***$2,326*** | ***$1,063*** | ***$815*** | ***$2,174*** | ***$1,328*** | ***$754*** | ***$983*** | ***$945*** | ***$2,900*** | ***$4,764*** | ***$9,381*** | ***$8,251*** | ***$7,001*** | ***$8,906*** | ***$56,618*** | ***$56,618*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | | | | |
| Performance Optimization Program | $0 | $0 | $0 | $0 | $0 | $145 | $242 | $149 | $381 | $189 | $42 | $197 | $729 | $1,274 | $807 | $1,446 | $1,369 | $696 | $2,769 | **$1,836** | **$12,271** | **$12,271** |
| High Efficiency Motors Market | $0 | $0 | $37 | $403 | $332 | $242 | $186 | $202 | $294 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$1,696** | **$1,696** |
| Internal Retrofit Program | $0 | $0 | $0 | $36 | $53 | $397 | $651 | $0 | $0 | $37 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$1,176** | **$1,176** |
| Quality Motor Repair Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***Subtotal*** | $0 | $0 | $37 | $440 | $385 | $784 | $1,079 | $351 | $675 | $226 | $42 | $197 | $729 | $1,274 | $807 | $1,446 | $1,369 | $696 | $2,769 | **$1,836** | **$15,142** | **$15,142** |
| **CONSERVATION SUBTOTAL** | ***$48*** | ***$67*** | ***$289*** | ***$1,000*** | ***$2,244*** | ***$3,294*** | ***$3,410*** | ***$1,414*** | ***$1,490*** | ***$2,400*** | ***$1,370*** | ***$951*** | ***$1,712*** | ***$2,219*** | ***$3,708*** | ***$6,859*** | ***$11,804*** | ***$12,128*** | ***$13,090*** | ***$14,620*** | ***$84,118*** | ***$84,118*** |
| **RATES** | | | | | | | | | | | | | | | | | | | | | | |
| Curtailable Rate Program | $0 | $0 | $0 | $0 | $506 | $1,326 | $1,312 | $1,308 | $1,128 | $1,468 | $1,822 | $2,347 | $3,127 | $4,721 | $6,185 | $6,194 | $6,915 | $6,765 | $6,705 | **$6,486** | **$58,313** | **$58,313** |
| ***RATES SUBTOTAL*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$506*** | ***$1,326*** | ***$1,312*** | ***$1,308*** | ***$1,128*** | ***$1,468*** | ***$1,822*** | ***$2,347*** | ***$3,127*** | ***$4,721*** | ***$6,185*** | ***$6,194*** | ***$6,915*** | ***$6,765*** | ***$6,705*** | ***$6,486*** | ***$58,313*** | ***$58,313*** |
| **CUSTOMER SELF GENERATION** | | | | | | | | | | | | | | | | | | | | | | |
| Power Smart Bioenergy Optimization Program/Tolko | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $149 | $1,713 | $1,543 | **$1,760** | **$5,166** | **$5,166** |
| ***SELF GENERATION SUBTOTAL*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$149*** | ***$1,713*** | ***$1,543*** | ***$1,760*** | $5,166 | ***$5,166*** |
| ***POWER SMART INCENTIVES*** | ***$48*** | ***$67*** | ***$289*** | ***$1,000*** | ***$2,751*** | ***$4,620*** | ***$4,722*** | ***$2,722*** | ***$2,618*** | ***$3,867*** | ***$3,192*** | ***$3,298*** | ***$4,839*** | ***$6,940*** | ***$9,893*** | ***$13,052*** | ***$18,868*** | ***$20,606*** | ***$21,338*** | ***$22,867*** | ***$147,598*** | ***$147,598*** |

## APPENDIX C - 2009 Power Smart Plan Natural Gas

Appendix C.1 - Annual Energy Savings (m3)
Appendix C.2 - Annual Total Resource Cost
Appendix C.3 - Annual Program Budgets (Utility Cost)
Appendix C.4 - Annual Program Administration Budgets
Appendix C.5 - Incentives

**Annual Energy Savings (m3)**
**2009 Option 2**
**In '000,000**

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | | | | | | | | |
| New Home Program | **0.15** | 1.33 | 2.58 | 3.57 | 4.55 | 5.54 | 6.52 | 7.51 | 7.51 | 7.51 | 7.51 | 7.51 | 7.51 | 7.51 | 7.51 | **7.51** | |
| Home Insulation Program | **1.26** | 2.48 | 3.66 | 4.81 | 5.92 | 6.99 | 8.02 | 9.03 | 9.03 | 9.03 | 9.03 | 9.03 | 9.03 | 9.03 | 9.03 | **9.03** | |
| Water and Energy Saver Program | **0.28** | 0.99 | 1.84 | 2.61 | 3.37 | 3.37 | 3.37 | 3.37 | 3.37 | 3.37 | 3.37 | 3.37 | 3.37 | 3.37 | 3.37 | **3.09** | |
| Residential Appliance Program | **0.06** | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.06 | 0.00 | **0.00** | |
| Lower Income Energy Efficiency Program | **1.84** | 3.62 | 3.62 | 3.62 | 3.62 | 3.14 | 2.64 | 2.64 | 2.64 | 2.64 | 2.46 | 2.29 | 2.29 | 2.31 | 2.25 | **2.17** | |
| Residential HE Furnace & Boiler Program | **0.59** | 0.65 | 0.72 | 0.79 | 0.87 | 0.94 | 1.01 | 1.09 | 1.17 | 1.25 | 1.33 | 1.41 | 1.50 | 1.58 | 1.67 | **1.67** | |
| ***Subtotal*** | ***4.2*** | ***9.2*** | ***12.5*** | ***15.5*** | ***18.4*** | ***20.1*** | ***21.7*** | ***23.7*** | ***23.8*** | ***23.9*** | ***23.8*** | ***23.7*** | ***23.8*** | ***23.9*** | ***23.8*** | ***23.5*** | ***22%*** |
| **Customer Service Initiatives** | | | | | | | | | | | | | | | | | |
| Power Smart Residential Loan Program | **4.20** | 4.70 | 5.20 | 5.70 | 6.20 | 6.70 | 7.20 | 7.70 | 8.20 | 8.70 | 9.20 | 9.70 | 10.20 | 10.70 | 11.20 | **11.70** | |
| ecoEnergy | **0.00** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | |
| Residential Earth Power Program | **0.00** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | |
| Solar Water Heaters | **0.03** | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | **0.03** | |
| ***Subtotal*** | ***4.2*** | ***4.7*** | ***5.2*** | ***5.7*** | ***6.2*** | ***6.7*** | ***7.2*** | ***7.7*** | ***8.2*** | ***8.7*** | ***9.2*** | ***9.7*** | ***10.2*** | ***10.7*** | ***11.2*** | ***11.7*** | ***11%*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | |
| Commercial Custom Measures Program | **0.06** | 0.11 | 0.17 | 0.22 | 0.27 | 0.31 | 0.36 | 0.41 | 0.45 | 0.50 | 0.55 | 0.59 | 0.64 | 0.68 | 0.73 | **0.73** | |
| Commercial Windows Program | **0.26** | 0.45 | 0.63 | 0.82 | 1.00 | 1.19 | 1.37 | 1.56 | 1.74 | 1.93 | 2.11 | 2.29 | 2.47 | 2.65 | 2.83 | **3.01** | |
| Commercial Rinse & Save Program | **0.34** | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | |
| Commercial Insulation Program | **1.25** | 2.51 | 3.77 | 5.03 | 6.28 | 7.52 | 8.77 | 10.00 | 11.23 | 12.46 | 13.68 | 14.90 | 16.12 | 17.33 | 18.53 | **19.73** | |
| Commercial New Construction Program | **0.00** | 0.15 | 0.32 | 0.59 | 0.73 | 0.92 | 1.16 | 1.47 | 1.78 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | 2.13 | **2.13** | |
| Commercial Building Optimization Program | **0.17** | 0.34 | 0.57 | 0.94 | 1.31 | 1.60 | 1.88 | 2.42 | 2.71 | 3.05 | 3.22 | 3.42 | 3.56 | 3.62 | 3.76 | **3.48** | |
| Power Smart Energy Manager Program | **0.14** | 0.58 | 0.94 | 1.22 | 1.22 | 1.22 | 1.22 | 1.22 | 1.22 | 1.22 | 1.15 | 0.79 | 0.50 | 0.29 | 0.29 | **0.29** | |
| Commercial Kitchen Appliance Program | **0.03** | 0.08 | 0.14 | 0.21 | 0.29 | 0.38 | 0.49 | 0.63 | 0.78 | 0.78 | 0.78 | 0.88 | 0.96 | 1.04 | 1.11 | **1.18** | |
| Commercial Clothes Washers Program | **0.02** | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.09 | 0.10 | 0.12 | 0.13 | 0.13 | 0.13 | 0.15 | 0.16 | **0.17** | |
| Power Smart Shops | **0.02** | 0.03 | 0.05 | 0.07 | 0.09 | 0.11 | 0.12 | 0.14 | 0.16 | 0.17 | 0.18 | 0.18 | 0.19 | 0.19 | 0.20 | **0.20** | |
| CO2 Sensors | **0.06** | 0.14 | 0.23 | 0.34 | 0.47 | 0.61 | 0.78 | 0.97 | 1.18 | 1.43 | 1.44 | 1.45 | 1.45 | 1.44 | 1.42 | **1.40** | |
| Commercial Furnace Program | **0.06** | 0.07 | 0.07 | 0.07 | 0.07 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | **0.08** | |
| Commercial Boiler Program | **1.60** | 2.65 | 3.76 | 4.94 | 6.24 | 7.73 | 9.36 | 11.16 | 13.18 | 15.84 | 18.56 | 21.33 | 24.10 | 26.84 | 29.58 | **29.58** | |
| ***Subtotal*** | ***4.0*** | ***7.5*** | ***11.0*** | ***14.8*** | ***18.4*** | ***22.1*** | ***26.0*** | ***30.5*** | ***35.0*** | ***40.1*** | ***44.0*** | ***48.2*** | ***52.3*** | ***56.4*** | ***60.8*** | ***62.0*** | ***59%*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | |
| Industrial Natural Gas Optimization Program | **0.70** | 1.40 | 2.10 | 2.71 | 3.15 | 3.59 | 3.94 | 4.29 | 4.64 | 4.64 | 4.64 | 4.64 | 4.64 | 4.64 | 4.64 | **4.64** | |
| ***Subtotal*** | ***0.7*** | ***1.4*** | ***2.1*** | ***2.7*** | ***3.2*** | ***3.6*** | ***3.9*** | ***4.3*** | ***4.6*** | ***4.6*** | ***4.6*** | ***4.6*** | ***4.6*** | ***4.6*** | ***4.6*** | ***4.6*** | ***4%*** |
| ***CONSERVATION SUBTOTAL*** | ***13*** | ***23*** | ***31*** | ***39*** | ***46*** | ***52*** | ***59*** | ***66*** | ***72*** | ***77*** | ***82*** | ***86*** | ***91*** | ***96*** | ***101*** | ***102*** | |
| **CUSTOMER SELF-GENERATION** | | | | | | | | | | | | | | | | | |
| BioEnergy Optimization Program | **0.00** | 0.03 | 0.03 | 1.75 | 1.77 | 1.88 | 3.60 | 3.63 | 3.63 | 3.63 | 3.63 | 3.63 | 3.63 | 3.63 | 3.63 | **3.63** | |
| ***CUSTOMER SELF-GENERATION SUBTOTAL*** | ***0.0*** | ***0.0*** | ***0.0*** | ***1.7*** | ***1.8*** | ***1.9*** | ***3.6*** | ***3.6*** | ***3.6*** | ***3.6*** | ***3.6*** | ***3.6*** | ***3.6*** | ***3.6*** | ***3.6*** | ***3.6*** | ***3%*** |
| ***Program Impacts*** | ***13*** | ***23*** | ***31*** | ***41*** | ***48*** | ***54*** | ***62*** | ***70*** | ***75*** | ***81*** | ***85*** | ***90*** | ***95*** | ***99*** | ***104*** | ***105*** | ***100%*** |
| - Interactive Effects | **-5.19** | **-10.49** | **-15.15** | **-15.23** | **-15.28** | **-11.13** | **-6.84** | **-3.19** | **-3.13** | **-3.07** | **-2.99** | **-2.91** | **-2.82** | **-1.97** | **-1.09** | **-0.10** | |
| ***Subtotal after Interactive Effects*** | ***8*** | ***12*** | ***16*** | ***25*** | ***33*** | ***43*** | ***56*** | ***67*** | ***72*** | ***78*** | ***82*** | ***87*** | ***92*** | ***97*** | ***103*** | ***105*** | |
| + Option 1 - Supporting Codes & Standards | 0.00 | 1.16 | 3.23 | 5.30 | 8.90 | 12.49 | 16.09 | 19.68 | 23.28 | 24.44 | 25.59 | 26.75 | 27.91 | 29.07 | 30.23 | **31.39** | |
| ***POWER SMART 2009 to 2024 Impacts*** | ***8*** | ***13*** | ***19*** | ***31*** | ***42*** | ***56*** | ***72*** | ***86*** | ***95*** | ***102*** | ***108*** | ***114*** | ***120*** | ***126*** | ***133*** | ***137*** | |
| **TOTAL SAVINGS TO DATE** | | | | | | | | | | | | | | | | | |
| Incentive-Based Program Impacts | **26.71** | 26.71 | 26.71 | 26.71 | 26.71 | 26.71 | 26.71 | 25.88 | 25.59 | 24.44 | 24.44 | 24.44 | 24.38 | 24.11 | 20.93 | **20.49** | |
| CSI Program Impacts | **17.42** | 17.42 | 17.43 | 17.37 | 17.23 | 17.10 | 17.10 | 17.10 | 17.10 | 17.10 | 17.10 | 17.10 | 17.10 | 17.05 | 16.95 | **16.60** | |
| - Interactive Effects | **-5.77** | -5.33 | -4.90 | -4.22 | -1.15 | -1.15 | -1.15 | -1.15 | -1.23 | -1.23 | -1.23 | -1.97 | -1.97 | -2.03 | -2.12 | **-1.53** | |
| ***Total m3*** | ***46*** | ***52*** | ***58*** | ***70*** | ***84*** | ***98*** | ***114*** | ***128*** | ***137*** | ***143*** | ***148*** | ***153*** | ***159*** | ***166*** | ***169*** | ***172*** | |

NOTE: Figures may not add due to rounding

# Annual Total Resource Cost
## 2009 Option 2

(1000s in 2009 $)

| | | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | Cumulative Total 2024 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | | | | | | | | | | |
| New Home Program | | **$747** | $5,314 | $5,643 | $4,382 | $4,378 | $4,378 | $4,374 | $4,374 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $33,590 | |
| Home Insulation Program | | **$3,517** | $3,427 | $3,340 | $3,256 | $3,174 | $3,093 | $3,013 | $2,936 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $25,756 | |
| Water and Energy Saver Program | | **$457** | $846 | $946 | $831 | $811 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $3,891 | |
| Residential Appliance Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Lower Income Energy Efficiency Program | | **$11,694** | $11,455 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $23,149 | |
| Residential HE Furnace & Boiler Program | | **$1,928** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,928 | |
| | ***Subtotal*** | ***$18,343*** | ***$21,043*** | ***$9,929*** | ***$8,469*** | ***$8,363*** | ***$7,471*** | ***$7,387*** | ***$7,310*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$88,314*** | ***36%*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | |
| Commercial Custom Measures Program | | **$200** | $196 | $196 | $196 | $175 | $179 | $175 | $175 | $175 | $179 | $175 | $175 | $175 | $175 | $175 | **$0** | $2,722 | |
| Commercial Windows Program | | **$602** | $420 | $420 | $420 | $420 | $420 | $420 | $420 | $420 | $420 | $409 | $409 | $409 | $409 | $409 | **$409** | $6,838 | |
| Commercial Rinse & Save Program | | **$62** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $62 | |
| Commercial Insulation Program | | **$4,844** | $4,883 | $4,871 | $4,847 | $4,835 | $4,811 | $4,817 | $4,775 | $4,769 | $4,744 | $4,738 | $4,714 | $4,699 | $4,675 | $4,648 | **$4,648** | $76,317 | |
| Commercial New Construction Program | | **$58** | $147 | $159 | $232 | $264 | $349 | $424 | $525 | $540 | $600 | $0 | $0 | $0 | $0 | $0 | **$0** | $3,298 | |
| Commercial Building Optimization Program | | **$396** | $396 | $469 | $659 | $659 | $543 | $540 | $885 | $467 | $544 | $547 | $585 | $585 | $662 | $738 | **$0** | $8,676 | |
| Power Smart Energy Manager Program | | **$119** | $256 | $219 | $183 | $27 | $27 | $27 | $27 | $27 | $0 | $34 | $34 | $34 | $34 | $0 | **$0** | $1,048 | |
| Commercial Kitchen Appliance Program | | **$92** | $121 | $158 | $172 | $185 | $216 | $265 | $317 | $336 | $0 | $0 | $235 | $269 | $285 | $307 | **$313** | $3,271 | |
| Commercial Clothes Washers Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Power Smart Shops | | **$17** | $15 | $15 | $15 | $13 | $12 | $11 | $11 | $10 | $10 | $4 | $4 | $4 | $4 | $4 | **$4** | $152 | |
| CO2 Sensors | | **$122** | $122 | $125 | $117 | $128 | $143 | $149 | $166 | $186 | $207 | $59 | $63 | $68 | $74 | $82 | **$91** | $1,903 | |
| Commercial Furnace Program | | **$171** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $171 | |
| Commercial Boiler Program | | **$1,906** | $1,319 | $1,353 | $1,351 | $1,477 | $1,664 | $1,780 | $1,957 | $2,191 | $3,110 | $3,172 | $3,235 | $3,244 | $3,195 | $3,201 | **$0** | $34,154 | |
| | ***Subtotal*** | ***$8,588*** | ***$7,874*** | ***$7,984*** | ***$8,192*** | ***$8,182*** | ***$8,364*** | ***$8,610*** | ***$9,259*** | ***$9,122*** | ***$9,814*** | ***$9,138*** | ***$9,455*** | ***$9,487*** | ***$9,514*** | ***$9,564*** | ***$5,465*** | ***$138,613*** | ***57%*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | |
| Industrial Natural Gas Optimization Program | | **$1,665** | $1,665 | $1,665 | $1,484 | $1,121 | $1,121 | $940 | $940 | $940 | $0 | $0 | $0 | $0 | $0 | $0 | **$1,450** | $12,990 | |
| | ***Subtotal*** | ***$1,665*** | ***$1,665*** | ***$1,665*** | ***$1,484*** | ***$1,121*** | ***$1,121*** | ***$940*** | ***$940*** | ***$940*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$1,450*** | ***$12,990*** | ***5%*** |
| | ***CONSERVATION SUBTOTAL*** | ***$28,595*** | ***$30,582*** | ***$19,579*** | ***$18,144*** | ***$17,666*** | ***$16,956*** | ***$16,936*** | ***$17,508*** | ***$10,062*** | ***$9,814*** | ***$9,138*** | ***$9,455*** | ***$9,487*** | ***$9,514*** | ***$9,564*** | ***$6,915*** | ***$239,917*** | |
| **CUSTOMER SELF-GENERATION** | | | | | | | | | | | | | | | | | | | |
| BioEnergy Optimization Program | | **$173** | $88 | $40 | $982 | $80 | $263 | $953 | $63 | $11 | $12 | $12 | $3 | $0 | $0 | $0 | **$0** | $2,681 | |
| | ***CUSTOMER SELF-GENERATION SUBTOTAL*** | ***$173*** | ***$88*** | ***$40*** | ***$982*** | ***$80*** | ***$263*** | ***$953*** | ***$63*** | ***$11*** | ***$12*** | ***$12*** | ***$3*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$2,681*** | ***1%*** |
| | ***Subtotal of Programs*** | ***$28,768*** | ***$30,670*** | ***$19,618*** | ***$19,127*** | ***$17,746*** | ***$17,219*** | ***$17,889*** | ***$17,572*** | ***$10,073*** | ***$9,826*** | ***$9,150*** | ***$9,458*** | ***$9,487*** | ***$9,514*** | ***$9,564*** | ***$6,915*** | ***$242,598*** | ***100%*** |
| + Incremental Support Activity | | **$686** | $767 | $897 | $962 | $1,001 | $871 | $871 | $846 | $846 | $846 | $846 | $846 | $846 | $846 | $846 | **$846** | $13,669 | |
| + Contingency | | **$0** | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | **$0** | $14,000 | |
| ***Incremental TRC (2009 to 2024)*** | | ***$29,454*** | ***$32,438*** | ***$21,516*** | ***$21,089*** | ***$19,747*** | ***$19,090*** | ***$19,760*** | ***$19,418*** | ***$11,919*** | ***$11,672*** | ***$10,996*** | ***$11,304*** | ***$11,333*** | ***$11,360*** | ***$11,410*** | ***$7,761*** | ***$270,267*** | |
| + Customer Service & Standards Support | | **$1,234** | **$1,158** | **$1,156** | **$1,148** | **$1,143** | **$1,127** | **$1,120** | **$1,107** | **$1,105** | **$1,024** | **$1,019** | **$1,019** | **$1,019** | **$1,019** | **$1,019** | **$1,019** | $17,436 | |
| ***TRC (2009 to 2024)*** | | ***$30,688*** | ***$33,596*** | ***$22,671*** | ***$22,237*** | ***$20,890*** | ***$20,217*** | ***$20,880*** | ***$20,525*** | ***$13,024*** | ***$12,696*** | ***$12,015*** | ***$12,323*** | ***$12,353*** | ***$12,379*** | ***$12,429*** | ***$8,780*** | ***$287,703*** | |
| **COMMITTED TO DATE:** | | | | | | | | | | | | | | | | | | | |
| Activity cumulative to 2007/08 | $43,233 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $43,233 | |
| Current Year Estimate 2008/09 | $25,119 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $25,119 | |
| | ***$68,352*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$68,352*** | |
| ***TRC (1989 to 2024)*** | ***$68,352*** | ***$30,688*** | ***$33,596*** | ***$22,671*** | ***$22,237*** | ***$20,890*** | ***$20,217*** | ***$20,880*** | ***$20,525*** | ***$13,024*** | ***$12,696*** | ***$12,015*** | ***$12,323*** | ***$12,353*** | ***$12,379*** | ***$12,429*** | ***$8,780*** | ***$356,055*** | |

NOTE: Figures may not add due to rounding

Total Resource Costs for Customer Service Initiatives (CSI) are not tracked because they do not fall under the standard form of programming. Utility costs CSI's for that flow into total resource costs are included within Customer Service & Standards Support.

# Annual Program Budgets (Utility Cost)
## 2009 Option 2

(1000s in 2009 $)

| | | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | Cumulative Total 2024 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | | | | | | | | | | |
| New Home Program | | **$258** | $295 | $361 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $914 | |
| Home Insulation Program | | **$2,943** | $2,872 | $2,802 | $2,735 | $2,669 | $2,605 | $2,542 | $2,480 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $21,647 | |
| Water and Energy Saver Program | | **$459** | $850 | $949 | $834 | $815 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $3,907 | |
| Residential Appliance Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Lower Income Energy Efficiency Program | | **$1,326** | $1,342 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $2,668 | |
| Residential HE Furnace & Boiler Program | | **$1,123** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,123 | |
| | ***Subtotal*** | ***$6,108*** | ***$5,359*** | ***$4,112*** | ***$3,569*** | ***$3,483*** | ***$2,605*** | ***$2,542*** | ***$2,480*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$30,259*** | ***34%*** |
| **Customer Service Initiatives** | | | | | | | | | | | | | | | | | | | |
| Power Smart Residential Loan Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| ecoEnergy | | **$471** | $554 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,025 | |
| Residential Earth Power Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Solar Water Heaters | | **$0** | $0 | $27 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $27 | |
| | ***Subtotal*** | ***$471*** | ***$554*** | ***$27*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$1,025*** | ***1%*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | |
| Commercial Custom Measures Program | | **$94** | $91 | $91 | $91 | $91 | $94 | $91 | $91 | $91 | $94 | $91 | $91 | $91 | $91 | $91 | **$0** | $1,372 | |
| Commercial Windows Program | | **$429** | $298 | $298 | $298 | $298 | $298 | $298 | $298 | $298 | $298 | $290 | $290 | $290 | $290 | $290 | **$290** | $4,856 | |
| Commercial Rinse & Save Program | | **$68** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $68 | |
| Commercial Insulation Program | | **$1,483** | $1,495 | $1,492 | $1,483 | $1,480 | $1,473 | $1,474 | $1,461 | $1,458 | $1,451 | $1,448 | $1,441 | $1,436 | $1,428 | $1,420 | **$1,420** | $23,345 | |
| Commercial New Construction Program | | **$58** | $94 | $108 | $146 | $134 | $159 | $194 | $225 | $240 | $260 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,619 | |
| Commercial Building Optimization Program | | **$284** | $284 | $321 | $418 | $418 | $378 | $375 | $552 | $301 | $341 | $344 | $364 | $364 | $404 | $424 | **$0** | $5,573 | |
| Power Smart Energy Manager Program | | **$54** | $61 | $56 | $53 | $27 | $27 | $27 | $27 | $27 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $359 | |
| Commercial Kitchen Appliance Program | | **$63** | $66 | $77 | $85 | $88 | $99 | $115 | $128 | $139 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $860 | |
| Commercial Clothes Washers Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Power Smart Shops | | **$17** | $15 | $15 | $15 | $13 | $12 | $11 | $11 | $10 | $10 | $0 | $0 | $0 | $0 | $0 | **$0** | $128 | |
| CO2 Sensors | | **$122** | $118 | $115 | $101 | $105 | $113 | $111 | $119 | $129 | $138 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,171 | |
| Commercial Furnace Program | | **$45** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $45 | |
| Commercial Boiler Program | | **$1,597** | $1,245 | $1,290 | $1,295 | $1,376 | $1,464 | $1,521 | $1,632 | $1,740 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $13,160 | |
| | ***Subtotal*** | ***$4,315*** | ***$3,767*** | ***$3,862*** | ***$3,985*** | ***$4,030*** | ***$4,118*** | ***$4,219*** | ***$4,544*** | ***$4,433*** | ***$2,593*** | ***$2,173*** | ***$2,186*** | ***$2,182*** | ***$2,213*** | ***$2,225*** | ***$1,710*** | ***$52,555*** | ***59%*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | |
| Industrial Natural Gas Optimization Program | | **$465** | $465 | $465 | $434 | $371 | $371 | $340 | $340 | $340 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $3,590 | |
| | ***Subtotal*** | ***$465*** | ***$465*** | ***$465*** | ***$434*** | ***$371*** | ***$371*** | ***$340*** | ***$340*** | ***$340*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | $3,590 | ***4%*** |
| | ***CONSERVATION SUBTOTAL*** | ***$11,359*** | ***$10,145*** | ***$8,467*** | ***$7,988*** | ***$7,884*** | ***$7,094*** | ***$7,101*** | ***$7,364*** | ***$4,773*** | ***$2,593*** | ***$2,173*** | ***$2,186*** | ***$2,182*** | ***$2,213*** | ***$2,225*** | ***$1,710*** | ***$87,429*** | |
| **CUSTOMER SELF-GENERATION** | | | | | | | | | | | | | | | | | | | |
| BioEnergy Optimization Program | | **$173** | $53 | $40 | $572 | $45 | $81 | $543 | $28 | $11 | $12 | $12 | $3 | $0 | $0 | $0 | **$0** | $1,572 | |
| | ***CUSTOMER SELF-GENERATION SUBTOTAL*** | ***$173*** | ***$53*** | ***$40*** | ***$572*** | ***$45*** | ***$81*** | ***$543*** | ***$28*** | ***$11*** | ***$12*** | ***$12*** | ***$3*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$1,572*** | ***2%*** |
| | ***Subtotal of Programs*** | ***$11,532*** | ***$10,198*** | ***$8,506*** | ***$8,560*** | ***$7,929*** | ***$7,175*** | ***$7,643*** | ***$7,392*** | ***$4,784*** | ***$2,604*** | ***$2,185*** | ***$2,190*** | ***$2,182*** | ***$2,213*** | ***$2,225*** | ***$1,710*** | ***$89,029*** | ***100%*** |
| + Support Activity | | **$686** | $767 | $897 | $962 | $1,001 | $871 | $871 | $846 | $846 | $846 | $846 | $846 | $846 | $846 | $846 | $846 | $13,669 | |
| + Contingency | | **$0** | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $0 | $14,000 | |
| ***Utility Cost (2009 to 2024)*** | | ***$12,218*** | ***$11,965*** | ***$10,404*** | ***$10,522*** | ***$9,929*** | ***$9,045*** | ***$9,514*** | ***$9,238*** | ***$6,630*** | ***$4,450*** | ***$4,031*** | ***$4,036*** | ***$4,028*** | ***$4,059*** | ***$4,071*** | ***$2,556*** | ***$116,697*** | |
| + Option 1 - Customer Service & Standards Support | | $1,234 | $1,158 | $1,156 | $1,148 | $1,143 | $1,127 | $1,120 | $1,107 | $1,105 | $1,024 | $1,019 | $1,019 | $1,019 | $1,019 | $1,019 | $1,019 | $17,436 | |
| ***Utility Cost (2009 to 2024)*** | | ***$13,451*** | ***$13,123*** | ***$11,559*** | ***$11,670*** | ***$11,073*** | ***$10,172*** | ***$10,633*** | ***$10,346*** | ***$7,735*** | ***$5,474*** | ***$5,050*** | ***$5,055*** | ***$5,047*** | ***$5,079*** | ***$5,090*** | ***$3,575*** | ***$134,133*** | |
| **COMMITTED TO DATE:** | | | | | | | | | | | | | | | | | | | |
| Activity cumulative to 2007/08 | 26245.09 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $26,245 | |
| Current Year Estimate 2008/09 | 12676.01 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $12,676 | |
| | ***38921.10*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$38,921*** | |
| ***UTILITY COST (1989 to 2024)*** | ***38921.10*** | ***$13,451*** | ***$13,123*** | ***$11,559*** | ***$11,670*** | ***$11,073*** | ***$10,172*** | ***$10,633*** | ***$10,346*** | ***$7,735*** | ***$5,474*** | ***$5,050*** | ***$5,055*** | ***$5,047*** | ***$5,079*** | ***$5,090*** | ***$3,575*** | ***$173,054*** | |

