

Power Smart Plan

2014 to 2017

SUPPLEMENTAL REPORT:
15yr (2014 to 2029)



EXECUTIVE SUMMARY

Manitoba Hydro's 2014-2017 Power Smart Plan - 15 year supplemental report outlines the Corporation's demand side management program over the next 15 years, with some programs formally approved and placeholders used for those programs requiring further review and analysis. The Plan was developed through an intensive planning process which builds on the Corporation's experience and continuous involvement in demand side management since 1989. This plan builds upon and is consistent with the 2014-2017 three year Power Smart Plan which was prepared in consultation with the Minister responsible for Manitoba Hydro. The 15 year plan is required to accommodate the Corporation's overall longer term business planning requirements, including developing an integrated resource plan.

This supplemental report outlines the 15 year forecast of energy and demand savings, investments and cost effectiveness metrics to the benchmark year of 2028/29 which will be achieved through electricity and natural gas Power Smart Programs. The plan sets out to realize electricity savings of 1,136 MW and 3,978 GW.h, natural gas savings of 108 million cubic meters and combined global greenhouse gas emission reductions of 2.9 million tonnes by 2028/29. This activity represents 12.7% of the estimated electric load forecast offsetting 66% of projected load growth during this period and 5.3% of the estimated natural gas volume forecast by 2028/29, further reducing natural gas consumption in Manitoba. The total cost of achieving the energy savings is \$978 million; \$818 million of the costs are funded through the Corporation's Power Smart electricity budget, \$130 million from the Power Smart natural gas budget, \$11 million from the Affordable Energy Fund and \$19 million from the Furnace Replacement budget for targeting furnace replacement.

Combined with energy savings achieved to date, total electrical savings of 1,635 MW and 6,286 GW.h and total natural gas savings of 211 million cubic meters will be realized by 2028/29. These combined energy savings are expected to result in an overall reduction of greenhouse gas emissions of 4.6 million tonnes by 2028/29. This activity represents 20.1% of the estimated electric load forecast and 10.2% of the estimated natural gas volume forecast by 2028/29. It is expected that by 2028/29, a cumulative investment of achieving the energy savings will have been \$1.6 billion dollars, \$1.3 billion of the costs are funded through the Corporation's Power Smart electricity budget, \$232 million from the Power Smart natural gas budget, \$37 million from the Affordable Energy Fund, \$27 million from the Furnace Replacement budget for targeting furnace replacement.

By reducing electricity and natural gas consumption through innovative products, participating customers can expect to save \$191 million in 2028/29 and \$1.7 billion cumulatively by 2028/29. When combined with bill reductions to date, Power Smart programs are expected to save participating customers \$277 million in 2028/29 and over \$4.3 billion dollars cumulatively by 2028/29.

The overall Societal Cost (SC) and Total Resource Cost (TRC) metrics for the electric and natural gas Power Smart portfolio is 2.2 and 2.0, respectively. The electric Power Smart portfolio has an overall TRC of 2.2, RIM of 1.0 and an overall levelized utility cost of 1.8 cents per kilowatt-hour. The natural gas Power Smart portfolio has an overall TRC of 1.1, RIM of 0.5 and an overall levelized utility cost of 18.6 cents per cubic meter. Excluding the Affordable Energy Program, the natural gas Power Smart portfolio has an overall levelized utility cost of 13.5 cents per cubic meter.

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1 THE 2014-2017 POWER SMART PLAN

1.1 Introduction

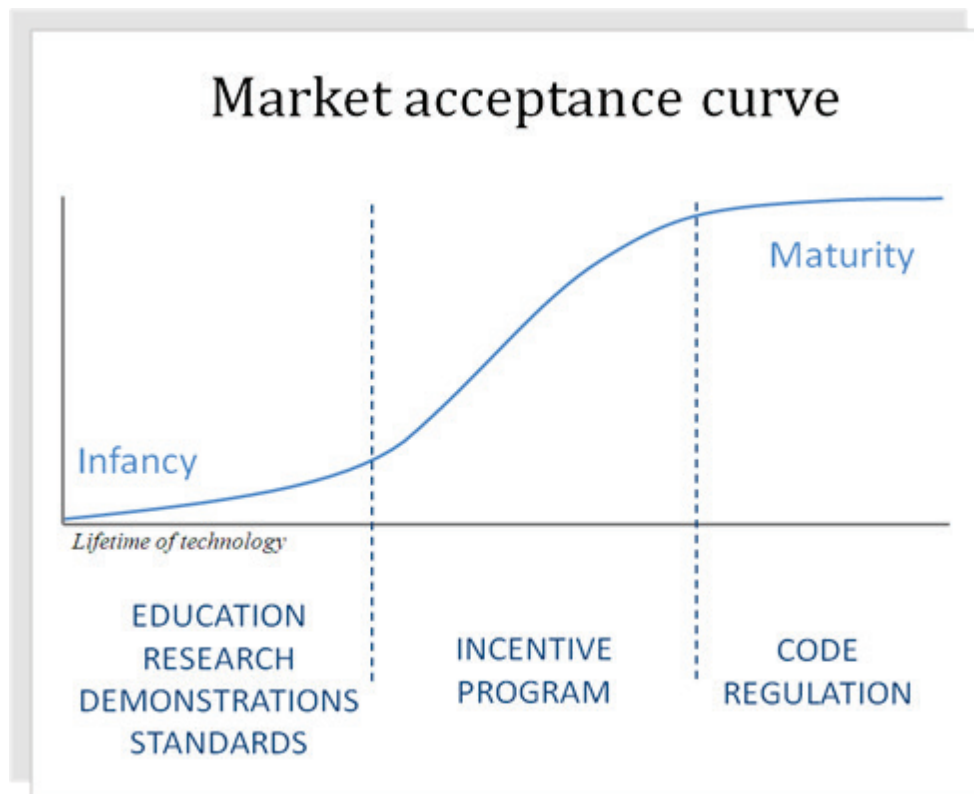
Manitoba Hydro's 2014-2017 Power Smart Plan – 15 year supplemental report outlines the Corporation's demand side management program over the next 15 years, with some programs formally approved and placeholders used for those programs requiring further review and analysis. The Plan was developed through an intensive planning process which builds on the Corporation's experience and continuous involvement in demand side management since 1989. This plan builds upon and is consistent with the 2014-2017 three year Power Smart Plan which was prepared in consultation with the Minister responsible for Manitoba in accordance with the Energy Savings Act. The 15 year plan is required to accommodate the Corporation's overall longer term business planning requirements, including developing an integrated resource plan.

Manitoba Hydro's DSM plan is an input to the development of the Corporation's Integrated Power Resource Plan. To support this process, the Corporation prepares a 15 year forecast which is reviewed and updated annually to reflect current market information and trends. This supplemental report outlines the 15 year forecast underpinning the approved 2014 – 2017 Power Smart Plan and includes the long term forecasts of energy and demand savings, budgets and cost effectiveness metrics.

1.2 DSM Market Transformation Strategy

Manitoba Hydro's DSM strategy is to aggressively pursue all cost effective energy efficiency opportunities and continually monitor the market to identify emerging trends and opportunities which may become viable and cost effective DSM initiatives within the planning horizon with the end goal of creating a sustainable market change where the energy efficient technology or practice ("EE measure") becomes the market standard.

To accomplish this in a manner that ensures permanent market transformation to the EE measure is achieved, a long term and comprehensive approach is used that involves different market intervention strategies at the various stages of the EE measure's adoption into the market. These strategies are researched and designed using a collaborative approach considering the input and expertise of the entire delivery channel for the EE measure including designers, suppliers, retailers and target customers.



Infancy

When an EE measure is first introduced to the market, it is typically received with skepticism on the part of installers, facility owners and consumers. The market is also often characterized by limited availability of the product, higher costs and, in many cases, unverified or untested energy performance claims. These conditions make it difficult to develop and increase market acceptance for the product. Lack of informed suppliers or experienced installers is also an issue with some EE measures, as many industry participants prefer to retain their own “tried and true” supply chain and installation methods.

It is of utmost importance in this phase that these barriers are addressed otherwise the EE measure will face difficulty with achieving market penetration and may fail to enter the growth stage.

Market Intervention Strategies:

Research and Development including possible demonstrations project showcasing the EE technology are important to demonstrate the performance claims for the measure and possibly to even highlight areas where the EE measure can be improved. For technologies related to space and water heating in particular, local field demonstration experience can be critical to increasing acceptance, due to Manitoba’s climate differences from typical laboratory or field testing. Demonstrations also have additional benefits through the ability to become showcases for the purpose of education and a future basis for communications that incorporate “real world” experiences that installers and customers can identify with operational performance.

If the energy performance of the EE technology is already known or has been verified through research and demonstration, communication strategies focusing on education to the market are critical to building awareness of the EE measure and its benefits.

Policy relating to energy efficiency is a very powerful strategy for EE measures in the infancy stages as it encourages government stakeholders to be to become leaders with energy efficiency and be the early adopters of the new technology. Early adopters are critical to the successful launch of new EE measures as they help to build the base industry infrastructure by creating initial demand.

Growth

Once the barriers of the Infancy stage have been identified and a strategy to address the barriers has been successfully implemented for the EE measure, market penetration begins to rise, whether voluntarily or through a policy strategy. In the early stages of growth, there needs to be a balanced approach to creating demand for the measure while ensuring that the market has developed qualified and knowledgeable providers in order to meet the emerging demand. EE measures in early growth can face irreparable damage if the early majority adopters lose confidence in the measure due to performance that does not meet expectations.

At this stage, the product efficiency performance is established with energy benefits to the customer quantified and the non-energy benefits have been identified. However, there will still be a lack of knowledge in the market as to the optimum methods of realizing these benefits.

During later periods of the growth stage, installers and suppliers become more plentiful, there may be customers with years of successfully implementing the EE measure, and there is increased awareness of the existence of the product.

Through the majority of the growth phase, a first cost premium typically remains associated with the EE measure.

Power Smart can have a significant impact on the rate at which a product is adopted in the market regardless of the form of the program or support offered due to the immense trust that industry and consumers have in Manitoba Hydro's expertise in matters pertaining to energy efficiency.

Market Intervention Strategies:

The strategies that are employed during this phase are dependent upon the characteristics of the market the technology is directed toward, the magnitude and significance of the additional cost to the market, and the breadth of accommodation that must be made in order to effectively utilize the technology. Strategies can vary drastically not only by market segment but also by specific technology. A thorough understanding of the market, both overall characteristics and drivers and detractors to the EE measure, is essential to ensure that the program design is addressing the proper target market and contains the tools and strategies that will address the barriers present.

Marketing and communication strategies focus on comprehensive messaging that includes both the efficiency benefits and the non-energy benefits that have been attributed to the measure, and that have a perceived value to the intended target market, in order to maximize the market adoption.

With first cost still a barrier, many programs will utilize financial tools such as incentives and/or financing to encourage customer adoption of the measure. The specific tool used or the extent to which the program covers the incremental cost of the measure will vary by technology and by target market and, once again, involves consultation with the channel participants to determine the optimal contribution by Power Smart.

Equally as important to the more visible customer directed strategies are capacity building initiatives. These strategies can be especially important for those EE measures that rely on professional consultants or installers for implementation and include training, education, and certification of groups such as homebuilders, equipment installers, engineers, architects, retailers, and distributors.

In assessing options for pursuing a Power Smart program to support an EE measure, Manitoba Hydro uses a number of metrics as guidelines to assess the opportunities. These metrics assist in determining whether to pursue an opportunity, how aggressive an opportunity will be pursued, the effectiveness of program design options and the relative investment sharing between ratepayers and participating customers.

Maturity

At the maturity phase of the EE measure's life cycle, the measure's use has become the preferred installation for the majority of the installers and customers in the market. At this stage volumes have increased to the point that prices are reduced to the same level as the technology that is being replaced, or the price of the technology is in alignment with the value perceived by the customer. With these conditions, program participants often are qualified as "free riders"; in other words, they would have adopted the measure even in the absence of a program so the incentive they received was not responsible for achieving their energy savings.

Market Intervention Strategies:

During this phase, Manitoba Hydro's strategy involves pursuing the remaining opportunities through the adoption of codes and regulations. A code or a regulation ensures permanent market transformation for the specific energy efficiency opportunity since a potential always exists that the market could revert back to the non-efficient option once Power Smart has reduced or eliminated its program support.

Manitoba Hydro is heavily engaged in both Federal level and Provincial level committees that work to establish ongoing updates to minimum energy performance standards for technologies and to determine the appropriateness of their adoption into a code or a regulation. The assessment of the most appropriate exit strategy for a technology is strategized as early as at the infancy phase of the adoption life cycle of the EE measure where possible.

1.3 Power Smart Programs

The following table provides program durations and cumulative participation for incentive based and financial loan programs over the 15 year planning horizon. For program descriptions, please refer to the current approved DSM plan (2014-2017 Power Smart Plan). For programs not approved but where placeholders are used, detail program descriptions are not available at this time.

**Program Duration and Cumulative Participation
 2014/15 - 2028/29**

Programs	Program Category	Electric	Natural Gas	Program Launch Date	Participation Definition	Cumulative Participation by 2028/29
Residential						
New Home Program	Incentive Based	✓	✓	Apr-2017	No. of houses	1,772
Home Insulation Program	Incentive Based	✓	✓	May-2004	No. of houses	25,220
Water and Energy Saver Program	Incentive Based	✓	✓	Sep-2010	No. of houses	335,484
Affordable Energy Program	Incentive Based	✓	✓	Dec-2007	No. of retrofits	24,025
Refrigerator Retirement Program	Incentive Based	✓		Jun-2011	No. of appliances	31,000
Residential LED Lighting Program	Incentive Based	✓		Apr-2014	No. of bulbs	328,658
Community Geothermal Program	Incentive Based	✓		Apr-2013	No. of geothermal systems	5,885
Power Smart Residential Loan	Financial Loan	✓	✓	Feb-2001	No. of loans	90,000
Power Smart PAYS Financing	Financial Loan	✓	✓	Nov-2012	No. of loans	7,673
Residential Earth Power Loan	Financial Loan	✓	✓	Apr-2002	No. of loans	335
Commercial						
Commercial Lighting Program	Incentive Based	✓		Apr-1992	No. of projects	7,315
LED Roadway Lighting Conversion Program	Incentive Based	✓		Apr-2014	No. of conversions	129,550
Commercial Building Envelope - Windows Program	Incentive Based	✓	✓	Dec-1995	No. of projects	3,774
Commercial Building Envelope - Insulation Program	Incentive Based	✓	✓	Dec-1995	No. of projects	4,975
Commercial Geothermal Program	Incentive Based	✓		Dec-1995	No. of buildings	1,069
Commercial HVAC Program - Boilers	Incentive Based		✓	Sep-2003	No. of boilers	259
Commercial HVAC Program - Chillers	Incentive Based	✓		Sep-2003	No. of chillers	89
Commercial HVAC Program - CO2 Sensors	Incentive Based	✓	✓	Apr-2009	No. of sensors	3,339
Commercial HVAC Program - Water Heaters	Incentive Based		✓	Apr-2015	No. of water heaters	462
Commercial Custom Measures Program	Incentive Based	✓	✓	Dec-1995	No. of projects	317
Commercial Building Optimization Program	Incentive Based	✓	✓	Apr-2006	No. of buildings	138
New Buildings Program	Incentive Based	✓	✓	Apr-2009	No. of buildings	195
Commercial Refrigeration Program	Incentive Based	✓		Apr-2006	No. of locations	3,378
Commercial Kitchen Appliance Program	Incentive Based	✓	✓	Jan-2008	No. of appliances	5,240
Network Energy Management Program	Incentive Based	✓		May-2008	No. of licenses	38,944
Internal Retrofit Program	Incentive Based	✓	✓	Jul-1995	No. of projects	174
Power Smart Shops	Incentive Based	✓	✓	Feb-2009	No. of projects	5,057
Power Smart for Business PAYS Financing	Financial Loan	✓	✓	Sep-2013	No. of loans	328
Industrial						
Performance Optimization Program	Incentive Based	✓		Jun-1993	No. of projects	2,254
Industrial Natural Gas Optimization Program	Incentive Based		✓	Sep-2006	No. of projects	48
Load Management						
Curtable Rate Program	Incentive Based	✓		Nov-1993	No. of customers	45 ^
Load Displacement & Alternative Energy						
Bioenergy Optimization Program	Incentive Based	✓	✓	Mar-2006	No. of projects	54
Customer Sited Load Displacement	Incentive Based	✓		Apr-2014	No. of customers	61

* Participation recurs annually

1.4 Economic Assumptions

Marginal Costs

The 2014–17 Power Smart Plan – 15 year supplemental report incorporated the following forecasts to estimate the marginal benefits for energy savings resulting from the revenue realized from conserved electricity being sold in the export market, the avoided costs of new transmission and the supply of natural gas:

- Electric – The electric marginal cost forecast was prepared and compiled by the Resource Planning and Market Analysis Department. Marginal values were provided for savings at the distribution level, transmission level, generation level and for the value of curtailable load. For the 2014-2017 Power Smart Plan - 15 year supplemental report, the following assumptions were applied:
 - Marginal costs were based on a uniform supply with a 100% capacity factor
 - Distribution Level Programs used a loss factor of 14% to translate back to generation
 - General Service Large Programs used a loss factor of 10% to translate back to generation
 - Generation Level Programs used a loss factor of 14% to translate to distribution level
 - US/Cdn Exchange Rates and Escalation Factors were derived from the Corporation's G911 corporate policy document issued August 13th, 2013
 - Transmission & distribution marginal costs were updated using SPD 2010/02
- Natural Gas – The marginal cost forecast for natural gas was prepared based on the natural gas price forecast which was provided by the Economic Analysis Department. Unlike the price forecast, it does not include distribution costs. The benefits of avoided greenhouse gas emissions were included in the natural gas marginal benefits used to calculate the Societal Cost (SC) and Total Resource Cost (TRC) metric. A greenhouse gas cost forecast was provided by the Energy Policy & Analysis Department.
- In addition, water benefits were calculated based on 2014 City of Winnipeg Water and Sewer rates effective April 1st, 2014.

Customer Rates

The following forecasts were used to determine the impact of customer bill reductions resulting from their Power Smart energy savings:

- Electric – The Electric Rates & Regulatory Department provided the rate forecast for electricity. Commercial and industrial program rates were determined by a weighted average based on the forecast participation by each of the Corporations’ billing classes. Residential rates were consistent for all residential programs. For the 2014-2017 Power Smart Plan - 15 year supplemental report, the weighted rates were based on the approved May 1st, 2013 rate forecast which assumed the 2014/15 real rates would increase by 1.9% and thereafter by 1.9% per year. This was based on the projected rate increase of 3.95% for 2014/15 and the long term rate increase of 3.95% per year (as per IFF-12) less the 2014/15 escalation rate of 2.0 % and the long term escalation rate of 2.0% (2012 Economic Outlook), (represented in 2014 \$).
- Natural Gas – The natural gas price forecast was prepared by the Economic Analysis Department with input from the Energy Price Outlook. For the 2014-2017 Power Smart Plan - 15 year supplemental report, the following assumptions were applied:
 - Forecast starting point was the February 1st, 2013 rate
 - Commodity price changes into the future were based on the forecast of natural gas prices contained in the Energy Price Outlook which represented a consensus view of futures markets and a suite of five independent forecasting organizations
 - Non-commodity (monthly charge, transportation, distribution) price changes were based on IFF-12 assumptions on general rate increases and the Economic Outlook assumptions on Manitoba inflation. Non-commodity price changes in the post-IFF period were based on historical trends

Economic Variables

For the 2014-2017 Power Smart Plan - 15 year supplemental report, the Projected Escalation, Interest, & Exchange Rates – G911 corporate policy document issued August 13th, 2013 was used to discount all forward-looking savings and costs. The real weighted average cost of capital of 5.4% was used to discount real dollar cash flows and energy savings. Rates for all historical benefits, costs, and energy savings used actual economic results for each year.

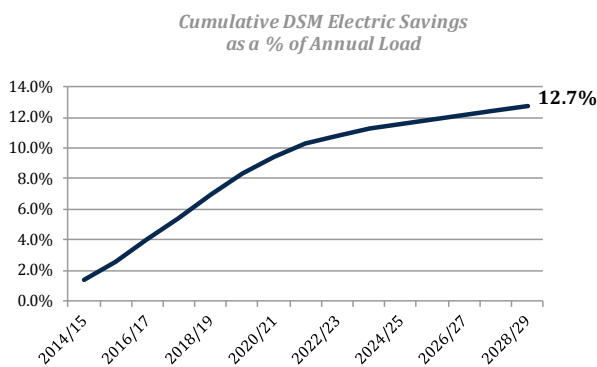
2 DEMAND SIDE MANAGEMENT

2.1 DSM Targets

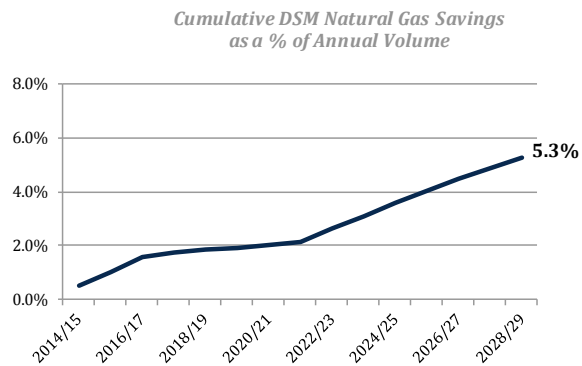
2.1.1 Electric and Natural Gas DSM Savings

In summary, the plan sets out to realize electricity savings of 1,136 MW and 3,978 GW.h, natural gas savings of 108 million cubic meters and combined global greenhouse gas emission reductions of 2.9 million tonnes by 2028/29.

This demand side management plan represents 12.7% of the estimated electric load forecast offsetting 66% of projected load growth during this period and 5.3% of the estimated natural gas volume forecast by 2028/29, further reducing natural gas consumption in Manitoba.



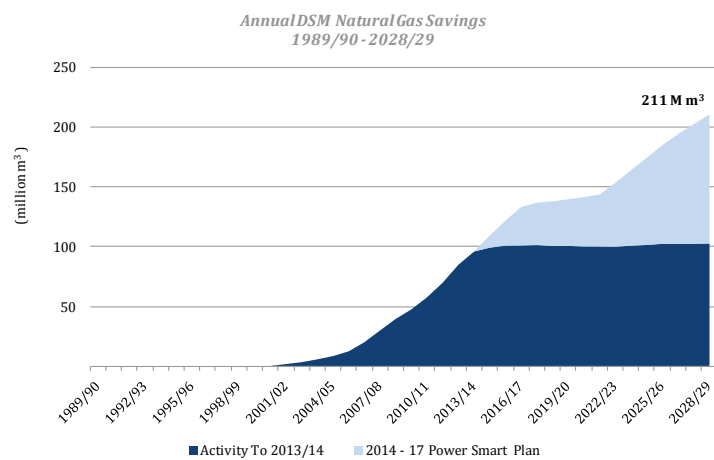
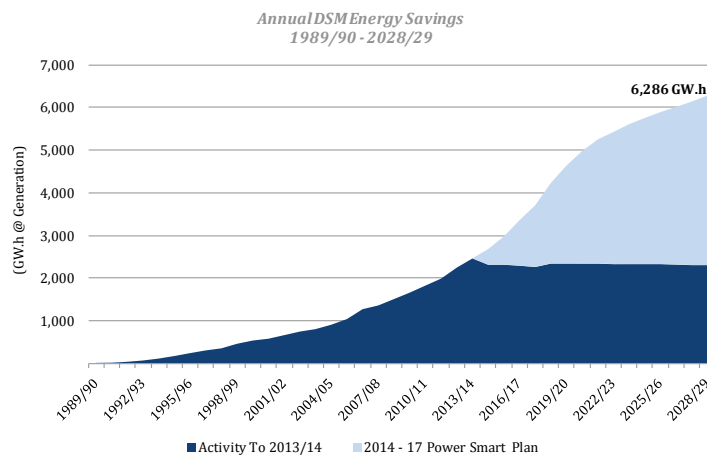
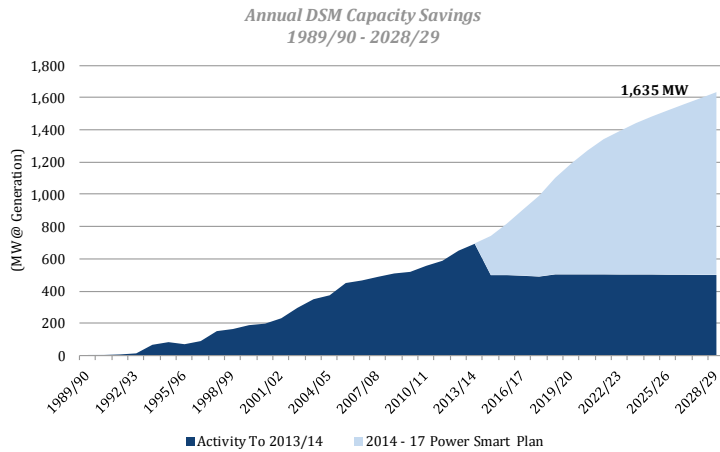
*Note: Total DSM Electric savings per the above graph includes forecast savings from program impacts and savings from Codes, Standards and Regulations.
 Source of Load Forecast: 2013 Electric Load Forecast*



*Note: Total DSM Natural Gas savings per the above graph includes forecast savings from program impacts and Codes, Standards and Regulations
 Source of Natural Gas Volume Forecast: 2013 Natural Gas Volume Forecast*

Combined with energy savings achieved to date, total electrical savings of 1,635 MW and 6,286 GW.h and total natural gas savings of 211 million cubic meters will be realized by 2028/29. These combined energy savings are expected to result in an overall reduction of greenhouse gas emissions of 4.6 million tonnes by 2028/29. This activity represents 20.1% of the estimated electric load forecast and 10.2% of the estimated natural gas volume forecast by 2028/29.

The following charts graphically represent the capacity, electric energy and natural gas energy savings achieved to date and the savings anticipated from future DSM activity for the 2014-2017 Power Smart Plan - 15 year supplemental report:



The following table shows detailed DSM savings associated with the 2014-2017 Power Smart Plan - 15 year supplemental report by sector to 2028/29.

**Electric and Natural Gas DSM Savings
 2014/15 - 2028/29**

	Annual Capacity (MW)		Annual Energy (GW.h)		Annual Energy (million m ³)	
Residential						
New Home Program	12.0		39.9		6.4	
Home Insulation Program	16.8		31.2		8.9	
Water and Energy Saver Program	2.4		12.3		2.5	
Affordable Energy Program						
Affordable Energy Program - Insulation	15.6		31.1		6.1	
Affordable Energy Program - Furnace	n/a		n/a		0.0	
Affordable Energy Program - Total	15.6		31.1		6.1	
Refrigerator Retirement Program	0.2		1.5		0.0	
Residential LED Lighting Program	1.4		5.9		0.0	
Community Geothermal Program	15.7		59.7		0.0	
Residential Programs Total (@ Meter)	64.1	10%	181.7	7%	23.9	74%
Customer Service Initiatives / Financial Loan Programs						
Power Smart Residential Loan	3.9		7.5		4.6	
Power Smart PAYS Financing	1.4		5.2		0.1	
Residential Earth Power Loan	4.3		18.0		2.0	
Residential CSI / Financial Loan Programs Total (@ Meter)	9.7	1%	30.7	1%	6.8	21%
Commercial						
Commercial Lighting Program	70.7		254.3		-	
LED Roadway Lighting Conversion Program	5.2		35.3		n/a	
Commercial Building Envelope - Windows Program	12.6		31.8		4.2	
Commercial Building Envelope - Insulation Program	11.8		30.1		13.1	
Commercial Geothermal Program	24.3		101.6		n/a	
Commercial HVAC Program - Boilers	n/a		n/a		4.7	
Commercial HVAC Program - Chillers	-		8.4		n/a	
Commercial HVAC Program - CO2 Sensors	1.3		1.7		2.8	
Commercial HVAC Program - Water Heaters	n/a		n/a		0.7	
Commercial Custom Measures Program	5.7		21.6		2.1	
Commercial Building Optimization Program	2.9		14.4		3.7	
New Buildings Program	21.7		49.1		1.5	
Commercial Refrigeration Program	7.0		62.1		-	
Commercial Kitchen Appliance Program	2.7		2.2		1.0	
Network Energy Management Program	1.8		4.7		-	
Internal Retrofit Program	0.5		2.7		0.0	
Power Smart Shops	1.1		3.9		0.1	
Commercial Programs Total (@ Meter)	169.3	26%	624.0	26%	33.9	105%
Customer Service Initiatives / Financial Loan Programs						
Power Smart For Business PAYS Financing	0.6		2.3		0.1	
Commercial CSI / Financial Loan Programs Total (@ Meter)	0.6	0%	2.3	0%	0.1	0%
Industrial						
Performance Optimization Program	57.0		363.5		n/a	
Natural Gas Optimization Program	n/a		n/a		4.8	
Industrial Programs Total (@ Meter)	57.0	9%	363.5	15%	4.8	15%
Energy Efficiency Subtotal (@ Meter)	300.6	46%	1,202.2	49%	69.5	214%
Load Management						
Curtailable Rate Program	146.2		n/a		n/a	
Load Management Programs Total (@ Meter)	146.2	23%	n/a	0%	n/a	0%
Load Displacement & Alternative Energy						
Bioenergy Optimization Program	7.1		61.9		1.7	
Customer Sited Load Displacement	85.9		580.6		n/a	
Load Displacement & Alt. Energy Programs Total (@ Meter)	93.0	14%	642.5	26%	1.7	5%
Conservation Rates						
Conservation Rates - Residential	16.9		140.1		n/a	
Conservation Rates - Commercial	24.3		202.1		n/a	
Conservation Rates Total	41.2	6%	342.1	14%	n/a	0%
Fuel Choice						
Fuel Choice	66.7		250.7		(38.8)	
Fuel Choice Total	66.7	10%	250.7	10%	(38.8)	(120%)
Program Impacts Total (@ Meter)	647.8	100%	2,437.5	100%	32.4	100%
Interactive Effects						
					(2.2)	
Codes, Standards and Regulations (@ Meter)	358.8		1,087.4		78.0	
Power Smart 2014/15 to 2028/29 Impacts (@ Meter)	1,007		3,525			
Power Smart 2014/15 to 2028/29 Impacts (@ Generation)	1,136		3,978		108	
Savings Achieved To 2013/14 (@ Meter)	442		2,043			
Savings Achieved To 2013/14 (@ Generation)	500		2,307		103	
Grand Total (@ Meter)	1,448		5,568			
Grand Total (@ Generation)	1,635		6,286		211	

2.1.2 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, Water & Energy Saver and Oil & Propane Furnace Replacement programs. The following table provides the oil and propane fuel savings estimated to be achieved through this funding.

It is estimated that savings of 399,400 litres of fuel oil and 180,700 litres of propane will be achieved from 2014/15 to 2028/29.

Affordable Energy Fund Other Fuel Savings 2014/15 - 2028/29 (000s, litres)

	2014/15	2015/16	2016/17 - 2028/29
Fuel Oil Savings			
Home Insulation Program	6.0	6.0	54.4
Water & Energy Saver Program	4.6	4.6	4.6
Oil & Propane Furnace Replacement	46.0	46.0	227.1
Annual Fuel Oil Savings	56.6	56.6	286.1
Cumulative Fuel Oil Savings, 2014/15 - 2028/29	56.6	113.3	399.4
Propane Savings			
Home Insulation Program	7.6	7.6	69.0
Water & Energy Saver Program	2.5	2.5	2.5
Oil & Propane Furnace Replacement	12.9	12.9	63.4
Annual Propane Savings	22.9	22.9	134.9
Cumulative Propane Savings, 2014/15 - 2028/29	22.9	45.9	180.7

2.1.3 Energy Efficient Codes, Standards & Regulation Savings

Many Canadian and U.S. electric utilities, including Manitoba Hydro, have been engaged in DSM activities for more than two decades. In addition to utility specific DSM programs, 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. These codes and standards are subsequently referenced in national and provincial regulations that mandate minimum energy performance levels for a variety of appliances, buildings and other energy consuming measures. The focus of Manitoba Hydro's efforts on these committees is to advance the progress of product efficiency improvements through the development of test methodologies that facilitate measurement and comparison of energy performance and provide for minimum energy performance levels that reasonably represent performance improvements available from commercially viable product advancements, which are then incorporated into Manitoba Power Smart programs, and subsequent energy efficiency regulations and building codes proposed by national and provincial regulators.

Not all codes and standards are regulated, with some codes and standards being developed for the purpose of supporting good business practices that assist customers in quantifying and comparing the energy performance of measures being considered for implementation. In these instances, Manitoba Hydro supports the adoption of such non-regulated codes and standards within its Power Smart programs.

Manitoba Hydro annually prepares a forecast of the expected influence of both regulated and non-regulated codes and standards, and since 1995 this forecast has been used to adjust Manitoba Hydro's system load forecast.

Strategic Steering Committee on Performance, Energy Efficiency and Renewables

Manitoba Hydro is a leading contributor on the Canadian Standards Association's Strategic Steering Committee on Performance, Energy Efficiency and Renewables (SCOPEER). This Canadian Standards Association committee, with participation from federal and provincial authorities, electric utilities, industry associations and equipment suppliers, provides oversight and governance for the process used to develop energy performance standards and establish minimum energy performance levels for energy consuming measures across most residential, commercial and industrial sectors. SCOPEER includes Technical Committees responsible for specific end-use technology areas, including Heating, Ventilation, Air Conditioning and Refrigeration Equipment (TC 401), Industrial Equipment (TC 402), Residential Equipment (TC 403), Lighting Equipment (TC 419), Solar Equipment (TC 420) and Energy Management (TC 422). Individual Technical Subcommittees operating within each of the Technical Committees are responsible for the development of specific standards related to the energy performance of end-use measures that are vetted and approved by the SCOPEER committee for adoption. Electric utilities, equipment suppliers and consumer reference these standards within their programs and specific areas of activity, while regulatory agencies at the national and provincial level adopt these standards and their associated minimum energy performance levels into energy efficiency regulations.

Energy Savings from Codes & Standards

In many markets, the most effective and permanent form of market transformation for energy efficient technologies and practices is the regulation of energy efficient codes and standards as such regulations ensures that customers do not revert to less efficient technologies/practices once the incentives and/or promotional activities are discontinued. Consequently, the process of achieving these changes is complex and lengthy as it involves many stakeholders, varying environmental and market conditions and market acceptance to ensure successful implementation.

Efforts to achieve energy savings through Energy Efficient Codes and Standards initiatives are forecasted in the 2014-2017 Power Smart Plan - 15 year supplemental report to achieve capacity savings of 419 MW, energy savings of 1273 GW.h and 84 million cubic meters of natural gas annually by 2028/29. As a result of these savings, a greenhouse gas emissions reduction of 1.0 million tonnes is expected by 2028/29.

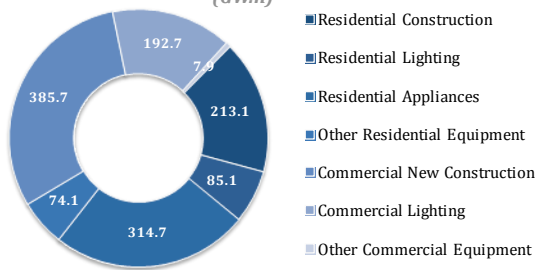
The following table and charts provide a summary of the planned energy savings in 2028/29 from codes and standards that currently implemented in energy efficiency regulation at the provincial and national level. Future DSM plans will provide updated forecasts of savings from codes and standards based on new information, such as the pending proposals being put forward by Natural Resources Canada for Amendments 13 and 14, which include both new or enhanced energy efficiency regulations for a variety of energy consuming measures.