NOTE: Figures may not add due to rounding

# Annual Program Administration Budgets
## 2009 Option 2

(1000s in 2009 $)

| | | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | Cumulative Total 2024 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | | | | | | | | | | |
| New Home Program | | **$120** | $120 | $120 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $361 | |
| Home Insulation Program | | **$833** | $828 | $824 | $819 | $815 | $811 | $807 | $803 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $6,541 | |
| Water and Energy Saver Program | | **$189** | $179 | $149 | $148 | $132 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $798 | |
| Residential Appliance Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Lower Income Energy Efficiency Program | | **$246** | $273 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $519 | |
| Residential HE Furnace & Boiler Program | | **$241** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $241 | |
| | ***Subtotal*** | ***$1,630*** | ***$1,401*** | ***$1,093*** | ***$967*** | ***$947*** | ***$811*** | ***$807*** | ***$803*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$8,460*** | ***48%*** |
| **Customer Service Initiatives** | | | | | | | | | | | | | | | | | | | |
| Power Smart Residential Loan Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| ecoEnergy | | **$471** | $554 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,025 | |
| Residential Earth Power Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Solar Water Heaters | | **$0** | $0 | $27 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $27 | |
| | ***Subtotal*** | ***$471*** | ***$554*** | ***$27*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$1,025*** | ***1%*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | |
| Commercial Custom Measures Program | | **$73** | $69 | $69 | $69 | $69 | $73 | $69 | $69 | $69 | $73 | $69 | $69 | $69 | $69 | $69 | **$0** | $1,049 | |
| Commercial Windows Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Commercial Rinse & Save Program | | **$32** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $32 | |
| Commercial Insulation Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Commercial New Construction Program | | **$58** | $39 | $35 | $31 | $39 | $34 | $34 | $30 | $30 | $30 | $0 | $0 | $0 | $0 | $0 | **$0** | $362 | |
| Commercial Building Optimization Program | | **$164** | $164 | $161 | $157 | $157 | $157 | $155 | $152 | $81 | $81 | $84 | $84 | $84 | $84 | $44 | **$0** | $1,812 | |
| Power Smart Energy Manager Program | | **$51** | $51 | $48 | $47 | $27 | $27 | $27 | $27 | $27 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $332 | |
| Commercial Kitchen Appliance Program | | **$36** | $29 | $29 | $29 | $18 | $18 | $18 | $13 | $13 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $200 | |
| Commercial Clothes Washers Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Power Smart Shops | | **$14** | $12 | $11 | $11 | $9 | $9 | $8 | $8 | $7 | $7 | $0 | $0 | $0 | $0 | $0 | **$0** | $98 | |
| CO2 Sensors | | **$74** | $64 | $56 | $37 | $34 | $34 | $25 | $24 | $24 | $23 | $0 | $0 | $0 | $0 | $0 | **$0** | $395 | |
| Commercial Furnace Program | | **$21** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $21 | |
| Commercial Boiler Program | | **$266** | $239 | $213 | $142 | $141 | $141 | $105 | $115 | $115 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,477 | |
| | ***Subtotal*** | ***$790*** | ***$668*** | ***$623*** | ***$524*** | ***$495*** | ***$494*** | ***$441*** | ***$438*** | ***$366*** | ***$214*** | ***$153*** | ***$153*** | ***$153*** | ***$153*** | ***$113*** | ***$0*** | ***$5,778*** | ***33%*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | |
| Industrial Natural Gas Optimization Program | | **$215** | $215 | $215 | $215 | $215 | $215 | $215 | $215 | $215 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,934 | |
| | ***Subtotal*** | ***$215*** | ***$215*** | ***$215*** | ***$215*** | ***$215*** | ***$215*** | ***$215*** | ***$215*** | ***$215*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$1,934*** | ***11%*** |
| | ***CONSERVATION SUBTOTAL*** | ***$3,105*** | ***$2,838*** | ***$1,958*** | ***$1,706*** | ***$1,657*** | ***$1,520*** | ***$1,463*** | ***$1,456*** | ***$581*** | ***$214*** | ***$153*** | ***$153*** | ***$153*** | ***$153*** | ***$113*** | ***$0*** | ***$17,197*** | |
| **CUSTOMER SELF-GENERATION** | | | | | | | | | | | | | | | | | | | |
| BioEnergy Optimization Program | | **$173** | $38 | $40 | $56 | $30 | $12 | $26 | $13 | $11 | $12 | $12 | $3 | $0 | $0 | $0 | **$0** | $426 | |
| | ***CUSTOMER SELF-GENERATION SUBTOTAL*** | ***$173*** | ***$38*** | ***$40*** | ***$56*** | ***$30*** | ***$12*** | ***$26*** | ***$13*** | ***$11*** | ***$12*** | ***$12*** | ***$3*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$426*** | |
| | ***Subtotal of Programs*** | ***$3,278*** | ***$2,875*** | ***$1,998*** | ***$1,761*** | ***$1,687*** | ***$1,533*** | ***$1,489*** | ***$1,469*** | ***$592*** | ***$225*** | ***$165*** | ***$157*** | ***$153*** | ***$153*** | ***$113*** | ***$0*** | ***$17,649*** | ***100%*** |
| \+ | Support Activity | **$686** | $767 | $897 | $962 | $1,001 | $871 | $871 | $846 | $846 | $846 | $846 | $846 | $846 | $846 | $846 | **$846** | $13,669 | |
| \+ | Contingency | **$0** | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | **$0** | $14,000 | |
| | ***Administration Cost (2009 to 2024)*** | ***$3,964*** | ***$4,643*** | ***$3,895*** | ***$3,724*** | ***$3,687*** | ***$3,403*** | ***$3,360*** | ***$3,315*** | ***$2,438*** | ***$2,071*** | ***$2,011*** | ***$2,003*** | ***$1,999*** | ***$1,999*** | ***$1,959*** | ***$846*** | ***$45,318*** | |
| \+ | Option 1 (Customer Service & Support) | $1,234 | $1,158 | $1,156 | $1,148 | $1,143 | $1,127 | $1,120 | $1,107 | $1,105 | $1,024 | $1,019 | $1,019 | $1,019 | $1,019 | $1,019 | **$1,019** | $17,436 | |
| | ***Administration Cost (2009 to 2024)*** | ***$5,198*** | ***$5,801*** | ***$5,051*** | ***$4,872*** | ***$4,831*** | ***$4,530*** | ***$4,480*** | ***$4,422*** | ***$3,543*** | ***$3,095*** | ***$3,030*** | ***$3,022*** | ***$3,018*** | ***$3,018*** | ***$2,978*** | ***$1,865*** | ***$62,754*** | |
| **COMMITTED TO DATE:** | | | | | | | | | | | | | | | | | | | |
| Activity cumulative to 2007/08 | $15,428 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $15,428 | |
| Current Year Estimate 2008/09 | $4,083 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $4,083 | |
| | ***$19,510*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$19,510*** | |
| ***ADMIN. (1989 to 2024)*** | ***$19,510*** | ***$5,198*** | ***$5,801*** | ***$5,051*** | ***$4,872*** | ***$4,831*** | ***$4,530*** | ***$4,480*** | ***$4,422*** | ***$3,543*** | ***$3,095*** | ***$3,030*** | ***$3,022*** | ***$3,018*** | ***$3,018*** | ***$2,978*** | ***$1,865*** | ***$82,264*** | |

NOTE: Figures may not add due to rounding

# Incentives
## 2009 Option 2
(1000s in 2009 $)

| | | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | Cumulative Total 2024 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | | | | | | | | | | |
| New Home Program | | **$102** | $129 | $176 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $407 | |
| Home Insulation Program | | **$2,110** | $2,043 | $1,979 | $1,915 | $1,854 | $1,794 | $1,735 | $1,677 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $15,106 | |
| Water and Energy Saver Program | | **$100** | $249 | $298 | $265 | $264 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,177 | |
| Residential Appliance Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Lower Income Energy Efficiency Program | | **$1,079** | $1,069 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $2,149 | |
| Residential HE Furnace & Boiler Program | | **$882** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $241 | $241 | $241 | $241 | **$241** | $2,087 | |
| | ***Subtotal*** | ***$4,273*** | ***$3,491*** | ***$2,453*** | ***$2,181*** | ***$2,118*** | ***$1,794*** | ***$1,735*** | ***$1,677*** | ***$0*** | ***$0*** | ***$0*** | ***$241*** | ***$241*** | ***$241*** | ***$241*** | ***$241*** | ***$20,926*** | ***30%*** |
| **COMMERCIAL** | | | | | | | | | | | | | | | | | | | |
| Commercial Custom Measures Program | | **$22** | $22 | $22 | $22 | $22 | $22 | $22 | $22 | $22 | $22 | $22 | $22 | $22 | $22 | $22 | **$0** | $324 | |
| Commercial Windows Program | | **$429** | $298 | $298 | $298 | $298 | $298 | $298 | $298 | $298 | $298 | $290 | $290 | $290 | $290 | $290 | **$290** | $4,856 | |
| Commercial Rinse & Save Program | | **$35** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $35 | |
| Commercial Insulation Program | | **$1,483** | $1,495 | $1,492 | $1,483 | $1,480 | $1,473 | $1,474 | $1,461 | $1,458 | $1,451 | $1,448 | $1,441 | $1,436 | $1,428 | $1,420 | **$1,420** | $23,345 | |
| Commercial New Construction Program | | **$0** | $55 | $73 | $115 | $95 | $125 | $160 | $195 | $210 | $230 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,257 | |
| Commercial Building Optimization Program | | **$120** | $120 | $160 | $260 | $260 | $220 | $220 | $400 | $220 | $260 | $260 | $280 | $280 | $320 | $380 | **$0** | $3,762 | |
| Power Smart Energy Manager Program | | **$3** | $10 | $8 | $6 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $27 | |
| Commercial Kitchen Appliance Program | | **$28** | $38 | $49 | $56 | $70 | $81 | $98 | $115 | $126 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $660 | |
| Commercial Clothes Washers Program | | **$0** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $0 | |
| Power Smart Shops | | **$3** | $3 | $3 | $3 | $3 | $3 | $3 | $3 | $3 | $3 | $0 | $0 | $0 | $0 | $0 | **$0** | $30 | |
| CO2 Sensors | | **$48** | $53 | $59 | $65 | $71 | $78 | $86 | $95 | $105 | $115 | $0 | $0 | $0 | $0 | $0 | **$0** | $776 | |
| Commercial Furnace Program | | **$23** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $23 | |
| Commercial Boiler Program | | **$1,330** | $1,005 | $1,077 | $1,153 | $1,235 | $1,323 | $1,417 | $1,517 | $1,625 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $11,682 | |
| | ***Subtotal*** | ***$3,525*** | ***$3,099*** | ***$3,240*** | ***$3,462*** | ***$3,534*** | ***$3,623*** | ***$3,778*** | ***$4,106*** | ***$4,067*** | ***$2,379*** | ***$2,020*** | ***$2,033*** | ***$2,028*** | ***$2,060*** | ***$2,112*** | ***$1,710*** | ***$46,777*** | ***66%*** |
| **INDUSTRIAL** | | | | | | | | | | | | | | | | | | | |
| Industrial Natural Gas Optimization Program | | **$250** | $250 | $250 | $219 | $156 | $156 | $125 | $125 | $125 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,656 | |
| | ***Subtotal*** | ***$250*** | ***$250*** | ***$250*** | ***$219*** | ***$156*** | ***$156*** | ***$125*** | ***$125*** | ***$125*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$1,656*** | ***2%*** |
| | | ***$8,048*** | ***$6,840*** | ***$5,943*** | ***$5,861*** | ***$5,808*** | ***$5,573*** | ***$5,638*** | ***$5,908*** | ***$4,192*** | ***$2,379*** | ***$2,020*** | ***$2,274*** | ***$2,269*** | ***$2,301*** | ***$2,353*** | ***$1,951*** | ***$69,360*** | |
| | ***CONSERVATION SUBTOTAL*** | | | | | | | | | | | | | | | | | | |
| **CUSTOMER SELF-GENERATION** | | | | | | | | | | | | | | | | | | | |
| BioEnergy Optimization Program | | **$0** | $15 | $0 | $516 | $15 | $69 | $516 | $15 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | $1,147 | |
| | ***CUSTOMER SELF-GENERATION SUBTOTAL*** | ***$0*** | ***$15*** | ***$0*** | ***$516*** | ***$15*** | ***$69*** | ***$516*** | ***$15*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$1,147*** | ***2%*** |
| ***Incentive Cost (2009 to 2024)*** | | ***$8,048*** | ***$6,855*** | ***$5,943*** | ***$6,377*** | ***$5,824*** | ***$5,642*** | ***$6,154*** | ***$5,924*** | ***$4,192*** | ***$2,379*** | ***$2,020*** | ***$2,274*** | ***$2,269*** | ***$2,301*** | ***$2,353*** | ***$1,951*** | ***$70,506*** | ***100%*** |
| **COMMITTED TO DATE:** | | | | | | | | | | | | | | | | | | | |
| Activity cumulative to 2007/08 | $10,656 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $10,656 | |
| Current Year Estimate 2008/09 | $8,593 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $8,593 | |
| | ***$19,250*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$19,250*** | |
| ***INCENTIVES TOTAL (1989 to 2024)*** | ***$19,250*** | ***$8,048*** | ***$6,855*** | ***$5,943*** | ***$6,377*** | ***$5,824*** | ***$5,642*** | ***$6,154*** | ***$5,924*** | ***$4,192*** | ***$2,379*** | ***$2,020*** | ***$2,274*** | ***$2,269*** | ***$2,301*** | ***$2,353*** | ***$1,951*** | ***$89,756*** | |

NOTE: Figures may not add due to rounding
There are no incentives for Customer Service Initiatives

## APPENDIX D - Historical Million m3 Savings & Costs by Program (Savings to Date)

Appendix D.1 - Annual Energy Savings (m3)
Appendix D.2 - Annual Total Resource Cost
Appendix D.3 - Annual Program Budgets (Utility Cost)
Appendix D.4 - Annual Program Administration Budgets
Appendix D.5 - Incentives

**Energy Savings (million m3)**
**Savings to Date (2001/02 - 2008/09)**

| | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | Int. Est 2008/09 | 2024/25 |
|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | |
| **Incentive Based** | | | | | | | | | |
| Residential Furnace | 0.00 | 0.00 | 0.00 | 0.00 | 0.61 | 2.60 | 4.04 | **6.19** | **6.19** |
| Thermostat | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.11 | 0.17 | **0.17** | **0.17** |
| H2O NRG Saver | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| Solar H2O Heat | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| Home Insulation | 0.00 | 0.00 | 0.00 | 0.00 | 0.30 | 2.15 | 3.85 | **5.77** | **5.77** |
| New Homes | 0.00 | 0.00 | 0.00 | 0.03 | 0.08 | 0.15 | 0.23 | **0.31** | **0.31** |
| Appliance | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.13** | **0.00** |
| Low Income | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.07** | **0.00** |
| CFL | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| Fridge Recycling Program | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| EE Light Fixtures | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| SLED Program | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| ***Subtotal*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***1.0*** | ***5.0*** | ***8.3*** | ***12.6*** | ***12.4*** |
| **COMMERCIAL** | | | | | | | | | |
| Power Smart Energy Manager | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| Commercial Insulation | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.29 | 1.05 | **2.12** | **2.12** |
| Commercial Windows | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.11 | **0.21** | **0.21** |
| Commercial Building Optimization | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.12** | **0.00** |
| Custom Program | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| Spray Valves | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.83 | 1.12 | **2.16** | **0.00** |
| Furnace Program | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 2.15 | **2.19** | **2.19** |
| Boiler Program | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.38 | 0.38 | **1.87** | **1.87** |
| City of Winnipeg PSA | 0.00 | 0.05 | 0.11 | 0.38 | 0.70 | 0.82 | 0.82 | **0.82** | **0.12** |
| New Construction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| Kitchen Program | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| Commercial Lighting | | | | | | | | | |
| Washer Program | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| Commercial Refrigeration | | | | | | | | | |
| NEM | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| PS Shops | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| C02 Sensors | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| ***Subtotal*** | ***0.0*** | ***0.1*** | ***0.1*** | ***0.4*** | ***0.7*** | ***2.4*** | ***5.6*** | ***9.5*** | ***6.5*** |
| **INDUSTRIAL** | | | | | | | | | |
| Industrial Natural Gas | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.69 | **4.59** | **1.47** |
| ***Subtotal*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***1.7*** | ***4.6*** | ***1.5*** |
| **CUSTOMER SELF GENERATION** | | | | | | | | | |
| Bio Energy | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** | **0.00** |
| ***Subtotal*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** | ***0.0*** |
| ***INCENTIVE-BASED SUBTOTAL*** | ***0*** | ***0*** | ***0*** | ***0*** | ***2*** | ***7*** | ***16*** | ***27*** | ***20*** |
| **CUSTOMER SERVICE INITIATIVES** | 1.2 | 2.4 | 4.3 | 7.7 | 11.3 | 13.2 | 15.3 | **17.4** | **16.6** |
| ***CONSERVATION SUBTOTAL*** | ***1*** | ***2*** | ***4*** | ***8*** | ***13*** | ***21*** | ***31*** | ***44*** | ***37*** |
| **-INTERACTIVE EFFECTS** | 0.0 | 0.0 | 0.0 | -1.2 | -2.5 | -2.9 | -3.7 | **-6.4** | **-1.5** |
| ***M3 IMPACTS (millions)*** | ***1*** | ***2*** | ***4*** | ***7*** | ***10*** | ***18*** | ***27*** | ***38*** | ***35*** |

NOTE: Figures may not add due to rounding

**Total Resource Cost**
**to Date (2001/02 - 2008/09)**
**(1000s in 2009 $)**

| | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | Int. Est 2008/09 | Cumulative Total 2008/09 | Cumulative Total to 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | |
| Residential Furnace | $0 | $0 | $0 | $0 | $2,122 | $7,414 | $4,760 | **$12,127** | **$26,423** | **$26,423** |
| Thermostat | $0 | $0 | $0 | $0 | $0 | $235 | $150 | **$0** | **$385** | **$385** |
| H2O NRG Saver | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$37** | **$37** | **$37** |
| Solar H2O Heat | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Home Insulation | $0 | $0 | $0 | $0 | $808 | $4,405 | $3,778 | **$3,876** | **$12,866** | **$12,866** |
| New Homes | $0 | $13 | $77 | $174 | $119 | $271 | $430 | **$651** | **$1,735** | **$1,735** |
| Appliance | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Low Income | $0 | $0 | $0 | $0 | $81 | $55 | $167 | **$170** | **$474** | **$474** |
| CFL | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Fridge Recycling Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| EE Light Fixtures | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| SLED Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***Subtotal*** | ***$0*** | ***$13*** | ***$77*** | ***$174*** | ***$3,130*** | ***$12,380*** | ***$9,284*** | ***$16,861*** | ***$41,919*** | ***$41,919*** |
| **COMMERCIAL** | | | | | | | | | | |
| Power Smart Energy Manager | $0 | $0 | $0 | $0 | $0 | $10 | $121 | **$130** | **$260** | **$260** |
| Commercial Insulation | $0 | $0 | $0 | $0 | $0 | $581 | $1,381 | **$1,281** | **$3,242** | **$3,242** |
| Commercial Windows | $0 | $0 | $0 | $0 | $0 | $132 | $344 | **$381** | **$857** | **$857** |
| Commercial Building Optimization | $0 | $0 | $0 | $0 | $78 | $235 | $161 | **$144** | **$618** | **$618** |
| Custom Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$58** | **$58** | **$58** |
| Spray Valves | $0 | $0 | $0 | $0 | $0 | $131 | $56 | **$112** | **$299** | **$299** |
| Furnace Program | $0 | $0 | $0 | $0 | $108 | $135 | $2,520 | **$158** | **$2,921** | **$2,921** |
| Boiler Program | $0 | $0 | $0 | $0 | $0 | $821 | $0 | **$1,632** | **$2,452** | **$2,452** |
| City of Winnipeg PSA | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| New Construction | $0 | $0 | $0 | $0 | $0 | $1 | $0 | **$0** | **$1** | **$1** |
| Kitchen Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$36** | **$36** | **$36** |
| Washer Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| NEM | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| PS Shops | $0 | $0 | $0 | $0 | $0 | $0 | $1 | **$0** | **$1** | **$1** |
| C02 Sensors | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$186*** | ***$2,045*** | ***$4,583*** | ***$3,930*** | ***$10,745*** | ***$10,745*** |
| **INDUSTRIAL** | | | | | | | | | | |
| Industrial Natural Gas | $0 | $0 | $0 | $0 | $105 | $38 | $1,911 | **$3,189** | **$5,243** | **$5,243** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$105*** | ***$38*** | ***$1,911*** | ***$3,189*** | ***$5,243*** | ***$5,243*** |
| **CUSTOMER SELF GENERATION** | | | | | | | | | | |
| Bio Energy | $0 | $0 | $0 | $0 | $0 | $96 | $14 | **$0** | **$110** | **$110** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$96*** | ***$14*** | ***$0*** | ***$110*** | ***$110*** |
| ***INCENTIVE-BASED SUBTOTAL*** | ***$0*** | ***$13*** | ***$77*** | ***$174*** | ***$3,421*** | ***$14,559*** | ***$15,792*** | ***$23,981*** | ***$58,016*** | ***$58,016*** |
| **CUSTOMER SERVICE INITIATIVES** | $797 | $457 | $386 | $378 | $6 | $866 | **$486** | **$537** | **$3,912** | **$3,912** |
| ***CONSERVATION SUBTOTAL*** | ***$797*** | ***$470*** | ***$463*** | ***$552*** | ***$3,426*** | ***$15,424*** | ***$16,278*** | ***$24,518*** | ***$61,928*** | ***$61,928*** |
| \+ Support Cost | $204 | $225 | $244 | $536 | $1,251 | $1,738 | $1,625 | **$1,086** | **$6,908** | **$6,908** |
| \+ Contingency | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***Incremental Total Resource Cost*** | ***$1,001*** | ***$695*** | ***$706*** | ***$1,088*** | ***$4,677*** | ***$17,162*** | ***$17,903*** | ***$25,603*** | ***$68,836*** | ***$68,836*** |

NOTE: Figures may not add due to rounding
Total Resource Costs are economic costs that are used for analyzing cost effectiveness.
Economic costs are used because there may be a timing difference between when an expediture occurs (economic cost) and when the expenditure is entered into the accounting system.

**Annual Program Budgets (Utility Cost)**
**to Date (2001/02 - 2008/09)**
**(1000s in 2009 $)**

| | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | Int. Est 2008/09 | Cumulative Total 2008/09 | Cumulative Total 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | |
| Residential Furnace | $0 | $0 | $0 | $0 | $600 | $2,403 | $2,160 | **$3,386** | **$8,550** | **$8,550** |
| Thermostat | $0 | $0 | $0 | $0 | $0 | $198 | $134 | **$0** | **$332** | **$332** |
| H2O NRG Saver | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$37** | **$37** | **$37** |
| Solar H2O Heat | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Home Insulation | $0 | $0 | $0 | $0 | $388 | $1,893 | $3,034 | **$3,147** | **$8,462** | **$8,462** |
| New Homes | $0 | $13 | $77 | $95 | $63 | $96 | $141 | **$368** | **$853** | **$853** |
| Appliance | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Low Income | $0 | $0 | $0 | $0 | $81 | $55 | $167 | **$170** | **$474** | **$474** |
| CFL | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Fridge Recycling Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| EE Light Fixtures | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| SLED Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***Subtotal*** | ***$0*** | ***$13*** | ***$77*** | ***$95*** | ***$1,132*** | ***$4,646*** | ***$5,636*** | ***$7,109*** | ***$18,708*** | ***$18,708*** |
| **COMMERCIAL** | | | | | | | | | | |
| Power Smart Energy Manager | $0 | $0 | $0 | $0 | $0 | $10 | $121 | **$129** | **$259** | **$259** |
| Commercial Insulation | $0 | $0 | $0 | $0 | $0 | $431 | $841 | **$956** | **$2,228** | **$2,228** |
| Commercial Windows | $0 | $0 | $0 | $0 | $0 | $132 | $286 | **$459** | **$877** | **$877** |
| Commercial Building Optimization | $0 | $0 | $0 | $0 | $78 | $235 | $161 | **$95** | **$569** | **$569** |
| Custom Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$58** | **$58** | **$58** |
| Spray Valves | $0 | $0 | $0 | $0 | $0 | $132 | $56 | **$114** | **$302** | **$302** |
| Furnace Program | $0 | $0 | $0 | $0 | $108 | $24 | $1,687 | **$77** | **$1,895** | **$1,895** |
| Boiler Program | $0 | $0 | $0 | $0 | $0 | $599 | $0 | **$1,397** | **$1,995** | **$1,995** |
| City of Winnipeg PSA | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| New Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Kitchen Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$31** | **$31** | **$31** |
| Washer Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| NEM | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| PS Shops | $0 | $0 | $0 | $0 | $0 | $0 | $1 | **$34** | **$35** | **$35** |
| C02 Sensors | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$19** | **$1,562** | **$1,562** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$186*** | ***$1,562*** | ***$3,153*** | ***$3,367*** | ***$9,811*** | ***$9,811*** |
| **INDUSTRIAL** | | | | | | | | | | |
| Industrial Natural Gas | $0 | $0 | $0 | $0 | $105 | $38 | $295 | **$577** | **$1,015** | **$1,015** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$105*** | ***$38*** | ***$295*** | ***$577*** | ***$1,015*** | ***$1,015*** |
| **CUSTOMER SELF GENERATION** | | | | | | | | | | |
| Bio Energy | $0 | $0 | $0 | $0 | $0 | $96 | $14 | **$0** | **$110** | **$110** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$96*** | ***$14*** | ***$0*** | ***$110*** | ***$110*** |
| ***INCENTIVE-BASED SUBTOTAL*** | ***$0*** | ***$13*** | ***$77*** | ***$95*** | ***$1,423*** | ***$6,342*** | ***$9,098*** | ***$11,054*** | ***$29,644*** | ***$29,644*** |
| **CUSTOMER SERVICE INITIATIVES** | $797 | $457 | $386 | $378 | $6 | $866 | $486 | **$537** | **$3,912** | **$3,912** |
| ***CONSERVATION SUBTOTAL*** | ***$797*** | ***$470*** | ***$463*** | ***$472*** | ***$1,429*** | ***$7,208*** | ***$9,583*** | ***$11,590*** | ***$33,556*** | ***$33,556*** |
| Support Cost | $204 | $225 | $244 | $536 | $1,251 | $1,738 | $1,625 | **$1,086** | **$6,908** | **$6,908** |
| Contingency | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***TOTAL ACCOUNTING UTILITY COST*** | ***$1,001*** | ***$695*** | ***$706*** | ***$1,009*** | ***$2,679*** | ***$8,946*** | ***$11,209*** | ***$12,676*** | ***$40,464*** | ***$40,464*** |

NOTE: Figures may not add due to rounding
Program level costs are economic costs that are used for analyzing cost effectiveness, therefore program costs may not add up to the Total Accounting Cost.
Economic costs are used because there may be a timing difference between when an expediture occurs (economic cost) and when the expenditure is entered into the accounting system.