**Energy Savings from Codes & Standards
 2014/15 - 2028/29**

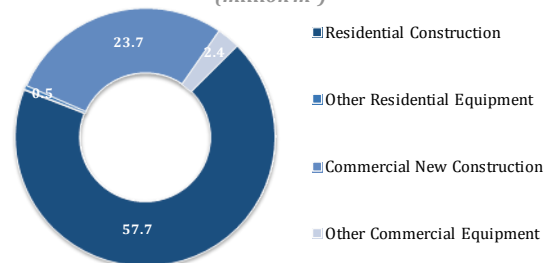
Code Category	Components	Energy and Demand Savings		Natural Gas Annual millions m ³	CO2 Reductions Annual Tonnes
		Winter MW	Annual GW.h		
Residential Construction	Insulation, Windows, Pilot Light Gas Fire Place, Furnance, Heat Recovery Ventilation, Showerhead	106.5	213.1	57.7	253,601
Residential Lighting	General Service Lamps	20.3	85.1	0.0	57,418
Residential Appliances	Dishwashers, Clothes Washers, Clothes Dryers, Refrigerators, Freezers, Ranges, Stoves, Cooktops	54.1	314.7	0.0	212,453
Other Residential Equipment	Electric Hot Water Tank, Central Air Conditioning, Residential Furnace	3.1	74.1	0.5	51,023
Commercial New Construction	Various Building Code Amendments	170.9	385.7	23.7	305,407
Commercial Lighting	General Service Lamps, Exit Signs, Fluorescent Lamp Ballasts	53.6	192.7	0.0	130,105
Other Commercial Equipment	Commercial Furnace, Boiler and Spray Valves	10.6	7.9	2.4	9,897
Total @ Generation		419	1273	84	1,019,905

* Totals per above include savings attributed to specific Power Smart programs and thus differ from Codes and Standards savings reported in Appendices A.1, A.3 and C.1

Electric Codes & Standards By Category (GW.h)



Natural Gas Codes & Standards By Category (million m³)



Status of Codes and Standards

The following table summarizes the status of changes to provincially and nationally regulated codes and standards included in the 2014-2017 Power Smart Plan - 15 year supplemental report, including actual or expected dates for implementation.

For electricity, changes that account for 67% of total energy savings have been enacted and 33% are planned.

For natural gas, changes that account for 64% of total energy savings have been enacted and 36% are planned.

Status of Changes to Codes and Standards

Code Category	Components	Energy	Natural Gas	Level of Government	Expected Effective Date		
		Annual GW.h	Annual million m ³		Enacted	Announced	Planned
Residential Construction	Building Code - Insulation	38.4	6.0	MB	2008		
Residential Construction	Building Code - Various measures	141.1	45.4	MB	2010		
Residential Construction	Building Code - Various measures	33.7	6.2	MB			2020
Residential Lighting	General Service Lamps (MEPS)	85.1	0.0	Federal	2014		
Residential Appliances	Various appliances	314.7	0.0	Federal			
Other Residential Equipment	Electric Hot Water Tank	15.9	0.0	Federal	2004		
Other Residential Equipment	Central Air Conditioning	58.2	0.0	Federal	2006		
Other Residential Equipment	Residential Furnace	0.0	0.5	Federal / MB	2009		
Commercial New Construction	Building Code	385.7	23.7	MB			2017
Commercial Lighting	General Service Lamps (MEPS)	33.9	0.0	Federal	2014		
Commercial Lighting	Exit Signs	1.9	0.0	Federal	2004		
Commercial Lighting	Fluorescent lamp ballasts (New / Reno)	157.0	0.0	Federal	2006 / 2010		
Other Commercial Equipment	Commercial Furnace	0.0	0.3	Federal / MB	2009		
Other Commercial Equipment	Commercial Boilers	0.0	0.2	Federal / MB		2016	
Other Commercial Equipment	Commercial Spray Valves	7.9	1.9	Federal / MB	2011		
Total (GW.h)		1273			854 67%	0.0 0%	419 33%
Total (million m³)			84		54 64%	0.2 0%	30 36%

Code, Standard & Regulation Descriptions

The following section describes each of the codes and standards listed in the Summary Table noted in Section 2.1.3 that have been taken into consideration when developing a forecast for projected savings.

Residential Construction

Building Code

Manitoba Building Code, amendment (PROVINCIAL)
Regulation 4/2008
Registered: January 11, 2008
Effective date: October 1, 2008

Manitoba Hydro has been offering the Power Smart New Home program to customers across the province since 2004. The New Home program promoted and offered incentives to customers for the installation of energy efficient technologies and building practices within the New Home construction industry. Manitoba Hydro worked closely with industry stakeholders like the Manitoba Home Builders' Association when developing requirements for the program. Specifically, the Power Smart New Home program has required and been promoting a minimum requirement for R20 insulation in the foundation walls of new homes since 2004.

Changes to Table 9.25.5.2. (Minimum Thermal Resistance for the Building Envelope) of the Manitoba Building Code (Regulation 127/2006) came into effect on October 1, 2008. The changes related to the minimum requirement for insulation R-value for the interior and exterior foundation walls of new homes. The code change increased the minimum required insulation value from R12 to R20.

Building Code

Manitoba Building Code, amendment (PROVINCIAL)
Regulation 142/2010
Registered: October 4, 2010
Effective date: December 1, 2010

Manitoba Hydro has promoted energy efficient technologies and building practices within the residential new construction segment through delivery of the Power Smart New Home Program. When developing program requirements, Manitoba Hydro worked closely with industry stakeholders like the Manitoba Home Builders Association.

Through the delivery of the Power Smart Gold Home offering, Manitoba Hydro planned to aid the advancement of future building code by promoting and offering incentives to customers to build their home with Power Smart recommended technologies and construction practices. The Gold standard announced in 2007 required the use of heat recovery ventilators (HRV), 94 % AFUE furnaces, electronic ignition for natural gas fireplaces, R50 attic insulation, water efficient fixtures and many other building envelope improvements.

Effective December 1st, 2010, Manitoba implemented changes to the building and plumbing codes that increased energy and water efficiencies. These changes were the result of extensive consultations by the Office of the Fire Commissioner involving new homebuilders, contractors and technical experts. The new efficiencies incorporated into new construction and homes undergoing extensive renovations included:

- specifying minimum energy-efficiency requirements for windows,
- eliminating the pilot light in gas fireplaces,
- increasing the required level of attic insulation to R50,
- requiring a minimum 94 per cent fuel-efficiency rating for furnaces,
- specifying a mid-efficient heat-recovery ventilator, and
- introducing energy-modeling software that will allow builders to model alternatives to the code requirements.
- Requiring a maximum flow rate for primary showerheads to 1.75 GPM

Through its close working relations with key industry stakeholders and the Power Smart New Home Program offering, Manitoba Hydro succeeded in advancing these changes to the Manitoba Building code. In fact, a majority of the technologies adopted by the Manitoba Building Code for the December 1, 2010 update were part of the aforementioned Power Smart Gold Home standard requirements. Without the program providing information, education, training, and incentives for these technologies and building practices, the industry would have been less likely to adopt these technologies and transform the market. The program created demand for these technologies, provided builders an opportunity to gain experience using them, and provided trades and contractors training opportunities to advance their expertise and knowledge of the technologies.

Building Code

Manitoba Building Code, amendment (PROVINCIAL)

Regulation (Proposed)

Effective date: 2020

Manitoba Hydro is currently assessing the Power Smart New Home program. The program will promote and offer incentives to customers for the installation of energy efficient technologies and building practices within the New Home construction industry. Manitoba Hydro will work closely with industry stakeholders with the aim to build market acceptance of Power Smart New Home technologies for ease of adoption in the Manitoba Building Code in 2020.

Residential Lighting

General Service Lamps

National Resources Canada (FEDERAL)

Amendment 12B to Energy Efficiency Regulations

Published: January 15, 2014 (Canada Gazette Part II)

Effective date(s): January 1st, 2014 - 75 to 100 watt equivalent lamps

December 31st, 2014 - 40 to 60 watt equivalent lamps

The Government of Canada announced in Amendment 12B to the Energy Efficiency Regulations, published on January 15, 2014 that they would introduce Minimum Energy Performance Standards (MEPS) for general service lamps in 2012. The consequent Regulations came into force in December 2013 and applied to 100 and 75 W bulbs manufactured on or after January 1, 2014, and to 60 and 40 W bulbs manufactured on or after December 31, 2014. The Regulations prohibit the importation and interprovincial shipment of non-compliant products. The Regulations provide for a number of alternatives to inefficient bulbs. Where no alternatives exist, exemptions are made.

Residential Appliances

Manitoba Hydro is a key player on the Canadian Standards Association's Strategic Steering Committee on Performance, Energy Efficiency and Renewables (SCOPEER). This committee is responsible for changes to provincial and national performance standards and legislation which have resulted in the improvement of energy utilization of numerous appliances such as dishwashers, clothes washers & dryers, refrigerators and freezers, and ranges/stoves/cooktops.

Other Residential Equipment

Hot Water Tank Standby Losses

National Resources Canada (FEDERAL)
Amendment 8 to Energy Efficiency Regulations
Test Standard: CAN/CSA-C191-00
Published: September 22, 2004 (Canada Gazette Part II)
Effective date(s): July 1, 2004

Standby heat loss is the heat lost and energy wasted by heating water and storing it in a tank such as the case with traditional tank hot water heaters. That is, heat leaches from the tank to the surrounding air, causing the heater to heat up the water again. Storage water heater models with heavily insulated tanks can significantly reduce heat loss.

In 2004, the CSA published a standard (C191-00) which specified requirements related to delivery, minimum standby performance, heater element ratings, and marking of electric storage tank water heaters. For standards, standby heat loss savings are based on the water heated for use by dishwashers and clothes washers.

Central Air Conditioning

National Resources Canada (FEDERAL)
Amendment 9 to Energy Efficiency Regulations
Test Standard: CAN/CSA-C656-05
Published: November 15, 2006 (Canada Gazette Part II)
Effective date(s): November 15, 2006

In November 2006, the CSA published a standard (C656-05) which specified mandatory MEPS applied to permanently installed 'air-source' air-conditioner and heat pumps. Equipment types include air conditioners and heat pumps that are single package and split system, single and three-phase, with rated capacity of less than 19 kW (65,000 Btu/h). For air conditioners, a minimum SEER rating of 13 was mandated.

Manitoba Hydro provides a fixed interest finance plan that may be used for renovations including central air, mid-efficient natural gas/electric furnaces and water heaters, direct vent natural gas fireplaces, security lights and fixtures under the Energy Finance Plan. Pre 2005, a minimum SEER rating of 10 for Air Conditioners was required for eligibility for financing under the plan. In order to comply with the forthcoming national standard, Manitoba Hydro raised the minimum SEER to 13 for eligibility of financing in October, 2005; approximately one year earlier.

Residential High Efficiency Furnace

National Resources Canada (FEDERAL)

Amendment 10 to Energy Efficiency Regulations

Published: December 24, 2008 (Canada Gazette Part II)

Effective date: December 31, 2009

On December 12, 2008 the Federal Government amended the Energy Act to require increased efficiency requirements for replacement gas (natural gas and propane) furnaces and boilers. Effective December 31, 2009 replacement furnaces up to 225 000 Btu/h sold in Canada are required to have a minimum AFUE of 90%.

Manitoba Hydro played a material role in the amendment of the Federal Energy Act. Manitoba Hydro staff assisted the Federal Government by providing technical and market data regarding the heating market in Manitoba and comments to the proposed Amendment during the consultation process. Power Smart Programs such as the Residential Loan and the High Efficiency Furnace and Boiler Rebate influenced the Manitoba market to the point that 80% of all equipment installed in 2009 was high efficiency products, thus making the Amendment acceptable to the industry and to consumers.

The Energy Act (PROVINCIAL)

Regulation 181/2009

Published: November 12, 2009

Effective date: December 30, 2009

On November 12, 2009 the Manitoba Government passed a regulation under the Energy Act to require increased efficiency requirements for replacement gas (natural gas and propane) furnaces and boilers. Effective December 30, 2009 replacement furnaces up to 225 000 Btu/h sold in Manitoba are required to have a minimum AFUE of 92%.

Manitoba Hydro played a major role in the development of the Provincial Regulation. Manitoba Hydro staff assisted the Province by providing technical and market data regarding the heating market, hosting an industry consultation with contractors and other interested parties, preparing a formal market impact study, and providing general guidance to regulatory staff. Power Smart Programs such as the Residential Loan and the High Efficiency Furnace and Boiler Rebate influenced the market to the point that 80% of all equipment installed in 2009 was high efficiency products, thus making regulation acceptable to the industry.

Commercial New Construction

Building Code

The national commitment to update the 1997 National Energy Code for Buildings (NECB) was initiated in Manitoba by the Energy Code Advisory Committee (ECAC) which was led by Manitoba Hydro. Manitoba Hydro also chaired the national Building Energy Code Collaborative (BECC), which was formed in response to the recommendations provided by ECAC. As a result of the work done by BECC, formal support was provided by jurisdictions across Canada to undertake the work to update the 1997 NECB and a national working group was formed to conduct the detailed work for updating the code. Manitoba's Minister of Labour provided formal support that signaled Manitoba's intention to adopt the document once published, however the Province still moved forward with their own energy strategy and convened a sub-committee of the Building Standards Board of Manitoba to recommend Manitoba-based energy and water efficiency recommendations that could be implemented in advance of the release of the 1997 NECB.

In January 2011, the energy efficiency amendments developed for the Manitoba building code were approved by the Building Standards Board of Manitoba and the Minister of Labour. However, with the NECB already through its public consultation phase and targeting a release date of Fall 2011, it was decided to hold back on regulating the specific Manitoba amendments so that a review and implementation of the NECB could be implemented. The sub-committee that developed the Manitoba amendments was reconvened in fall of 2012 with the task of reviewing the NECB and determining its applicability to the Manitoba market. Once again, Manitoba Hydro played a key role with several Power Smart staff contributing to this process. The sub-committee provided a recommendation that was formally adopted with minor adjustments in the December of 2013 for implementation and enforcement in December of 2014.

Manitoba Hydro staff continues to contribute to the national process for the development of the 2015 edition of the NECB and several Customer Engineering Services staff members formally attend regular code development meetings to ensure Manitoba Hydro objectives are met. Manitoba Hydro staff are also members of the Manitoba Building Standards Board Sub-Committee on Energy and Water Efficiency, which is responsible for recommending that the Province adopt the 2011 NECB and creation of additional recommendations specific to Manitoba that will be incorporated as amendments.

Commercial Lighting

Since 1992, Manitoba Hydro has been actively promoting energy efficient lighting technologies for commercial applications. Activities involved in developing lighting standards include:

- 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

General Service Lamps

National Resources Canada (FEDERAL)

Amendment 12B to Energy Efficiency Regulations

Published: January 15, 2014 (Canada Gazette Part II)

Effective date(s): January 1st, 2014 - 75 to 100 watt equivalent lamps

December 31st, 2014 - 40 to 60 watt equivalent lamps

The Government of Canada announced in Amendment 12B to the Energy Efficiency Regulations, published on January 15, 2014 that they would introduce Minimum Energy Performance Standards (MEPS) for general service lamps in 2012. The consequent Regulations came into force in December 2013 and applied to 100 and 75 W bulbs manufactured on or after January 1, 2014, and to 60 and 40 W bulbs manufactured on or after December 31, 2014. The Regulations prohibit the importation and interprovincial shipment of non-compliant products. The Regulations provide for a number of alternatives to inefficient bulbs. Where no alternatives exist, exemptions are made.

Exit Signs

National Resources Canada (FEDERAL)

Amendment 8 to Energy Efficiency Regulations

Test Standard: CAN/CSA-C860-01

Published: September 22, 2004 (Canada Gazette Part II)

Effective date: November 1, 2004

In September of 2004, Natural Resources Canada's (NRCan's) Office of Energy Efficiency (OEE) amended Canada's Energy Efficiency Regulations (the Regulations) in order to strengthen the minimum energy performance standard for internally lighted exit signs with the publication of Amendment 8 in Canada Gazette Part II. This standard contains voluntary minimum performance standards of 22 watts for signs 120 V or less, and 27 watts for signs greater than 120 V. These levels were harmonized with the National Building Code of Canada. The standard also addresses the visibility performance of the exit sign. To meet these standards, typically requires that LED technology be employed. In the area of LED lighting, the program supported these minimum efficiency levels for new exit signs with signs set at a level that only LED exit signs could meet.

Fluorescent lamp ballasts

National Resources Canada (FEDERAL)

Amendment 9 to Energy Efficiency Regulations

Test Standard: CAN/CSA-C654-M91

Published: November 15, 2006 (Canada Gazette Part II)

Effective date(s): November 15th, 2006 (New Construction Market)

April 1st, 2010 (Renovation Market)

In November of 2006, Natural Resources Canada's (NRCan's) Office of Energy Efficiency (OEE) amended Canada's Energy Efficiency Regulations (the Regulations) in order to strengthen the minimum energy performance standard for florescent lamp ballasts with the publication of Amendment 9 in Canada Gazette Part II. Manitoba Hydro's lighting initiative helped support this Federal code change that required fluorescent lamp ballasts meet a prescribed minimum energy performance standard in the new construction market in 2006 and the renovation market in 2010.

Other Commercial Equipment

Commercial High Efficiency Furnace

National Resources Canada (FEDERAL)

Amendment 10 to Energy Efficiency Regulations

Published: December 24, 2008 (Canada Gazette Part II)

Effective date: December 31, 2009

On December 12, 2008 the Federal Government amended the Energy Act to require increased efficiency requirements for replacement gas (natural gas and propane) furnaces and boilers. Effective December 31, 2009 replacement furnaces up to 225 000 Btu/h sold in Canada are required to have a minimum AFUE of 90%.