**Annual Program Administration Budgets**
**to Date (2001/02 - 2008/09)**
**(1000s in 2009 $)**

| | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | Int. Est. 2008/09 | Cumulative Total 2008/09 | Cumulative Total 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | |
| Incentive Based | | | | | | | | | | |
| Residential Furnace | $0 | $0 | $0 | $0 | $271 | $1,343 | **$457** | **$367** | **$2,439** | **$2,439** |
| Thermostat | $0 | $0 | $0 | $0 | $0 | $113 | **$96** | **$0** | **$209** | **$209** |
| H2O NRG Saver | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$37** | **$37** | **$37** |
| Solar H2O Heat | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** | **$0** |
| Home Insulation | $0 | $0 | $0 | $0 | $176 | $542 | **$778** | **$612** | **$2,108** | **$2,108** |
| New Homes | $0 | $13 | $77 | $78 | $21 | $32 | **$50** | **$314** | **$585** | **$585** |
| Appliance | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** | **$0** |
| Low Income | $0 | $0 | $0 | $0 | $81 | $0 | **$144** | **$0** | **$225** | **$225** |
| CFL | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** | **$0** |
| Fridge Recycling Program | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** | **$0** |
| EE Light Fixtures | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** | **$0** |
| SLED Program | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** | **$0** |
| ***Subtotal*** | ***$0*** | ***$13*** | ***$77*** | ***$78*** | ***$549*** | ***$2,030*** | ***$1,526*** | ***$1,330*** | ***$5,602*** | ***$5,602*** |
| **COMMERCIAL** | | | | | | | | | | |
| Power Smart Energy Manager | $0 | $0 | $0 | $0 | $0 | $0 | **$121** | **$0** | **$121** | **$121** |
| Commercial Insulation | $0 | $0 | $0 | $0 | $0 | $77 | **$77** | **$0** | **$154** | **$154** |
| Commercial Windows | $0 | $0 | $0 | $0 | $0 | $84 | **$87** | **$0** | **$171** | **$171** |
| Commercial Building Optimization | $0 | $0 | $0 | $0 | $78 | $235 | **$161** | **$0** | **$474** | **$474** |
| Custom Program | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** | **$0** |
| Spray Valves | $0 | $0 | $0 | $0 | $0 | $54 | **$31** | **$129** | **$214** | **$214** |
| Furnace Program | $0 | $0 | $0 | $0 | $108 | $11 | **$302** | **$137** | **$558** | **$558** |
| Boiler Program | $0 | $0 | $0 | $0 | $0 | $280 | **$0** | **$141** | **$422** | **$422** |
| City of Winnipeg PSA | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$76** | **$76** | **$76** |
| New Construction | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$58** | **$58** | **$58** |
| Kitchen Program | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$21** | **$21** | **$21** |
| Washer Program | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$185** | **$185** | **$185** |
| NEM | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** | **$0** |
| PS Shops | $0 | $0 | $0 | $0 | $0 | $0 | **$1** | **$34** | **$35** | **$35** |
| C02 Sensors | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$19** | **$19** | **$19** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$186*** | ***$740*** | ***$781*** | ***$799*** | ***$2,507*** | ***$2,507*** |
| **INDUSTRIAL** | | | | | | | | | | |
| Industrial Natural Gas | $0 | $0 | $0 | $0 | $105 | $38 | **$94** | **$135** | **$372** | **$372** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$105*** | ***$38*** | ***$94*** | ***$135*** | ***$372*** | ***$372*** |
| **CUSTOMER SELF GENERATION** | | | | | | | | | | |
| Bio Energy | $0 | $0 | $0 | $0 | $0 | $0 | **$14** | **$0** | **$14** | **$14** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$14*** | ***$0*** | ***$14*** | ***$14*** |
| ***INCENTIVE-BASED SUBTOTAL*** | ***$0*** | ***$13*** | ***$77*** | ***$78*** | ***$840*** | ***$2,808*** | ***$2,415*** | ***$2,264*** | ***$8,495*** | ***$8,495*** |
| **CUSTOMER SERVICE INITIATIVES** | $797 | $457 | $386 | $378 | $6 | $866 | **$486** | **$479** | **$3,854** | **$3,854** |
| ***CONSERVATION SUBTOTAL*** | ***$797*** | ***$470*** | ***$463*** | ***$455*** | ***$846*** | ***$3,674*** | ***$2,901*** | ***$2,743*** | ***$12,348*** | ***$12,348*** |
| Support Cost | $204 | $225 | $244 | $536 | $1,251 | $1,738 | **$1,625** | **$1,086** | **$6,908** | **$6,908** |
| Contingency | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** | **$0** |
| ***TOTAL PROGRAM ADMIN BUDGETS*** | ***$1,001*** | ***$695*** | ***$706*** | ***$992*** | ***$2,096*** | ***$5,412*** | ***$4,526*** | ***$3,829*** | ***$19,256*** | ***$19,256*** |

NOTE: Figures may not add due to rounding
Administration costs are economic costs that are used for analyzing cost effectiveness.
Economic costs are used because there may be a timing difference between when an expediture occurs (economic cost) and when the expenditure is entered into the accounting system.

**Annual Program Incentives Budgets**
**to Date (2001/02 - 2008/09)**
**(1000s in 2009 $)**

| | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | Int. Est. 2008/09 | Cumulative Total 2008/09 | Cumulative Total 2024/25 |
|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | |
| **Incentive Based** | | | | | | | | | | |
| Residential Furnace | $0 | $0 | $0 | $0 | $329 | $1,060 | $1,703 | **$3,019** | **$6,111** | **$6,111** |
| Thermostat | $0 | $0 | $0 | $0 | $0 | $85 | $37 | **$0** | **$123** | **$123** |
| H2O NRG Saver | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Solar H2O Heat | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Home Insulation | $0 | $0 | $0 | $0 | $212 | $1,352 | $2,256 | **$2,535** | **$6,354** | **$6,354** |
| New Homes | $0 | $0 | $0 | $17 | $42 | $64 | $90 | **$54** | **$268** | **$268** |
| Appliance | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Low Income | $0 | $0 | $0 | $0 | $0 | $0 | $23 | **$0** | **$23** | **$23** |
| CFL | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Fridge Recycling Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$2,535** | **$2,535** | **$2,535** |
| EE Light Fixtures | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| SLED Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$17*** | ***$583*** | ***$2,561*** | ***$4,110*** | ***$8,143*** | ***$15,414*** | ***$15,414*** |
| **COMMERCIAL** | | | | | | | | | | |
| Power Smart Energy Manager | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Commercial Insulation | $0 | $0 | $0 | $0 | $0 | $355 | $763 | **$819** | **$1,937** | **$1,937** |
| Commercial Windows | $0 | $0 | $0 | $0 | $0 | $48 | $199 | **$318** | **$565** | **$565** |
| Commercial Building Optimization | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$18** | **$18** | **$18** |
| Custom Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Spray Valves | $0 | $0 | $0 | $0 | $0 | $78 | $25 | **$94** | **$196** | **$196** |
| Furnace Program | $0 | $0 | $0 | $0 | $0 | $13 | $1,385 | **$29** | **$1,427** | **$1,427** |
| Boiler Program | $0 | $0 | $0 | $0 | $0 | $318 | $0 | **$1,212** | **$1,530** | **$1,530** |
| City of Winnipeg PSA | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| New Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| Kitchen Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$3** | **$3** | **$3** |
| Washer Program | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| NEM | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| PS Shops | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| C02 Sensors | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$812*** | ***$2,372*** | ***$2,492*** | ***$5,676*** | ***$5,676*** |
| **INDUSTRIAL** | | | | | | | | | | |
| Industrial Natural Gas | $0 | $0 | $0 | $0 | $0 | $0 | $201 | **$443** | **$644** | **$644** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$201*** | ***$443*** | ***$644*** | ***$644*** |
| **CUSTOMER SELF GENERATION** | | | | | | | | | | |
| Bio Energy | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** | **$0** | **$0** |
| ***Subtotal*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** | ***$0*** |
| ***INCENTIVES*** | ***$0*** | ***$0*** | ***$0*** | ***$17*** | ***$583*** | ***$3,373*** | ***$6,683*** | ***$11,078*** | ***$21,734*** | ***$21,734*** |

NOTE: Figures may not add due to rounding

Incentive costs are economic costs that are used for analyzing cost effectiveness.

Economic costs are used because there may be a timing difference between when an expediture occurs (economic cost) and when the expenditure is entered into the accounting system.

**Appendix E.1**

**Program Concepts**
**Customer Service Initiatives, Supporting the Development of Standards and Basic Customer Information**

# HOME COMFORT & ENERGY SAVINGS PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Building envelope and equipment upgrades.

**Activities:**

1. Basic Customer Information

   Provide retail point of purchase materials and displays featuring the consumer benefits of acquiring the various Power Smart technologies.

   Provide for the production and support of industry wide training.

   Provide for the production/support for the development and use of corporate display materials at relevant tradeshow and home show venues.

   Provide Power Smart Series of Booklets 1-9, technology specific data sheets, information folders, bill inserts, trade ally newsletters, newspaper and radio advertising, target specific publication advertising, Public Service Announcements, Hydro-Lines and/or Hydro-Gram, customer billing message.

   Provide support for the continued delivery of the Energy Expert, mail-in and on-line Power Smart survey, energy expert, and Power Smart phone line.

   Provide for the promotion and continued delivery of consumer workshops throughout the year.

2. Standards Development

   Participate and support Federal Energy Star requirements for product/technology and performance standards.

3. Customer Service

   Wisdom in Saving Energy (W.I.S.E.) – Seniors Helping Seniors Program that aims to reduce energy and water consumption in seniors' homes and to improve their understanding of conservation practices.

Low interest financing, with a fixed interest rate for up to five years, will be provided for Power Smart home renovations.

Terms of the Loan:

Borrow up to $7,500.
The minimum loan is $500.
The maximum term is 60 months (five years).
The minimum monthly payment is $15.

**Cost:**

Portions of Option 1 (i.e. the Low Interest Financing Option) are designed as cost recovery. Program services for the loan are financed from revenue generated by the activity under the low interest loan.

| Home Comfort & Energy Savings | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 256,584 | 256,584 | 3,592,170 | 4,105,338 |
| | Natural Gas | 585,474 | 585,474 | 8,196,641 | 9,367,590 |
| **Total Budget** | | **$ 842,058** | **$ 842,058** | **$ 11,788,811** | **$ 13,472,927** |

# ecoENERGY IN-HOME ENERGY EVALUATION PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

In-home energy evaluation service delivered under a Licensing Agreement between Manitoba Hydro and Natural Resources Canada (the creator of the Program). Program end date is March 31, 2011. The service recommends energy efficiency upgrades to existing homes and qualifying Multi Unit Residential (MURB) and mixed-use residential / small commercial buildings, including:

- air leakage sealing;
- foundation insulation;
- attic insulation, wall insulation;
- Energy Star heating systems;
- geothermal (ground-source) and air-source heat pump systems;
- energy efficient hot water heating, water heat recovery and solar water heater systems;
- ventilation systems;
- Energy Star air conditioning systems;
- low flush toilets; and
- Energy Star windows and doors.

**Activities:**

1. Basic Customer Information.

   Provide information through a detailed in-home energy evaluation to both residential homeowners and residential building property owners of Multi Unit Residential (MURB) and Mixed-Use residential / small commercial buildings. Program information identifies the benefits of improving energy efficiency of existing homes or residential buildings. Energy improvement recommendations are detailed in a report that outlines program requirements and Power Smart methods to make recommended improvements.

   Homeowners and building property owners who undertake the recommended energy improvements and have both a pre-retrofit and post-retrofit energy evaluation may qualify for federal ecoENERGY Grants. Grant amounts are based on qualifying energy improvements and the maximum Grant is $5,000 for an individual home or $5,000 per unit in a MURB.

   The Program employs communication tools for residential customers including data sheets, renovation “how to” booklets and Federal Government publications. Marketing targets specific advertising in community newspapers,

Hydro bill-stuffer and at trade shows and other public Power Smart presentations.

Review and update current data sheets, web site information and renovation booklets.

2. Standards Development

No current Standards development - Program requirements are outlined by Natural Resources Canada and must be adhered to for Program participation.

3. Customer Service

Continue to provide support to the Customer Contact Centre to ensure customer inquiries are addressed timely and accurately. Contact Centre is also tasked to schedule appointments requested by homeowners.

# RESIDENTIAL EARTH POWER PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Geothermal heat pumps are an energy efficient alternative to conventional heating systems. A geothermal heat pump can reduce energy consumption for space heating by 50% to 70%. Auxiliary benefits include reduced energy consumption for residential space cooling and water heating applications.

**Activities:**

1. Basic Customer Information

   Market Awareness - promote geothermal technology through development and distribution of comprehensive public information offerings, including "Geothermal Heat Pumps - A homeowner's guide" brochure and Earth Power Program website (www.earthpowerprogram.ca). The printed information kit is distributed to approximately 3,500 residential customers per year while the program's website receives over 25,000 unique visits per year.

   The technology is actively promoted to Manitobans through a targeted spring advertising campaign, which utilizes a variety of print, direct mail media and live events to communicate the benefits of geothermal technology as an alternative to conventional space heating/cooling systems. Program advertising and technology promotion is targeted toward all-electric Manitoba consumers in rural areas.

   Additional initiatives under the program's market development strategy include consumer workshop awareness sessions, presentations to various targeted groups/associations and development of Power Smart customer profiles.

2. Standards Development

   Industry Infrastructure - promote industry training, regulation and legislation. These activities are administered through Manitoba Hydro's Earth Power Program, the Manitoba Geothermal Energy Alliance and/or the Canadian GeoExchange Coalition.

   In addition, the program undertakes other initiatives, such as residential system performance monitoring study, to help assist in the development of best practices in regards to design and installation of geothermal heat pump systems in Manitoba.

3. Customer Service

Financial Enablers - provide Manitobans with access to financing tools to help mitigate the high capital cost of the technology. Since 2002, all residential consumers have the opportunity to finance a geothermal heat pump installation through the Earth Power Loan Program. The loan would provide a maximum of $15,000 over a term of up to 15 years. In March 2007, the loan terms were restructured. The loan maximum was increased to $20,000 with the interest rate reduced to 4.9% (five year fixed) through subsidization through the Affordable Energy Fund.

**Costs:**

| Residential Earth Power Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 332,678 | 339,332 | 2,573,144 | 3,245,154 |
| | Natural Gas | - | - | - | - |
| **Tota Budget** | | **$ 332,678** | **$ 339,332** | **$ 2,573,144** | **$ 3,245,154** |

# RESIDENTIAL SOLAR WATER HEATING

(Basic Customer Information, Services and Standards)

**Technology:**

Solar water heating is an energy efficient supplement to conventional water heating systems. A solar water heating system can reduce energy consumption for water heating by 50%. Auxiliary benefits include reduced energy consumption for residential space, pool or hot tub heating applications.

A two-year contribution agreement for solar water heating systems with Natural Resources Canada - ecoENERGY for Renewable Heat Program commenced in 2008. This partnership commits Manitoba Hydro to carry out all program administration, promotion and savings monitoring along with market and infrastructure development. This partnership will end October 2010.

**Activities:**

1. Basic Customer Information

   Market Awareness - promote solar water heating through development and distribution of comprehensive public information offerings, including the program website (www.hydro.mb.ca/your_home/solar_water_heating.shtml), program brochure and supporting documentation to hire a contractor. An installation video is also to be developed to further assist customers familiarize themselves with solar water heating.

   The technology is actively promoted to Manitobans through a targeted advertising campaign, which utilizes a variety of print, direct mail media and live events to communicate the benefits of solar water heating as a supplement to conventional water heating systems.

   Additional initiatives under the program's market development strategy include presentations to various targeted customer groups, partnerships with environmental associations and development of Power Smart customer profiles.

2. Standards Development

   Industry Infrastructure - promote industry training and certification through the Power Smart Residential Solar Water Heating Program, the Canadian Solar Industries Association (CanSIA) and the Canadian Standards Association (CSA).

In addition, the program undertakes other initiatives, such as performance monitoring to help assist in the development of best practices in regards to design and installation of solar water heating systems.

3. Customer Service

Financial Enablers - provide Manitobans with access to financing tools to help mitigate the high capital cost of the technology. Customers have access to the Residential Earth Power Loan at a maximum of $7,500 over a maximum term of 15 years and a fixed interest rate of 4.9% (five year fixed) through subsidization through the Affordable Energy Fund.

# AIR CONDITIONING (Cooling) ACTIVITIES

(Basic Customer Information, Services and Standards)

**Technology:**

Air Conditioning (split system) for residential housing.

**Activities:**

1. Basic Customer Information

   Hydrolines, customer billing message, PSAs, target specific publications, display materials, development of a dealer network relations and building industry alliances through participation on industry associations.

2. Standards Development

   Continue efforts at the Federal level for the adoption of higher Seasonal Energy Efficiency Ratio (SEER) values for split systems and insert style air conditioning units. Lobby NRCan to adopt amendments to existing energy efficiency regulations.

3. Customer Service

   Financing, with a fixed interest rate for up to five years, will be provided for split system air conditioning system in residential and small commercial applications.

   Terms of the Loan:

   Borrow up to $5,000.
   The minimum loan is $500.
   The maximum term is 60 months (five years).
   The minimum monthly payment is $15.

**Costs:**

| Residential Air Conditioning | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 5,000 | 5,000 | 70,000 | 80,000 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 5,000** | **$ 5,000** | **$ 70,000** | **$ 80,000** |

# RESIDENTIAL SEASONAL LED (SLED)

(Basic Customer Information, Services and Standards)

**Technology:**

Residential seasonal light emitting diode (SLED) light strings and SLED screw-in replacement bulbs for standard incandescent light strings.

**Activities:**

1. Basic Customer Information

   Promote SLED light strings and screw-in SLED replacement bulbs by providing technical and general information through data sheets, external website information, Energy Expert columns, PSA's, Hydrogram, customer bill insert, point-of-purchase material, brochures, tradeshow displays, Power Smart campaigns and partnerships with national and local organizations and retailers.

2. Standards Development

   Interact with the groups/agencies involved with regulating Canada's Minimum Energy Performance Standards (MEPS) for lighting products. Continue to actively participate on the Strategic Lighting Initiatives Committee (SLIC), and the Canadian Lighting Industry Committee (CLIC).

3. Customer Service

   Provide answers to customers SLED questions received through phone calls, emails and third parties, such as retailers.

**Costs:**

| Residential Seasonal LED Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 30,309 | 31,209 | 26,209 | 87,727 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 30,309** | **$ 31,209** | **$ 26,209** | **$ 87,727** |

# STANDBY POWER

(Basic Customer Information, Services and Standards)

**Technology:**

Standby power as part of consumer electronics and appliances that use stand-by power.

**Activities:**

1. Basic Customer Information

   Educate and inform homeowners on the issue of standby power and its impact on energy consumption in the home, while also focussing on steps they can take to reduce the standby power used by their current devices, and promoting the purchase of new devices which use less standby power.

2. Standards Development

   Work with the Stand-By Power Advisory Committee (SPAC) to supplement Canada's regulatory efforts to meet a "1 watt" maximum standby power level targeted by 2012.

**Costs:**

| Stand by Power | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 20,000 | 20,000 | 20,000 | 60,000 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 20,000** | **$ 20,000** | **$ 20,000** | **$ 60,000** |

# APPLIANCES AND ELECTRONICS

(Basic Customer Information, Services and Standards)

**Technologies:**

ENERGY STAR appliances including refrigerators, freezers, clothes washers, dishwashers, dehumidifiers and bottled water coolers and various consumer electronics with a focus on televisions.

**Activities:**

1. Basic Customer Information

   Promote ENERGY STAR appliances by providing technical and general information in the form of appliance-specific data sheets, newspaper/magazine advertisements, PSAs, customer billing messages, POP material, trade show displays, local Power Smart campaigns and partnership activities with national and local organizations.

2. Standards Development

   As part of the National Appliance Sub-Committee, (NASc - a DSM Working Group under the Forum on Leadership in Energy Efficiency Equipments Standards and Promotion) work to advance and transform the national appliance market. Liaise with all levels of government, utilities, appliance manufacturers and retailers to continue energy efficiency improvements to reduce average energy consumption for all appliances by 24% by 2020.

   Begin investigating savings opportunities for upstream, midstream and downstream programs for consumer electronics, primarily televisions.

3. Customer Service

   Respond to customer requests for information regarding energy efficient appliances received through the Customer Contact Centre and the Energy Expert email.

**Costs:**

| Residential Appliance Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 170,063 | 92,845 | 467,010 | 729,918 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 170,063** | **$ 92,845** | **$ 467,010** | **$ 729,918** |

# HOME INSULATION PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Upgrades to existing homes, including: air leakage sealing, foundation insulation, attic insulation, wall insulation.

**Activities:**

1. Basic Customer Information

   Provide information and guidance to customers and trade allies regarding the benefits of recommended insulation levels and the importance of proper installation of insulation and air sealing materials.

   Employ communication tools including insulation data sheets, renovation "how to" booklets, target specific publication advertising, the Energy Matters newsletter and customer billing message.

   Review and update current data sheets, web site information and renovation booklets.

2. Standards Development

   Continue to support New Homes staff to ensure that insulation level requirements in the Manitoba Building Code are not relaxed, with a view to increasing prescriptive levels over time to match the Power Smart recommended levels.

3. Customer Service

   Continue to provide support to the Customer Contact Centre to ensure customer inquiries are addressed timely and accurately.

**Costs:**

| Home Insulation Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 11,220 | 11,220 | 157,080 | 179,520 |
| | Natural Gas | 39,780 | - | - | 39,780 |
| **Total Budget** | | **$ 51,000** | **$ 11,220** | **$ 157,080** | **$ 219,300** |

# WATER AND ENERGY SAVER PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Energy efficient low-flow showerheads and faucet aerators.

**Activities:**

1. Basic Customer Information

    - Energy Matters bill inserts
    - Customer billing message
    - Water heating data sheets
    - Public Service Announcements
    - Displays at industry events and trade shows.

2. Standards Development

    Work with Provincial and Federal agencies on advancing codes and standards in relation to domestic hot water consumption. Specific areas that would be targeted are as follows: hot water heating systems, showerheads and faucet aerators.

3. Customer Service

    Provide answers to customer questions in relation to domestic hot water heating and how to improve the efficiency of their water heating system.

**Costs:**

| Water and Energy Saver Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 8,885 | 8,885 | 26,655 | 44,425 |
| | Natural Gas | 11,308 | 11,308 | 33,924 | 56,540 |
| **Total Budget** | | **$ 20,193** | **$ 20,193** | **$ 60,579** | **$ 100,965** |

# RESIDENTIAL CFL PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Residential, household use (general service) compact fluorescent lamps.

**Activities:**

1. Basic Customer Information

   Promote compact fluorescent lamps by providing technical and general information in the form of data sheets, external website information, Energy Expert columns, PSA's, Hydrogram, customer billing message, point-of-purchase material, brochures, tradeshow displays, Power Smart campaigns, Winnipeg Transit Residential Lighting bus and partnership activities with national and local organizations.

2. Standards Development

   Interact with the groups/agencies involved with regulating Canada's Minimum Energy Performance Standards (MEPS) for general service lighting. Continue to actively participate on the Strategic Lighting Initiatives Committee (SLIC) and the Canadian Lighting Industry Committee (CLIC).

3. Customer Service

   Provide answers to customers' compact fluorescent lighting questions received through phone calls, emails and third parties such as retailers.

**Costs:**

| Residential CFL Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 82,440 | 81,810 | 300,040 | 464,290 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 82,440** | **$ 81,810** | **$ 300,040** | **$ 464,290** |

# ENERGY EFFICIENT LIGHT FIXTURES PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Residential energy efficient lighting products, including: ENERGY STAR qualified light fixtures, dimmer switches, and LED night lights.

**Activities:**

1. Basic Customer Information

   Promote energy efficient lighting products including ENERGY STAR qualified light fixtures, dimmer switches and LED night lights by providing technical and general information in the form of data sheets, external website information, Energy Expert columns, PSA's, Hydrogram, customer billing message, point-of-purchase material, brochures, tradeshow displays, Power Smart campaigns, Winnipeg Transit Residential Lighting bus and partnership activities with national and local organizations.

2. Standards Development

   Interact with the groups/agencies involved with regulating Canada's Minimum Energy Performance Standards (MEPS) for general service lighting. Continue to actively participate on the Strategic Lighting Initiatives Committee (SLIC) and the Canadian Lighting Industry Committee (CLIC).

3. Customer Service

   Provide answers to customers' questions regarding energy efficient light fixtures, dimmer switches and LED night lights received through phone calls, emails and third parties such as retailers.

**Costs:**

| Energy Efficient Light Fixtures | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 26,400 | 26,400 | 26,400 | 79,200 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 26,400** | **$ 26,400** | **$ 26,400** | **$ 79,200** |

# RESIDENTIAL HIGH EFFICIENCY FURNACE/BOILER PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Replacement of existing natural gas furnace/boiler with a ENERGY STAR high efficiency ≥92% AFUE furnace with a dc variable speed motor or ≥85% AFUE boiler.

**Activities:**

1. Basic Customer Information

   Provide information and guidance to customers and trade allies regarding the benefits of upgrading to high efficiency model.

   Employ communication tools including data sheets, brochures, heating system information booklets, target specific publication advertising, Energy Matters newsletter, customer billing messaging.

2. Standards Development

   Participate in national committees studying furnace motor operation and other heating system characteristics impacting efficiency. Federal regulation requiring 90% AFUE furnaces for all retrofit applications is scheduled to take effect December 31, 2009.

3. Customer Service

   Contact centre and supporting activities to respond to customer questions and concerns regarding residential heating systems.

**Costs:**

| Residential HE Furnace & Bolier Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | - | - | - | - |
| | Natural Gas | 36,000 | 20,000 | 70,000 | 126,000 |
| **Total Budget** | | **$ 36,000** | **$ 20,000** | **$ 70,000** | **$ 126,000** |

# COMMERCIAL LIGHTING PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Energy efficient lighting systems for commercial installations.

**Activities:**

1. Basic Customer Information

   Manitoba Hydro will promote the installation of permanent cost effective energy efficient lighting using customer profiles, public service announcements, general advising, case studies and testimonials.

2. Standards Development

   Activities involved in developing lighting standards include:

   - In collaboration with other utilities, identify necessary research
   - Work with Canadian Electrical Association
   - Liaise with manufacturers to encourage the development and improvement of energy efficient lighting
   - Product testing
   - Liaise with National Research Council
   - Participation on the CSA Standards Setting Committee
   - Participation on the Canadian Lighting Industry Collaborative

3. Customer Service

   Manitoba Hydro will promote the installation of permanent cost effective energy efficient lighting at trade shows, and will provide technical advice from engineering staff.

Costs:

| Commercial Lighting Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 107,902 | 107,902 | 1,510,628 | 1,726,432 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 107,902** | **$ 107,902** | **$ 1,510,628** | **$ 1,726,432** |

# COMMERCIAL BUILDING ENVELOPE PROGRAM - WINDOWS (ELECTRIC AND GAS)

(Basic Customer Information, Services and Standards)

**Technology**

Energy efficient window systems (for electric-heated and gas-heated customers)

**Activities**

1. Basic Customer Information

   Provide technical advice, information and guidance in the installation of energy efficient window systems in commercial buildings.

   Promote and generate awareness on window upgrades and energy savings through seminars to building owners and managers.

   Provide annual basic education and training of effective window upgrades to consultants and trade allies.

2. Standards Development

   Commencing in 2011/12, support ongoing efforts to accelerate provincial and federal government adoption of higher energy efficiency regulations.

Costs:

| Commercial Windows Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 2,000 | 4,500 | 63,000 | 69,500 |
| | Natural Gas | 2,000 | 4,500 | 63,000 | 69,500 |
| **Total Budget** | | **$ 4,000** | **$ 9,000** | **$ 126,000** | **$ 139,000** |

# COMMERCIAL CHILLER PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

High efficient water-cooled chillers with IPLVs (integrated part-load values) less than 0.62 kW/ton.

**Activities:**

1. Basic Customer Information

   Provide technical information and guidance to customers and trade allies regarding the benefits of upgrading to a high efficient chiller.

   Supply datasheets to customers and trade allies on best practices, benefits and frequently asked questions.

2. Standards Development

   Continue to support further federal code for more efficient IPLV levels for commercial water-cooled chillers.

   Continue to play a role on the CSA Strategic Steering Committee on Performance, Energy Efficiency and Renewables (SCOPEER). This committee is responsible for changes to Provincial and National performance standards in order to improve energy consumption.

3. Customer Service

   Assist customers and trade allies with frequently asked questions regarding high efficient chillers.

Costs:

| Commercial HVAC Program - Chiller | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 10,192 | 9,498 | 76,389 | 96,079 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 10,192** | **$ 9,498** | **$ 76,389** | **$ 96,079** |

# COMMERCIAL RINSE & SAVE PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Low flow pre-rinse spray valves are specified by Energy Star and other utility programs as valves that spray water at 6.1 litres per minute or less. Low-flow valves spray in a flat, knife-like pattern different from the round spray of a high-flow nozzle. Most of these high flow nozzles that are currently purchased and installed use 11 to 15 litres per minute. Using a low-flow pre-rinse spray valve instead of a standard high-flow valve will reduce the hot water, resulting in reduced water and energy usage (from heating the water).

**Activities:**

1. Basic Customer Information

   Provide technical information and guidance to customers and trade allies regarding the benefits of upgrading to a low flow pre-rinse spray valve.

   Supply datasheets to customers and trade allies on best practices, benefits and frequently asked questions.

2. Standards Development

   A US federal pre-rinse spray valve efficiency standard was included in the 2005 US Energy Policy Act. This standard, which came into effect in 2006, specifies that any new valves manufactured must flow at less than 6 litres per minute.

   Currently, there are no standards in development for Canada, however it is expected that the Natural Resources Canada and the Office of Energy Efficiency will follow suit within the next few years. Ongoing efforts to accelerate federal government adoption of higher energy efficiency regulations will be supported.