Manitoba Hydro played a material role in the amendment of Canada's Energy Efficiency Act. Manitoba Hydro staff assisted the Federal Government by providing technical and market data regarding the furnace market in Manitoba and comments to the proposed Amendment during the consultation process. Power Smart programs such as the Power Smart Residential Loan, the Residential High Efficiency Furnace and Boiler Rebate, and the Commercial HVAC Program - High Efficiency Furnace incentive all influenced market adoption; increasing market penetration of high efficiency furnaces in Manitoba commercial buildings from the pre-program average of 30% to 75% at program termination. Manitoba Hydro's involvement has expedited market transformation and thus facilitated the adoption of the federal efficiency regulation.

The Energy Act (PROVINCIAL)
Regulation 181/2009
Published: November 12, 2009
Effective date: December 30, 2009

On November 12, 2009 the Manitoba Government passed a regulation under the Energy Act to require increased efficiency requirements for replacement gas (natural gas and propane) furnaces and boilers. Effective December 30, 2009 replacement furnaces up to 225 000 Btu/h sold in Manitoba are required to have a minimum AFUE of 92%.

Manitoba Hydro played a material role in the development of the provincial efficiency regulation. Manitoba Hydro staff assisted the Manitoba Government by providing technical and market data, hosting an industry consultation with contractors and other interested parties, preparing a formal market impact study, and providing general guidance to regulatory staff. Power Smart programs such as the Residential Loan, the Residential High Efficiency Furnace and Boiler Rebate, and the Commercial HVAC Program - High Efficiency Furnace incentive all helped to expedite market adoption of high efficiency furnaces in Manitoba commercial buildings from the pre-program average of 30% to 75% at program termination. Manitoba Hydro's active involvement had expedited market transformation, and thus facilitated the adoption of the provincial efficiency regulation.

Commercial Boilers

National Resources Canada (FEDERAL)
Bulletin published: August 2010
Test Standard: HI BTS 2000, Rev 06.07 Method to Determine Efficiency of Commercial Space Heating Boilers
Proposed Effective date(s): March, 2015 (90% Min Efficiency Rating - New Construction Market)
March, 2015 (85% Min Efficiency Rating - Existing Buildings Market)

In August of 2010, Natural Resources Canada's (NRCan's) Office of Energy Efficiency (OEE) Natural Resources Canada (NRCan) proposed to amend Canada's ENERGY EFFICIENCY REGULATIONS (the Regulations) to require dealers to comply with minimum energy performance standards (MEPS) for commercial gas and oil-fired boilers, imported or shipped inter-provincially, for sale or lease in Canada. NRCan proposes that commercial packaged boilers meet minimum efficiency ratings of 90% for the New Construction mark and 85% for the Replacement Market, effective March, 2015.

Manitoba Hydro proposes that the Provincial Government enact regulations under The Energy Act, requiring a minimum performance level for all natural gas boilers sold to new Manitoba buildings. By April 1 2013, Manitoba Hydro proposes that all commercial boilers be condensing, with a minimum efficiency rating of 90%. This regulation is equivalent to the proposed federal regulation, but will be enacted two years earlier.

Manitoba Hydro will play a material role in the development of a provincial efficiency regulation for commercial natural gas boilers. Manitoba Hydro staff will assist the Manitoba Government by providing technical and market data, hosting an industry consultation with contractors and other interested parties, preparing a formal market impact study, and providing general guidance to regulatory staff. The Commercial HVAC Program will continue to expedite market adoption of high efficiency boilers in all commercial buildings from its pre-program average of 30% to an estimated 72% by April 2013, thus facilitating the adoption of a provincial performance standard two years earlier than the rest of Canada.

Manitoba Hydro proposes that the Provincial Government enact regulations under The Energy Act, requiring a minimum performance level for all natural gas boilers sold to existing Manitoba buildings. By March 2015, Manitoba Hydro proposes that all commercial boilers be condensing, with a minimum efficiency rating of 90%. This is approximately 5% higher than the proposed federal regulation requiring all boilers sold to be at least 85% efficient (near-condensing).

Manitoba Hydro will play a material role in the development of a provincial efficiency regulation for commercial natural gas boilers. Manitoba Hydro staff will assist the Manitoba Government by providing technical and market data, hosting an industry consultation with contractors and other interested parties, preparing a formal market impact study, and providing general guidance to regulatory staff. The Commercial HVAC Program will continue to expedite market adoption of high efficiency boilers in all commercial buildings from its pre-program average of 30% to an estimated 75% by March 2015, thus facilitating the adoption of a higher performance standard in Manitoba.

Commercial Pre Rinse Spray Valve

Manitoba Plumbing Code

Regulation 32/2011

Adoption of National Plumbing Code of Canada 2010

Published: March 28, 2011 The Buildings and Mobile Homes Act (C.C.S.M. c. B93)

Effective date: April 1, 2011

On April 1, 2011 the Manitoba Government repealed the Manitoba Plumbing Code, Manitoba Regulation 128/2006 and adopted the National Plumbing Code of Canada 2010 issued by the Canadian Commission on Buildings and Fire Codes, National Research Council Canada. The code states that the maximum flow rate for a pre-rinse spray valve not exceed 6.1 litres per minute (1.60 gallons per minute). The Power Smart Rinse & Save Program influenced market adoption; converting the Manitoba market to pre-rinse spray valves with equal or higher energy efficiency than the code. Manitoba Hydro's involvement has expedited market transformation and thus facilitated the adoption of the code.

At an Industrial level, Manitoba Hydro undertakes codes and standards development work with the following organizations:

- Natural Resources Canada (NRCAN)
- Province of Manitoba
- Canadian Standards Association (CSA), including BC Hydro, Hydro Quebec, Ontario Power Authority, Ontario Ministry of Energy, etc)
- Centre for Energy Advancement through Technological Innovation (CEATI)
- US Department of Energy (DOE)
- Institute of Electronic and Electrical Engineers (IEEE)
- International Electrotechnical Commission (IEC)
- American Council for an Energy-Efficient Economy (ACEEE)
- Electric Power Research Institute (EPRI)
- Energy Solutions Center (ESC)
- American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE)
- Canadian Gas Association (CGA)

This work pertains primarily to industrial and commercial equipment that incorporates or applies to electric motors, variable speed drives, air compressors, compressed air systems, fans, pumps, transformers, power quality systems, battery charges, uninterruptible power supplies, lighting systems, refrigeration, heating, ventilation and air conditioning systems, and building envelope incorporating both natural gas and electric supply.

Areas of involvement include, test methods for determination of energy efficiency, performance standards, application guides for efficiency test methods and performance standards and repair standards (to maintain efficiency). Industrial codes and standards are often developed as non-regulated mechanisms designed to support good practices in the selection, operation and maintenance of energy consuming measures. As such, these codes and standards are incorporated into Manitoba Hydro's Industrial Power Smart programs supporting the savings objectives of these programs.

2.2 DSM Utility Investment

2.2.1 Internal Sources

The following table provides the cumulative electric and natural gas internal DSM investment totals to 2028/29 broken down by market sector and cost basis. Including other internal DSM investments, it is expected that by 2028/29, an additional cumulative investment amount of \$978 million dollars will have been spent on Power Smart programs and initiatives. Including investments to date, it is expected that by 2028/29, a cumulative investment of achieving the energy savings will have been \$1.6 billion dollars.

Internal DSM Utility Investment			
2014/15 - 2028/29			
	Electric Cumulative Utility Costs (Millions 2014\$)	Natural Gas Cumulative Utility Costs (Millions 2014\$)	Total Cumulative Utility Costs (Millions 2014\$)
Residential			
New Home Program	\$2.3	\$0.1	\$2.4
Home Insulation Program	\$16.6	\$15.4	\$32.0
Water and Energy Saver Program	\$5.0	\$3.2	\$8.2
Affordable Energy Program			
Affordable Energy Program - Insulation	\$16.7	\$35.6	\$52.4
Affordable Energy Program - Furnace	n/a	\$19.3	\$19.3
Affordable Energy Program - Total	\$16.7	\$54.9	\$71.7
Refrigerator Retirement Program	\$6.6	\$0.0	\$6.6
Residential LED Lighting Program	\$1.9	\$0.0	\$1.9
Community Geothermal Program	\$21.1	\$0.0	\$21.1
Opower (Behavioral)	\$0.0	\$0.0	\$0.0
Residential Programs Total	\$70.1	\$73.7	\$143.8
	10%	61%	17%
Commercial			
Commercial Lighting Program	\$92.3	\$0.0	\$92.3
LED Roadway Lighting Conversion Program	\$40.4	\$0.0	\$40.4
Commercial Building Envelope - Windows Program	\$11.8	\$6.7	\$18.5
Commercial Building Envelope - Insulation Program	\$12.6	\$20.9	\$33.5
Commercial Geothermal Program	\$47.6	\$0.0	\$47.6
Commercial HVAC Program - Boilers	n/a	\$2.4	\$2.4
Commercial HVAC Program - Chillers	\$2.0	\$0.0	\$2.0
Commercial HVAC Program - CO2 Sensors	\$0.5	\$1.9	\$2.4
Commercial HVAC Program - Water Heaters	n/a	\$0.9	\$0.9
Commercial Custom Measures Program	\$10.1	\$3.2	\$13.3
Commercial Building Optimization Program	\$4.2	\$4.4	\$8.6
New Buildings Program	\$17.2	\$3.7	\$20.9
Commercial Refrigeration Program	\$8.8	\$0.0	\$8.8
Commercial Kitchen Appliance Program	\$0.2	\$0.5	\$0.7
Network Energy Management Program	\$0.7	\$0.0	\$0.7
Internal Retrofit Program	\$2.5	\$0.1	\$2.6
Power Smart Shops	\$1.5	\$0.1	\$1.7
Commercial Programs Total	\$252.5	\$44.7	\$297.2
	34%	37%	35%
Industrial			
Performance Optimization Program	\$143.4	n/a	\$143.4
Natural Gas Optimization Program	n/a	\$2.3	\$2.3
Industrial Programs Total	\$143.4	\$2.3	\$145.7
	20%	2%	17%
Energy Efficiency Subtotal	\$466.1	\$120.7	\$586.7
	64%	99%	69%
Load Management			
Curtailable Rate Program	\$89.3	n/a	\$89.3
Load Management Programs Total	\$89.3	n/a	\$89.3
	12%	0%	10%
Load Displacement & Alternative Energy			
Bioenergy Optimization Program	\$10.2	\$0.8	\$11.0
Customer Sited Load Displacement	\$84.3	n/a	\$84.3
Load Displacement & Alt. Energy Programs Total	\$94.5	\$0.8	\$95.4
	13%	1%	11%
Conservation Rates			
Conservation Rates - Residential	\$15.6	n/a	\$15.6
Conservation Rates - Commercial	\$18.4	n/a	\$18.4
Conservation Rates Total	\$34.1	n/a	\$34.1
	5%	0%	4%
Fuel Choice			
Fuel Choice	\$49.4	\$0.0	\$49.4
Fuel Choice Total	\$49.4	\$0.0	\$49.4
	7%	0%	6%
Program Impacts Total	\$733.3	\$121.5	\$854.8
	100%	100%	100%
Program Support and Contingency Costs	\$87.2	\$34.3	\$121.4
Power Smart Investment Total, 2014/15 - 2028/29	\$820.5	\$155.8	\$976.2
Other Internal DSM Investments			
Affordable Energy Fund	\$1.1	\$0.7	\$1.8
Cumulative Investment Total, 2014/15 - 2028/29	\$821.5	\$156.5	\$978.0
Spent to 2013/14	\$461.0	\$123.6	\$584.6
Cumulative Investment Total, 1989/90 - 2028/29	\$1,282.5	\$280.1	\$1,562.6

** Includes all Affordable Energy Fund Expenditures and Furnace Replacement Program

The following table outlines the total projected DSM budget including all internal sources of funding to 2028/29. A total investment of \$978 million is planned for the period of 2014/15 to 2028/29.

Forecasted Internal DSM Budget 2014/15 - 2028/29 (Millions 2014 \$)																
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Total
Electric DSM																
Electric Power Smart	52.3	58.5	74.0	79.4	86.8	71.3	64.9	53.6	43.4	42.2	39.7	39.6	38.0	37.2	37.3	818.2
Affordable Energy Fund	1.4	1.1	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
Annual Electric Budget	\$53.6	\$59.6	\$74.4	\$79.4	\$86.9	\$71.3	\$64.9	\$53.6	\$43.4	\$42.2	\$39.7	\$39.6	\$38.0	\$37.2	\$37.3	\$821.3
Natural Gas DSM																
Natural Gas Power Smart	10.2	10.8	11.2	9.5	8.7	8.7	8.6	8.7	8.8	8.9	8.6	8.6	8.5	5.1	5.0	129.9
Affordable Energy Fund	3.3	3.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2
Furnace Replacement Budget	2.6	2.7	2.7	2.6	2.4	2.3	1.9	1.2	0.7	0.2	0.1	0.1	0.1	0.0	0.0	19.3
Annual Natural Gas Budget	\$16.1	\$16.4	\$14.8	\$12.1	\$11.1	\$11.1	\$10.5	\$9.9	\$9.5	\$9.1	\$8.6	\$8.6	\$8.6	\$5.1	\$5.0	\$156.5
Oil and Propane DSM																
Affordable Energy Fund	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Annual Oil and Propane Budget	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.3
Manitoba Hydro Annual Budget	\$69.7	\$76.1	\$89.2	\$91.5	\$98.0	\$82.4	\$75.4	\$63.5	\$52.8	\$51.4	\$48.4	\$48.3	\$46.6	\$42.3	\$42.4	
Cumulative Investment 2014/15 - 2028/29	\$69.7	\$145.8	\$235.0	\$326.5	\$424.5	\$506.9	\$582.3	\$645.9	\$698.7	\$750.1	\$798.4	\$846.7	\$893.3	\$935.7	\$978.0	\$978.0

Note: Figures may not add due to rounding

Including investments to date, it is expected that by 2028/29, a cumulative investment of achieving the energy savings will have been \$1.6 billion dollars, \$1.3 billion of the costs are funded through the Corporation's Power Smart electricity budget, \$232 million from the Power Smart natural gas budget, \$37 million from the Affordable Energy Fund, and \$27 million from the Furnace Replacement budget for targeting furnace replacement.

Total Internal DSM Budget 1989/90 - 2028/29 (Millions 2014 \$)			
	Expenditures to date 1989/90 - 2013/14	15 yr planning horizon 2014/15 - 2028/29	Total 1989/90 - 2028/29
Electric DSM			
Electric Power Smart	448.7	818.2	1,267.0
Affordable Energy Fund	11.8	3.0	14.8
Annual Electric Budget	\$460.5	\$821.3	\$1,281.8
Natural Gas DSM			
Natural Gas Power Smart	102.1	129.9	232.0
Affordable Energy Fund	13.7	7.2	20.9
Furnace Replacement Budget	7.8	19.3	27.1
Annual Natural Gas Budget	\$123.6	\$156.5	\$280.1
Oil and Propane DSM			
Affordable Energy Fund	0.5	0.3	0.7
Annual Oil and Propane Budget	\$0.5	\$0.3	\$0.7
Cumulative Investment 1989/90 - 2028/29	\$584.6	\$978.0	\$1,562.6

Note: Figures may not add due to rounding

Affordable Energy Fund

The Affordable Energy Fund is an internal fund established as a result of the Winter Heating Cost Control Act. The purpose of the Fund is to provide support for programs and services that achieve specific objectives outlined under the Act 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.

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. As of March 31st, 2013 approximately \$26.8 million of the Affordable Energy Fund had been spent, leaving the remaining \$11.2 million.

Affordable Energy Fund Budget (Millions \$)

	Total Budget	Expenditures to Date	Remaining Total Budget
Affordable Energy Program	23.9	15.2	8.7
Geothermal Support	1.6	1.4	0.2
Community Support and Outreach	0.8	0.7	0.1
Oil and Propane Heated Homes	0.3	0.3	0.0
Special Projects			
Residential ecoENERGY Audits	0.5	0.5	0.0
Oil and Propane Furnace Replacement	0.2	0.1	0.0
Solar Water Heaters	0.3	0.3	0.0
Power Smart Residential Load	2.5	1.8	0.6
Oil and Propane Heated Homes - Additional funding	0.3	0.0	0.3
Spruce Wood Loggers	0.2	0.0	0.2
Community Energy Development			
ecoENERGY Program Funding	4.1	4.1	0.0
Power Smart PAYS Financing Program	0.4	0.0	0.4
Subtotal	\$35.0	\$24.5	\$10.5
Energy & Resource Fund *	0.8	0.8	0.0
Manitoba Electric Bus *	1.2	0.9	0.3
FortWhyte EcoVillage *	0.1	0.1	0.0
Diesel Community Green Pilot Demonstration *	0.4	0.0	0.4
Métis Generation Fund *	0.5	0.5	0.0
TOTALS	\$38.0	\$26.8	\$11.2

Note: * Non Demand Side Management Budget
 Figures may not add due to rounding

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 Budget (Millions 2014 \$)												
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25 - 2028/29	Total
Affordable Energy Program	4.0	3.7	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.7
Geothermal Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Community Support and Outreach	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Oil and Propane Heated Homes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Special Projects												0.0
Residential ecoENERGY Audits	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0
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
Power Smart Residential Load	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Oil and Propane Heated Homes - Additional funding	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Spruce Wood Loggers	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Community Energy Development												
ecoENERGY Program Funding	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Power Smart PAYS Financing Program	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Subtotal	\$4.7	\$4.1	\$1.3	\$0.1	\$0.1	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$10.5
Energy & Resource Fund *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Manitoba Electric Bus *	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
FortWhyte EcoVillage *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Community Green Pilot Demonstration *	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Métis Generation Fund *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Annual Budget	5.3	4.1	1.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	11.2
Cumulative Budget, 2014/15 - 2028/29	\$5.3	\$9.4	\$10.7	\$10.8	\$10.9	\$11.0	\$11.0	\$11.1	\$11.1	\$11.1	\$11.2	\$11.2

Note: Annual interest accruals are not included in the above forecast
 Figures may not add due to rounding

Affordable Energy Program

The Affordable Energy Fund supports the Affordable Energy Program by targeting low-income Manitobans through an individual, community and neighbourhood approach.