**Costs:**

| Commercial Rinse and Save | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 1,366 | - | - | 1,366 |
| | Natural Gas | 3,692 | - | - | 3,692 |
| **Total Budget** | | **$ 5,058** | **$ -** | **$ -** | **$ 5,058** |

# COMMERCIAL EARTH POWER PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Geothermal heat pumps are an energy efficient alternative to conventional heating systems. A geothermal heat pump can reduce energy consumption for space heating by 50% to 70%. Auxiliary benefits include reduced energy consumption for space cooling and water heating applications.

**Activities:**

1. Basic Customer Information

   Promote geothermal heat pump systems through presentations to various groups, associations, conferences, tradeshows; Power Smart Profiles and sector technology sheets; and website information and distribution of Commercial Earth Power Program information kits.

**Costs:**

| Commercial Earth Power | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 35,884 | 36,602 | 277,549 | 350,035 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 35,884** | **$ 36,602** | **$ 277,549** | **$ 350,035** |

***Note: Program end is 2017/18***

# COMMERCIAL NEW CONSTRUCTION PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Design and construction of new energy efficient commercial buildings

**Activities:**

1. Basic Customer Information

   Provide information and guidance to customers and trade allies regarding the benefits of designing and constructing energy efficient buildings.

2. Standards Development

   Through working partnerships with Provincial and Federal government agencies (e.g. STEM, NRCan) and industry experts, contribute to the development of:
   - a National standard for Integrated Design Process;
   - an updated (and provincially adopted) version of the MNECB; and
   - energy efficiency recommendations for the Provincial building code.

3. Customer Service

   Facilitate training opportunities and support conferences/events to develop the local industry's capacity in the disciplines of Integrated Design, Building Simulation, Building Commissioning, and energy efficient buildings in general.

Costs:

| Commercial New Construction | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 44,557 | 44,557 | 356,458 | 445,572 |
| | Natural Gas | 4,951 | 4,951 | 39,606 | 49,508 |
| **Total Budget** | | **$ 49,508** | **$ 49,508** | **$ 396,064** | **$ 495,080** |

# COMMERCIAL BUILDING OPTIMIZATION PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

The whole building approach to commercial building optimization will be promoted. Basic "low-cost, no-cost" energy saving opportunities will be identified to help customers maximize their building's energy efficiency. Energy consumption changes such as regulating controls will be promoted, as well as behavior changes such as good maintenance practices. The practice of retrocommissioning will be explained and promoted to help customers optimize their facilities.

**Activities:**

1. Basic Customer Information

   Program staff will work with Natural Resources Canada to help speed the adoption of the retrocommissioning process within the Canadian industry. Involvement with Natural Resources staff will include being a part of the Demand Side Working Group for Commissioning which aims to learn about the barriers of Commissioning in Canada and how to remedy the identified barriers.

2. Standards Development

   New standards and codes have not been introduced, requiring no changes in forecasted savings or expenditures under this option.

3. Customer Service

   Technical advice will be made available by the engineering staff. Information about the whole building approach to commercial building optimization will be completed by in-house sales staff in coordination with a comprehensive manual entitled "Commercial Building Optimization Program's Energy Efficiency Guide for Commercial Buildings."

Costs:

| Commercial Building Optimization Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 856 | 856 | 11,984 | 13,696 |
| | Natural Gas | 1,904 | 1,904 | 26,656 | 30,464 |
| **Total Budget** | | **$ 2,760** | **$ 2,760** | **$ 38,640** | **$ 44,160** |

# INTERNAL RETROFIT PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Energy efficient improvements to new and existing corporate-owned facilities at generating stations, commercial buildings (not at generation) and corporate housing. Technologies include building envelope upgrades, energy efficient lighting, parking lot controllers, geothermal heat pumps, HVAC and water saving measures.

**Activities:**

1. Basic Customer Information

   Educate Manitoba Hydro building and project managers on the benefits of implementing cost-effective energy efficient improvements to existing buildings and incorporating energy efficient technologies into the design and construction of new buildings.

   Increase Manitoba Hydro staff and customer's awareness of the benefits of installing energy efficient technologies which are installed in Manitoba Hydro buildings. In turn, increasing awareness and consumer buy-in contributing to increased market share.

2. Standards Development

   Further increase minimum energy efficiency standards for Manitoba Hydro's corporate facilities to assist in establishing and further improving building standards and policies for corporate new construction and renovation projects.

**Costs:**

| Internal Retrofit | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 5,270 | 5,270 | 73,780 | 84,320 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 5,270** | **$ 5,270** | **$ 73,780** | **$ 84,320** |

# COMMERCIAL REFRIGERATION PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Energy efficient commercial refrigeration equipment including solutions for display cases, walk-in coolers and freezers, and mechanical rooms.

**Activities:**

1. Basic Customer Information

   Provide technical information and guidance in the selection of appropriate energy efficient commercial refrigeration technologies.

   Provide refrigeration equipment setup, operating, maintenance, and prevention recommendations.

   Promote ENERGY STAR qualified self-contained reach-in commercial refrigerators and freezers, and when possible, display cases, walk-in coolers and freezers, and mechanical room components.

   Employ communication tools including data sheets, brochures, website FAQs, trade show and conference presentations and industry seminars.

2. Standards Development

   Participate and support ENERGY STAR requirements for self-contained reach-in commercial refrigerators and freezers, and when possible, display cases, walk-in coolers and freezers, and mechanical rooms.

   Support ongoing efforts to accelerate provincial and federal government adoption of higher energy efficiency regulations.

3. Customer Service

   Provide technical information and guidance in the selection of appropriate energy efficient commercial refrigeration technologies by way of promotional materials, email, telephone or in-person.

   Provide refrigeration equipment setup, operating, maintenance, and prevention recommendations by way of promotional materials, email, telephone or in-person.

## Costs:

| Commercial Refrigeration | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 8,305 | 8,305 | 116,270 | 132,880 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 8,305** | **$ 8,305** | **$ 116,270** | **$ 132,880** |

# COMMERCIAL BUILDING ENVELOPE PROGRAM - INSULATION

(Basic Customer Information, Services and Standards)

**Technology**

Installation of additional insulation to Power Smart Design Standards-recommended levels in buildings during renovation projects.

**Activities**

1. Basic Customer Information

   Provide technical advice, information and guidance in the addition of insulation levels in commercial buildings.

   Promote and generate awareness on insulation upgrades and energy savings through seminars to building owners and managers.

   Provide annual basic education and training of effective insulation upgrades to consultants and trade allies.

   Some target design groups include:

   - Winnipeg Construction Association
   - Manitoba Association of Architects (MAA)
   - Association of Professional Engineers and Geoscientists of Manitoba (APEGM)

   Separate educational seminars will be delivered to customers via end user associations; technical advice will be provided from Manitoba Hydro engineering staff; and marketing of technology information by Manitoba Hydro Marketing Specialist.

   Some targeted end-user groups include:

   - Manitoba Association of School Buildings Officials (MASBO)
   - Building Owners and Managers Association of Manitoba (BOMA)
   - Manitoba Housing
   - Building Officials of Manitoba
   - Winnipeg Condo Corporations
   - Professional Property Managers Association
   - Business Development Zones (BIZ)
   - Chamber of Commerce (Winnipeg, Brandon, Manitoba)

2. Standards Development

Commencing in 2011/12, support for proper insulation levels as addressed in the Model National Energy Code for Buildings adopted as part of the National Building Code of Canada and improved to reflect progress in the industry.

Costs:

| Commercial Insulation | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 2,000 | 4,500 | 63,000 | 69,500 |
| | Natural Gas | 2,000 | 4,500 | 63,000 | 69,500 |
| **Total Budget** | | **$ 4,000** | **$ 9,000** | **$ 126,000** | **$ 139,000** |

# AGRICULTURAL HEAT PADS

(Basic Customer Information, Services and Standards)

**Technology:**

Heat pads used as an alternative to heat lamps in farrowing crates.

**Activities:**

1. Basic Customer Information

   Provide promotional messages in monthly electrical bills and through direct mail.

   Distribute existing marketing material (brochures and profiles) through Energy Services Advisors, product distributors and the Manitoba Pork Council.

   Maintain a presence at local agriculture events including Hog & Poultry Days and the Manitoba Swine Seminar.

Costs:

| Agricultural Heat Pads | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 6,945 | - | - | 6,945 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 6,945** | **$ -** | **$ -** | **$ 6,945** |

# POWER SMART ENERGY PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Educate school divisions about the benefits of employing a full or part-time energy manager to implement resource conservation measures through behavior and operational improvements designed to reduce energy use and lower utility costs.

**Activities:**

1. Basic Customer Information

   Provide technical advice, information, resources and guidance on the benefits of having a staff person dedicated full or part time to energy management in school divisions. This would include promoting and generating awareness around the benefits and savings associated with energy and resource conservation.

2. Standards Development

   No standards work exists to date. In the future, support any provincial and national standards development on Energy Managers and provide information to customers on Energy Manager Certification courses.

3. Customer Service

   Provide technical advice, information, resources and guidance on our website, in promotional displays/booths, over the phone, through in person meetings, speaking engagements, power smart sales calls on the benefits of implementing resource conservation initiatives by employing a full or part-time energy manager in school divisions.

Costs:

| Power Smart Energy Manager | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 9,976 | 9,976 | 139,662 | 159,614 |
| | Natural Gas | 3,325 | 3,325 | 46,554 | 53,204 |
| **Total Budget** | | **$ 13,301** | **$ 13,301** | **$ 186,216** | **$ 212,818** |

# COMMERCIAL KITCHEN APPLIANCE PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Commercial, open deep-fat fryers are commercial kitchen appliances that use oil to deep fry food. ENERGY STAR high efficient, natural gas fryers are defined as fryers that have a minimum heavy load cooking efficiency of >50% with a maximum idle energy rate <9,000 Btu/h[1] . They are used as an alternative to non-efficient fryers.

Commercial steamers are commercial kitchen appliances that provide an easy, fast way to prepare large quantities of food through steam cooking. ENERGY STAR high efficient electric and gas steamers have the following specifications:

Table 1: Energy Efficiency Requirements for Electric Steam Cookers

| Pan Capacity | Cooking Energy Efficiency* | Idle Rate (watts) |
|---|---|---|
| 3-pan | 50% | 400 |
| 4-pan | 50% | 530 |
| 5-pan | 50% | 670 |
| 6-pan | 50% | 800 |

Table 2: Energy Efficiency Requirements for Gas Steam Cookers

| Pan Capacity | Cooking Energy Efficiency* | Idle Rate (Btu/h) |
|---|---|---|
| 3-pan | 38% | 6,250 |
| 4-pan | 38% | 8,350 |
| 5-pan | 38% | 10,400 |
| 6-pan | 38% | 12,500 |

*Cooking Energy Efficiency is based on heavy load (potato) cooking capacity.

ENERGY STAR steamers are used as an alternative to non-efficient steamers.

**Activities:**

1. Basic Customer Information

   Provide a *Restaurant Guide* for the target market providing energy saving low cost/no cost solutions. Distribute existing marketing material (brochures and profiles) through District Offices, product distributors, the Manitoba Restaurant & Food Association and the Manitoba Hotel Association. Maintain a presence at local foodservice events including the Centrex tradeshow.

2. Standards Development

   Currently, there are no standards in development for Canada; however Manitoba Hydro will work with Natural Resources Canada and the Office of

1 Based on 38.1 cm (15 inch) fryer

Energy Efficiency in effort to accelerate federal government adoption of higher energy efficiency regulations.

Costs:

| Commercial Kitchen Appliances | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 1,704 | 207 | 2,901 | 4,812 |
| | Natural Gas | 7,763 | 944 | 13,216 | 21,923 |
| **Total Budget** | | **$ 9,467** | **$ 1,151** | **$ 16,117** | **$ 26,735** |

# POWER SMART COMMERCIAL CLOTHES WASHERS PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

ENERGY STAR® qualified front-loading commercial clothes washer used as an alternative to non-energy efficient commercial clothes washers.

**Activities:**

1. Basic Customer Information

   Promote washers with inserts on monthly electrical bills and create marketing materials such as brochures, customer profiles and testimonials and distribute each through District Offices, product distributors, the Convenience and Carwash Canada publication and the Professional Property Managers Association newsletter.

2. Standards Development

   Natural Resources Canada is working to harmonize Canadian standards with the United States' Department of Energy with regulations in July 2009.

3. Customer Service

   Manitoba Hydro will promote Washers at trade shows.

**Costs:**

| Commercial Clothes Washers | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 2,000 | 2,000 | 28,000 | 32,000 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 2,000** | **$ 2,000** | **$ 28,000** | **$ 32,000** |

# POWER SMART NETWORK ENERGY MANAGEMENT PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Eligible software programs that reduce energy consumption in networked personal computers (PCs) by putting them in hibernation/sleep modes when not in use and shutting down PCs over night while still allowing IT upgrades and patches to be installed. Eligible software programs are: Verdiem's Surveyor, 1E's Nightwatchman/SMS Wakeup package, Faronics Powersave Corporate and Education versions, and BigFix Power Management.

**Activities:**

1. Basic Customer Information

   Manitoba Hydro will promote the eligible software programs with inserts in monthly electrical bills and create marketing materials such as brochures, customer profiles and testimonials, then distribute each through District Offices, product distributors and partners, on our website, and at green technology conferences such as Epic Information Solutions Technology Day.

2. Standards Development

   Support any provincial and national standards development on energy consumption by personal computers and other Information Technology related products in an office or educational setting.

3. Customer Service

   Provide customers with information about eligible software programs, field customer inquiries, and connect consumers with the companies offering eligible software programs. Manitoba Hydro staff will also speak at association conferences such as BOMA, MASBO, and MASS to promote the energy saving abilities of eligible software programs.

**Costs:**

| Network Energy Manager | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 5,000 | 5,000 | 70,000 | 80,000 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 5,000** | **$ 5,000** | **$ 70,000** | **$ 80,000** |

# POWER SMART SHOPS

(Basic Customer Information, Services and Standards)

**Technology:**

Power Smart Shops Program is a designation program designed to promote energy efficiency to small independent commercial customers including restaurants, food retail, non-food retail/services, and small office.

The program will encourage small independent commercial customers to fully convert their buildings to a Power Smart Shop efficiency level by providing expertise, competitive pricing and through the installation of no/low cost energy efficient products including lighting, refrigeration, hot water, and kitchen upgrades. The program will be used to cross-promote the existing Power Smart programs as well.

**Activities:**

1. Basic Customer Information

   Provide technical information and guidance to the target market with respect to the selection of appropriate energy efficient technologies.

   Provide an energy efficiency guide for setup, operating, maintenance, and prevention recommendations.

   Employ communications tools including data sheets, brochures, website FAQs, trade show and conference presentations, and industry seminars.

2. Standards Development

   Support ongoing efforts to accelerate provincial and federal government adoption of higher energy efficiency regulations.

3. Customer Service

   Provide technical information and guidance in the selection of appropriate energy efficient technologies by way of promotional materials, email, telephone or in-person.

Costs:

| Power Smart Shops | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 9,500 | 9,500 | 133,000 | 152,000 |
| | Natural Gas | 500 | 500 | 7,000 | 8,000 |
| **Total Budget** | | **$ 10,000** | **$ 10,000** | **$ 140,000** | **$ 160,000** |

# COMMERCIAL HVAC FURNACE PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

High efficient natural gas commercial furnaces greater than or equal to 90% AFUE (annual fuel utilization efficiency).

**Activities:**

1. Basic Customer Information

   Provide technical information and guidance to customers and trade allies regarding the benefits of upgrading to a high efficient commercial furnace.

   Supply datasheets to customers and trade allies on best practices, benefits and frequently asked questions.

2. Standards Development

   Pursue code adoption through the Provincial Energy Act.

3. Customer Service

   Assist customers and trade allies with frequently asked questions regarding high efficient commercial furnace installations including; ventilation requirements and best practices, expected savings and benefits and hot water heater options.

**Costs:**

| Commercial Furnace Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | - | - | - | - |
| | Natural Gas | 4,545 | 2,061 | 28,854 | 35,460 |
| **Total Budget** | | **$ 4,545** | **$ 2,061** | **$ 28,854** | **$ 35,460** |

# COMMERCIAL HVAC BOILER PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

High efficient, near condensing or condensing natural gas hot water, commercial boilers with a combustion efficiency greater than or equal to 85% and 90% accordingly.

**Activities:**

1. Basic Customer Information

   Provide technical information and guidance to customers and trade allies regarding the benefits of upgrading to high efficient commercial boilers.

   Supply datasheets to customers and trade allies on maintenance best practices, equipment sizing, benefits and frequently asked questions.

2. Standards Development

   Interact with appropriate groups/agencies to develop new minimum efficiency standards for commercial boilers.

   Continue to play a role on the CSA Strategic Steering Committee on Performance, Energy Efficiency and Renewables (SCOPEER). This committee is responsible for changes to Provincial and National performance standards in order to improve energy consumption.

3. Customer Service

   Assist customers and trade allies with frequently asked questions regarding high efficient commercial boiler installations including; ventilation requirements, expected savings and benefits, domestic hot water and ventilation load options, equipment maintenance best practices and operation optimization.

**Costs:**

| Commercial Boiler Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | - | - | - | - |
| | Natural Gas | 30,753 | 28,306 | 127,168 | 186,227 |
| **Total Budget** | | **$ 30,753** | **$ 28,306** | **$ 127,168** | **$ 186,227** |

# COMMERCIAL HVAC $CO_2$ SENSOR PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Carbon Dioxide ($CO_2$) demand-controlled ventilation sensor with infrared technology.

**Activities:**

1. Basic Customer Information

   Provide technical information and guidance to customers and trade allies regarding building ventilation loads and the benefits of upgrading to demand-controlled ventilation (DCV).

   Supply datasheets to customers and trade allies on ventilation system operation and maintenance, as well as DCV benefits, best practices and frequently asked questions.

2. Customer Service

   Assist customers and trade allies with frequently asked questions regarding DCV, including; installation requirements, equipment maintenance best practices and expected savings and benefits.

**Costs:**

| CO2 Sensors | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 692 | 350 | 1,398 | 2,440 |
| | Natural Gas | 9,196 | 4,644 | 18,578 | 32,418 |
| **Total Budget** | | **$ 9,888** | **$ 4,994** | **$ 19,976** | **$ 34,858** |

# RELIGIOUS BUILDING INITIATIVE

(Basic Customer Information, Services and Standards)

**Technology:**

The Religious Building Initiative was developed to help religious facilities find ways to make their buildings more energy efficient and to ultimately assist them in reducing their energy bills. This initiative provides a free energy efficiency guide book, a benchmark energy evaluation, and an 8.5% loan to implement the Power Smart energy saving programs that are applicable.

**Activities:**

1. Basic Customer Information

   Provide the energy efficiency guide for religious buildings called "Improving the Energy Efficiency of your Religious Building with Power Smart" and a brochure explaining the features of the Religious Building Initiative. The guide includes a list of low-cost, no-cost energy saving measures that can be considered and the forms for a walk-through energy evaluation that can be conducted by the facility operator. By providing this guide to every religious building customer, Manitoba Hydro would demonstrate that it is interested in ensuring that all churches have the knowledge and assistance to make their facilities Power Smart.

2. Standards Development

   No new standards or codes will be introduced under this option.

3. Customer Service

   The Benchmark Energy Evaluation Survey form was developed to allow religious buildings the opportunity to have a free benchmark energy evaluation conducted of their facilities. The client is asked to complete the two page survey form as thoroughly as possible, return it to Manitoba Hydro and Manitoba Hydro staff will conduct a benchmark energy evaluation of the facility. The Benchmark Evaluation Report shows the congregation how their energy consumption relates to other similar buildings and what Power Smart measures can be taken to develop an energy action plan to reduce their energy consumption.

   To help religious buildings implement energy saving measures, the Religious Buildings Initiative Loan is available with a fixed annual interest rate of 8.5 %. All building improvements must meet Power Smart levels consistent with existing Power Smart for Business Commercial Programs to qualify.

## Costs:

| Religious Building Initiative Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 6,838 | 6,838 | 95,732 | 109,408 |
| | Natural Gas | 15,955 | 15,955 | 223,372 | 255,282 |
| **Total Budget** | | **$ 22,793** | **$ 22,793** | **$ 319,104** | **$ 364,690** |

# RECREATION FACILITY SURVEY

(Basic Customer Information, Services and Standards)

**Technology:**

To help operators of arenas and curling rinks use energy efficiently, Manitoba Hydro has created the Recreation Facility Survey for Ice Arenas and Curling Rinks. The survey is a comprehensive examination of the energy using equipment in a facility. The information gathered in the survey is used to provide a benchmark energy evaluation for all recreation facilities. This initiative also provides a free energy efficiency guide for ice arenas and curling rinks who are investigating new ways to save energy with low-cost, no-cost opportunities.

**Activities:**

1. Basic Customer Information

   Provide the energy efficiency guide for arenas and curling rinks called "Energy Efficiency Guide for Ice Arenas and Curling Rinks". By providing this guide to a recreation facility building customer, Manitoba Hydro demonstrates that it is interested in ensuring that all ice rinks and curling rinks have the knowledge and assistance to make their facilities Power Smart.

2. Standards Development

   No new standards or codes will be introduced under this option.

3. Customer Service

   The Recreation Facility Survey for Ice Arenas and Curling Rinks is a comprehensive examination of the energy using equipment in a facility. The Facility Operator at each arena or rink is asked to complete the survey as fully as possible and return it to Manitoba Hydro. Technical staff will review the completed survey and produce a report that will compare the energy use of the facility with other similar facilities in Manitoba, show how the facility uses energy and provides a list of possible Energy Savings Opportunities that are applicable to the facility.

**Costs:**

| **Recreation Facility** | | **2009/10** | **2010/11** | **2011/12-2024/25** | **Total** |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 1,200 | 1,200 | 16,800 | 19,200 |
| | Natural Gas | 4,800 | 4,800 | 67,200 | 76,800 |
| **Total Budget** | | **$ 6,000** | **$ 6,000** | **$ 84,000** | **$ 96,000** |

# HIGH EFFICIENCY MOTOR MARKET

(Basic Customer Information, Services and Standards)

**Technology:**

AC, 3 phase, 1 - 200 horsepower squirrel cage induction motors.

**Activities:**

1. Basic Customer Information

   Provide technical and general information related to the use and application of electric motors including data sheets, case studies, manuals, articles, etc.

   *Workshops/Seminars:* Organize technical workshops on the use and application of electric motors for Manitoba Hydro customers, trade allies, consultants and contractors.

   *Information Partnerships:* Act as a liaison for the cost effective exchange of information and ideas with the following groups: CEA, CCE, NRCan, Consortium on Energy Efficiency, CUA, Manitoba Hydro customers, NEMA, Power Smart, Trade Allies and U.S. DOE.

   *Manuals & Guides:* Develop application guides and technical manuals for proper assessment and utilization of higher efficiency industrial products (high efficiency motors, advanced motors) and systems.

2. Standards Development

   Work with standards agencies to improve North American test standards for the performance evaluation of industrial products. Typical associations involved are CEA, CSA, NEMA, IEEE, SCC, NIST and NVLAP.

   *R&D*: Identify and lead R&D efforts to support the development and commercialization of higher efficiency industrial products (advanced motors) and systems. Associations involved are the CEA, EPRI, and Hydro R&D.

   *Legislative Initiatives*: Participate in the recommendation of performance levels for adoption by North American legislative bodies. Legislative initiatives will include areas such as power quality, efficiency and others governed by federal (Canadian & US) and provincial authorities.

3. Customer Service

Provide customer advisory services in the areas of motor electrical consumption, and recommendations for specific applications.

**Costs:**

| High Efficiency Motor Market | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 60,000 | 60,000 | 840,000 | 960,000 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 60,000** | **$ 60,000** | **$ 840,000** | **$ 960,000** |

# PERFORMANCE OPTIMIZATION PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

Motor Drive Systems: The motor drive systems portion of the program promotes a system approach where a system boundary is defined and then various optimization options for end uses, the distribution network, equipment and controls are examined and an optimal solution is recommended for each analyzed system. The primary focus is compressed air, pumps, fans/blowers, and industrial refrigeration systems.

Electro-Technology Processes: The electro-technology processes portion of the program promotes the examination of electrical systems to identify energy saving opportunities that can be achieved via the use of a plant wide energy management system that can be optimized for each customer's unique electrical usage pattern.

**Activities:**

1. Basic Customer Information

   Provide technical and general information in the form of:

   *Manuals & Guides:* Develop application best practice guides and other technical support material for proper assessment and utilization of higher efficiency industrial products and systems.

   *Workshops/Seminars:* Organize and sponsor workshops on optimization of industrial end use technologies for customers, trade allies, consultants, and contractors.

   *Information Partnerships:* Act as a liaison for the cost effective exchange of information with the following groups: Coordinated Utility group, CEA, Canadian Committee on Electro-technologies (CCE), Consortium on Energy Efficiency (CEE), Trade Allies, large customers, etc.

2. Standards Development

   Work with Standards Development agencies to develop North American performance standards for industrial products with typical associations such as NRCan, CEA, CSA, CEE, NEMA, DOE, etc.

*R & D:* Identify and lead Research & Development efforts to support the development and commercialization of higher efficiency industrial products and systems. Typical associations involved are CEA, EPRI, and others.

*Legislative Initiatives:* Participate in the recommendation of performance levels for adoption by legislative bodies. This includes areas such as power quality, equipment efficiency, and others.

3. Customer Service

Provide customer advisory services in the areas of electrical consumption, system specific scoping studies (audits), and support for end-use feasibility studies, etc.

**Costs:**

| **Performance Optimization** | | **2009/10** | **2010/11** | **2011/12-2024/25** | **Total** |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 1,250,000 | 1,250,000 | 17,500,000 | 20,000,000 |
| | Natural Gas | - | - | - | - |
| **Total Budget** | | **$ 1,250,000** | **$ 1,250,000** | **$ 17,500,000** | **$ 20,000,000** |

# NATURAL GAS OPTIMIZATION PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

This program aims to encourage the systematic improvement of all industrial natural gas equipment and processes from source, through distribution and end-use. The program focuses on steam and hot water boiler systems, industrial ventilation, energy management and controls.

**Activities:**

1. Basic Customer Information

   Communications / Literature

   As a basic customer service, this program will introduce industrial customers to information on energy efficient measures for natural gas systems through print and electronic media. This information may include access to external resources such as work performed by Natural Resources Canada (NRCan), the Energy Solutions Centre (ESC) and the U.S. Department of Energy (DOE), or study results from joint research ventures.

   Workshops / Seminars

   In order to engrain energy efficiency into the operations of our industrial customers, this program will facilitate workshops and seminars on emerging efficient technologies and best practices in the operation and maintenance of natural gas fueled devices/processes.

2. Customer Service

   Walkthrough Studies

   A facility walk-through/scoping study will be offered free of charge in order to help customers identify efficiency opportunities within their facility. This study will follow a systems approach and may be conducted in conjunction with the assessment of electric efficiencies.

## Costs:

| Industrial Natural Gas Optimization Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | - | - | - | - |
| | Natural Gas | 74,697 | 69,697 | 487,879 | 632,273 |
| **Total Budget** | | **$ 74,697** | **$ 69,697** | **$ 487,879** | **$ 632,273** |

# BIOENERGY OPTIMIZATION PROGRAM

(Basic Customer Information, Services and Standards)

**Technology:**

The technology will comprise a broad array of biomass to energy conversion technologies. The primary technologies are anticipated to be based upon anaerobic digestion and combustion of biomass.

**Activities:**

1. Basic Customer Information

   The program will provide potential participants with information about biomass to energy conversion systems. The information will be disseminated to customers via the hosting of workshops and the distribution of news items. This activity will help to raise the awareness of customers and stakeholders on the use of biomass and other renewable fuels for the production of useful heat and power.

2. Standards Development

   The program technical staff will collaborate with agencies responsible for the development of standards and performance testing to ensure that suitable information is being made available to customers on load displacement generation systems.

3. Customer Service

   The program will offer customers pre-feasibility studies to evaluate the potential for converting their waste streams and by-products into useful heat and power. This activity will assist in identifying potentially viable projects and gauging the customer's level of interest.

**Costs:**

| Bioenergy Optimization Program | | 2009/10 | 2010/11 | 2011/12-2024/25 | Total |
|---|---|---|---|---|---|
| **Summary of Costs:** | | | | | |
| | Electric | 95,000 | 95,000 | 1,330,000 | 1,520,000 |
| | Natural Gas | 10,000 | 10,000 | 140,000 | 160,000 |
| **Total Budget** | | **$ 105,000** | **$ 105,000** | **$ 1,470,000** | **$ 1,680,000** |

**Appendix E.2**

**Program Concepts**
**Residential Programs**
*(Incentive Based)*

# NEW HOME PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Power Smart New Home Program is expected to reduce winter peak demand by 4.2 MW and annual energy consumption by 23.6 GW.h and 7.5 million $m^3$ by the year 2024/25. This will be achieved by providing customers in the residential new construction market with prescriptive Power Smart standards and incentives to implement energy saving features and construction techniques into the construction of new homes. These standards incorporate cost-effective energy upgrades to achieve maximum economically achievable opportunities in a baseline new home.