Geothermal Support

The Affordable Energy Fund provides funding to support the application of geothermal technology. A portion of the fund is being used to subsidize the interest rate for Residential Earth Power Loan program participants from 6.5% to 4.9% for the first five years of the loan term.

Community Support and Outreach

The Affordable Energy Fund provides funding for additional resources for the purpose of encouraging rural and northern customers to participate in Power Smart initiatives.

Oil and Propane-Heated Homes

The Affordable Energy Fund provides incentives to allow customers with wood, oil or propane heating to participate in Power Smart programs. The estimated savings of the other fuel types resulting from the installation of insulation in customer homes are provided in the next section of this report. (Note: Additional funding provided through the special projects category)

Special Projects

Residential Energy Assessment Service (ecoENERGY Audits)

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.

Oil & Propane Furnace Replacement

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.

Residential Solar Water Heating Program

Manitoba Hydro is partnering with Natural Resources Canada to deliver a residential solar water heating initiative in Manitoba. This initiative supports the application of solar domestic hot water pre-heating systems and the development of the local solar industry.

Power Smart Residential Loan

The Affordable Energy Fund provides funding to reduce the interest rate for the Power Smart Residential Loan from a cost recovery rate of 5.5% to a rate of 3.9%.

Oil and Propane-Heated Homes – Additional Funding

This initiative provides further funding to extend the eligibility of Power Smart programs to include homes currently heated by a source other than electricity and natural gas. As this additional funding is coming from a separate Affordable Energy Fund category than the original funding, it is tracked separately.

Spruce Wood Loggers

This initiative provides funding to support Spruce Wood Loggers in upgrading their operations to include pelletizing ground wood and waste sawdust material. The pellets would provide an alternative fuel for coal-fired boilers and potentially prevent some customers in close proximity to Spruce Wood Loggers from converting to electric boilers.

Community Energy Development

ecoENERGY Program Funding – Additional Funding

Additional funding has been allocated to support the cost of offering audits in Manitoba, involving a \$100 subsidy for each audit plus the incremental cost of offering audits in rural and northern Manitoba.

Power Smart PAYS Financing Program

This initiative provides funding to reduce the interest rate for the PAYS financing program from the cost recovery rate to a rate of 3.9%.

Energy and Resource Fund

The Affordable Energy Fund provided funding to the Energy and Resource Fund. Managed by the First Peoples Economic Growth Fund, this joint initiative between the Government of Manitoba and the Assembly of Manitoba Chiefs was created to maximize First Nations participation in Major Energy and Resource Projects.

Manitoba Electric Bus

Funding is provided to support the Manitoba Electric Bus Project; a joint initiative among the Province of Manitoba, Manitoba Hydro, Red River College, New Flyer Industries and

Mitsubishi Heavy Industries. The objective of the project is to develop a commercially viable all-electric bus design with near-zero emissions for use in urban transit systems.

FortWhyte EcoVillage

The Affordable Energy Fund supported the research and design of a world-class ecovillage on land belonging to FortWhyte Alive.

Diesel Community Green Pilot Demonstration

This initiative provides funding to support a pilot demonstration focusing on green technologies in one of four diesel communities.

Métis Generation Fund for Resource & Energy Development

The Affordable Energy Fund is providing funding to the Métis Generation fund, managed by the Métis Economic Development Organization. This fund was created to enable Metis-owned businesses in Manitoba to invest in business growth and development within the resource and energy sectors in Manitoba.

Furnace Replacement Budget

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

The following table outlines the planned additions and expenditures over the planning horizon.

**Furnace Replacement Budget
 (Millions 2014\$)**

	2014/15	2015/16	2016/17	2017/18 - 2028/29	Total
Furnance Replacement Budget					
Opening Balance	18.2				
Annual Additions	3.8	3.8	0.0	0.0	25.8
Annual Budget	2.6	2.7	2.7	11.4	19.3
Annual Balance	\$18.2	\$19.4	\$20.5	\$6.4	\$6.4

Note: Figures may not add due to rounding

2.2.2 External Sources

Manitoba Hydro's Power Smart programs are supported by funding from external organizations as outlined in the following table.

The Affordable Energy Program includes partnership funding from the Provincial Government. This external funding is expected to total \$2.5 million over the period of 2014/15 to 2028/29.

External Funding Budget
2014/15 - 2028/29
(Millions 2014 \$)

	2014/15	2015/16	2016/17	2017/18- 2028/29	Total
External Funding					
Affordable Energy Program	0.5	0.4	0.3	1.2	2.5
Cumulative Budget, 2014/15 - 2028/29	\$0.5	\$1.0	\$1.3	\$2.5	\$2.5

Note: Figures may not add due to rounding

2.3 DSM Metrics and other related measurements

2.3.1 Integrated Perspective

Metrics

The following table outlines the cost effectiveness, from an integrated perspective, of the program offerings provided in the 2014-2017 Power Smart Plan - 15 year supplemental report.

Integrated DSM Metrics 2014/15 - 2028/29										
	Combined DSM		Electric DSM				Natural Gas DSM			
	SC	TRC	SC	TRC	TRC NPV	LRC (€/kW.h)	SC	TRC	TRC NPV	LRC (€/m ³)
Residential										
New Home Program	2.1	1.9	3.6	3.3	\$51.2	3.3	1.1	1.0	(\$1.0)	30.9 w c
Home Insulation Program	2.7	2.4	4.3	3.9	\$40.7	3.5	1.5	1.4	\$7.0	21.2
Water and Energy Saver Program	5.3	5.1	4.4	4.1	\$13.5	3.0	6.7	6.5	\$16.2	12.4 w
Affordable Energy Program										
Affordable Energy Program - Insulation	1.9	1.7	4.1	3.8	\$36.4	3.6	0.8	0.8	(\$7.0)	44.5 ** w
Affordable Energy Program - Furnace	0.6	0.5	n/a	n/a	n/a	n/a	0.6	0.5	(\$3.3)	49.0 ** w
Affordable Energy Program - Total	1.7	1.5	4.1	3.8	\$36.4	3.6	0.8	0.7	(\$10.2)	45.3 ** w
Refrigerator Retirement Program	1.2	1.1	1.7	1.6	\$5.8	3.8	0.0	0.0	(\$4.7)	0.0 i
Residential LED Lighting Program	2.1	1.9	3.0	2.7	\$3.8	3.1	0.0	0.0	(\$1.7)	0.0 i
Community Geothermal Program	1.3	1.2	1.3	1.2	\$9.3	8.0	0.0	0.0	\$0.0	0.0
Residential Programs Total	2.0	1.8	2.6	2.3	\$160.7	4.6	1.1	1.1	\$5.5	32.8
Commercial										
Commercial Lighting Program	2.6	2.4	2.7	2.4	\$156.2	3.8	0.0	0.0	(\$5.5)	0.0 i
LED Roadway Lighting Conversion Program	1.3	1.2	1.3	1.2	\$6.1	8.2	n/a	n/a	n/a	n/a
Commercial Building Envelope - Windows Program	3.0	2.7	3.9	3.5	\$27.2	3.2	1.6	1.5	\$3.6	19.3
Commercial Building Envelope - Insulation Program	2.7	2.4	4.2	3.8	\$26.7	2.9	1.9	1.7	\$14.4	16.5
Commercial Geothermal Program	2.2	2.0	2.2	2.0	\$44.6	4.8	n/a	n/a	n/a	n/a
Commercial HVAC Program - Boilers	3.3	3.0	n/a	n/a	n/a	n/a	3.3	3.0	\$9.4	9.4 c
Commercial HVAC Program - Chillers	2.1	1.9	2.1	1.9	\$2.7	2.6	n/a	n/a	n/a	n/a
Commercial HVAC Program - CO2 Sensors	3.5	3.2	6.6	6.0	\$1.9	2.7	2.9	2.7	\$3.5	10.2
Commercial HVAC Program - Water Heaters	1.2	1.0	n/a	n/a	n/a	n/a	1.2	1.0	\$0.1	26.4
Commercial Custom Measures Program	1.7	1.5	1.8	1.6	\$7.6	6.1	1.3	1.2	\$0.9	24.3
Commercial Building Optimization Program	1.9	1.8	2.6	2.4	\$5.0	3.6	1.4	1.3	\$1.4	21.7
New Buildings Program	2.2	2.0	2.7	2.5	\$60.8	5.0	0.6	0.5	(\$5.9)	53.0
Commercial Refrigeration Program	4.4	4.0	4.0	3.7	\$30.9	1.8	0.0	0.0	\$3.6	0.0 i
Commercial Kitchen Appliance Program	19.3	18.4	31.2	29.2	\$9.2	1.0	14.0	13.5	\$9.2	6.3 w i
Network Energy Management Program	2.3	2.1	2.4	2.2	\$4.0	4.9	0.0	0.0	(\$0.3)	0.0 i
Internal Retrofit Program	1.3	1.2	1.3	1.2	\$0.4	5.4	2.3	2.0	(\$0.1)	13.0
Power Smart Shops	2.9	2.6	2.9	2.6	\$2.5	3.6	2.8	2.5	(\$0.1)	11.5
Commercial Programs Total	2.4	2.2	2.6	2.3	\$386.0	4.2	1.7	1.6	\$34.1	19.2
Industrial										
Performance Optimization Program	2.3	2.1	2.3	2.1	\$156.7	3.8	n/a	n/a	n/a	n/a
Natural Gas Optimization Program	1.3	1.2	n/a	n/a	n/a	n/a	1.3	1.2	\$2.0	21.1
Industrial Programs Total	2.3	2.0	2.3	2.1	\$156.7	3.8	1.3	1.2	\$2.0	21.1
Energy Efficiency Subtotal	2.2	2.0	2.5	2.3	\$703.4	4.1	1.4	1.3	\$41.6	25.4
Load Management										
Curtable Rate Program	737.4	535.3	n/a	n/a	\$32.2	n/a	n/a	n/a	n/a	n/a
Load Management Programs Total	737.4	535.3	n/a	n/a	\$32.2	n/a	n/a	n/a	n/a	n/a
Load Displacement & Alternative Energy										
Bioenergy Optimization Program	1.8	1.7	1.8	1.7	\$17.6	4.0	2.0	1.8	\$2.2	14.1
Customer Sited Load Displacement	1.5	1.4	1.5	1.4	\$156.8	5.0	n/a	n/a	n/a	n/a
Load Displacement & Alt. Energy Programs Total	1.6	1.4	1.6	1.4	\$174.4	5.0	2.0	1.8	\$2.2	14.1
Conservation Rates										
Conservation Rates - Residential	10.2	9.3	10.2	9.3	\$104.4	0.8	n/a	n/a	n/a	n/a
Conservation Rates - Commercial	13.8	12.5	13.8	12.5	\$163.1	0.6	n/a	n/a	n/a	n/a
Conservation Rates Total	12.1	11.0	12.1	11.0	\$267.4	0.7	n/a	n/a	n/a	n/a
Fuel Choice										
Fuel Choice	4.7	4.3	4.7	4.3	\$219.0	2.3	0.0	0.0	\$0.0	0.0
Fuel Choice Total	4.7	4.3	4.7	4.3	\$219.0	2.3	0.0	0.0	\$0.0	0.0
Program Impacts Total	2.4	2.2	2.5	2.3	\$1,396.5	3.7	1.4	1.3	\$43.7	25.0
Program Support and Contingency Costs	-	-	-	-	(\$59.9)	-	-	-	(\$25.4)	-
Program Impacts Total (Incl. Support and Contingency Costs)	2.2	2.0	2.4	2.2	\$1,336.6	3.9	1.2	1.1	\$18.3	29.0
Other Internal DSM Investments										
Affordable Energy Fund	-	-	-	-	(\$0.9)	-	-	-	(\$0.7)	-
Overall Portfolio Metric	2.2	2.0	2.4	2.2	\$1,335.7	3.9	1.2	1.1	\$17.6	29.1

Notes:

** Includes all Affordable Energy Fund Expenditures and Furnace Replacement Program

AEF Electric - Total:

Excluding AEF costs, SC is 5.8, TRC is 5.3, TRC NPV is \$40.1M, and LRC is 2.5 €/kW.h

AEF Natural Gas - Total:

Excluding AEF costs, without Furnace Replacement Program, SC is 1.1, TRC is 1.0, TRC NPV is \$0.16M, and LRC is 33.4 €/kW.h

c Program assumption includes savings from Codes & Standards

i Program reflects natural gas interactive effects

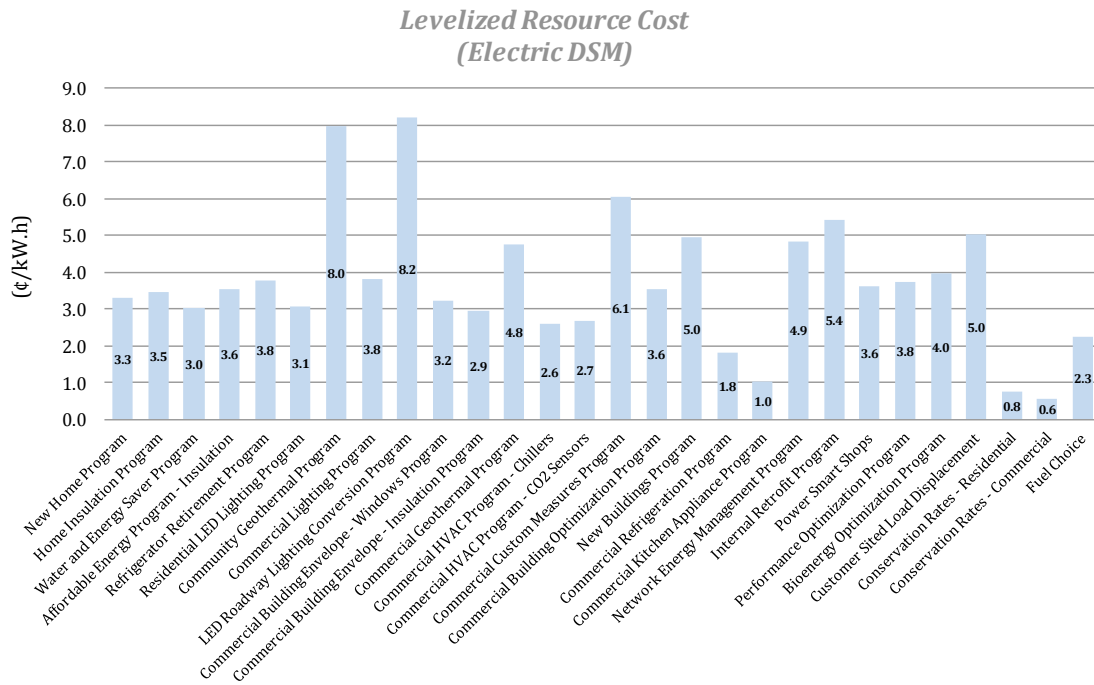
w SC, TRC and TRC NPV include Water Savings Benefits

1) Overall portfolio metrics do not include Customer Service Initiatives / Financial Loan Programs

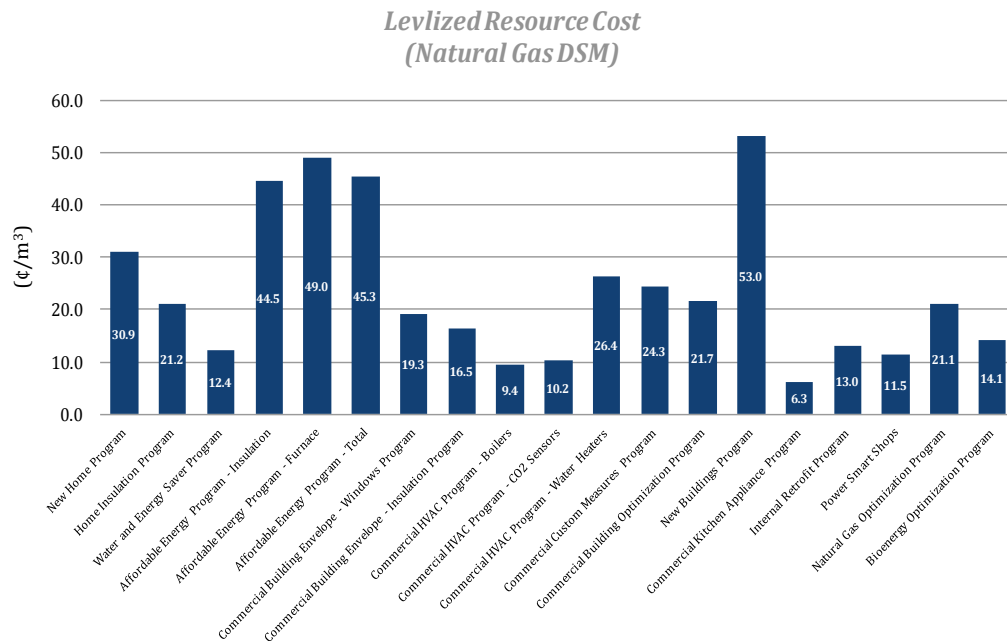
2) Overall portfolio LRC metric does not include Curtable Rate Program

3) Overall portfolio metrics include all support, contingency and Affordable Energy Fund Expenditures and Furnace Replacement Program

The following chart provides the Levelized Resource Cost of the electric program offerings in the 2014-2017 Power Smart Plan - 15 year supplemental report.



The following chart provides the Levelized Resource Cost of the natural gas program offerings in the 2014-2017 Power Smart Plan - 15 year supplemental report.

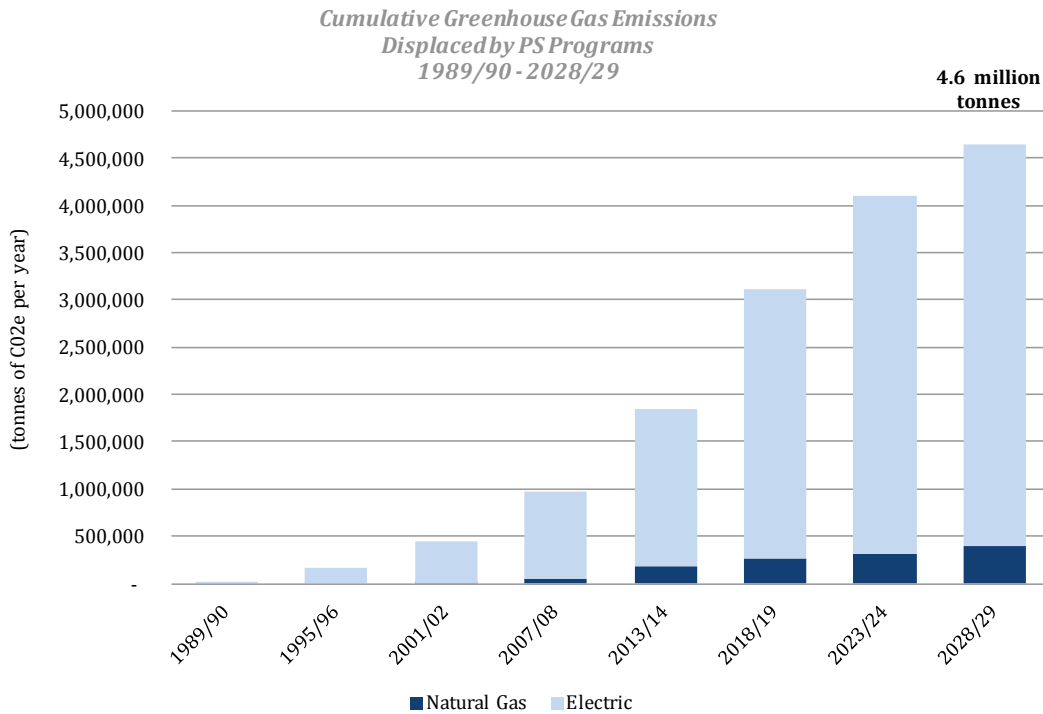


Global Greenhouse Gas Emissions Reductions

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 2014-2017 Power Smart Plan - 15 year supplemental report, including greenhouse gas emission reductions resulting from Manitoba Hydro's Power Smart efforts since 1989. Global greenhouse gas emission reductions of 2.9 million tonnes are forecast to be achieved due to energy savings outlined in the Power Smart Plan.

	Annual CO₂ Reductions (tonnes)
CO ₂ Reductions - Electric	2,685,291
CO ₂ Reductions - Natural Gas	205,900
2014/15 Power Smart Plan (2014/15 - 2028/29)	2,891,191
CO ₂ Reductions Achieved to Date - Electric	1,557,430
CO ₂ Reductions Achieved To Date - Natural Gas	195,193
Savings Achieved to 2013/14 (1989/90 - 2028/29)	1,752,623
Total Projected to 2028/29	4,643,814

Including reductions achieved to date, approximately 4.6 million tonnes are forecast to be realized due to Manitoba Hydro's Power Smart efforts by 2028/29.

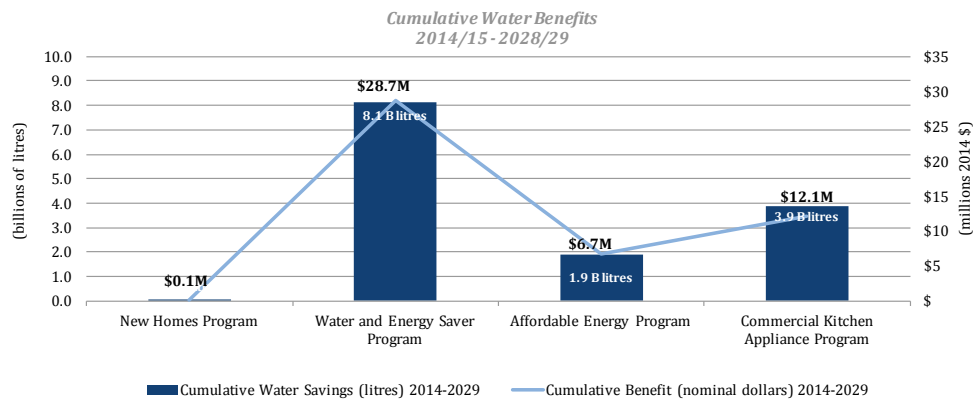


Additional Measureable Non-Energy Benefits

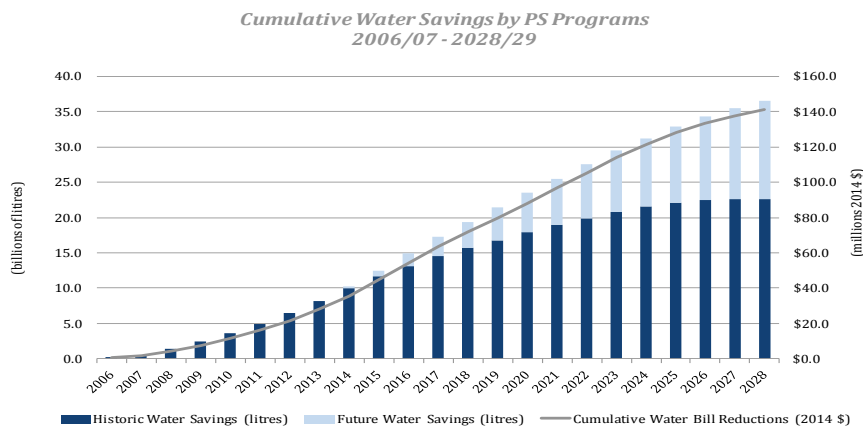
As part of the 2014-2017 Power Smart Plan - 15 year supplemental report, the following residential and commercial programs are expected to capture additional water saving benefits:

- New Homes Program
- Water and Energy Saver Program
- Affordable Energy Program
- Commercial Kitchen Appliance Program

The following graph depicts cumulative water savings in litres and cumulative customer dollar savings from each of the above programs. It is estimated that savings of approximately 14 billion liters of water and \$48 million in bill savings will be achieved from 2014/15 to 2028/29.



When combined with savings to date, Power Smart programs are expected to save approximately 37 billion liters of water and \$141 million by 2028/29.



2.3.2 Utility Perspective Metrics

The following table outlines the cost effectiveness, from a utility perspective, of the program offerings provided in the 2014-2017 Power Smart Plan - 15 year supplemental report.

	Utility DSM Metrics 2014/15 - 2028/29							
	Electric DSM				Natural Gas DSM			
	RIM	NUB	NPV	LUC (€/kWh)	RIM	NUB	NPV	LUC (€/m ³)
Residential								
New Home Program	1.1	5.1	\$7.3	0.3	0.8	(110.8)	(\$7.7)	0.1 c
Home Insulation Program	1.2	1.6	\$8.0	3.2	0.6	(0.6)	(\$18.4)	12.6
Water and Energy Saver Program	0.7	0.0	(\$4.2)	3.0	0.5	(0.6)	(\$4.9)	12.7
Affordable Energy Program								
Affordable Energy Program - Insulation	1.1	1.4	\$4.9	3.4	0.3	(0.2)	(\$31.7)	41.7 **
Affordable Energy Program - Furnace	n/a	n/a	n/a	n/a	0.2	(0.1)	(\$17.3)	119.9 **
Affordable Energy Program - Total	1.1	1.4	\$4.9	3.4	0.3	(0.1)	(\$48.9)	55.3 **
Refrigerator Retirement Program	0.6	(0.7)	(\$10.8)	2.3	0.8	0.0	\$1.4	- i
Residential LED Lighting Program	0.8	0.3	(\$1.2)	2.4	0.8	0.0	\$0.5	0.0 i
Community Geothermal Program	0.9	0.5	(\$7.7)	2.5	0.0	0.0	\$0.0	0.0
Residential Programs Total	1.0	0.9	(\$3.8)	2.2	0.5	(0.4)	(\$78.1)	20.9
Commercial								
Commercial Lighting Program	0.9	0.7	(\$22.3)	2.4	0.8	0.0	\$1.2	0.0 i
LED Roadway Lighting Conversion Program	0.8	0.8	(\$6.9)	3.3	n/a	n/a	n/a	n/a
Commercial Building Envelope - Windows Program	1.2	1.7	\$6.0	2.5	0.6	(0.3)	(\$6.5)	12.4
Commercial Building Envelope - Insulation Program	1.2	1.6	\$5.0	2.8	0.6	(0.3)	(\$19.5)	12.3
Commercial Geothermal Program	1.0	0.9	(\$4.1)	3.2	n/a	n/a	n/a	n/a
Commercial HVAC Program - Boilers	-	-	-	-	0.8	(0.8)	(\$4.2)	4.5 c
Commercial HVAC Program - Chillers	0.7	(0.7)	(\$2.9)	1.4	n/a	n/a	n/a	n/a
Commercial HVAC Program - CO2 Sensors	1.7	3.5	\$0.9	2.6	0.7	(0.5)	(\$2.2)	7.3
Commercial HVAC Program - Water Heaters	n/a	n/a	n/a	n/a	0.6	(0.4)	(\$0.9)	11.6
Commercial Custom Measures Program	1.1	1.2	\$1.4	3.2	0.6	(0.3)	(\$2.8)	12.1
Commercial Building Optimization Program	0.9	0.6	(\$1.1)	2.8	0.6	(0.3)	(\$3.8)	13.0
New Buildings Program	1.4	3.0	\$28.6	1.7	0.6	(0.2)	(\$3.9)	13.5
Commercial Refrigeration Program	0.9	0.6	(\$2.5)	1.1	0.8	0.0	(\$0.6)	- i
Commercial Kitchen Appliance Program	1.7	13.1	\$2.6	0.7	0.7	(1.5)	(\$1.1)	3.7
Network Energy Management Program	1.1	2.3	\$0.8	0.9	0.9	0.0	\$0.0	- i
Internal Retrofit Program	1.2	1.2	\$0.4	5.4	1.9	1.9	(\$0.1)	13.0
Power Smart Shops	0.9	0.6	(\$0.5)	2.7	0.6	(0.7)	(\$0.1)	10.5
Commercial Programs Total	1.0	1.0	\$5.3	2.4	0.6	(0.4)	(\$44.6)	10.8
Industrial								
Performance Optimization Program	0.9	0.8	(\$19.3)	2.6	n/a	n/a	n/a	n/a
Natural Gas Optimization Program	n/a	n/a	n/a	n/a	0.8	(0.5)	(\$3.2)	4.6
Industrial Programs Total	0.9	0.8	(\$19.3)	2.6	0.8	(0.5)	(\$3.2)	4.6
Energy Efficiency Subtotal	1.0	0.9	(\$17.8)	2.4	0.6	(0.4)	(\$125.8)	14.8
Load Management								
Curtailable Rate Program	1.4	1.4	\$32.2	n/a	n/a	n/a	n/a	n/a
Load Management Programs Total	1.4	1.4	\$32.2	n/a	n/a	n/a	n/a	n/a
Load Displacement & Alternative Energy								
Bioenergy Optimization Program	1.0	1.1	\$1.2	1.4	0.8	(0.4)	(\$1.1)	4.2
Customer Sited Load Displacement	1.2	2.0	\$74.3	1.0	n/a	n/a	n/a	n/a
Load Displacement & Alt. Energy Programs Total	1.1	1.9	\$75.4	1.0	0.8	(0.4)	(\$1.1)	4.2
Conservation Rates								
Conservation Rates - Residential	0.8	(1.8)	(\$35.3)	0.8	n/a	n/a	n/a	n/a
Conservation Rates - Commercial	1.1	2.3	\$18.4	0.6	n/a	n/a	n/a	n/a
Conservation Rates Total	0.9	0.4	(\$17.0)	0.7	n/a	n/a	n/a	n/a
Fuel Choice								
Fuel Choice	1.0	1.0	\$1.2	1.3	0.0	0.0	\$0.0	0.0
Fuel Choice Total	1.0	1.0	\$1.2	1.3	0.0	0.0	\$0.0	0.0
Program Impacts Total	1.0	1.1	\$74.1	1.6	0.6	(0.4)	(\$126.9)	14.5
Program Support and Contingency Costs	-	-	(\$59.9)	-	-	-	(\$25.4)	-
Program Impacts Total (Incl. Support and Contingency Costs)	1.0	1.0	\$14.3	1.8	0.5	(0.3)	(\$152.3)	18.5
Other Internal DSM Investments								
Affordable Energy Fund	-	-	(\$0.9)	-	-	-	(\$0.7)	-
Overall Portfolio Metric	1.0	1.0	\$13.3	1.8	0.5	(0.3)	(\$153.0)	18.6 13.5 (4)

Notes:

** Includes all Affordable Energy Fund Expenditures and Furnace Replacement Program

AEP Electric - Total:

Excluding AEF costs, RIM is 1.4, NUB is 3.8, NPV is \$12.8M, and LUC is 1.3 €/kWh

AEP Natural Gas - Total:

Excluding AEF costs, without Furnace Replacement Program, RIM is 0.6, NUB is -1.1, NPV is -\$9.3M, and LUC is 6.8 €/m³

c Program assumption includes savings from Codes & Standards

i Program reflects natural gas interactive effects

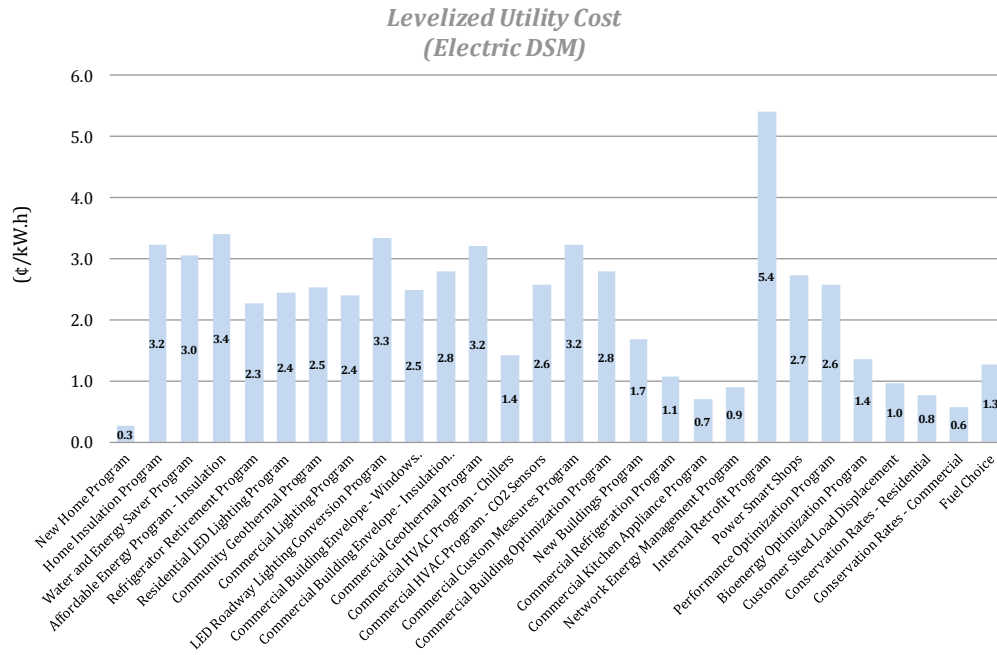
1) Overall RIM, NUB, and NPV portfolio metrics include Curtailable Rate Program and do not include Customer Service Initiatives / Financial Loan Programs

2) Overall LUC portfolio metric does not include Curtailable Rate Program

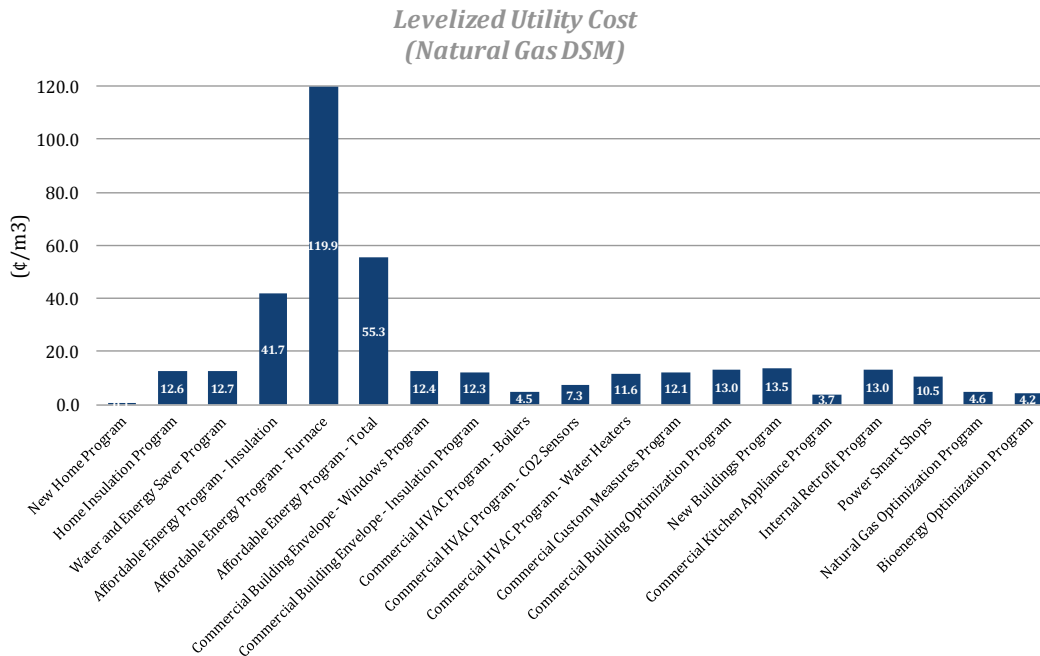
3) Overall portfolio metrics include all support, contingency and Affordable Energy Fund Expenditures and Furnace Replacement Program

4) Excluding the Affordable Energy Program, overall natural gas LUC is 13.5 €/m³

The following chart provides the Levelized Utility Cost of the electric program offerings in the 2014-2017 Power Smart Plan - 15 year supplemental report.