**Electric**
TRC Test: 1.9
RIM Test: 1.4
Levelized Utility Cost: 0.6¢/kW.h

**Natural Gas**
TRC Test: 1.2
RIM Test: 1.0
Levelized Utility Cost: 1.0¢/m3

**Combined** *(including Interactive Effects)*
TRC Test: 1.4

The program will support the voluntary adoption of the Power Smart standards and work to have these standards adopted into the National Energy Code for Housing in Manitoba, until mandatory adoption in 2010. Every customer who builds a certified Power Smart Gold Home will receive a financial incentive.

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of residential customers building new homes in Manitoba Hydro serviced areas. The annual eligible market is estimated to be 2,249 electrically heated homes (including geothermal heat pumps) and 1,840 homes heated with natural gas. Electric savings can be achieved in natural gas heated homes through measures that directly affect the electric usage within the home. The target market is expected to remain level over the next five years.

## 3. DEFINITION OF MARKET

The market for the New Home Program includes all residential new construction starts in Manitoba. This includes single-detached, semi-detached and row housing.

## 4. MARKET BARRIERS

- Lack of homeowner knowledge and understanding of the benefits associated with implementing energy efficiency into new home construction.
- Lack of industry support for energy efficiency upgrades and regulation.
- High incremental cost associated with upgrading efficiency measures in the new home.
- Lack of control over builder pricing of the Power Smart New Home upgrade package - builder pricing of the Power Smart home upgrade has discouraged program participation in some cases.

## 5. MARKETING STRATEGY

- **Product** — The Power Smart New Home Program offers two choices for energy efficiency - Silver and Gold. Both levels offer a choice for the customer to build to either a prescriptive or performance standard. The prescriptive standard includes features that are economical with an MRC of a minimum of 1.0 and which will be readily available and accepted within the industry.

  The superior energy savings of a Power Smart New Home is the strength of the marketing mix. A Power Smart Home provides lower long-term operating costs. Equally important, it provides the homeowner with greater comfort, a healthier environment and less outside noise. The value proposition to the homeowner is building to the Power Smart standard.

- **Place** — Program information specific to builders and customers will be distributed through homebuilders, contractors and building suppliers. Manitoba Hydro Customer Service representatives will deliver the program through direct contact with the customer.

  Builders and their sales agents are the front-line delivery agents and will be provided promotional materials to distribute to their clients. These materials will act as tools in the selling process.

For hard-to-reach markets such as Lower Income, Aboriginal and First Nations, direct contact, training and technical support are required over traditional marketing channels and methods.

- **Promotion**

  Promotion will consist of bill inserts, brochures, data sheets, web site and other materials prepared for Manitoba Hydro's Basic Customer Service Information and Standards along with specific program information. Specific activities targeted to the consumer includes promotion at the semi-annual Parade of Homes, advertising in newspapers, trade publications and magazines, outdoor signage (billboards, bus benches) and radio advertising.

  In order to increase knowledge and participation within the industry, there will be a semi annual promotion for sales agents. Agents will receive a financial incentive for Power Smart Gold homes registered during designated promotional periods.

  Co-operative advertising with builders and developers is a key component to gaining industry buy-in. Industry stakeholder will be eligible for joint advertising opportunities with Manitoba Hydro when building Power Smart show homes and communities in Manitoba.

- **Price**

  Customers who build to the Gold level will be eligible for a financial incentive of $600 applied as a rebate on their Manitoba Hydro energy bill. Additional incentives are available for installation of a drain water heat recovery unit ($200) and for installation of energy efficient lighting throughout the home ($100). Builders will also be eligible for a financial incentive of $350 for all Power Smart Gold homes built and certified.

  Although the price of the Power Smart upgrade is up to the individual builder - research indicates the average cost is approximately $6 500. When added to the monthly mortgage the savings virtually offset the additional financing on the customer's mortgage.

6. **PER SALE ENERGY & DEMAND IMPACT**

| | |
|---|---|
| Gold electrically-heated home: | |
| Annual Energy Savings | 7 574 kW.h per participant |
| Average Winter Peak Demand Savings | 2.64 kW per participant |
| | |
| Gold natural gas-heated home: | |
| Annual Energy Savings | 1 172 kW.h per participant |
| | 1 499 m3 per participant |
| Average Winter Peak Demand Savings | 0.28 kW per participant |

7. **EXPECTED PRODUCT LIFE**

30 year average

# HOME INSULATION PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Residential Home Insulation Program is expected to reduce winter peak demand by 12.5 MW and annual energy consumption by 25.6 GW.h by the year 2024. Natural gas consumption is expected to be reduced by 9.0 million $m^3$ with cumulative annual GHG emissions reductions of 36,822 tonnes by the year 2024. Customers utilizing electricity or natural gas to heat their homes are being encouraged to upgrade the insulation in their attics, walls, and foundations to Power Smart recommended levels. Informational material and financial incentives are being offered to encourage customer participation in upgrade activities.

**Electric**
TRC Test: 4.4
RIM Test: 1.6
Levelized Utility Cost: 2.2¢/kW.h

**Natural Gas**
TRC Test: 1.9
RIM Test: 0.7
Levelized Utility Cost: 17.3¢/m3

**Combined**
TRC Test: 2.7

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of electric and natural gas heated homes with fair or poor insulation levels. The eligible market is estimated to be 21,000 all-electric homes and 105,000 natural gas homes.

## 3. DEFINITION OF MARKET

The market for the Home Insulation Program consists of electric and natural gas heated homes with fair or poor insulation levels.

## 4. MARKET BARRIERS

- Incremental cost of adding insulation to meet Power Smart recommended levels.

- Lack of homeowner awareness of the benefits of increasing insulation to Power Smart recommended levels, and the correct methods for installing insulation.
- Lack of awareness of the benefits of the Home Insulation Program.

## 5. MARKETING STRATEGY

- **Product** The program encourages customers to renovate their homes to increase their insulation to Power Smart recommended levels. Recommended insulation levels are:
  Attic - R50
  Walls - min R10; add minimum 3.75 when residing
  Basement - R24
  Crawlspace - R24

- **Place** Program information is distributed through a network of renovation contractors and building supply retailers. Manitoba Hydro's website also contains program information.

- **Promotion** Promotion consists of Renovation Booklets 1 through 4, data sheets, application forms, program brochures, media advertising (radio and newspaper), point of purchase material, bill inserts, and customer information sessions.

- **Price** Customers are being offered a financial incentive of up to 100% of the insulation material cost.

## 6. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 4 303 kW.h per participant<br>538 m3 per participant |
| Average Winter Peak Demand Savings | 2.09 kW per participant |

## 7. EXPECTED PRODUCT LIFE

50 year average

# WATER & ENERGY SAVER PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Water & Energy Saver Program (WESP) is expected to reduce annual electric energy consumption by 25.6 GW.h and 3.1 million $m^3$ of natural gas by the year 2024/2025[1]. The Program will encourage customers in Manitoba to replace existing inefficient showerheads and faucet aerators with low-flow efficient showerheads and faucet aerators.

The WESP takes an aggressive approach to achieve market penetration and program success. The Program will offer customers in large urban centres a complete no-cost package of products delivered by a team of fully qualified Field Service Technicians that install and equip the homeowner with water and energy saving measures. Direct mail out of packages will be offered to customers living in rural communities and hard to reach areas.

**Electric**
TRC Test: 9.6
RIM Test: 1.1
Levelized Utility Cost: 1.3¢/kW.h

**Natural Gas**
TRC Test: 6.9
RIM Test: 0.8
Levelized Utility Cost: 11.4¢/m3

**Combined**
TRC Test: 8.4

## 2. MARKET POTENTIAL AND TARGET MARKET

The market for the Power Smart Water and Energy Saver Program will consist of electric and natural gas heated homes and apartment suites with inefficient showerheads and faucet aerators. The Program will target, but not be limited to, residential customers living in older homes and apartments that are more likely to have inefficient technologies installed. There are approximately 496 000 residential customers in Manitoba with showerheads installed in their residences, approximately 47% heat their water with natural gas and 53% with electricity. The

[1] Assumes only half a year of sales in first year of the program.

Program will aim to capture approximately 25%[2] of the target market in the five year time frame which represents nearly 116 000 customers.

| Market Potential | Penetration Rate | # of Customers |
|---|---|---|
| 2009/2010[3] | 4% | 9,400 |
| 2010/2011 | 5% | 23,945 |
| 2011/2012 | 6% | 29,160 |
| 2012/2013 | 5% | 26,429 |
| 2013/2014 | 5% | 26,604 |
| **Total** | | **115,538** |

## 3. DEFINITION OF MARKET

The market for the Water and Energy Saver Program will consist of electric and natural gas heated homes and apartment units with high flow showerheads and faucet aerators.

## 4. MARKET BARRIERS

- Lack of customer awareness that installing water saving devices can save a significant amount of energy at little or no cost to the customer.

- Lack of buy-in from industry leaders. Major manufacturers, builders and contractors are not specifically promoting or installing water saving devices in customer's homes.

- Negative public perception of the performance of low-flow showerheads.

## 5. MARKETING STRATEGY

- **Product** 1 or 2 per household - 1.5 gallon per minute (GPM) low-flow chrome showerheads.
  1 - Kitchen faucet aerator (1.5 GPM)
  2 - Bathroom faucet aerators (1.0 GPM)
  3 metres of hot water tank pipe wrap

[2] Market penetration if program started at the beginning of a fiscal year.
[3] First year participation adjusted for only half a year of potential sales. If an EC Recommendation is approved by the end of June it would allow for a program launch of October 1, 2009.

- **Place** Program information will be distributed through various forms of advertising including industry contacts, web, print, radio and television. A third party full service provider will handle customer requests through phone and internet mediums. Distribution of the packages will be handled by the third party provider. Customers in large urban centres will benefit from full-service installations, while rural and remote customers will receive kits via direct mail.

- **Promotion** Promotion will take the form of bill inserts, displays, data sheets and advertorials. Communications will focus on the savings associated with installing energy-saving water measures. Manitoba Hydro staff will be informed of the Program through articles in the Hydrogram.

- **Price** The Water & Energy Saver Kit is provided free of charge to participating customers. The costs to Manitoba Hydro are approximately $22 for a 1 showerhead kit and $27 for a 2 showerhead kit. Distribution costs are approximately $15 for the direct mail option and roughly $50 for the full-service installation option. The above prices include all logistics and reporting functions by the third party service provider.

## 6. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 494.6 KW.h per participant<br>68.1 $m^3$ per participant |
| Average Winter Peak Demand Savings | 0.08 kW per participant |

## 7. EXPECTED PRODUCT LIFE

15 year average life.

# RESIDENTIAL COMPACT FLUORESCENT LIGHTING (CFL) PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Power Smart CFL program is expected to reduce winter peak demand by 9.9 MW, summer peak by 3.3 MW and 40.4 GW.h of savings by 2015/16. These savings will be attained by encouraging the replacement of residential incandescent lights with CFLs. An instant rebate program, bulk purchase program for property managers and an educational give-away program will be used to encourage customers to adopt this technology and advance market transformation.

**Electric**
TRC Test: 15.3
RIM Test: 1.3
Levelized Utility Cost: 0.75¢/kW.h

**Combined** *(including Interactive Effects)*
TRC Test: 9.7

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of the Manitoba Hydro residential customers who will be replacing or installing new residential screw-in lighting products. According to sales data obtained by Marbek for the Strategic Lighting Initiatives Committee, sales of light bulbs in Manitoba total over 5 million units per year - energy savings potential in this market are significant.

## 3. DEFINITION OF MARKET

The market for the CFL Program includes residential customers who use incandescent lighting in their homes.

## 4. MARKET BARRIERS

- The incremental cost of residential CFL products over the current price of incandescent lighting products.

- Lack of consumer knowledge about the versatility of CFL products.

- Lack of information provided to the customers about CFL technologies and the associated benefits of CFL products.

- Interactive effects and reduced potential for "true" energy savings.

- Consumer lack of knowledge and misconceptions related to product quality and operating characteristics.

## 5. MARKETING STRATEGY

- **Product** The program will encourage customers to install residential CFLs in their home through instant rebates, school program / community give-aways and a bulk purchase program for multi-residential buildings.

- **Place** Delivery of the program will enlist the support of home renovation, big-box and specialty lighting retailers in Manitoba.

- **Promotion** Promotion of the mail-in and instant rebates will take place in the fall and will consist of a province-wide direct mail brochure, retailer point-of-purchase materials, radio ads, newspaper, billboards, transit advertising and local television media. Promotion of the school and bulk purchase programs will include a direct mail campaign.

- **Price**
  a. Instant rebates - $1.00 rebate on ENERGY STAR qualified standard spiral CFLs, and $3.00 off specialty ENERGY STAR qualified CFLs (vanity, dimmable, 3-way, chandelier, outdoor).
  b. School program/community give-aways - $4.25 cost to Manitoba Hydro for a two-pack of one 13 watt and one 23 watt CFL.
  c. Bulk purchase - $1.00 rebate on standard spiral and $3.00 rebate on specialty ENERGY STAR qualified CFLs from April 1, 2009 to March 31, 2011.

## 6. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 63.5 kW.h per CFL |
| | -5.4 m3 per CFL |
| Average Winter Peak Demand Savings | 0.02 kW per CFL |

7. **EXPECTED PRODUCT LIFE**

4.5 year average

# RESIDENTIAL ENERGY EFFICIENT LIGHT FIXTURES PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Residential Energy Efficient Light Fixtures Program is expected to reduce winter peak demand by 0.2 MW, summer peak demand by 0.1 MW and annual energy consumption by 0.8 GW.h by the year 2024/25. These savings will be attained by encouraging the replacement of residential incandescent and halogen fixtures with ENERGY STAR qualified fixtures and installation of other energy efficient devices including dimmer switches and LED night lights. Information materials and a financial incentive will be provided to the customer to encourage adoption of the technology and to advance market transformation.

**Electric**
TRC Test: 1.8
RIM Test: 0.7
Levelized Utility Cost: 5.3¢/kW.h

**Combined** *(including Interactive Effects)*
TRC Test: 1.5

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of Manitoba Hydro residential customers who will be replacing or installing new residential lighting fixtures, replacing traditional fixtures that use incandescent or halogen bulbs. Residential customers in homes that are at least 10 years old are the Program's primary target market, as new home installations are captured by the New Home Program. It is estimated that each home has an average of 30 fixtures that have potential to be replaced.

## 3. DEFINITION OF MARKET

The market for the Fixtures Program includes residential customers who have traditional fixtures that use incandescent or halogen bulbs in their homes.

## 4. MARKET BARRIERS

- The incremental cost of residential ENERGY STAR qualified light fixtures over the current price of incandescent or halogen fixtures.

- Lack of availability of ENERGY STAR qualified light fixtures through local retailers, especially in rural and northern Manitoba.
- Lack of consumer knowledge that ENERGY STAR qualified light fixtures exist.
- Interactive effects and reduced potential for "true" energy savings.
- Negative media reports that portray fluorescent lighting as dangerous to human health and the environment.

## 5. MARKETING STRATEGY

- **Product** The program will encourage customers to replace their old incandescent and halogen light fixtures with ENERGY STAR qualified light fixtures and install other energy saving devices (dimmer switches and LED night lights) in their home. There are two components to the program:
  a. Mail-in rebate (all fixtures)
  b. Bulk purchase (all fixtures)

- **Place** Delivery of the program will enlist the support of home renovation, big-box and specialty lighting retailers in Manitoba.

- **Promotion** Promotion of the program will include a direct mail brochure, retailer point-of-purchase material, newspaper and magazine ads, billboards, transit shelters and local television media.

- **Price** Financial incentives will be offered to address the price barrier associated with ENERGY STAR qualified light fixtures. Incremental product costs range from $15 to $125 per fixture. The mail-in rebates range from $1 to $25 depending on the type of fixture and its purchase cost.

## 6. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 135.0 kW.h per fixture<br>-2.8 m3 per fixture |
| Average Winter Peak Demand Savings | 0.02 kW per fixture |

## 7. EXPECTED PRODUCT LIFE

20 year average

# RESIDENTIAL HIGH EFFICIENCY FURNACE/BOILER PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Residential Furnace/Boiler Replacement Program will encourage residential customers to retrofit their current natural gas heating system to either a ≥92% AFUE ENERGY STAR qualified natural gas furnace with a DC variable speed motor or a ≥85% AFUE ENERGY STAR qualified boiler. The program is expected to achieve annual energy savings of 1.7 million cubic metres by 2024/25 and reduce greenhouse gas emission reductions by 3,930 tonnes. These savings will be attained by encouraging the replacement of inefficient natural gas furnaces and boilers with high efficiency natural gas furnaces/boilers. The program will run until August 31, 2009, when a Provincial regulation requiring a minimum efficiency of 92% AFUE for furnaces is expected to take effect. A federal regulation requiring high efficiency furnaces with a minimum AFUE of 90% will take effect December 31, 2009.

**Electric**
TRC Test: 0.8
RIM Test: 1.9
Levelized Utility Cost: N/A

**Natural Gas**
TRC Test: 3.4
RIM Test: 0.8
Levelized Utility Cost: 6.7¢/m3

**Combined** *(including Interactive Effects)*
TRC Test: 2.3

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of Manitoba Hydro residential customers who will be replacing their current natural gas furnaces and boilers. Based on permit numbers supplied by the Department of Labour, the total potential market is approximately 10 000 units per year.

## 3. DEFINITION OF MARKET

A residence with an existing conventional or mid efficient natural gas furnace or <85% AFUE boiler.

4. **MARKET BARRIERS**

- Affordability - there is an incremental cost of upgrading to an ENERGY STAR high-efficiency furnace/boiler.

- Consumer awareness - consumers are unaware of savings and the relatively quick payback that can be achieved when upgrading to ENERGY STAR models.

5. **MARKETING STRATEGY**

- **Product** The program encourages customers to purchase a ≥92% AFUE ENERGY STAR qualified natural gas furnace with a dc variable speed motor or a ≥85% AFUE ENERGY STAR qualified boiler in lieu of choosing a mid efficient unit.

- **Place** Externally contractors, installers and manufacturers promote the program. Internally gas inspectors and Energy Services and Sales reps educate and encourage consumers to upgrade to high efficiency models that meet the program requirements.

- **Promotion** Promotion includes bill inserts, brochures, data sheets, heating system information booklets, the Corporate website and a variety of print media.

- **Price** Consumers are offered a $245 credit on their energy bill.

6. **PER SALE ENERGY & DEMAND IMPACT**

| | |
|---|---|
| Annual Energy Savings | 283 m3 per participant<br>310 kW.h per participant (DC variable speed motors) |

7. **EXPECTED PRODUCT LIFE**

25 year average

# FRIDGE/FREEZER RECYCLING PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Fridge/Freezer Recycling Program is expected to reduce winter peak demand by 0.3 MW, summer peak demand by 0.7 MW and annual energy consumption by 3.9 GW.h by the 2024/25. This will be achieved by providing a pick-up and recycling service for Manitoba Hydro customers to remove their old and working secondary fridges and freezers earlier than their expected end of life. This will be supported by a marketing campaign promoting the benefits of removing older working appliances as well as a financial incentive to encourage customers to give up their appliance. The program will be implemented through a third party service provider specializing in appliance removal and recycling.

**Electric**
TRC Test: 1.6
RIM Test: 0.8
Levelized Utility Cost: 2.5¢/kW.h

**Combined** *(including Interactive Effects)*
TRC Test: 1.0

## 2. MARKET POTENTIAL AND TARGET MARKET

Currently, there are more than 194,000 fridges and 155,000 freezers that are over 15 years old (or manufactured before 1993) on the Manitoba Hydro system. The program expects to capture 20% of the fridge market over three years and 5% of the freezer market.

## 3. DEFINITION OF MARKET

The target market is any residential customer with a working fridge and/or freezer that is 15 years old or older.

## 4. MARKET BARRIERS

- Consumers are unaware of how inefficient old appliances are.
- "Out of sight, out of mind" philosophy. Many of these older fridges/freezers are located in the basement and away from daily use by the customer. As such

consumers often aren't even using them, and don't think about the wasted energy consumption.

- The older units were "built to last" and are still working well and are in circulation well beyond 30 years of use. Consumers may be reluctant to dispose of a unit that is still in working condition.

- There is a resale market for refurbished units.

## 5. MARKETING STRATEGY

- **Product** Working refrigerators and freezers that were manufactured before 1993. The older units are predominantly located in basements.

- **Place** Units will be picked up from the customer's residence. An experienced third party service provider will book the appointments, dispatch the call, collect and recycle the fridge/freezer and administrate the incentive.

- **Promotion** The program will be promoted through a variety of channels including: advertising (print, radio, tv); bill inserts; websites; news stories; displays at public events and trade shows; and direct mail. The program will also be promoted to municipal governments.

- **Price** Customers will receive an incentive of $50 per qualified appliance.

## 6. PER SALE ENERGY & DEMAND IMPACT

| | Fridge | Freezer | |
|---|---|---|---|
| Annual Energy Savings | 968 | 563 | kW.h per participant |
| | -64.7 | -37 | m3 per participant |
| Avg Winter Peak Demand Savings | 0.08 | 0.05 | kW per participant |

## 7. EXPECTED PRODUCT LIFE

Fridges - 13 remaining years
Freezers - 17 remaining years

**Appendix E.3**

**Program Concepts**
**Commercial Programs**
*(Incentive Based)*

# COMMERCIAL LIGHTING PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Commercial Lighting Program is expected to reduce winter peak demand by 75.9 MW, summer peak demand by 70.5 MW and annual energy by 294.3 GW.h by the year 2024/25. Savings will be achieved by aggressively promoting the installation of energy efficient lighting through promotional activities and financial incentives. Promotional efforts will include a dedicated Power Smart Commercial Sales group, as well as sector-specific and mass-market promotional activities.

**Electric**
TRC Test: 2.5
RIM Test: 1.4
Levelized Utility Cost: 1.7¢/kW.h

**Combined** *(including Interactive Effects)*
TRC Test: 2.4

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of all commercial/industrial and agricultural new construction projects and existing inefficient lighting installations in Manitoba, where lighting systems operate a minimum of 2 000 hours per year. This represents a total of 9 865 projects during the period of 2009/10 to 2024/25.

## 3. MARKET SHARE

Without the existence of the Commercial Lighting Program, it is estimated that sales of energy efficient lighting would have increased cumulatively from 40 projects in 1992 to 1 893 projects by 2024. As a result of the Commercial Lighting Program, sales of energy efficient lighting have, and are expected to, cumulatively grow from 121 projects in 1992 to 18 156 by 2024. The total market potential has grown from 48 282 in 1992, and is expected to reach 52 298 by 2024. By 2024, it is estimated that the program will have captured 35% of the total market, whereas without a program, only 4% of the market would install energy efficient lighting.

## 4. DEFINITION OF MARKET

The market consists of all commercial/industrial and agricultural new construction projects and existing inefficient lighting installations in Manitoba, where lighting systems operate a minimum of 2 000 hours per year.

## 5. MARKET BARRIERS

- Higher initial capital cost of energy efficient technologies.
- Lack of awareness that energy efficient lighting can decrease operating and maintenance costs, while improving the quality of light.
- Lack of awareness of the Commercial Lighting Program.
- Labour costs for renovation projects.

## 6. MARKETING STRATEGY

- **Product** Various energy efficient lighting technologies are promoted by means of financial incentives and the provision of information.

- **Place** The Power Smart Commercial Sales group will be the main delivery mechanism for the program. Sales staff from Retail Accounts, Key Accounts and Major Accounts will also continue to deliver the program. The program will continue to rely heavily on lighting trade allies who have an established network with the commercial/industrial customer base.

- **Promotion** Promotion will include all activities in Option 1, as well as an advertising campaign to address the awareness barriers. Promotion will include personal sales, sector-specific marketing such as direct mail, educational seminars, association tradeshow/conference presence, business and trade publication advertisements, mass market advertising in newspaper and newsletters. Significant time will spent on training and educating lighting trade allies such as distributors and contractors.

- **Price** Aggressive financial incentives will address the price barriers of energy efficient lighting. To promote the conversion of operating inefficient lighting systems, renovation projects will receive incentive levels that cover an average of 82% of initial capital cost. For new construction installations, the incentive will cover an average of 83% of the incremental capital cost. The rebate will average approximately $4 125 per project.

7. **PER SALE ENERGY & DEMAND IMPACT**

| | |
|---|---|
| Annual Energy Savings | 31 266 kW.h per participant |
| Average Winter Peak Demand Savings | 8.2 KW per participant |

8. **EXPECTED PRODUCT LIFE**

20 year average

# COMMERCIAL CUSTOM MEASURES

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Commercial Custom Program is expected to reduce annual electric consumption by 1.3 in winter, 1.0 MW in summer, 8.7 GW.h annually and reduce annual natural gas consumption by 0.73 million $m^3$ by the year 2024/2025. This will be achieved by promoting the installation of custom measures by increasing the levels of education to developers and customers.

**Electric**
TRC Test: 2.5
RIM Test: 1.2
Levelized Utility Cost: 2.5¢/kW.h

**Natural Gas**
TRC Test: 1.2
RIM Test: 0.7
Levelized Utility Cost: 15.5¢/m3

**Combined** *(including Interactive Effects)*
TRC Test: 2.0

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of new construction, renovation and planned expansion projects within the Manitoba Hydro service territory. The program will specifically target projects in schools, health care facilities and recreation facilities.

## 3. DEFINITION OF MARKET

A project is defined as one technology or measure installed.

## 4. MARKET BARRIERS

- The custom application process tends to be complicated, requiring feasibility studies. The public perceives feasibility studies to be difficult and time consuming.

- Customers have a difficult time determining which measures are available to them or are relevant to their situation.
- It is difficult to change established design practices in the consulting industry.
- Initial capital costs of purchasing energy efficient technologies tend to be high.
- When purchase decisions are made about the replacement of these systems, emphasis tends to be placed on the product cost and not on operating efficiency.
- Lack of customer knowledge about the long-term cost savings from the use of an energy efficient measure.

## 5. MARKETING STRATEGY

- **Product** The program will educate designers and customers about the benefits and cost savings associated with the recommended measures. Installations of energy efficient measures will be further encouraged by providing aggressive financial incentives.

- **Place** Manitoba Hydro's Power Smart Commercial Sales group will be the main delivery mechanism and Energy Service Coordinators will also deliver the program. The program will continue to rely heavily on the existing network of architects, consultants, trade allies who have established relationships with the commercial and industrial customer base.

- **Promotion** Promotion will include campaigns to address awareness barriers and to address specific technologies eligible for the program (solar air heat and hot water). Separate campaigns will be used to educate customers and manufacturers/installers. Other promotional tactics include one-on-one sales, sector specific marketing (workshops, association tradeshow/conference presence, business and trade publication advertisements) and e-mail newsletters. Time will be spent training and educating architects, consultants, and trade allies; presenting to customers; participating in tradeshows; distributing information packages, and conducting direct advertising.

- **Price** Financial incentives will address the price barriers of the incremental costs for the energy efficient custom measures.

6. **PER SALE ENERGY & DEMAND IMPACT**

| | |
|---|---|
| Annual Energy Savings | 115 934.2 kW.h per participant<br>9 248.4 m3 per participant |
| Average Winter Peak Demand Savings | 17.40 KW per participant |

7. **EXPECTED PRODUCT LIFE**

20 year average

# COMMERCIAL BUILDING ENVELOPE - INSULATION

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Commercial Insulation Program is expected to reduce winter peak demand by 15.2 MW, summer peak demand by 4.8 MW, and annual energy consumption by 30.7 GW.h by the year 2024/25 for electric heated commercial space. The Program is also expected to reduce gas consumption by 19.7 million $m^3$ by the year 2024/25 for natural gas heated commercial space. This will be achieved by promoting the installation of additional insulation to Power Smart Design Standards levels and by increasing the levels of education to developers and customers.

**Electric**
TRC Test: 3.2
RIM Test: 1.6
Levelized Utility Cost: 2.5¢/kW.h

**Natural Gas**
TRC Test: 1.2
RIM Test: 0.8
Levelized Utility Cost: 9.3¢/m3

**Combined** *(including Interactive Effects)*
TRC Test: 1.6

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of major re-roofing and re-siding projects of existing electrically-heated buildings within the Manitoba Hydro service territory where insulation levels do not meet Power Smart Design Standards.

## 3. DEFINITION OF MARKET

Property owners and building managers of electric and natural gas serviced customers. In particular, those responsible for older buildings that are under-insulated and require maintenance.

## 4. MARKET BARRIERS

- Difficulty in changing established design practices in the construction industry. The consulting industry, which makes building envelope decisions, is primarily concerned with capital costs of a project and not with operational costs of a building.

- Lack of customer knowledge about the long-term cost savings from installing higher insulation levels during the construction or renovation process.

- There is an enormous lost opportunity if insulation is not chosen at conception of the renovation project for the reason that insulation cannot easily be installed after construction.

- Initial high incremental cost of adding insulation levels during the expensive process of re-roofing or re-siding a building.

- Lack of customer awareness of Power Smart programs available to commercial customers.

## 5. MARKETING STRATEGY

- **Product** Various levels of incentives are provided for insulation in roof and wall systems upgraded to Power Smart recommended levels. The Program will educate designers and customers about the benefits and cost savings of installing higher levels of insulation in buildings for renovation projects.

- **Place** Manitoba Hydro's Power Smart Commercial Sales group will be the main delivery mechanism for the program. Energy Service Advisors will continue to promote and deliver the program to their commercial customers. The Program will also foster existing relationships with the network of architects, consultants, trade allies and key customer groups.

- **Promotion** Promotion will include educational and awareness activities. Time will be spent on training and educating trade allies (architects, consultants, contractors and carpenters). In addition, an aggressive campaign to address the awareness barriers of insulation upgrades will be conducted. Promotion will include sector-specific marketing to this target market (one-on-one sales, educational seminars, association

tradeshow/conference participation, business and trade publication advertisements), web page redesign and email newsletters.

- **Price** Incentives will be offered to customers to reduce the incremental cost of the added insulation. The incentive will range from 25% to 75% of incremental costs and will have up to one year paybacks, depending on the type of insulation upgrade.

## 6. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 6 088.6 kW.h per participant<br>777.3 $m^3$ per participant |
| Winter Peak Demand Savings | 3.01 kW per participant |

## 7. EXPECTED PRODUCT LIFE

25 year average

# COMMERCIAL BUILDING ENVELOPE - WINDOWS

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Commercial Window Program is expected to reduce winter peak demand by 6.5 MW, summer peak demand by 0.44 MW and annual energy consumption by 16.0 GW.h by the year 2024/25 for electric heated commercial space. The Program is expected to reduce gas consumption by 3.01 million m3 by the year 2024/25. These targets will be achieved by promoting the installation of energy efficient window system by increasing the levels of promotion and education to designers, developers and customers. The promotion will include a dedicated Power Smart Commercial Sales group, as well as extensive sector-specific targeted marketing and mass-market promotional activity.

**Electric**
TRC Test: 2.3
RIM Test: 1.2
Levelized Utility Cost: 4.5¢/kW.h

**Natural Gas**
TRC Test: 2.0
RIM Test: 0.7
Levelized Utility Cost: 12.7¢/m3

**Combined** *(including Interactive Effects)*
TRC Test: 2.2

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of existing and new construction window installations in buildings in the Manitoba Hydro service territory. This program is targeted primarily at bulk apartments and condos, small office and retail, and personal care homes.

## 3. DEFINITION OF MARKET

The windows program is targeted to small/medium commercial offices, retail, hotel/motels, apartments and condos to upgrade to high efficiency windows.

## 4. MARKET BARRIERS

- Lack of awareness of the Commercial Building Envelope Program for Windows.
- Difficulty in changing established design practices in the consulting industry.
- Price differential between high efficiency and standard efficiency products.
- Lack of awareness and knowledge that energy efficient windows can decrease operating costs and maintenance costs, while improving the comfort.
- Labour costs for renovation projects.

## 5. MARKETING STRATEGY

- **Product** Various energy efficient window technologies are promoted through financial incentives and the provision of information. The Program will educate designers and customers about the benefits and cost savings of installing energy efficient windows in new construction and renovation projects. Installation of more energy efficient windows will be encouraged by providing financial incentives.
- **Place** Manitoba Hydro's Power Smart Commercial Sales group will be the main delivery mechanism for the program. Energy Service Advisors will also continue to deliver the program, especially in rural areas. The program will also develop better relationships with the window trade allies who have an established network with the commercial and industrial customer base.
- **Promotion** Promotion will include educational and awareness activities. Time will be spent on training and educating trade allies (architects, consultants and contractors). In addition, an aggressive campaign to address the awareness barriers of window upgrades will be conducted. Promotion will include sector-specific marketing to this target market (personal sales, educational seminars, association tradeshow/conference participation, business and trade publication advertisements), web page redesign and email newsletters.

- **Price** Aggressive financial incentives will address the price barriers of energy efficient windows. The incentives will provide 70% to 80% of the incremental cost. The incentives will result in average annual savings of approximately $590 per participant for an electric heated home or $844 per participant for a natural gas heated home.

## 6. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 21 445.0 kW.h per participant |
| Annual Gas Savings | 2 567.9 $m^3$ per participant |
| Average Winter Peak Demand Savings | 8.67 kW per participant |

## 7. EXPECTED PRODUCT LIFE

25 year average

# COMMERCIAL CHILLER PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Commercial Chiller Program is expected to reduce summer peak demand by 1.5 MW and annual energy consumption by 18.4 GW.h by 2024/25. This will be achieved by promoting the installation of water cooled chillers by increasing the levels of education to developers and customers.

In addition, code will be pursued through the Provincial Energy Act requiring all water cooled chiller installation meet current Power Smart efficiency levels of 0.43 kW/ton (IPLV) by 2017/18.

**Electric**
TRC Test: 1.7
RIM Test: 1.1
Levelized Utility Cost: 1.1¢/kW.h

## 2. MARKET POTENTIAL AND TARGET MARKET

On average, there are 4 500 tons of chiller cooling capacity retrofitted or installed annually. Typically, chillers have a 30-year product life and are replaced when the refrigerant must be changed or when the equipment is reaching end of life.

The primary target market for water cooled chillers are buildings with cooling capacities above 200 tons including; large offices, large multi-residential, hospitals and large educational facilities.

## 3. MARKET SHARE

The Program anticipates market penetration of high efficient water cooled chillers to reach 60% by 2017/18, at which time provincial code will be pursued through the Provincial Energy Act.

## 4. DEFINITION OF MARKET

The market is the total amount of cooling capacity (tons) of chillers changed out annually. The market consists of new construction, renovation and plant expansion projects within the Manitoba Hydro service territory. Specifically the chiller market tends to include large, aged, multi-storey buildings with a consolidated metre.

## 5. MARKET BARRIERS

- Difficulty in changing established design practices in the consulting industry.
- Initial capital cost of purchasing this product is very high.
- When purchase decisions are made about the replacement of these systems, emphasis tends to be placed on the initial cost and not on operating efficiency or life cycle costs.
- Product life is approximately 30 years. Replacement is unlikely to occur until the equipment is at or approaching end of life.
- Refrigerant regulation dates determine retrofit schedules.

## 6. MARKETING STRATEGY

- **Product** The Program will educate designers and customers about the benefits and cost savings of installing an energy efficient chiller.
- **Place** Manitoba Hydro's Power Smart Commercial Sales group will be the main delivery mechanism for the program. Energy Service Coordinators will also deliver the program. The program will also continue to rely heavily on the existing network of architects, consultants, trade allies who have established relationships with the commercial and industrial customer base.
- **Promotion** Promotion will include an aggressive campaign to address the awareness barriers. Promotion will consist of one-on-one sales, sector-specific marketing (direct mail, educational seminars, association tradeshow/conference presence, business and trade publication advertisements), webpage redesign, and email newsletters. Considerable time will be spent training and educating architects, consultants, and trade allies; presenting to customers; participating in tradeshows; distributing information packages, and conducting direct advertising.
- **Price** Aggressive financial incentives address the price barriers of the capital costs for energy efficient water-cooled chillers. The existing incentive of $86 per ton equates to approximately 53% of incremental costs. The incentive will be offered up to 2017/18 at which time provincial code is anticipated.

7. **PER SALE ENERGY & DEMAND IMPACT**

| | |
|---|---|
| Annual Energy Savings | 431 kW.h per ton |
| Summer Peak Demand Savings | 0.04 kW per ton |

8. **EXPECTED PRODUCT LIFE**

30 year average

# COMMERCIAL BOILER PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Commercial Boiler Program anticipates savings of 29.6 million $m^3$ by 2024/25. This will be achieved by promoting the installation of near-condensing and condensing gas boilers through financial incentives and promotional activities, as well as increasing the levels of education to customers and channel intermediaries.

Through the Provincial Energy Act, the Program will pursue minimum efficiency requirements. This will require minimum combustion efficiency in all commercial boiler applications to be greater than or equal to 90%, making condensing boilers mandatory in Manitoba by 2017/18.

**Natural Gas**
TRC Test: 3.9
RIM Test: 0.9
Levelized Utility Cost: 4.5¢/m3

## 2. MARKET POTENTIAL AND TARGET MARKET

On average, 480 commercial boilers are installed annually. Included are boilers used for space heating, domestic hot water, ventilation loads, process loads (i.e. car wash) and redundancy/backup. Of these, 78% are renovation projects and 22% are new construction projects.

The primary target market consists of office, multi-residential, education, personal care homes and religious facilities with existing heating equipment approaching end of life or new constructions projects. The secondary target market consists of agriculture, health, warehouse, recreation facilities and retail with existing heating equipment approaching end of life or new constructions projects.

## 3. MARKET SHARE

The Program anticipates overall market penetration of near-condensing and condensing boilers to reach 60% by 2009/10. By 2017/18, the Program anticipates market penetration of near-condensing and condensing boilers in retrofit applications to reach 80%.

## 4. DEFINITION OF MARKET

The market consists of both new construction projects installing new heating equipment and renovation projects replacing heating equipment at or approaching end of life within the Manitoba Hydro natural gas service territory. In 2010/11, the Program will eliminate new construction boiler projects from the Boiler Program's potential market.

## 5. MARKET BARRIERS

- Difficulty in changing established design practices in the consulting industry.
- Product life for boilers is approximately 25 years. Replacement is unlikely to occur until the equipment is at or approaching end of life.
- Price premium associated with high efficiency boilers; emphasis tends to be put on the product's initial capital cost and not on life cycle costs.
- A failed boiler in the heating season is considered an emergency good and therefore decisions tend to be quick and without consideration of the additional benefits of high efficient options.
- Limitations to existing distribution systems.
- Department of Labour requires stainless steel ventilation to prevent chimney corrosion/deterioration. This can add significant cost to the project depending on the location of the heating equipment.
- Detailed heat load calculation, detailing transmission, infiltration, ventilation, and domestic hot water loads is required for all applications. This requirement may deter contractors and installers from specifying condensing or near-condensing equipment.

## 6. MARKETING STRATEGY

- **Product** The program will educate designers, customers, and channel intermediaries about the benefits and cost savings of specifying and installing near-condensing and condensing boilers. The Program will also educate equipment suppliers, contractors and installers on how to properly size equipment. Installation will be encouraged by providing financial incentives to customers.

- **Place** Manitoba Hydro's Power Smart Commercial Sales group will be the main delivery mechanism for the program. The program will also rely heavily on the existing network of architects, consultants, and trade allies who have established relationships with the commercial customer base. Manitoba Hydro Energy Services Coordinators will also promote and deliver the program through their contact with commercial customers.

- **Promotion** Promotion will consist of one-on-one sales and sector specific marketing (direct mail, association newsletters, event sponsorship, educational seminars, trade shows and business publication advertisements). Considerable time will be spent educating consultants and trade allies, presenting to customers, participating in trade shows; distributing of information packages; and conducting direct advertising. The two primary marketing messages will be cost savings and improved occupant comfort through more uniform building temperatures. In addition, contractor/installer incentives are being considered in order to minimize barriers and encourage the industry to push near-condensing and condensing boilers to their customers.

- **Price** Aggressive financial incentives will address the price barriers of energy efficient boilers. The incentives will provide approximately 50% of the incremental cost of the higher efficiency product. Incentives in new construction applications will be offered up to 2010/11, at which time condensing equipment will be a requirement of the Proposed Commercial New Building Program. Renovation incentives will be offered up to 2017/18, at which time provincial code is anticipated.

## 7. PER SALE ENERGY & DEMAND IMPACT

Annual Energy Savings 15 246 m3 per participant

## 8. EXPECTED PRODUCT LIFE

25 year average

# COMMERCIAL HVAC FURNACE PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Commercial Furnace Program is expected to save 0.08 million $m^3$ by 2024/25. This will be achieved by promoting the installation of high-efficiency gas furnaces through financial incentives and promotional activities, as well as increasing the levels of education to customers and channel intermediaries. The program is scheduled to end November 1, 2009, at which time Provincial Code is expected to take affect, requiring a minimum 94% AFUE.

**Natural Gas**
TRC Test: 2.0
RIM Test: 0.8
Levelized Utility Cost: 4.7¢/m3

## 2. MARKET POTENTIAL AND TARGET MARKET

On average 500 commercial furnaces are installed annually. Typically furnaces have a 25 year product life and are considered for replacement as they reach end of life.

The primary target market consists of small office, religious facilities, small retail and restaurants with existing heating equipment reaching end of life or new construction projects. The secondary target market consists of small multi-residential, small hotels/motels, warehouses and small recreation facilities with existing heating equipment reaching end of life or new construction projects.

## 3. MARKET SHARE

The Program anticipates market penetration of high-efficient furnaces to reach 85% in 2009/10, at which time provincial code requiring a minimum 94% AFUE (annual fuel utilization efficiency) is expected to take affect.

## 4. DEFINITION OF MARKET

The market consists of new construction projects installing new heating equipment or renovation projects replacing heating equipment approaching end of life, within the Manitoba Hydro natural gas service territory.

## 5. MARKET BARRIERS

- Product life for furnaces is approximately 25 years. Replacement is unlikely to occur until the equipment is at or approaching end of life.

- Price premium associated with high efficiency equipment; emphasis tends to be put on the product's initial capital cost and not on life cycle costs.

- A failed furnace in the heating season is considered an emergency item and therefore decisions tend to be quick and without consideration of the additional benefits of high efficient options.

- Mid and standard efficiency furnaces tend to use a chimney for ventilation along with a natural gas water heater. High efficiency furnaces are direct vented meaning the chimney will no longer be used for ventilation by the furnace. The chimney will need be resized or the water heater will have to be replaced by a direct vent or electric water heater. This adds additional costs to the retrofit.

## 6. MARKETING STRATEGY

- **Product** The program will educate consultants, customers, and channel intermediaries about the benefits and cost savings of specifying and installing high efficiency furnaces. Installation will be encouraged by providing financial incentives to customers. Code under the Provincial Energy Act will require 94% AFUE (annual fuel utilization efficiency) for commercial furnace installations which is higher than the 90% AFUE anticipated by federal code on January 1, 2010.

- **Place** Manitoba Hydro's Power Smart Commercial Sales group will be the main delivery mechanism for the program. The program will also continue to rely heavily on the existing network of architects, consultants, and trade allies who have established relationships with the commercial customer base. Manitoba Hydro Energy Services Advisors will also promote and deliver the program through their contact with commercial customers.

- **Promotion** Promotional initiatives will be scaled back this year, as the Program is scheduled to end after ten months. Sector specific marketing initiatives (direct mail, print advertisements) are being evaluated for Fall 2009.

- **Price** A financial incentive of $245 toward the incremental cost of the higher efficiency product will be offered to customers to

encourage specification and installation. This incentive will available up until November 1, 2009, at which time national and provincial code are anticipated.

## 7. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 390 m3 per participant |

## 8. EXPECTED PRODUCT LIFE

25 year average

# COMMERCIAL PARKING LOT CONTROLLERS

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Commercial Parking Lot Controller Program is expected to reduce annual energy consumption by 10.4 GW.h by the year 2024/25. This will be achieved by promoting the installation of parking lot controllers. The 2009/10 year is the last year that incentives per circuit will be offered to clients.

**Electric**
TRC Test: 3.7
RIM Test: 1.7
Levelized Utility Cost: 0.5¢/kW.h

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of all electrical parking stalls to which electrical power is provided within the Manitoba Hydro service territory (both retrofit and new construction opportunities). The last year of the program targets slow adopters. Therefore, the number of circuits per application will decrease in comparison to the inception of the program.

## 3. DEFINITION OF MARKET

The target market consists of all electrical parking stalls to which electrical power is provided within the Manitoba Hydro service territory (both retrofit and new construction opportunities).This includes all sectors but specifically targeted towards, multi-residential (MURB), offices, schools, and hotel/motel

## 4. MARKET BARRIERS

- Initial capital cost of purchasing this product is high.
- The purchaser of the product is often not responsible to pay for operational costs including energy bills.
- Negative perceptions of consumers about parking lot controller systems.
- Lack of customer knowledge about the long-term cost savings from the use of a parking lot control system.

## 5. MARKETING STRATEGY

- **Product** — Financial incentives are available for the installation of eligible parking lot controller systems. The Program will educate designers and customers about the benefits and cost savings of installing an ambient temperature parking lot control system.

- **Place** — Manitoba Hydro's Power Smart Commercial Sales group will be the main delivery mechanism for the program. Energy Service Advisors will also deliver the program. The program will also continue to rely heavily on the existing network of architects, consultants, trade allies who have established relationships with the commercial and industrial customer base.

- **Promotion** — Promotion will include an aggressive campaign to address the awareness barriers. Promotion will consist of one-on-one sales, sector-specific marketing (educational seminars, association tradeshow/conference presence, business and trade publication advertisements), webpage redesign, and email newsletters. Time will be spent working with and educating architects, consultants, and trade allies; presenting to customers; participating in tradeshows; distributing information packages, and conducting direct advertising.

- **Price** — Aggressive financial incentives will address the price barriers of the capital costs for the parking lot controller technology. An incentive of $50 per circuit equates to 70-80% of incremental costs.

## 6. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 344.40 kW.h per participant |

## 7. EXPECTED PRODUCT LIFE

15 year average

# CITY OF WINNIPEG POWER SMART AGREEMENT

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The City of Winnipeg Power Smart Agreement (PSA) encourages, promotes and implements energy saving measures to improve the efficiency of City-owned facilities. The PSA forecasts savings of 0.2 GW.h and 0.1 MW of winter and summer peak by 2022/23.

The Power Smart Agreement between the Manitoba Hydro Electric Board and the City of Winnipeg closed on September 3, 2002 and committed the Corporation to implement energy saving measures in the City of Winnipeg facilities. During the period of the contract, Manitoba Hydro committed to pay any shortfall to the City of Winnipeg when the annual savings was less than $800,000 (the commitment). The Agreement further allowed for energy savings in excess of the commitment to be repaid to Manitoba Hydro subject to a maximum amount equal to the Corporation's capital investment incurred to realize the energy savings. The opportunity to recover the capital costs associated with the project is limited by the contract to a ten year period, commencing on September 3, 2002.

**Electric**
TRC Test: 8.2
RIM Test: 1.5
Levelized Utility Cost: 1.1¢/kW.h

## 2. MARKET POTENTIAL AND TARGET MARKET

A variety of measures have been considered and implemented for new construction and renovation in a large number of City-owned or operated facilities including; solar air and water heating, lighting retrofits and controls, building envelope and water saving upgrades, HVAC controls, mechanical modifications, street lighting, traffic signal upgrades and power factor corrections.

Considering the time limitations within the PSA there is limited potential for new projects with the exception of traffic signals.

## 3. DEFINITION OF MARKET

The market includes City-owned facilities which would save energy through the use of energy efficient technologies with a relatively short payback period (since the agreement expires in 2012).

## 4. MARKET BARRIERS

- The 10 year limitation in the agreement severely limits the number and types of projects undertaken. In order for the project to be economical it must pay for itself during the life of the agreement which limits project in many situations to paybacks of four years or less.

- There is a shortage of skilled labour in the province causing construction delays; making projects less economical. The shortage has also resulted in increased construction costs.

- The City of Winnipeg is under a severe cash flow shortage making cost sharing of certain projects, that are not economical for Manitoba Hydro to pay in full but still economical for the City to contribute towards, not an option. This has limited the number and types of projects implemented through the PSA.

- Many City-owned facilities are not operated by the City of Winnipeg. This has resulted in cooperation issues in many facilities further delaying construction and in some cases preventing certain measures from being implemented.

## 5. MARKETING STRATEGY

An engineering firm has been contracted to undertake the energy management services associated with building retrofits projects for the City of Winnipeg facilities excluding City of Winnipeg initiated projects. The energy management services include auditing, design, implementation and savings justification of the energy efficient measures. The engineering firm will also make application on behalf of the City of Winnipeg for any incentives, grants, refunds or rebates for which the energy measure is eligible for to reduce the overall project costs to Manitoba Hydro.

The Power Smart Agreement gives Manitoba Hydro the first right of refusal on any projects the City wishes to undertake that may present an energy saving opportunity. This includes normal maintenance projects, as well as any planned retrofit projects. Under the terms of the PSA the City of Winnipeg will notify Manitoba Hydro about these projects allowing Manitoba Hydro the opportunity to participate with them.

To ensure the economic viability of energy saving projects, they will initially be screened using high-level payback criteria developed for the project. Those that appear viable will be assessed using more stringent economic models which consider the capital investment (including administration), lost revenues, the reduction in the commitment to the City, energy savings achieved, as well as any marginal cost benefits. As long as projects provide a positive Net Present Value, they will be undertaken.

The PSA will consider all economical projects with electrical, natural gas and/or water savings. Over 300 different projects have been completed to date at 170 various City of Winnipeg buildings.

# COMMERCIAL RINSE & SAVE PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Commercial Low Flow Pre-Rinse Spray Valve (PRSV) Program is expected to reduce winter and summer peak demand by 0.2 MW and annual energy consumption by 1.4 GW.h along with 0.34 million $m^3$ of natural gas by 2018/19. The savings will be achieved by aggressively promoting the installation of energy efficient spray valves through a large full service direct install effort. Ecolab, the selected service contractor, will continue to remove inefficient valves that average 13 litres per minute (lpm) and install T&S Model # B-0107-C with flow rate of 6.1 lpm. Inefficient valves will continue to be sent to Manitoba Hydro where the metal will be recycled to ensure that inefficient valves do not re-enter the market once removed.

**Electric**
TRC Test: 62.6
RIM Test: 1.4
Levelized Utility Cost: 0.3¢/kW.h

**Natural Gas**
TRC Test: 46.6
RIM Test: 0.9
Levelized Utility Cost: 2.6¢/m3

**Combined**
TRC Test: 51.7

## 2. MARKET POTENTIAL AND TARGET MARKET

There are over 3 000 restaurants, hotel/motels, hospitals, personal care homes, grocery stores, and schools in Manitoba that have on-site food service capabilities. Of this total, 80% were assumed to have an operating valve and 80% of those were assumed to have sufficient water supply pressure to make best use of an energy efficient, or low flow, PRSV. This remaining potential market is therefore compromised of nearly 1 900 establishments and 2000 installed valves[1] during the period of July 2006 to March 2009 before Canada harmonizes with the United States Energy Policy Act of 2005 (all new valves manufactured must have a flow rate of 6.1 litres per minute or less.)

1 Industry market data estimates that there are 1.3 valves per establishment.

This market consists of all new construction projects and existing inefficient spray valve installations in Manitoba, where pre-rinse systems operate a minimum 11 lpm or greater, along with a water source flow rate of at least 40 pounds per square inch or greater.

## 3. MARKET BARRIERS

- Initial capital costs of the energy efficient technology compared to the less expensive replacement cartridges for the existing valve.

- Lack of awareness and knowledge that energy efficient spray valves can decrease operating costs and maintenance costs, while improving the quality of the pre-rinsing.

- Labour costs for the installation of the energy efficient technology compared to the replacement cartridges.

- Customer relationships with other suppliers that would prevent or interfere with the program's selected manufacturer and distributor.

- Too much pressure from the low flow, high velocity pre-rinse spray valve can create operator issues, such as over-spray or splash-back if administered improperly.

- Equipment and facility issues such as insufficient water supply line pressure. At least 40 psi is required in order for the low flow version to work effectively and if the line pressure is too great (i.e. 100 psi), the high velocity can become unmanageable for certain operators.

## 4. MARKETING STRATEGY

- **Product** An energy efficient spray valve technology with a flow rate of 6.1 litres per minute that is promoted through a direct install or replacement.

- **Place** Ecolab is the chosen delivery agent for the Program, coordinating customer sourcing, product purchase and installation and reporting. Through a request for proposal process, a selected manufacturer and distributor will be the main delivery mechanism for the program. The Power Smart Sales team and Energy Services Advisors will promote the program. The program will also continue to rely heavily on the

chosen trade ally who will have an established network with the commercial and industrial customer base.

- **Promotion** Promotion will primarily be through personal sales by Ecolab representatives and Manitoba Hydro sales staff (Power Smart Sales and Major Accounts). Promotion will also include sector-specific marketing (direct mail, association tradeshow/ conference presence, business and trade publication advertisements), website, and email newsletters.

- **Price** An aggressive financial incentive will address the price barriers of energy efficient spray valves. To promote the conversion of operating inefficient pre-rinse systems, renovation projects will receive 100% of the initial capital cost including installation. For new construction installations, the incentive will be the same. The rebate will average approximately $106 per participant.

## 5. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 8 770.4 kW.h per participant<br>1 238.8 m3 per participant |
| Average Winter Peak Demand Savings | 1.0 kW per participant |

## 6. EXPECTED PRODUCT LIFE

10 year average

# COMMERCIAL REFRIGERATION PROGRAM FOR RETAIL STORES AND RESTAURANTS

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Power Smart Commercial Refrigeration Program for Retail Stores and Restaurants is a technology based, prescriptive program aimed mainly at retrofit and renovation opportunities. The Program is expected to reduce annual energy consumption by 56.1 GW.h, winter peak demand by 6.3 MW and summer peak by 5.7 MW by the year 2024/2025. The Program will also results in a net positive gas interactive effect, reducing natural gas consumption by 2.36 million m3 by 2024/25.

Savings will be achieved by providing customers with information about best practices and maintenance, promoting energy efficient refrigeration technologies and optimizing the operation of new and existing refrigeration equipment.

**Electric**
TRC Test: 5.8
RIM Test: 1.4
Levelized Utility Cost: 0.6¢/kW.h

**Combined** *(Including Net Gas Benefits)*
TRC: 6.8

## 2. MARKET POTENTIAL AND TARGET MARKET

The end user target market is primarily comprised of grocery and convenience stores. Restaurants and food service establishments also make up a small portion of this market. These markets can be further divided into: chains, large independents, and small independents. These markets represent over 900 physical locations in Manitoba.

Based on the life of the commercial refrigeration technologies, and frequency of renovations in the target market, replacement occurs approximately every 10 years. Therefore, 10% these customers are replacing their equipment each year.

The market potential for new commercial refrigeration systems is lower than replacement opportunities because of limited new construction. The target market is currently experiencing a 2% rate for new construction.

## 3. DEFINITION OF MARKET

This market consists of replacement opportunities for equipment nearing end of life.

## 4. MARKET BARRIERS

- Aesthetics and reliability are regarded as much more important than energy efficiency.
- Decision makers for chains are often based outside of Manitoba, and equipment continuity across all locations is often an important criterion for them.
- Initial cost of energy efficient refrigeration equipment and technologies. .
- Lack of awareness of energy efficiency refrigeration equipment and technologies.
- End users have difficulty assessing paybacks and life-cycle cost.

## 5. MARKETING STRATEGY

- **Product** The Program will offer basic information including no/low cost ideas with respect to best practices, maintenance and energy efficient refrigeration equipment and technologies. 24 rebates will be offered for refrigerated walk-in boxes, refrigerated display cases and mechanical room components.
- **Place** Power Smart Commercial Sales and Energy Service Advisors will play crucial roles delivering the Program. In addition, Manitoba Hydro has formed strategic partnerships with various experts in the refrigeration industry, and energy professionals and management working in the end user target market. These parties have contributed with respect to: market research, program planning, program design, and promotion.
- **Promotion** External promotion will consist of: personal sales, direct mail, industry and end user newsletters, association meetings, seminars, tradeshows, website content, email updates, point of purchase displays and Manitoba Hydro initiated workshops. Internal promotion will consist of comprehensive training for all involved functional areas.

- **Price** Aggressive rebates will address the initial cost and payback barriers of energy efficient refrigeration equipment and technologies. For retrofits rebates are based on resource acquisition capital cost. For renovations, rebates are based on incremental capital cost. The Program's average rebate is 37% of capital cost, resulting in a simple payback time averaging three years.

## 6. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 70 167 kW.h per participant<br>3 013 m3 per participant |
| Average Winter Peak Demand Savings | 7.85 kW per participant |

## 7. EXPECTED PRODUCT LIFE

10 year average

# COMMERCIAL EARTH POWER PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Commercial Earth Power Program is expected to reduce winter peak demand by 6.8 MW, summer peak demand by 0.8 MW and annual energy consumption by 16.3 GW.h by the year 2024/25. This will be achieved by promoting the installation of geothermal heat pumps through consumer education and promotional activities. In addition, Manitoba Hydro offers aggressive incentives to promote increased program activity.

**Electric**
TRC Test: 2.7
RIM Test: 1.6
Levelized Utility Cost: 2.3¢/kW.h

## 2. MARKET POTENTIAL AND TARGET MARKET

The Program targets new and existing commercial buildings that use electricity as their primary space heating fuel - this represents an additional 200 projects by 2017/18 (program end).

## 3. DEFINITION OF MARKET

The market consists of new and existing commercial buildings that use conventional electric technologies for space heating.

## 4. MARKET BARRIERS

- Initial capital costs of purchasing the geothermal heat pump technology are significantly higher than conventional space conditioning equipment.
- When purchase decisions are made about the replacement of these systems, emphasis tends to be placed on the product cost and not on operating efficiency.
- Lack of customer knowledge about the long-term cost savings from the use of a geothermal heat pump system.

- It is difficult to change established design practices in the consulting and mechanical engineering industries.

- The supply of qualified commercial geothermal installers can be a barrier in some regions of the province.

## MARKETING STRATEGY

- **Product** The program will educate designers, engineers, architects and customers about the benefits and cost savings associated with the technology. Installations of geothermal heat pump systems will be further encouraged by providing aggressive financial incentives and a simple application process for customers without access to natural gas or currently heating with a conventional electric system.