The following chart provides the Levelized Utility Cost of the natural gas program offerings in the 2014-2017 Power Smart Plan - 15 year supplemental report.



2.3.3 Customer Perspective Metrics

The following table outlines the cost effectiveness, from a participating customer perspective, of the program offerings provided in the 2014-2017 Power Smart Plan - 15 year supplemental report.

Customer DSM Metrics 2014/15 - 2028/29						
	Electric DSM			Natural Gas DSM		
	Payback	PC	PC NPV	Payback	PC	PC NPV
Residential						
New Home Program	8.7	3.1	\$43.9	21.6	1.1	\$4.4 ^w
Home Insulation Program	0.6	5.5	\$32.7	4.4	2.4	\$22.8
Water and Energy Saver Program	0.0	8.4	\$17.7	-	29.5	\$20.7 ^{^ w}
Affordable Energy Program						
Affordable Energy Program - Insulation	0.5	4.7	\$31.5	1.7	2.1	\$23.0 ^{** w}
Affordable Energy Program - Furnace	n/a	n/a	n/a	-	6.8	\$13.8 ^{** ^}
Affordable Energy Program - Total	0.5	4.7	\$31.5	1.7	2.6	\$36.8 ^{** ^ w}
Refrigerator Retirement Program	1.9	3.9	\$16.6	0.0	-	(\$5.8)
Residential LED Lighting Program	0.5	5.7	\$5.1	0.0	0.0	(\$2.1)
Community Geothermal Program	10.9	1.3	\$17.0	0.0	0.0	\$0.0
Commercial						
Commercial Lighting Program	2.3	3.1	\$178.6	-	-	(\$6.3)
LED Roadway Lighting Conversion Program	0.0	1.4	\$13.0	n/a	n/a	n/a
Commercial Building Envelope - Windows Program	1.5	4.3	\$21.2	2.2	2.3	\$9.0
Commercial Building Envelope - Insulation Program	0.7	5.4	\$21.7	2.6	2.6	\$30.6
Commercial Geothermal Program	3.7	2.2	\$48.8	n/a	n/a	n/a
Commercial HVAC Program - Boilers	-	-	-	2.4	3.9	\$12.3
Commercial HVAC Program - Chillers	1.3	3.2	\$5.6	n/a	n/a	n/a
Commercial HVAC Program - CO2 Sensors	0.7	8.8	\$1.0	1.4	5.4	\$5.3
Commercial HVAC Program - Water Heaters	n/a	n/a	n/a	6.0	1.8	\$0.9
Commercial Custom Measures Program	8.5	1.7	\$6.3	6.9	2.2	\$3.1
Commercial Building Optimization Program	1.3	4.4	\$6.1	3.0	2.3	\$4.7
New Buildings Program	9.3	1.9	\$32.2	25.3	0.8	(\$2.4)
Commercial Refrigeration Program	0.2	5.4	\$33.4	-	-	\$3.9
Commercial Kitchen Appliance Program	0.1	23.7	\$6.6	0.1	18.7	\$10.0 ^w
Network Energy Management Program	1.7	2.0	\$3.2	-	-	(\$0.3)
Internal Retrofit Program	0.0	1.0	\$0.0	0.0	n/a	n/a
Power Smart Shops	2.1	3.8	\$3.0	0.4	12.9	\$0.0
Industrial						
Performance Optimization Program	0.9	2.7	\$176.0	n/a	n/a	n/a
Natural Gas Optimization Program	n/a	n/a	n/a	7.9	1.5	\$4.3
Load Management						
Curtailable Rate Program	0.0	0.0	\$0.0	n/a	n/a	n/a
Load Displacement & Alternative Energy						
Bioenergy Optimization Program	3.9	1.7	\$16.4	4.8	2.1	\$2.8
Customer Sited Load Displacement	1.5	1.2	\$82.5	n/a	n/a	n/a
Conservation Rates						
Conservation Rates - Residential	0.0	0.0	\$139.7	n/a	n/a	n/a
Conservation Rates - Commercial	0.0	0.0	\$144.7	n/a	n/a	n/a
Fuel Choice						
Fuel Choice	2.0	4.4	\$217.9	0.0	0.0	\$0.0
Overall Portfolio Metric	n/a	2.5	\$1,322.4	n/a	2.3	\$154.7

Notes:

**** Includes all Affordable Energy Fund Expenditures and Furnace Replacement Program**

^ Program with nil or negative customer costs

AEP Electric - Total:

Excluding AEF costs, Payback is 2.7, PC is 4.3, and PC NPV is \$27.3M

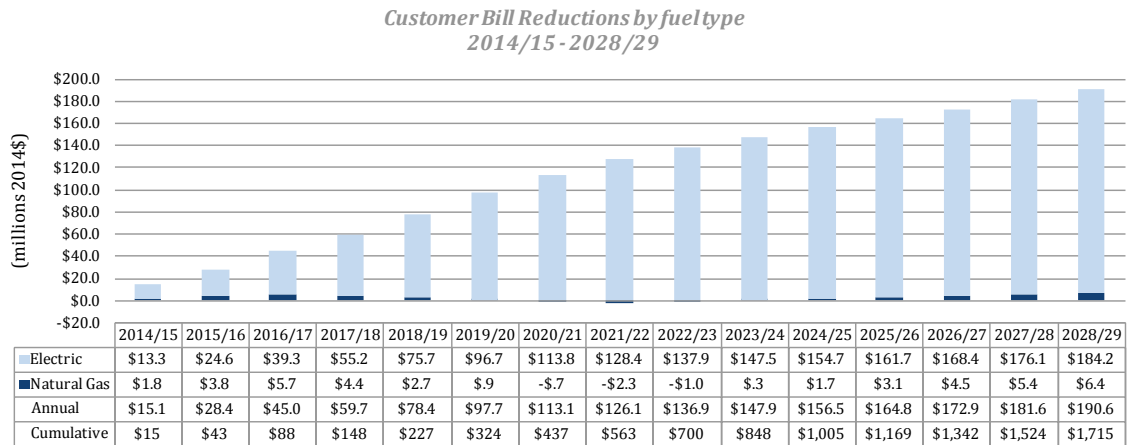
AEP Natural Gas - Total:

Excluding AEF costs, without Furnace Replacement Program, Payback is 10.7, PC is 1.4, and PC NPV is \$7.7M

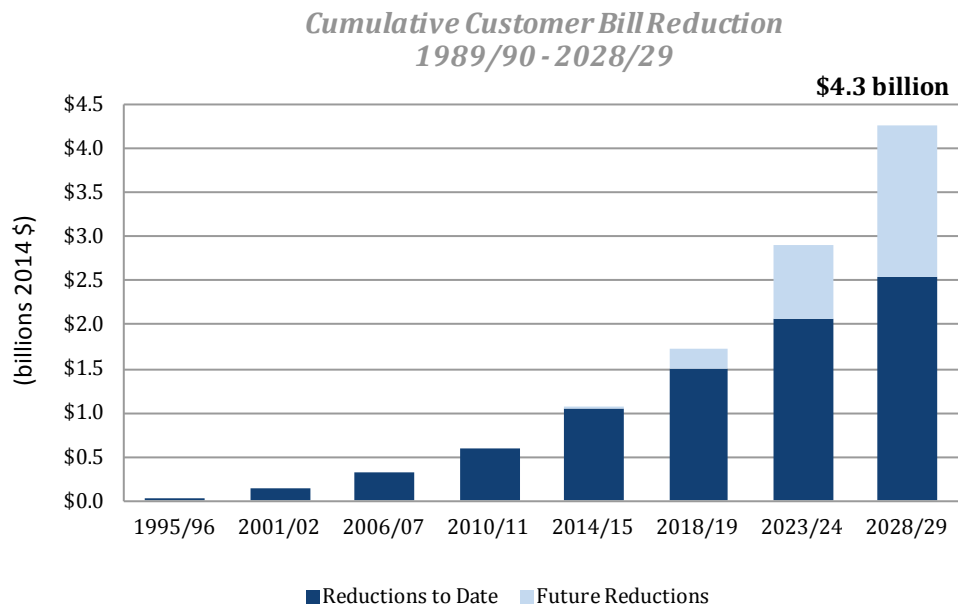
w Payback, PC and PC NPV include Water Savings Benefits

Combined Customer Bill Reductions

The following graph depicts customer bill reductions resulting from electric and natural gas programs outlined in the 2014-2017 Power Smart Plan - 15 year supplemental report. Power Smart programs are expected to save participating customers an additional \$15.1 million in 2014/15 alone, \$191 million in 2028/29 and \$1.7 billion cumulatively by 2028/29.



When combined with bill reductions to date, Power Smart programs are expected to save participating customers \$277 million in 2027/28 and over \$4.3 billion dollars cumulatively by 2028/29.



**2014 - 2017 Power Smart Plan
Annual Capacity Savings (MW)**

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	MW at Generation 2028/29	
RESIDENTIAL																	
Incentive Based																	
New Home Program	0.0	0.0	0.0	0.3	1.0	2.2	4.3	5.4	6.4	7.3	8.3	9.2	10.2	11.1	12.0	13.7	
Home Insulation Program	2.6	4.8	6.9	8.7	10.3	11.7	12.9	13.9	14.8	15.5	16.0	16.5	16.8	16.8	16.8	19.1	
Water and Energy Saver Program	0.6	1.2	1.7	1.9	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.8	
Affordable Energy Program	1.8	3.6	5.3	7.0	8.6	10.2	11.8	13.1	14.3	15.4	16.3	16.5	16.6	16.1	15.6	17.8	
Refrigerator Retirement Program	1.2	2.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.5	1.5	0.7	0.4	0.2	0.2	
Residential LED Lighting Program	0.5	0.6	0.9	1.2	1.6	1.7	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.6	
Community Geothermal Program	1.1	2.6	4.4	7.0	9.1	10.9	12.1	13.3	14.5	15.7	15.7	15.7	15.7	15.7	15.7	17.9	
Subtotal	7.8	15.3	22.7	29.6	36.2	42.6	48.7	53.0	57.3	61.3	62.7	63.3	63.8	64.0	64.1	73.1	10%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	0.3	0.5	0.8	1.0	1.3	1.6	1.8	2.1	2.3	2.6	2.9	3.1	3.4	3.7	3.9	4.5	
Power Smart PAYS Financing	0.1	0.2	0.3	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.4	1.6	
Residential Earth Power Loan	0.3	0.6	0.9	1.2	1.6	1.9	2.4	2.8	3.3	3.8	4.3	4.3	4.3	4.3	4.3	4.9	
Subtotal	0.6	1.3	2.0	2.7	3.4	4.2	4.9	5.7	6.5	7.4	8.3	8.6	9.0	9.3	9.7	11.0	1%
COMMERCIAL																	
Incentive Based																	
Commercial Lighting Program	9.1	18.7	27.7	36.0	44.6	49.4	54.0	58.3	62.3	66.1	67.7	68.9	69.0	69.9	70.7	80.6	
LED Roadway Lighting Conversion Program	0.7	1.5	2.1	2.9	3.8	4.6	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.9	
Commercial Building Envelope - Windows Program	1.0	1.9	2.7	3.5	4.3	5.1	5.9	6.7	7.6	8.4	9.2	10.1	10.9	11.7	12.6	14.3	
Commercial Building Envelope - Insulation Program	1.0	1.9	2.7	3.4	4.2	4.9	5.7	6.4	7.2	8.0	8.7	9.5	10.2	11.0	11.8	13.4	
Commercial Geothermal Program	0.4	1.3	2.3	3.5	4.9	6.3	7.8	9.6	11.4	13.3	15.3	17.4	19.6	21.9	24.3	27.7	
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	
Commercial HVAC Program - CO2 Sensors	0.1	0.1	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.3	1.3	1.3	1.3	1.3	1.3	1.4	
Commercial Custom Measures Program	0.2	0.5	0.8	1.1	1.4	1.8	2.1	2.5	2.9	3.3	3.7	4.1	4.6	5.1	5.7	6.5	
Commercial Building Optimization Program	0.1	0.2	0.4	0.5	0.7	0.9	1.2	1.4	1.7	2.0	2.2	2.4	2.5	2.7	2.9	3.3	
New Buildings Program	4.1	9.5	16.3	16.3	16.6	17.4	18.5	19.9	21.7	21.7	21.7	21.7	21.7	21.7	21.7	24.8	
Commercial Refrigeration Program	1.2	1.8	2.1	2.5	2.8	3.2	3.6	4.0	4.4	4.9	5.4	5.8	6.2	6.6	7.0	8.0	
Commercial Kitchen Appliance Program	0.6	1.5	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.8	3.1	
Network Energy Management Program	0.2	0.5	0.8	1.3	2.0	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	
Internal Retrofit Program	0.2	0.3	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	0.5	
Power Smart Shops	0.0	0.0	0.2	0.4	0.6	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.3	
Subtotal	18.8	39.7	61.4	75.0	89.6	100.3	110.8	121.1	131.6	140.2	146.6	152.6	157.5	163.4	169.3	193.0	26%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	
Subtotal	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0%
INDUSTRIAL																	
Performance Optimization Program	2.4	5.3	8.6	12.2	16.3	20.4	24.4	28.5	32.6	36.7	40.7	44.8	48.9	53.0	57.0	62.7	
Subtotal	2.4	5.3	8.6	12.2	16.3	20.4	24.4	28.5	32.6	36.7	40.7	44.8	48.9	53.0	57.0	62.7	9%
ENERGY EFFICIENCY SUBTOTAL	29.7	61.6	94.8	119.8	145.7	167.7	189.1	208.7	228.4	246.0	258.7	269.8	279.7	290.1	300.6	340.4	46%
LOAD MANAGEMENT																	
Curtailable Rate Program	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	160.9	
LOAD MANAGEMENT SUBTOTAL	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	160.9	23%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	1.5	3.1	4.3	5.5	6.3	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.8	
Customer Sited Load Displacement	21.9	34.1	50.9	61.9	77.9	81.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	94.5	
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	23.4	37.2	55.1	67.3	84.2	89.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	102.3	14%
CONSERVATION RATES																	
Conservation Rates - Residential	0.0	0.0	0.0	0.0	3.1	10.9	12.0	13.1	14.5	15.9	16.1	16.3	16.5	16.7	16.9	19.2	
Conservation Rates - Commercial	0.0	0.0	0.0	0.0	0.0	5.2	11.4	15.4	16.6	17.8	19.0	20.3	21.6	23.0	24.3	27.8	
CONSERVATION RATES SUBTOTAL	0.0	0.0	0.0	0.0	3.1	16.1	23.3	28.5	31.0	33.7	35.1	36.6	38.1	39.7	41.2	47.0	6%
FUEL CHOICE																	
Fuel Choice	0.0	0.0	0.0	13.3	26.7	40.0	53.4	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	76.1	
FUEL CHOICE SUBTOTAL	0.0	0.0	0.0	13.3	26.7	40.0	53.4	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	76.1	10%
Impacts (at meter)	199	245	296	347	406	459	505	543	565	586	600	612	624	636	648		100%
Impacts (at generation)	220	272	329	386	453	513	565	609	634	657	673	687	700	713	727		
Codes, Standards & Regulations (at meter)	19	42	71	101	129	154	179	203	226	249	271	294	316	337	359		
Codes, Standards & Regulations (at generation)	22	48	81	115	147	176	204	231	258	284	309	335	360	385	409		
POWER SMART 2014 to 2028 Impacts (at meter)	219	287	367	448	535	613	684	746	791	834	871	906	939	973	1,007		
POWER SMART 2014 to 2028 Impacts (at generation)	243	319	411	502	600	689	769	840	891	940	982	1,022	1,059	1,098	1,136		
POWER SMART SAVINGS TO DATE																	
Incentive Based Program Impacts (at meter)	240	240	240	240	240	240	240	240	239	239	239	238	238	237	237		
Incentive Based Program Impacts (at generation)	270	270	270	270	270	270	270	270	269	269	269	268	268	267	267		
Customer Service Initiatives Program Impacts (at meter)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
Customer Service Initiatives Program Impacts (at generation)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11		
Discontinued Programs (at meter)	46	46	42	38	50	50	50	50	50	50	50	50	50	50	50		
Discontinued Programs (at generation)	52	52	48	43	56	56	56	56	56	56	56	56	56	56	56		
Impacts of Codes & Standards (at meter)	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145		
Impacts of Codes & Standards (at generation)	166	166	166	166	166	166	166	166	166	166	166	166	166	166	166		
TOTAL MW (at meter)	660	728	805	881	979	1,058	1,129	1,191	1,235	1,279	1,315	1,349	1,382	1,415	1,448		
TOTAL MW (at generation)	741	818	905	991	1,103	1,192	1,272	1,343	1,393	1,442	1,484	1,523	1,560	1,597	1,635		

Note: May not add up due to rounding.