- **Place** The program will also continue to rely heavily on the existing network of engineers/architects, consultants and trade allies who have established relationships with the commercial and industrial customer base. The existing Energy Service Coordinators and Power Smart Commercial Sales group will also be an important delivery mechanism for the program as they have direct contact with many of these consumers. These groups have extensive knowledge of Manitoba Hydro's Commercial Earth Power Program and access to a potential geothermal customer.

- **Promotion** Promotion will include an aggressive campaign to address awareness barriers. Promotion will consist of one-on-one sales, sector-specific marketing (direct mail, educational seminars, business and trade publication advertisements). Considerable time will be spent training and educating architects, consultants and trade allies; presenting to customers; participating in tradeshows; distributing information packages; and conducting direct advertising.

- **Price** Financial incentives will address the price barrier of the capital costs for the geothermal heat pump systems. An average incentive of $11, 615 will cover approximately 30% of the average incremental product cost.

## 5. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 81 262 kW.h per participant |
| Average Winter Peak Demand Savings | 33.82 kW per participant |

## 6. EXPECTED PRODUCT LIFE

Heat Pump Unit: 20 year average
Ground Loop Heat Exchanger: 75+ year average

# NEW BUILDINGS PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The New Buildings Program is expected to achieve annual energy savings of 2.13 million $m^3$ of natural gas, 5.9 MW in winter peak, 8.7 MW in summer peak and 30.6 GW.h of electricity in 2024/25. This will be achieved by promoting the integrated design process (IDP), construction and commissioning of energy efficient commercial buildings through financial incentives and promotional activities, while focusing heavily on increasing the training and education levels of local industry stakeholders.

**Electric**

TRC Test: 1.5
RIM Test: 1.1
Levelized Utility Cost: 3.2¢/kW.h

**Natural Gas**

TRC Test: 3.2
RIM Test: 0.9
Levelized Utility Cost: 5.7¢/m3

**Combined**

TRC Test: 1.7

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of all new commercial construction projects within the Manitoba Hydro service area, which equates to approximately 200 buildings annually by 2017/18.

## 3. DEFINITION OF MARKET

All new commercial buildings constructed in Manitoba Hydro service territory.

## 4. MARKET BARRIERS

- The program requires fundamental changes to the industry's methods of designing, constructing and commissioning commercial buildings.
- Lack of qualified local firms offering IDP, energy modeling and building commissioning.

- Perceptions of higher initial capital costs associated with designing and constructing energy efficient buildings.

- Lack of customer and industry knowledge about life cycle costing.

- Higher costs associated with performance based measures as compared with prescriptive measures.

- Increased effort to identify, order and purchase the energy efficient alternative.

## 5. MARKETING STRATEGY

- **Product** The program will educate designers, customers, contractors and channel intermediaries about the benefits and cost savings of designing and constructing energy efficient buildings. The program will provide incentives for buildings that meet or exceed Power Smart Design Standards of 33% energy savings above the Model National Energy Code of Canada for Buildings (1997). Buildings targeting an efficiency level above 33% are also eligible for additional Performance Incentives. Provincially owned building will only be eligible for the Performance Incentives (if targeting an overall efficiency level greater than 33%).

- **Place** Manitoba Hydro's Power Smart Sales group will be the main delivery mechanism for the program with support from Customer Engineering Services and Marketing Programs. The program will also continue to rely heavily on the existing network of architects, consultants, and trade allies who have established relationships with the commercial customer base.

- **Promotion** Promotion will consist of one-on-one sales and sector specific marketing (direct mail, educational seminars, association trade shows, business and trade publication advertisements). Considerable time will be spent educating consultants and trade allies, presenting to customers, participating in trade shows, distributing information packages and conducting direct advertising.

- **Price** Aggressive financial incentives will address the price barriers of the design of energy efficient commercial buildings. The incentive will provide approximately 30%-40% of the incremental cost of the design.

## 6. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 247 600 kW.h per participant<br>17 000 $m^3$ per participant |
| Average Winter Peak Savings | 45 kW per participant |

## 7. EXPECTED PRODUCT LIFE

50 year average

# COMMERCIAL BUILDING OPTIMIZATION PROGRAM (CBOP)

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Commercial Building Optimization Program is expected to realize savings of 16.0 GW.h, 5.3 MW of winter peak demand, 2.7 MW of summer peak demand and 3.48 million $m^3$ of natural gas by the year 2024/25. The retrocommissioning process will cost-effectively improve a building's performance and reduce energy use, while improving indoor air quality, occupant comfort, and employee productivity. Retrocommissioning projects typically save fifteen percent of total building energy costs, with a simple payback time averaging two years. The program offers four stages of deliverables through an incentive plan. The success of Manitoba Hydro's program lies in its ability to reduce energy consumption, transform the marketplace, increase industry knowledge and ensure persistence of savings over the long term.

**Electric**
TRC Test: 5.0
RIM Test: 1.7
Levelized Utility Cost: 1.4¢/kW.h

**Natural Gas**
TRC Test: 1.6
RIM Test: 0.7
Levelized Utility Cost: 14.7¢/m3

**Combined**
TRC test: 2.7

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market of the program consists of existing commercial buildings that are larger than 50,000 $ft^2$ and ideally 2 to 25 years of age (equipment should be off warranty). They will be prescreened in the application process for energy use index (EUI) and the opportunity for energy savings to ensure the cost effectiveness of the program. The best candidates for the Building Optimization Program are those buildings with a Direct Digital Control (DDC) system and functioning (HVAC) mechanical systems. The customer should not be planning substantial equipment replacement or major renovation of their building in the near future to ensure payback periods are met and measurement and verification are substantiated. The

estimated target market is 1 176 commercial buildings (950 gas heated; 226 electrically heated).

## 3. DEFINITION OF MARKET

All commercial customers with buildings over 50,000 $ft^2$.

## 4. MARKET BARRIERS

- Building owners and operators have an overall lack of awareness and understanding of the energy and non-energy benefits and value of retrocommissioning.

- Lack of familiarity with the service and term of retrocommissioning and the types of building performance problems that are addressed. The service still needs to be defined for the market.

- Perception that retrocommissioning is expensive with long term paybacks. The investment of dollars for the studies is not linked to the savings benefits.

- Operators often are not involved in the retrocommissioning process and therefore do not understand or buy into the suggested changes. Buy-in from the operators is critical to ensure the savings ensue long term.

- Commissioning providers are not qualified to offer comprehensive retrocommissioning services.

- High building operator turnover rates limit the persistence of savings.

- Building owners and operators lack the tools and time for ongoing measurement and verification of energy savings and the ability to identify opportunities.

- Lack of confidence in the anticipated results of retrocommissioning.

## 5. MARKETING STRATEGY

- **Product** Retrocommissioning is the systematic processes that will cost effectively improve a building's performance; reduce energy use, while improving indoor air quality, occupant comfort, and employee productivity. Improvements are also supported with enhanced documentation and training.

- **Place** Manitoba Hydro's Power Smart Commercial Sales group and trained commissioning providers will be the two main sales mechanisms for the program. Specific buildings will also be targeted for entry into the program and presentations will be made to targeted owners/operators. Energy Service Coordinators will also assist in the sale of the program, especially in rural areas. The program will rely heavily on a marketing strategy that builds and leverages relationships with the industry through the education of retrocommissioning.

- **Promotion** Promotion will include an aggressive campaign to address the awareness and perceived value barriers of retrocommissioning. Promotion will consist of one-on-one sales presentations, sector-specific marketing (direct mail, educational seminars, and association tradeshow/conference presence), webpage redesign, and email newsletters. Considerable time will be spent training and educating the commissioning providers in the Manitoba marketplace through educational seminars, distribution of information packages, and conducting customized presentations.

- **Price** The program incorporates a four stage incentive plan designed to overcome the identified barriers. To encourage participation and reduce entry barriers, incentives for both the scoping and investigation study will be provided. Incentives may also be used to buy down payback periods to encourage further implementation opportunities. Towards the end of the program, incentives will be given in the persistence stage to ensure the continuation of energy savings. The persistence stage incentive will help with the training of the building operators and the enhancement of documentation to reflect the changes put into place during the program process.

## 6. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 110 534 kW.h per participant<br>28 487 m3 per participant |
| Average Winter Peak Demand Savings | 36.85 kW per participant |

## 7. EXPECTED PRODUCT LIFE

10 year average

# INTERNAL RETROFIT PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Internal Retrofit Program strives to retrofit all existing Manitoba Hydro buildings to Power Smart levels during scheduled renovations and initiate energy efficiency improvements to corporate facilities when it is cost-effective to do so. The Program will also ensure that new facilities meet Power Smart Design Standards. The Program is estimated to reduce winter peak demand by 7.1 MW, summer peak demand by 2.9 MW and reduce electrical energy consumption by 20.1 GW.h by the 2024/25 fiscal year.

Other objectives of the Program are:

- To increase market share of energy efficient products by demonstrating and showcasing the technologies and benefits to contractors, engineers, building operators, and other customers interested in energy conservation.
- To demonstrate to Manitobans that Manitoba Hydro and its facilities are committed to being Power Smart.
- To demonstrate to Manitoba Hydro staff the benefits of having Power Smart technologies in the work environment.
- To research energy efficient technologies in order to determine if these technologies should be included in present or future Power Smart programs.

**Electric**
TRC Test: 1.1
RIM Test: 1.1
Levelized Utility Cost: 2.2¢/kW.h

## 2. MARKET POTENTIAL AND TARGET MARKET

All Manitoba Hydro owned buildings that are to be renovated and constructed until the end of the 2011/12 fiscal year.

## 3. DEFINITION OF MARKET

The target market is all existing Manitoba Hydro buildings that do not meet Power Smart levels, particularly those which are scheduled for renovations. The Program also ensures new facilities meet Power Smart Design Standards.

## 4. MARKET BARRIERS

- Long term energy costs are not among the factors which influence the building manager when making his or her renovation choices.

- Lack of information by building managers on cost-effective energy efficient products.

- Capital cost of energy efficient technologies.

- Lack of acceptance by building managers and staff that the expenditures on energy savings are worthwhile.

- Lack of awareness of the added benefits of incorporating energy efficient technologies (lighting levels for improved safety, increased comfort for building occupants, etc.).

- Lack of Program awareness due to high turnover in some areas.

- Perception that participating in the Program is a lengthy process to qualify for Program incentives.

## 5. MARKETING STRATEGY

- **Product** The Program will result in the installation of permanent, cost-effective, energy efficient measures which will facilitate market transformation. The installation will showcase and demonstrate energy efficient technologies and assist in determining if they should be included in current or future Power Smart Programs.

- **Place** Manitoba Hydro staff will assist in the delivery of the Program to all Manitoba Hydro building and project managers.

- **Promotion** The Program will promote the use of energy efficient technologies and measures to Manitoba Hydro building and project managers using various internal resources including web and print materials and networking.

- **Price** The Program will fund a portion of the incremental cost, up to the full cost (including materials and labour) of energy efficient improvements provided that the project is cost-effective for Manitoba Hydro.

6. **PER SALE ENERGY & DEMAND IMPACT**

*Corporate Housing:*

| | |
|---|---|
| Annual Energy Savings: | 5 309 kW.h per building |
| Average Winter Peak Demand Savings | 1.04 kW per building |
| Summer Peak Demand Savings: | 0.23 kW per building |

*Corporate Buildings (not at Generation):*

| | |
|---|---|
| Annual Energy Savings: | 32 533 kWh per building |
| Average Winter Peak Demand Savings: | 7.73 kW per building |
| Summer Peak Demand Savings: | 1.28 kW per building |

*Corporate Buildings (at Generation):*

| | |
|---|---|
| Annual Energy Savings: | 182 183 kW.h per building |
| Average Winter Peak Demand Savings: | 41.15 kW per building |
| Summer Peak Demand Savings: | 34.70 kW per building |

7. **EXPECTED PRODUCT LIFE**

**Commercial Measures:**

| | |
|---|---|
| Air Sealing | 20 years |
| G.S. Heat Pump | 20 years |
| Insulation | 40 years |
| Lighting | 20 years |
| Parking Lot Controllers | 15 years |
| Programmable Thermostats | 7 years |
| Water Measures | 15 years |
| Windows | 25 years |

**Residential Measures:**

| | |
|---|---|
| Air Sealing | 30 years |
| Insulation | 40 years |
| Lighting (CFL) | 4.5 years |
| Ventilation | 20 years |
| Water Measures | 15 years |
| Windows | 25 years |

# AGRICULTURAL HEAT PADS

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Agricultural Heat Pad Program is expected to reduce winter peak demand by 0.7 MW, summer peak demand by 0.7 MW and annual energy consumption by 7.2 GW.h by 2024/25. These savings will be achieved by changing the purchase behaviour of the market from conventional heat lamps to energy efficient heat pads in existing swine farrowing facilities.

**Electric**
TRC Test: 143.9
RIM Test: 1.8
Levelized Utility Cost: 0.3¢/kW.h

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of all hog producers in Manitoba purchasing a replacement agricultural heating device for their farrowing operations that are currently using a less energy efficient heating technology. There are approximately 36 680 crates in the Manitoba Hydro service area, with approximately 10 550 that remain unconverted in existing barns.

## 3. MARKET SHARE

The program is expected to achieve a market share of 80% by the end of 2011. Without the program the market would only have transformed 48%.

## 4. DEFINITION OF MARKET

The market consists of existing farrowing crates in Manitoba. The program is penetrating the renovation market.

## 5. MARKET BARRIERS

- The capital cost of energy efficient heat pads is approximately $150 while the standard heat lamp fixture is $19 and the lamp is $15.

- Many hog producers believe piglets are attracted to the light when they are actually attracted to the heat.

- Many agricultural customers are reluctant to change their farrowing barn's heating system when they are "satisfied" with their current setup.

- Some dealers and customers are still unfamiliar with the benefits of energy efficient heat pads.

- The hog industry is in a cyclical downturn caused by poor market returns and escalating feed grain prices. Capital is a major concern for hog farmers.

## 6. MARKETING STRATEGY

- **Product** The program will promote the sale and use of energy efficient heat pads. Agricultural customers will be offered rebates and energy savings information which will encourage the purchase of replacement energy efficient units.

- **Place** The program will operate primarily through dealer outlets which sell heat pads to agricultural customers. Customers can also participate through Manitoba Hydro District Offices and industry trade shows.

- **Promotion** Promotion materials include a program brochure, customer profiles, energy savings comparisons and advertisements in agricultural magazines, trade seminar publications, specialty newspapers and trade journals. The program will also utilize heat pad salespeople, district employees, and technical engineers to sell the benefits of energy efficient heat pads. The program also participates at the annual Hog and Poultry show, which targets hog producers with swine farrowing facilities.

- **Price** A rebate of up to $50 per crate will be offered towards the purchase of energy efficient heat pads to lower the capital cost differential. The rebate will be available for all qualifying heat pads purchased for renovation installations where the heat pad is replacing a heat lamp. The rebate will be credited to the customer's Manitoba Hydro account following electrical inspection of the equipment installed.

## 7. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 962.9 kW.h per participant |
| Average Winter Peak Demand Savings | 0.09 kW per participant |

8. **EXPECTED PRODUCT LIFE**

15 year average

# POWER SMART ENERGY MANAGER

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Power Smart Energy Manager program is expected to reduce winter peak demand by 0.2 MW, summer peak demand by 0.1 MW, annual energy consumption by 3.9 GW.h of electricity and 0.29 million m3 of natural gas by 2024/25. This will be achieved by educating school divisions on the benefits of reducing their energy use through a comprehensive training program designed by Manitoba Hydro and an outside consultant on how to identify energy savings in their buildings. Manitoba Hydro will offer the PSEM training course to school divisions free of charge by covering the cost of the course fees along with an implementation took kit, technical resources, benchmarking and utility tracking support over 5 years. Financial incentives to cover the cost of the course will be offered until 2017/18 for the implementation of resource conservation measures to reduce their energy use as identified in their division Energy Efficiency plan and approved by Manitoba Hydro.

**Electric**
TRC Test: 3.1
RIM Test: 1.5
Levelized Utility Cost: 0.6¢/kW.h

**Natural Gas**
TRC Test: 3.9
RIM Test: 0.9
Levelized Utility Cost: 3.1¢/m3

**Combined**
TRC test: 3.3

## 2. MARKET POTENTIAL AND TARGET MARKET

The market consists of all school divisions across Manitoba with an initial target of school divisions with 8 buildings or more. The program has the potential to be expanded in the future to all commercial customers. In 2008, 12 school divisions participated in the training program.

## 3. DEFINITION OF MARKET

The initial target market is school divisions with 8 buildings or more with a higher than average Energy Use Index (EUI).

## 4. MARKET SHARE

The total market for the PSEM program is all 37 school divisions in Manitoba. This number is expected to remain unchanged over the life of the program. Take-up in the absence of the program is expected to remain relatively flat since there is very little educational material currently in the Manitoba and Canadian marketplace around the benefits of Energy conservation in school divisions. It is anticipated that the program will have a total take-up rate of roughly 65% by the end of the program.

## 5. MARKET BARRIERS

- School divisions are budget constrained and risk averse. In some cases even small costs must be budgeted for a year in advance and most divisions are under pressure to reduce or hold the line on taxes meaning some face budget cuts.

- Risk that if this is not a dedicated full time position, the energy conservation improvements will either not get implemented or not achieve the full energy savings due to competing priorities and time constraints (ie this is only one part of their job).

- Lack of qualified staff to successfully fulfill the role of a PSEM within school divisions. The new focus of the program will be to encourage school divisions to train in-house maintenance staff via a course presented by Manitoba Hydro and fulfill the role of a PSEM on a part or full time basis in addition to their current job, rather than hiring an energy manager externally. There is a risk that an in-house person will not be qualified to successfully implement the initiatives and achieve the savings.

- At the board and senior management level, energy is considered to be a small part of the overall budget for most school divisions and is seen to be a small expense that's just a cost of providing education. There is currently little incentive for maintenance managers to be concerned with managing their operating or energy costs more effectively.

- Lack of customer knowledge about the savings potential from resource conservation and improved operations and maintenance practices. Many school divisions lack information on the costs associated with poor maintenance, inefficient equipment and undefined building operating schedules.

- There is a risk that without incentives to implement the measures identified as part of the training program, divisions will take the training program but will not actually implement the measures and will therefore not achieve any savings.

- The PSEM program is not economically feasible for all divisions.

## 6. MARKETING STRATEGY

- **Product** A comprehensive training course, implementation guide, technical resources and financial incentives will be offered to encourage school division to implement resource efficiency measures (with a focus on behavioral and operational improvements) in their buildings to reduce their energy use.

- **Place** The PSEM team, Power Smart Commercial Sales, Energy Service Advisors and key stakeholder events will be used to deliver the program.

- **Promotion** Promotion will include education and awareness on the benefits of energy conservation and the PSEM program for school divisions. Seminars, information sessions, one-on-one meetings, association events, tradeshows, advertising, direct mail, commercial power smart sales calls, energy advisor customer meetings and the website will all be used to promote the program.

- **Price** Incentives will be offered to customers to encourage participation in and beyond the training session in the program, subsidized training and incentives for implementing energy conservation milestone initiatives approved by the PSEM program.

## 7. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 974 ,524.6 kW.h per participant<br>72 049.9 m3 per participant |
| Average Winter Peak Demand Savings | 41.33 kW per participant |

## 8. EXPECTED PRODUCT LIFE

10 year average

# COMMERCIAL KITCHEN APPLIANCE PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Commercial Kitchen Appliance Program is expected to reduce annual energy consumption by 3.4 GW.h, winter and summer peak demand by 1.1 MW, and natural gas consumption by 1.2 million m3 by 2024/25. The savings will be achieved by aggressively promoting the installation of ENERGY STAR commercial natural gas and electric steam cookers and natural gas fryers.

**Electric**
TRC Test: 3.5
RIM Test: 1.3
Levelized Utility Cost: 2.6¢/kW.h

**Natural Gas**
TRC Test: 1.6
RIM Test: 0.8
Levelized Utility Cost: 6.4¢/m3

**Combined**
TRC test: 2.4

## 2. MARKET POTENTIAL AND TARGET MARKET

The end user target market consists of restaurants and foodservice establishments, including both gas and electric commercial kitchen appliances. These markets can be further divided into: chains, large independents, and small independents. These markets represent over 1 800 physical locations in Manitoba of which 60% represent independently owned and operated establishments.

Used kitchen equipment represents approximately 5-10% of the potential market and is usually only purchased by smaller independents, however in the case of Energy Star appliances, used equipment will not be a factor as it only entered the market in 2003.

Based on the life of the commercial kitchen appliances, replacement occurs approximately every 12 years. There are 5 000 and 1 500 fryers and steamers respectively in the Manitoba market, therefore, approximately 8%, or 400 fryers and 125 steamers, are being replaced each year. Among those appliances sold, only 2-3%

is energy efficient due to the high capital costs. With a Power Smart program, 70% market saturation is expected to be achieved for steamers and 30% market saturation for fryers by 2017/18.

This market consists of replacement opportunities for existing foodservice establishments and new purchases for new construction projects in Manitoba.

## 3. DEFINITION OF MARKET

This market consists of replacement opportunities for existing foodservice establishments and new purchases for new construction projects in Manitoba.

## 4. MARKET BARRIERS

- The Initial capital costs of the ENERGY STAR appliances compared to the non energy efficient or used counterparts is the main barrier.

- Lack of awareness and knowledge that ENERGY STAR appliances can decrease operating costs and maintenance costs, while improving food quality.

- Reliability is extremely important to end users. Unproven energy efficient kitchen appliances and technologies are not readily accepted. New equipment and technologies will have to be field tested and proven before they are generally accepted.

- Long term success of start-up restaurants and foodservice establishments is never certain. The bankruptcy rate in Manitoba for this industry increased from 19 establishments to 27 in 2006. Investment capital is often limited for independents, making the purchase of energy efficient equipment with a cost premium unattractive.

- Decision makers for chains are often based outside of Manitoba, and equipment continuity across all locations is often an important criterion.

- End users have difficulty assessing paybacks, and whether the added cost of ENERGY STAR kitchen appliances will be paid back through energy savings.

## 5. MARKETING STRATEGY

- **Product** ENERGY STAR qualified commercial fryers and steamers promoted by means of a financial incentive and the provision of basic information including no/low cost ideas with respect

to best practices, maintenance, and energy efficient commercial kitchen appliances.

- **Place** Contractors, equipment dealers and wholesalers will prove to be the largest promotional channel and will act as advocates to their established networks within the target market. Power Smart Commercial Sales and Energy Service Advisors will also play crucial roles delivering this Program.

- **Promotion** Promotion includes personal sales, sector-specific marketing (direct mail, association trade show/conference presence, business and trade publication advertisements), webpage design and email newsletters. Time will be spent on educating trade allies (distributors). Internal promotion will consist of comprehensive training for all involved functional areas.

- **Price** Aggressive financial incentives address the initial cost and payback barriers of energy efficient commercial kitchen technologies. The Program's average rebate is 44% of the incremental cost. Energy Star gas and electric steamers will receive a rebate of $2 500 and have an average product cost of $17 600 and $9 800 respectively. Energy Star gas deep fryers will receive a rebate of $1 250 and have an average product cost of $10 000.

## 6. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 7 444 kW.h per electric steamer<br>3 937 m3 per gas steamer<br>1 430 m3 per gas fryer |
| Average Winter Peak Demand Savings | 2.5 kW per electric steamer |

## 7. EXPECTED PRODUCT LIFE

12 year average

# NETWORK ENERGY MANAGEMENT PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Power Smart Commercial Network Energy Management Program is a software-technology based prescriptive program, aimed at commercial customers utilizing personal computers (PCs) in a network setting. The Program is tentatively scheduled to launch April 1, 2009 and is expected to reduce annual energy consumption by 12.7 GW.h, winter peak demand by 2.0 MW and summer peak demand by 2.0 MW by 2024/25. Savings will be achieved by promoting software programs eligible through the Manitoba Hydro Power Smart program, while raising awareness to the customer of associated energy and other benefits.

**Electric**
TRC Test: 3.5
RIM Test: 1.1
Levelized Utility Cost: 1.4¢/kW.h

**Combined** *(including Interactive Effects)*
TRC test: 3.2

## 2. MARKET POTENTIAL AND TARGET MARKET

The end user target market is comprised of approximately 5 500 physical locations representing mainly the education and office sectors, estimated to include 350 000 PCs, or roughly 64 machines per customer in the target market.

The number of PCs in the target market is currently growing by 2% a year based on the replacement cycle of old PCs and the expanded need of PCs in office and educational settings.

## 3. DEFINITION OF MARKET

The target market is commercial customers utilizing PCs in a network setting.

## 4. MARKET BARRIERS

- Significant initial cost for organizations with a large number of PCs.
- In large organizations, IT managers do not see energy bills and are unaware of high energy costs, and therefore are not interested in energy efficiency.

- IT departments may be unfamiliar with energy saving software and may not want to risk affecting their IT upgrade and network patch schedules.

- Myths about damaging PCs by turning them on and off.

- Energy savings may be considered too low for an organization to purchase and implement available software.

- Individual workers may unnecessarily worry that software will prevent them from working outside normal business hours.

- Potential compatibility issues with energy saving software and the hardware organizations use, especially if organization uses both Mac and PCs.

- Software providers who require a minimum number of PCs necessary to sell software to the organization.

## 5. MARKETING STRATEGY

- **Product** The Program will inform all customers about the savings and benefits associated with energy saving software programs. The software programs being offered will provide participating customers with reduced energy use, network-level control over system power states, the ability to apply different power settings to various user groups, flexible work and shut down schedules, reports on energy consumption, reduced operating costs and the ability to shut down PCs at night while still installing IT patches and updates.

- **Place** The software providers and their respective partners, in conjunction with Manitoba Hydro will prove to be the largest promotional channel and will act as advocates to their established networks within the target market. Power Smart Commercial Sales and the existing Power Smart Energy Manager Program will also play crucial roles in delivering this program.

- **Promotion** Promotion will include sector-specific marketing (direct mail, association presentations, trade shows, conference presence, business and association publications and newsletter advertisements) by Manitoba Hydro in partnership with the software providers. Additional advertising will be done by the providers and their partner companies independent of Manitoba

Hydro's efforts. Internal promotion will consist of comprehensive training for all involved functional areas.

- **Price** Manitoba Hydro will provide a rebate to the customer pursuant to the purchase and installation of eligible software. The rebate will cover 100% of the software, installation and technical support costs to a maximum of $15 per computer.

  The price per PC for the individual programs are: $25 for Verdiem's Surveyor, $15 for 1E's Nightwatchman / SMS Wakeup package, $7.20 for Faronic's Powersave in an education setting, $14.40 for Faronic's Powersave in a corporate setting, and $7 for BigFix Power Management. By offering an incentive limited to $15, 1E's, BigFix's, and Faronic's eligible software programs will be available to consumers for free, therefore putting pressure on Verdiem to lower the cost of their product in an effort to attain more sales.

## 6. PER SALE ENERGY & DEMAND IMPACT

Assumes average Manitoba customer has 64 PCs:

| | |
|---|---|
| Annual Energy Savings | 9,523 kW.h per participant |
| Average Winter Peak Demand Savings | 0.64 kW per participant |

## 7. EXPECTED PRODUCT LIFE

Based on the average life and replacement cycle of PCs in a commercial setting, the product life is estimated at 5 years.

# POWER SMART SHOPS

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Power Smart Shops Program is a designation program designed to promote energy efficiency to small independent commercial customers including restaurants, food retail, non-food retail/services and small offices. The program will encourage small independent commercial customers to fully convert their buildings to a Power Smart Shop efficiency level by providing expertise and competitive pricing and through the installation of no/low cost energy efficient products including lighting, refrigeration, hot water, and kitchen upgrades. The program will be used to cross-promote the existing Power Smart suite of programs as well.

The Power Smart Shops Program is expected to reduce annual electric consumption by 1.4 MW in summer, 1.2 MW in winter, 9.9 GW.h annually and reduce annual natural gas consumption by 0.20 million $m^3$ by 2024/25.

**Electric**
TRC Test: 1.9
RIM Test: 1.0
Levelized Utility Cost: 2.1¢/kW.h

**Natural Gas**
TRC Test: 6.1
RIM Test: 0.8
Levelized Utility Cost: 5.4¢/m3

**Combined** *(including Interactive Effects)*
TRC test: 1.9

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of small independent commercial customers including restaurant, food retail, non-food retail or service, and small office customers. The market is comprised of approximately 5 000 customers.

## 3. MARKET SHARE

The Program will aim to capture approximately 50% of the target market in a ten-year time frame. That is, 50% of customers who will be doing equipment replacement anyway will participate in the program by installing the energy efficient measures advocated through the program.

## 4. DEFINITION OF MARKET

The target market consists of small independent commercial customers including restaurant, food retail, non-food retail or service, and small office customers. The market is comprised of approximately 5 000 customers.

Small independent businesses seem to fall between the cracks as they do not present a significant opportunity for industry or the Power Smart Commercial Sales team (PSCS) to target. Although independently small, collectively this sector accounts for a large percentage of the commercial customer segment and presents significant opportunities for energy efficient upgrades. The program is specifically structured to eliminate the unique market barriers facing this sector.

## 5. MARKET BARRIERS

- Competitive pricing - small businesses are unable to receive competitive pricing on equipment or labor as retrofit volumes are significantly less than most other commercial customers. This inflated pricing often makes typically attractive retrofits non-economical.

- Resources - small businesses not only have limited capital to invest in upgrading their facilities but they often have limited human resources to allocate to researching, managing or training staff on new technologies or procedures.

- Industry Exposure - this sector is typically not reached by industry as they do not independently represent a significant opportunity to increase sales. As such, industry will devote their resources (sales calls and advertisements) to larger customers with greater potential.

- Power Smart Exposure - much like industry, this sector offers limited savings potential by the individual buildings while still requiring a similar time investment to larger customers. As such, the Power Smart Commercial Sales team devotes more of their resources (sales calls, meetings, customer service) to sectors with greater potential. In addition, traditional program marketing efforts are tied closely to trade associations, customer groups or industry events; all of which are under-represented by the small business sector.

## 6. MARKETING STRATEGY

- **Product** To address the competitive pricing barrier, energy efficient equipment and labor fees will be pre-negotiated on behalf of the program participants. A RFQ will be issued for the supply and for

the installation of certain measures to ensure competitive pricing and increase the accuracy of payback estimations. There is the potential that the RFQ may provide pricing below the incentive level for certain products where incentive levels are close to 100%; such as lighting. This will reduce program costs and improve economics. Rebates will include: lighting, refrigeration, hot water, and kitchen upgrades.

- **Place** To assist customers in retrofitting their buildings and gaining exposure to Power Smart technologies; "street team" members will be utilized. The street team will act as a liaison between the customer and Manitoba Hydro by introducing the program to the customer, identifying areas of potential and assisting the customers through all the program stages.

  The program will be organized into 3 stages.

  1) **Walk through** - A street team member will visit the business to conduct a simple audit identifying opportunities in the building. Information will be collecting on a handheld PDA to be used later in generating the report.
  2) **Presentation** - a street team member will meet with the customer a second time to review the report outlining the savings potential, costs, paybacks and which measures are required to be completed in order to qualify. The no cost products will also be identified to provide further motivation. All measures with an economical payback period (to be determined) are required to be completed by the customer prior to the installation of no cost products and prior to receiving a Power Smart Shop designation.
  3) **Designation** - once the customer completes all economical measures, the street team member will revisit the site to verify the installation, install the no cost energy efficient products and award the Power Smart Shop designation.

- **Promotion** Promotion will include sector-specific print advertising (direct mail, business and association publications and newsletter advertisements), as well as direct customer engagement by the Power Smart Shops Street Team in person and by telephone. Outbound calls will be made using a pre-qualified prospect list with the objective being to schedule energy assessments.

- **Price** To address the competitive pricing barrier, energy efficient equipment and labor fees will be pre-negotiated on behalf of the program participants. A RFQ will be issued for the supply and for

the installation of certain measures to ensure competitive pricing and increase the accuracy of payback estimations. There is the potential that the RFQ may provide pricing below the incentive level for certain products where incentive levels are close to 100%; such as lighting.

## 7. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 2 872.9 kW.h per participant |
| Average Winter Peak Demand Savings | 0.35 kW per participant |

## 8. EXPECTED PRODUCT LIFE

Based on the average life and replacement cycle the product life is estimated at 10 years.

# COMMERCIAL HVAC $CO_2$ SENSOR PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Carbon Dioxide ($CO_2$) Sensor Program will be a ten year program with anticipated savings of 1.4 million m3 of natural gas and 1.1 GW.h of electricity by 2024/25. This will be achieved by promoting the installation of carbon dioxide demand-controlled ventilation sensors through financial incentives and promotional activities, as well as increasing the levels of education to customers and channel intermediaries.

**Electric**
TRC Test: 4.9
RIM Test: 1.4
Levelized Utility Cost: 0.7¢/kW.h

**Natural Gas**
TRC Test: 2.8
RIM Test: 0.8
Levelized Utility Cost: 8.9¢/m3

**Combined**
TRC Test: 2.9

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of over-ventilated buildings with variable and relatively unpredictable occupancy. This market is also represented further by medium to large electric or natural gas ventilated commercial customers operating mechanically ventilated schools, hotels, restaurants, retail and office buildings. The target is further defined to customers that have installed or would consider installing Direct Digital Control (DDC) systems or rooftop units to control heating, cooling and ventilation. This target market represents approximately 5 400 sensors in Manitoba.

## 3. Market Share

On average, 153 carbon dioxide ($CO_2$) sensors are installed annually in the commercial retrofit market. In 2008, only 2.7% of the target market installed $CO_2$ sensors. The $CO_2$ Sensor Program forecasts 73% market penetration or 4 300 sensors by the program end year of 2018/19.

## 4. DEFINITION OF MARKET

The market for the CO2 sensor rebate is comprised of medium to large commercial customers with variable occupancy such as schools, hotels, restaurants, retail and office buildings.

## 5. MARKET BARRIERS

- Emphasis is often put on the product's initial capital cost and not on life cycle costs.

- $CO_2$ sensors are not a necessity in commercial building operations and are often the first retrofit measure to be discarded in the event of budgetary constraints.

- $CO_2$ sensors are not a familiar technology to decision makers, who may be motivated by short-term budget reductions over long-term energy savings.

- Most property managers are unfamiliar with the operation of their ventilation systems and are unaware when a building is being over-ventilated.

- Lack of awareness that $CO_2$ sensors are an option for controlling ventilation loads and decreasing operating costs.

- Limited industry experience with installation and maintenance.

- Variable outside air dampers and mechanical ventilation is required so the volume of ventilation air can be adjusted. This is opposed to fixed volume systems, where ventilation can only be at two positions - on or off.

- Direct Digital Control (DDC) systems are required in almost all $CO_2$ sensor applications. $CO_2$ readings serve as inputs to the DDC system which then uses the data to adjust the position of variable dampers to either increase or decrease ventilation loads. Conversely, $CO_2$ sensors can be connected directly to roof-top units to control ventilation loads, eliminating the need for a DDC system.

- Installing $CO_2$ sensors in under-ventilated buildings will improve indoor air quality but also increase energy use. As such, participation from these customers is highly unlikely for this Program.

## 6. MARKETING STRATEGY

- **Product** The Program will educate industry partners and customers about building ventilation systems and the benefits and best practices of $CO_2$ demand-controlled ventilation. Installation will be encouraged by providing financial incentives to customers.

- **Place** Manitoba Hydro's Power Smart Commercial Sales group will be the main delivery mechanism for the program. The program will continue to rely heavily on the existing network of engineering consultants, equipment manufacturers, distributors/wholesalers and controls contractor/servicing companies who have established relationships with the commercial customer base. Manitoba Hydro Energy Services Advisors and Major Account Representatives will also promote and deliver the program through their contact with commercial customers.

- **Promotion** Promotion will consist of one-on-one sales, webpage design, and direct industry and customer marketing through direct mail, association newsletters and publications, association meetings, trade shows and educational seminars. Considerable time will be spent educating engineering consultants and trade allies, presenting to customers, participating in trade shows and seminars, distributing information packages and conducting direct advertising.

- **Price** Aggressive financial incentives will address the initial cost and payback barriers of $CO_2$ ventilation control. A $200 rebate per sensor will be offered, representing approximately 44% of the product cost.

## 7. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Average Annual Electric Savings | 102 kW.h per participant<br>552 m3 per participant |
| Average Annual Electric Savings | 315 kW.h per participant |

## 8. EXPECTED PRODUCT LIFE

10 year average

# POWER SMART COMMERCIAL CLOTHES WASHERS PROGRAM

(Incentive Based)

## 9. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Power Smart Commercial Clothes Washers Program is a technology based, prescriptive program, aimed mainly at the replacement market. The Program is expected to reduce annual energy consumption by 2.5 GW.h, winter peak demand by 1.9 MW, summer peak demand by 1.9 MW. The Program will have net positive gas interactive effects, reducing natural gas consumption by 0.17 million m3 by 2024/25. Savings will be achieved by promoting ENERGY STAR® qualified front-loading commercial clothes washers while raising awareness of lower operating costs and increased water savings.

**Electric**
TRC Test: 2.0
RIM Test: 1.6
Levelized Utility Cost: 3.1¢/kW.h

**Combined** *(include Net Gas Benefits)*
TRC Test: 2.2

## 10. MARKET POTENTIAL AND TARGET MARKET

The target market is comprised of multi-residential units (MRUs) with common laundry areas such as apartments, military barracks and student housing operated by landlords, property managers or route operators; and Laundromats operated by small business owners or distributors. This represents a total of 2 222 Washers during the period of 2009/10 to 2018/19.

## 11. DEFINITION OF MARKET

The market is customers with commercial clothes washers at or near end of life.

## 12. MARKET BARRIERS

- Higher initial cost and incremental price difference with washers.
- Recouping the extra investment with route operators paying for washers and apartment owners paying for the utility costs.

- Lack of awareness and knowledge about less operating and maintenance costs and drying time; and better performance and capacity with washers.

- End users have difficulty assessing paybacks and life-cycle costs.

## 13. MARKETING STRATEGY

- **Product** Washers promoted by means of a financial incentive and the provision of basic information including no/low cost ideas with respect to best practices, maintenance and energy efficient commercial clothes washers.

- **Place** Power Smart Commercial Sales reps, Energy Services Advisors (ESAs) and Major Account reps will be the main delivery mechanism for the Program. Contractors, equipment dealers, route operators and wholesalers will play critical roles in delivering this program acting as advocates to their established networks within the target market.

- **Promotion** Promotion will include an aggressive advertising campaign addressing awareness barriers. External promotion will consist of personal sales, sector-specific marketing (direct mail, association trade show/conference presence, business and trade publication advertisements), webpage design and email newsletters. Time will be spent on educating trade allies (distributors). Internal promotion will consist of comprehensive training for all involved functional areas.

- **Price** Aggressive financial incentives addressing initial cost and price barriers of washers. The Program's incentive is $180, representing 22% of the incremental cost.

## 14. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 700 kW.h per participant<br>50 m3 per participant |
| Average Winter Peak Demand Savings | 0.5 kW per participant |

## 15. EXPECTED PRODUCT LIFE

12 year average

**Appendix E.4**

**Program Concepts**
**Industrial Programs**
*(Incentive Based)*

# PERFORMANCE OPTIMIZATION PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Performance Optimization Program is expected to reduce winter peak demand by 37.1 MW and annual energy consumption by 245.1 GW.h by the year 2024/25. This will be achieved by:

a) Encouraging customers to optimize the operation of pumps, fans, air compressors and industrial refrigeration systems and other motor driven equipment; and
b) Encouraging customers to analyze and improve the efficiency of electro-technology processes as well as their overall electrical usage patterns.

To encourage high levels of participation, emphasis will be placed on the increased direct promotion and technical support for the identification and analysis of project opportunities.

The motor drive systems portion of the program promotes a system approach where a system boundary is defined and then various optimization options for end uses, the distribution network, equipment and controls are examined and an optimal solution is recommended for each analyzed system.

The electro-technology processes portion of the program promotes the examination of electrical systems to identify energy saving opportunities that can be achieved via the use of a plant wide energy management system that can be optimized for each customer's unique electrical usage pattern.

**Electric**
TRC Test: 3.8
RIM Test: 1.4
Levelized Utility Cost: 1.6¢/kW.h

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of the approximately 2 000 Manitoba Hydro customers who are billed at General Service rates. This includes both existing facility installations and new construction projects. Priority will be given to the 300 largest customers with consumption in excess of 1 GWh per year. The average project time from identification to implementation ranges from six months to two years in duration.

## 3. MARKET BARRIERS

Motor Drive System Projects

- Lack of knowledge of customers about energy efficient system performance optimization techniques and products.
- Higher cost of energy efficient equipment purchase and installation.
- Lack of top level customer commitment towards energy efficiency.

Electro-Technology Process Projects

- Lack of knowledge of customers about energy efficient system performance optimization techniques and products.
- Higher cost of energy efficient equipment purchase and installation.
- Lack of top level customer commitment towards energy efficiency.
- Limited availability of product technologies.

## 4. MARKETING STRATEGY

- **Product** The program will encourage the optimization of both motor drive systems and electro-technology processes by providing product knowledge, system analysis assistance and financial incentives.

  For motor drive systems, a system approach methodology will be promoted and used that involves analysis of a system's end uses, distribution network, equipment and controls. Poor end uses will be reduced or eliminated, the distribution network will be reviewed to reduce high pressure drop situations, equipment and controls will be reviewed for energy improvement opportunities.

  For electro-technology processes, similar concepts will be used as for motor drive systems for individual systems and computer software and hardware will be used for plant wide systems. For individual systems, changing from analog to electronic controls or to a less energy intensive process might be implemented. For plant wide systems, firmware will be purchased for process control and electrical load management.

  The lack of product knowledge will be addressed by providing educational support materials in a wide array of formats ranging from educational seminars to best practices fact sheets and technical manuals.

- **Place** The place function will include direct contact with customers, vendors and consultants by the Business Engineering Services personnel and Manitoba Hydro Key and Major Account Representatives. On-site analysis will be performed by consultants and Manitoba Hydro staff to identify suitable projects. The program will operate through seminars, vendor sales, consultant studies, customer workshops, and facility scoping studies/audits.

- **Promotion** Promotion has traditionally been focused on facility operation and production managers with good success. Promotion directly to corporate decision makers will also be utilized in the future. Business Engineering Services and or other qualified engineering staff from inside or outside the customer's organization will be enlisted to review facility operations to identify opportunities for increased energy efficiency and/or productivity.

  Program opportunity details will be promoted through a variety of media, trade ally sales presentations and Manitoba Hydro Key and Major Account Representatives conducting direct calls to customers.

- **Price** The higher cost of implementing performance optimization measures will be addressed by providing financial support to customers. This will take the form of providing incentives for both feasibility studies and project implementation.

## 5. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 430000 kW.h per participant |
| Average Winter Peak Demand Savings | 65 kW per participant |

## 6. EXPECTED PRODUCT LIFE

15 year average

# EMERGENCY PREPAREDNESS PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Industrial & Commercial Emergency Preparedness Program is intended to fulfill a two-fold purpose. The program will provide electrical demand and energy savings in support of the Corporation's Power-Smart mandate while providing operational support during crisis that impact the availability of supply for the Corporation's customers in the Greater Winnipeg Area.

The program's first objective is to provide customer-based, emergency response capability designed to assist Manitoba Hydro in maintaining service in the Greater Winnipeg Area during emergency scenarios such as the loss of the Dorsey Converter Station. Loss of access to the Corporation's northern generation will result in a 750 to 1000 MW shortfall in supply at peak to all classes of customers in the Greater Winnipeg Area. The development of a customer-based, emergency response plan designed to curtail, displace and shift the industrial and commercial sector's electrical demand and energy consumption will reduce this shortfall by approximately 300 MW.

The program's second objective is to provide the Corporation and its customers with electrical demand and energy savings through the implementation of facility-wide energy management systems. The installation of on-site energy management equipment to monitor, control and schedule electrical usage within industrial and commercial customer facilities will facilitate reductions in cumulative winter peak demand by 28.5 MW, summer peak by 28.5 MW, while providing annual energy consumption savings of 28.5 GWh by the year 2024/25.

The program will achieve these savings through coordination and management of electrical loads using equipment that monitors, controls and schedules operation of equipment within customer facilities, providing feedback on energy performance that may be used to identify additional energy saving opportunities. The program will support the installation and operation of this equipment through initial capital incentives and ongoing performance-based incentives that compensate customers for demand and energy-reductions achieved through regular operation and in response to opportunities identified by the Corporation's System Control operations.

**Electric**

TRC Test: 2.4

RIM Test: 1.1

Levelized Utility Cost: 6.3¢/kW.h

## 2. MARKET POTENTIAL AND TARGET MARKET

The program's target audience consists of Manitoba Hydro's 200 largest industrial and commercial customers in the Greater Winnipeg Area. The targeted focus of the program is based on the geographical area that has been determined to be impacted in the event of a major supply crisis such as the loss of the Dorsey Converter Station. The target audience is presently serviced by the Corporation through Industrial and Commercial Solutions, Key and Major Account activities in cooperation with the Division's Business Engineering Services activities.

The cumulative electrical demand and energy consumption of this market based on the 2008/09 fiscal period is approximately 750 - 800 MW and 3 300 to 3500 GW.h.

## 3. MARKET SHARE

The program targets greater than 85% participation by customer count and greater than 95% participation by cumulative energy consumption. The aggressive nature of these targets is necessary to achieve the program's objectives for emergency response preparedness. It is anticipated that these targets are achievable based on the customer-specific contact provided through the key and major account management process, coupled with the ongoing benefits provided to customers, in conjunction with emergency preparedness security.

## 4. DEFINITION OF MARKET

The target market consists of the Corporation's 200 largest industrial and commercial customers, as defined by electrical demand and energy consumption, in the Greater Winnipeg area. The geographical area is defined by the boundaries of the Winnipeg Central, Winnipeg West, Eastman and Interlake operating districts and relates to the configuration of the Corporation's transmission and distribution system in Southern Manitoba.

The targeted customers operate within Manitoba Hydro's General Service Large (approximately 45%) and General Service Medium (approximately 55%) rate classes. These customers intersect with the entire range of applicable Standard Industry Classifications (SIC), including commercial office buildings, medical facilities, educational institutions, retail shopping centers, recreational facilities, manufacturing facilities, warehousing, petroleum, pulp and paper, metals and mines.

## 5. MARKET BARRIERS

- **Customer Attitudes** (perception of risk, loss of control, confusion over program provisions, pricing, incentives and penalties, loss of comfort or convenience, lack of feedback, security)

  These attitudinal barriers will be addressed through education of the customer base, improving awareness of the need for emergency preparedness and the long-term benefits associated with energy management. Detailed engineering audits will be used to identify opportunities for demand-response and energy management that will assist customers in improving their energy performance, providing long term savings that will enhance cost efficiency and productivity. Continuous monitoring and feedback will assist customers in achieving a better understanding of their energy utilization and the resulting impact on costs of operation.

- **Technology Limitations** (equipment standardization, communication, monitoring, coordination, control, security)

  The use of proven equipment for monitoring and control of equipment, coupled with recent advancements in communication, coordination and security, will address concerns related to the availability and reliability of real-time data, performance monitoring, response time and verification of results.

## 6. MARKETING STRATEGY

- **Product** The program encourages targeted industrial and commercial customers to install energy management systems for the purpose of monitoring, controlling and scheduling operation of electrical equipment in a manner that reduces facility consumption on an ongoing 365 day-per-year basis and in planned response to opportunities identified by the Corporation as a result of economic opportunities or system constraints.

- **Place** Program promotion and opportunity identification will be facilitated by the Industrial & Commercial Solutions Division's Key and Major Account representatives through face-to-face meetings and facility audits coordinated by the Division's Business Engineering Services staff. Implementation will be facilitated through third-party relationships with demand response aggregators, electrical contractors and engineering consultants.

- **Promotion** Program promotion will be achieved primarily through face-to-face meetings with customers, intended to outline the need for an emergency response capability, highlight opportunities for customer participation, identify savings opportunities and program benefits. Customer contact and promotion will be managed key and major account representatives from the Industrial & Commercial Solutions Division.

- **Price** Customers will be offered financial incentives to support identification of opportunities through engineering analysis and installation of energy management equipment. The amount of these incentives, intended to reduce capital expenditures and promote program participation, will be determined based on the cost of the project, demand and energy savings contribution, financial payback criteria, and avoided cost benefit to the Corporation.

  Performance-based incentives will be provided based on the results achieved by participating customers in responding to short-term economic opportunities and system constraints identified by the Corporation. The amounts of these incentives will be in proportion to the value of the response to the Corporation.

## 7. PER SALE ENERGY & DEMAND IMPACT

| | |
|---|---|
| Annual Energy Savings | 150 000 kW.h per participant |
| | 0.00 m3 per participant |
| Average Winter Peak Demand Savings | 150 kW per participant |

## 8. EXPECTED PRODUCT LIFE

15 year average

# NATURAL GAS OPTIMIZATION PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECAST SAVINGS

The Industrial Natural Gas Optimization Program is designed to compliment the electric based Performance Optimization Program, extending Manitoba Hydro's effort to support the systematic improvement of natural gas equipment and processes in industry. This program is expected to reduce industrial natural gas consumption in the province by 4.6 million cubic meters annually by 2024/25.

**Natural Gas**
TRC Test: 1.5
RIM Test: 0.9
Levelized Utility Cost: 5.5¢/m3

## 2. MARKET POTENTIAL AND TARGET MARKET

The industrial natural gas market in Manitoba is made up of approximately 1 474 customers defined by a great diversity of scale and function. Customers are best categorized by process intensive energy consumption, tied to operating schedules as opposed to heating season.

This program was principally developed to promote custom applications of large and medium sized industrial customers. Recognizing that a custom approach may not suit some smaller industrial customers, those consuming less than 100 000 cubic metres annually will also have the option of applying through the prescriptive commercial HVAC program, at Manitoba Hydro's discretion.

## 3. PROGRAM / MARKET BARRIERS

- Lack of Capital - This common barrier plagues many industrial customers as energy efficiency projects are only one of many requests for capital that a company must try to accommodate.

- Lack of Customer Knowledge / Expertise - Customer knowledge of natural gas efficiency is limited, representing a low level presence in the decision making of energy managers in industry.

- Lack of Customer Emphasis on Energy Efficiency - Energy efficiency is absent in the corporate strategic goals/objectives of many industrial customers.

- Aversion to Process Efficiency Improvement - Many customers are hesitant to risk the operation of sensitive processes for efficiency modifications.

- Lacks of Homogeniality / Diversity of Scale - Industrial customers in Manitoba vary greatly in scale and characteristics of natural gas use.

- Customer Acceptance of Rate Impact - All natural gas programming in Manitoba is expected to have a negative rate impact on non-participants.

## 4. MARKETING STRATEGY

- **Product** The program will focus on the systematic improvement of all industrial natural gas equipment from source (boiler/ventilation unit) through distribution, to end-use (source fed/direct fired).

- **Placement** Key, major and retail account advisors will be utilized to disseminate program information and identify potential projects. Program staff identified the target customers and will arrange for site meetings with customers, either directly or through the account representatives. This effort will be complimented by the cooperation of channel partners (engineering and consulting firms, distributors and vendors ) serving the industrial sector.

- **Promotion** Promotion will utilize a direct approach, communicating technical and program information by way of in-person contact between the program staff and the customer and supported by electronic and paper media.

- **Price** This program intends to overcome financial and information barriers by way of program involvement at each step of project life; from the provision of no-cost walkthrough assessments, to incentives for feasibility study and project implementation.

## 5. PER SALE ENERGY IMPACT

Annual Energy Savings (average) 87, 500 m3 per participant

The average project should improve facility-wide natural gas use by 7 to 10%, with incentives providing an average customer payback of 2 years.

## 6. EXPECTED PRODUCT LIFE

The measure mix making up the average project has an expected life of 15 years.

**Appendix E.5**

**Program Concepts**
**Load Management Programs**
*(Incentive Based)*

# CURTAILABLE RATE PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

Under the Curtailable Rate Program (CRP), Manitoba Hydro gives qualifying customers a monthly credit on load (kW) which can be curtailed on notice from Hydro.

The CRP has been in existence since November, 1993; first as a 5 year experimental program and as of December 1, 1998 as a permanent rate offering. The Terms and Conditions of the program were last revised effective Apri1 1, 2005 to introduce a new Curtailment option which would assist Manitoba Hydro in meeting the Corporations Operating Reserve requirements under the Mid-Continent Area Power Pool Generation Reserve Sharing Pool (MAPP GRSP). Under the new curtailment option, Option R, customers are required to guarantee curtailable load and have such load available within a 5-minute time-frame. Customers selecting this option are, in addition to the monthly kW credit, also compensated by receiving a kW.h credit for the amount of energy curtailed during an Option R curtailment.

## 2. MARKET POTENTIAL AND TARGET MARKET

The target market consists of large industrial loads with a minimum of 5 MW of load which can be curtailed for several hours on five minutes and/or 1 hour notice, dependent on the curtailment option selected, from Manitoba Hydro.

There are currently four curtailable customers who provide 229.5 MW of nominal curtailable load at meter under Options A and C, and 40 MW of guaranteed curtailable load at meter under Option R. Manitoba Hydro has capped the level of curtailable load under all options, with Options A and C combined capped at 230 MW at meter and Option R capped at 100 MW at meter.

## 3. MARKET BARRIERS

There are no market barriers at this time.

## 4. MARKETING STRATEGY

- **Product** A permanent Curtailable Rate Program has received regulatory approval. The current Terms and Conditions of the program have been in effect since April 1, 2005.

- **Place** Information on the CRP will continue to be disseminated by Manitoba Hydro staff who have contract with existing and new large industrial customers.

- **Promotion** Due to the relatively small number of potential customers and the complex nature of the rate program, promotion of the program will be carried out through direct contact with each potential customer.

- **Price** The credit per kW of curtailable load is related to the marginal value of capacity. Dependent on the curtailment option selected, customers receive a percentage of the Reference Discount, currently set at $3.00 per kW and adjusted annually for inflation.

  Customers selecting Option "R", in addition to the Reference Discount, receive a Reserve Discount, set at $0.04 per kW.h, which is applied only when the customer has successfully curtailed their load when requested.

5. **PER SALE ENERGY AND DEMAND IMPACT**

Average Winter Peak Demand Savings: 1.0 kW per kW of nominal curtailable load

Average Summer Peak Demand Savings: 1.0 kW per kW of nominal curtailable load

The CRP has no energy impacts.

6. **EXPECTED PRODUCT LIFE**

Savings attained through this program are non-repeatable. Capacity saved at one point in time does not imply that the same capacity will be saved at any future time.

A curtailable program will remain in place if it continues to be mutually suitable for Manitoba Hydro and participating customers.

**Appendix E.6**

**Program Concepts**
**Customer Self Generation Programs**
*(Incentive Based)*

# BIOENERGY OPTIMIZATION PROGRAM

(Incentive Based)

## 1. PROGRAM CONCEPT AND FORECASTED SAVINGS

The Bioenergy Optimization Program will encourage customers to install, operate and maintain customer sited load displacement generation systems which employ combined heat and power (CHP) and renewable fuels; specifically biomass. By 2024/25 the program is forecast to achieve 10 MW and 75 GW.h in electricity load reduction and 3.6 million cubic meters in natural gas load reduction. From 2009 through 2014, the program is also forecast to achieve an additional 7 MW and 67 GW.h in electricity load reduction via a large scale load reduction project.

**Electric**
TRC Test: 1.6
RIM Test: 1.4
Levelized Utility Cost: 1.6¢/kW.h

**Natural Gas**
TRC Test: 5.1
RIM Test: 0.9
Levelized Utility Cost: 3.3 ¢/m3

**Combined**
TRC Test: 1.8

## 2. MARKET POTENTIAL AND TARGET MARKET

All customers billed at the General Service Rate categories will be eligible for the program; however, only agricultural and industrial customers with readily available, low cost sources of biomass are anticipated to actively participate in the program. The electrical load assigned to curtailable and surplus energy rates and electrical energy assigned to non-utility generation agreements will not be eligible for the program. The target market will consist of more than a dozen industrial customers, over 70 Hutterite Colonies and upwards of 140 large size hog farrowing units.

## 3. MARKET SHARE

The program is targeted at a relatively small group of customers within Manitoba. 57 projects are anticipated to be supported over the life of the program based upon a participation rate aimed at capturing between 20% to 26% of the target market.

## 4. DEFINITION OF MARKET

Customers that have readily available, low cost sources of biomass, continual needs for heat and power and the capability to operate and maintain biomass to energy conversion systems.

## 5. MARKET BARRIERS

- Significant Capital Investment by Customers: The program will offer financial incentives and incorporate mechanisms to assemble a benefit stream to cope with the significant capital cost of biomass to energy conversion systems.

- Technical and Operational Risk for Customers: The program will rely on Manitoba Hydro's technical expertise, a strong network of contacts and resources and technology demonstration projects to convince customers that technical and operational risk can be effectively managed.

## 6. MARKETING STRATEGY

- **Product** Customer sited load displacement generation incorporating combined heat and power and fuelled by readily available, low-cost sources of sustainable biomass.

- **Place** Facilities on the customer side of the revenue meter.

- **Promotion** Participants will be approached on an individual basis to present the program.

- **Price** Average installed cost of $3,500 per kW (electric) for load displacement generation systems.

## 7. PER SALE IMPACT

| Customer | Cumulative Sales | Cumulative | | | Per Sale Average | | |
|---|---|---|---|---|---|---|---|
| | | Electrical Demand MW | Electrical Energy GW.h | Natural Gas Million $m^3$ | Electrical Demand MW | Electrical Energy GW.h | Natural Gas Million $m^3$ |
| Large* | 1 | 7.3 | 67 | 0 | 7.3 | 67 | 0.0 |
| Industrial | 3 | 3.3 | 24 | 3.45 | 1.1 | 8.0 | 1.150 |
| Hutterite | 17 | 4.3 | 36 | 0.075 | 0.25 | 2.1 | 0.0044 |
| Sow | 36 | 1.8 | 15 | 0.075 | 0.05 | 0.42 | 0.0021 |

* For period from 2009 through 2014

8. **EXPECTED PRODUCT LIFE**

15 to 20 year average