**2014 - 2017 Power Smart Plan
Annual Utility Costs
(000's in 2014 \$)**

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Cumulative Total	
RESIDENTIAL																	
Incentive Based																	
New Home Program	\$0	\$0	\$0	\$448	\$496	\$700	\$626	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,270
Home Insulation Program	\$2,148	\$2,032	\$1,900	\$1,703	\$1,536	\$1,405	\$1,167	\$1,036	\$953	\$784	\$643	\$573	\$511	\$167	\$0	\$0	\$16,558
Water and Energy Saver Program	\$772	\$772	\$772	\$780	\$899	\$1,020	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,015
Affordable Energy Program	\$347	\$333	\$1,008	\$1,516	\$1,476	\$1,444	\$1,411	\$1,388	\$1,367	\$1,351	\$1,338	\$827	\$711	\$0	\$0	\$0	\$14,516
Refrigerator Retirement Program	\$2,329	\$2,289	\$1,951	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,570
Residential LED Lighting Program	\$1,025	\$229	\$219	\$209	\$209	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,893
Community Geothermal Program	\$1,567	\$2,017	\$2,354	\$3,613	\$2,703	\$2,376	\$1,612	\$1,612	\$1,612	\$1,611	\$0	\$0	\$0	\$0	\$0	\$0	\$21,076
Subtotal	\$8,187	\$7,672	\$8,205	\$8,269	\$7,319	\$6,945	\$4,816	\$4,036	\$3,932	\$3,746	\$1,981	\$1,399	\$1,222	\$167	\$0	\$0	9%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Power Smart PAYS Financing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Residential Earth Power Loan	\$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%
COMMERCIAL																	
Incentive Based																	
Commercial Lighting Program	\$8,614	\$8,733	\$8,356	\$8,076	\$8,213	\$5,828	\$5,670	\$5,519	\$5,331	\$5,170	\$4,979	\$4,655	\$4,385	\$4,393	\$4,404	\$0	\$92,325
LED Roadway Lighting Conversion Program	\$6,199	\$6,062	\$5,162	\$6,052	\$6,788	\$6,151	\$4,006	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,419
Commercial Building Envelope - Windows Program	\$950	\$857	\$752	\$763	\$763	\$763	\$763	\$768	\$768	\$768	\$777	\$777	\$777	\$777	\$777	\$777	\$11,803
Commercial Building Envelope - Insulation Program	\$986	\$987	\$812	\$812	\$812	\$812	\$816	\$816	\$816	\$816	\$816	\$816	\$816	\$816	\$816	\$816	\$12,564
Commercial Geothermal Program	\$970	\$2,034	\$2,351	\$2,532	\$2,748	\$2,896	\$3,037	\$3,354	\$3,508	\$3,661	\$3,799	\$3,949	\$4,103	\$4,256	\$4,410	\$0	\$47,609
Commercial HVAC Program - Chillers	\$302	\$308	\$342	\$191	\$192	\$195	\$199	\$204	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$1,969
Commercial HVAC Program - CO2 Sensors	\$35	\$41	\$43	\$45	\$47	\$48	\$50	\$52	\$53	\$55	\$2	\$2	\$2	\$2	\$2	\$2	\$476
Commercial Custom Measures Program	\$427	\$479	\$489	\$557	\$594	\$604	\$640	\$650	\$687	\$718	\$755	\$765	\$802	\$963	\$1,010	\$0	\$10,139
Commercial Building Optimization Program	\$252	\$222	\$241	\$241	\$258	\$277	\$277	\$287	\$287	\$296	\$306	\$306	\$316	\$332	\$332	\$0	\$4,194
New Buildings Program	\$2,546	\$3,091	\$3,525	\$459	\$803	\$1,090	\$1,434	\$1,721	\$2,009	\$515	\$0	\$0	\$0	\$0	\$0	\$0	\$17,194
Commercial Refrigeration Program	\$1,698	\$1,531	\$344	\$362	\$370	\$381	\$400	\$419	\$438	\$457	\$465	\$478	\$460	\$479	\$499	\$0	\$8,781
Commercial Kitchen Appliance Program	\$50	\$62	\$75	\$48	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$235
Network Energy Management Program	\$79	\$111	\$143	\$175	\$207	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$715
Internal Retrofit Program	\$821	\$886	\$803	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,511
Power Smart Shops	\$0	\$120	\$191	\$205	\$218	\$228	\$122	\$123	\$117	\$112	\$108	\$0	\$0	\$0	\$0	\$0	\$1,546
Subtotal	\$23,928	\$25,523	\$23,630	\$20,518	\$22,012	\$19,273	\$17,414	\$13,912	\$14,019	\$12,575	\$12,003	\$11,753	\$11,655	\$12,008	\$12,256	\$0	35%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	\$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%
INDUSTRIAL																	
Performance Optimization Program	\$5,902	\$6,916	\$7,930	\$8,944	\$9,958	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$143,443
Subtotal	\$5,902	\$6,916	\$7,930	\$8,944	\$9,958	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	\$10,379	20%
ENERGY EFFICIENCY SUBTOTAL	\$38,017	\$40,112	\$39,764	\$37,731	\$39,290	\$36,597	\$32,610	\$28,328	\$28,330	\$26,701	\$24,363	\$23,531	\$23,256	\$22,554	\$22,635	\$0	63%
LOAD MANAGEMENT																	
Curtaillable Rate Program	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$89,261
LOAD MANAGEMENT SUBTOTAL	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	\$5,951	12%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	\$2,045	\$2,217	\$1,767	\$1,691	\$1,260	\$1,188	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,168
Customer Sited Load Displacement	\$1,560	\$5,168	\$21,400	\$14,653	\$20,572	\$6,300	\$6,300	\$1,550	\$1,530	\$1,510	\$775	\$755	\$755	\$755	\$755	\$755	\$84,338
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	\$3,605	\$7,385	\$23,167	\$16,344	\$21,832	\$7,489	\$6,300	\$1,550	\$1,530	\$1,510	\$775	\$755	\$755	\$755	\$755	\$755	13%
CONSERVATION RATES																	
Conservation Rates - Residential	\$0	\$0	\$0	\$2,199	\$2,040	\$2,805	\$1,573	\$1,000	\$1,000	\$1,000	\$1,000	\$750	\$750	\$750	\$750	\$750	\$15,618
Conservation Rates - Commercial	\$0	\$0	\$0	\$1,466	\$2,040	\$2,805	\$2,805	\$1,101	\$775	\$805	\$1,353	\$2,370	\$1,000	\$952	\$972	\$972	\$18,444
CONSERVATION RATES SUBTOTAL	\$0	\$0	\$0	\$3,664	\$4,081	\$5,611	\$4,379	\$2,101	\$1,775	\$1,805	\$2,353	\$3,120	\$1,750	\$1,702	\$1,722	\$0	5%
FUEL CHOICE																	
Fuel Choice	\$0	\$0	\$0	\$9,902	\$9,882	\$9,882	\$9,882	\$9,882	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$49,428
FUEL CHOICE SUBTOTAL	\$0	\$0	\$0	\$9,902	\$9,882	\$9,882	\$9,882	\$9,882	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	7%
Subtotal of Programs	\$47,572	\$53,447	\$68,882	\$73,592	\$81,034	\$65,529	\$59,121	\$47,810	\$37,587	\$35,966	\$33,442	\$33,357	\$31,712	\$30,962	\$31,063	\$0	100%
Program Support	\$4,282	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$0	\$64,120
Contingency	\$400	\$850	\$850	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$0	\$23,050
Total Utility Costs (2014 to 2028)	\$52,254	\$58,522	\$74,006	\$79,367	\$86,809	\$71,303	\$64,895	\$53,585	\$43,361	\$42,240	\$39,716	\$39,631	\$37,986	\$37,236	\$37,337	\$0	\$818,248
Total Committed to Date																	\$448,717
TOTAL UTILITY COSTS (1989 to 2028)	\$52,254	\$58,522	\$74,006	\$79,367	\$86,809	\$71,303	\$64,895	\$53,585	\$43,361	\$42,240	\$39,716	\$39,631	\$37,986	\$37,236	\$37,337	\$0	\$1,266,965

Note: May not add up due to rounding.

**2014 - 2017 Power Smart Plan
Annual Administration Costs
(000's in 2014 \$)**

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Cumulative Total	
RESIDENTIAL																	
Incentive Based																	
New Home Program	\$0	\$0	\$0	\$448	\$496	\$700	\$626	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,270
Home Insulation Program	\$972	\$979	\$962	\$871	\$803	\$766	\$613	\$563	\$554	\$456	\$379	\$369	\$362	\$167	\$0	\$0	\$8,817
Water and Energy Saver Program	\$632	\$632	\$632	\$50	\$50	\$50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,047
Affordable Energy Program	\$112	\$108	\$791	\$979	\$959	\$944	\$927	\$916	\$904	\$896	\$891	\$512	\$428	\$0	\$0	\$0	\$9,367
Refrigerator Retirement Program	\$1,779	\$1,739	\$1,501	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,020
Residential LED Lighting Program	\$390	\$229	\$219	\$209	\$209	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,258
Community Geothermal Program	\$275	\$187	\$202	\$358	\$94	\$89	\$79	\$79	\$79	\$79	\$0	\$0	\$0	\$0	\$0	\$0	\$1,521
Subtotal	\$4,160	\$3,875	\$4,308	\$2,915	\$2,611	\$2,549	\$2,245	\$1,559	\$1,538	\$1,431	\$1,270	\$881	\$790	\$167	\$0	\$30,300	14%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Power Smart PAYS Financing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Residential Earth Power Loan	\$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%
COMMERCIAL																	
Incentive Based																	
Commercial Lighting Program	\$2,225	\$2,225	\$2,225	\$2,225	\$2,225	\$2,225	\$2,225	\$2,225	\$2,225	\$2,225	\$2,225	\$2,225	\$2,225	\$2,225	\$2,225	\$2,225	\$33,379
LED Roadway Lighting Conversion Program	\$420	\$420	\$420	\$420	\$420	\$420	\$420	\$420	\$408	\$408	\$408	\$408	\$408	\$408	\$408	\$408	\$2,938
Commercial Building Envelope - Windows Program	\$408	\$408	\$408	\$408	\$408	\$408	\$408	\$408	\$408	\$408	\$408	\$408	\$408	\$408	\$408	\$408	\$6,119
Commercial Building Envelope - Insulation Program	\$426	\$426	\$426	\$426	\$426	\$426	\$426	\$426	\$426	\$426	\$426	\$426	\$426	\$426	\$426	\$426	\$6,394
Commercial Geothermal Program	\$304	\$576	\$582	\$585	\$589	\$596	\$595	\$601	\$604	\$606	\$593	\$592	\$595	\$598	\$601	\$0	\$8,616
Commercial HVAC Program - Chillers	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$79	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$5	\$669
Commercial HVAC Program - CO2 Sensors	\$32	\$32	\$32	\$32	\$32	\$32	\$32	\$32	\$32	\$32	\$2	\$2	\$2	\$2	\$2	\$2	\$326
Commercial Custom Measures Program	\$241	\$283	\$283	\$327	\$349	\$349	\$371	\$393	\$415	\$437	\$437	\$459	\$547	\$569	\$569	\$0	\$5,827
Commercial Building Optimization Program	\$206	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$176	\$2,669
New Buildings Program	\$821	\$791	\$650	\$459	\$515	\$515	\$571	\$571	\$571	\$515	\$0	\$0	\$0	\$0	\$0	\$0	\$5,982
Commercial Refrigeration Program	\$1,270	\$1,270	\$170	\$170	\$170	\$170	\$170	\$170	\$170	\$170	\$170	\$170	\$170	\$170	\$170	\$170	\$4,744
Commercial Kitchen Appliance Program	\$10	\$10	\$10	\$8	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39
Network Energy Management Program	\$31	\$31	\$31	\$31	\$31	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$155
Internal Retrofit Program	\$821	\$886	\$803	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,511
Power Smart Shops	\$0	\$83	\$67	\$67	\$67	\$67	\$67	\$67	\$67	\$67	\$67	\$0	\$0	\$0	\$0	\$0	\$683
Subtotal	\$7,293	\$7,696	\$6,361	\$5,412	\$5,487	\$5,462	\$5,539	\$5,125	\$5,076	\$5,045	\$4,508	\$4,441	\$4,466	\$4,556	\$4,581	\$81,051	38%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	\$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%
INDUSTRIAL																	
Performance Optimization Program	\$2,342	\$2,763	\$3,184	\$3,605	\$4,026	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$60,388
Subtotal	\$2,342	\$2,763	\$3,184	\$3,605	\$4,026	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$4,447	\$60,388	29%
ENERGY EFFICIENCY SUBTOTAL	\$13,796	\$14,335	\$13,854	\$11,932	\$12,124	\$12,458	\$12,231	\$11,131	\$11,061	\$10,923	\$10,225	\$9,768	\$9,703	\$9,170	\$9,028	\$171,739	81%
LOAD MANAGEMENT																	
Curtaillable Rate Program	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$60
LOAD MANAGEMENT SUBTOTAL	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$4	\$60	0%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	\$233	\$268	\$238	\$250	\$219	\$206	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,414
Customer Sited Load Displacement	\$60	\$120	\$190	\$210	\$150	\$70	\$70	\$50	\$30	\$10	\$25	\$5	\$5	\$5	\$5	\$5	\$1,005
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	\$293	\$388	\$428	\$460	\$369	\$276	\$70	\$50	\$30	\$10	\$25	\$5	\$5	\$5	\$5	\$2,419	1%
CONSERVATION RATES																	
Conservation Rates - Residential	\$0	\$0	\$0	\$2,199	\$2,040	\$2,805	\$1,573	\$1,000	\$1,000	\$1,000	\$1,000	\$750	\$750	\$750	\$750	\$750	\$15,618
Conservation Rates - Commercial	\$0	\$0	\$0	\$1,466	\$2,040	\$2,805	\$2,805	\$1,101	\$775	\$805	\$1,353	\$2,370	\$1,000	\$952	\$972	\$972	\$18,444
CONSERVATION RATES SUBTOTAL	\$0	\$0	\$0	\$3,664	\$4,081	\$5,611	\$4,379	\$2,101	\$1,775	\$1,805	\$2,353	\$3,120	\$1,750	\$1,702	\$1,722	\$34,062	16%
FUEL CHOICE																	
Fuel Choice	\$0	\$0	\$0	\$668	\$647	\$647	\$647	\$647	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,258
FUEL CHOICE SUBTOTAL	\$0	\$0	\$0	\$668	\$647	\$647	\$647	\$647	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,258	2%
Subtotal of Programs	\$14,093	\$14,727	\$14,285	\$16,729	\$17,225	\$18,996	\$17,331	\$13,933	\$12,871	\$12,741	\$12,608	\$12,897	\$11,462	\$10,881	\$10,759	\$211,538	100%
Program Support	\$4,282	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$4,274	\$64,120
Contingency	\$400	\$800	\$850	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$23,050
Total Administration Costs (2014 to 2028)	\$18,774	\$19,801	\$19,409	\$22,503	\$23,000	\$24,771	\$23,105	\$19,707	\$18,645	\$19,016	\$18,882	\$19,171	\$17,736	\$17,155	\$17,033	\$298,708	
Total Committed to Date																\$189,749	
TOTAL ADMINISTRATION COSTS (1989 to 2028)	\$18,774	\$19,801	\$19,409	\$22,503	\$23,000	\$24,771	\$23,105	\$19,707	\$18,645	\$19,016	\$18,882	\$19,171	\$17,736	\$17,155	\$17,033	\$488,457	

Note: May not add up due to rounding.

**2014 - 2017 Power Smart Plan
Annual Incentive Costs
(000's in 2014 \$)**

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Cumulative Total	
RESIDENTIAL																	
Incentive Based																	
New Home Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Home Insulation Program	\$1,175	\$1,053	\$938	\$832	\$733	\$640	\$554	\$473	\$399	\$329	\$264	\$204	\$149	\$0	\$0	\$0	\$7,741
Water and Energy Saver Program	\$140	\$140	\$140	\$730	\$849	\$970	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,968
Affordable Energy Program	\$235	\$225	\$217	\$537	\$517	\$500	\$485	\$472	\$462	\$454	\$447	\$315	\$283	\$0	\$0	\$0	\$5,149
Refrigerator Retirement Program	\$550	\$550	\$450	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,550
Residential LED Lighting Program	\$635	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$635
Community Geothermal Program	\$1,292	\$1,830	\$2,153	\$3,255	\$2,609	\$2,286	\$1,533	\$1,533	\$1,533	\$1,532	\$0	\$0	\$0	\$0	\$0	\$0	\$19,555
Subtotal	\$4,027	\$3,797	\$3,897	\$5,354	\$4,708	\$4,396	\$2,571	\$2,478	\$2,394	\$2,315	\$711	\$519	\$432	\$0	\$0	\$37,598	7%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Power Smart PAYS Financing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Residential Earth Power Loan	\$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%
COMMERCIAL																	
Incentive Based																	
Commercial Lighting Program	\$6,389	\$6,507	\$6,131	\$5,851	\$5,988	\$3,602	\$3,444	\$3,293	\$3,105	\$2,945	\$2,754	\$2,430	\$2,160	\$2,168	\$2,179	\$58,947	
LED Roadway Lighting Conversion Program	\$5,779	\$5,642	\$4,742	\$5,632	\$6,368	\$5,731	\$3,587	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$37,481	
Commercial Building Envelope - Windows Program	\$542	\$449	\$344	\$355	\$355	\$355	\$355	\$360	\$360	\$360	\$369	\$369	\$369	\$369	\$370	\$5,684	
Commercial Building Envelope - Insulation Program	\$560	\$561	\$386	\$385	\$385	\$385	\$390	\$390	\$390	\$390	\$390	\$390	\$390	\$390	\$390	\$6,170	
Commercial Geothermal Program	\$666	\$1,459	\$1,770	\$1,946	\$2,159	\$2,300	\$2,442	\$2,753	\$2,904	\$3,055	\$3,206	\$3,357	\$3,508	\$3,659	\$3,810	\$38,993	
Commercial HVAC Program - Chillers	\$223	\$229	\$263	\$112	\$113	\$116	\$120	\$125	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,300	
Commercial HVAC Program - CO2 Sensors	\$3	\$9	\$11	\$13	\$15	\$17	\$18	\$20	\$22	\$23	\$0	\$0	\$0	\$0	\$0	\$150	
Commercial Custom Measures Program	\$186	\$196	\$206	\$230	\$245	\$255	\$269	\$279	\$294	\$304	\$318	\$328	\$343	\$416	\$441	\$4,311	
Commercial Building Optimization Program	\$46	\$46	\$65	\$65	\$82	\$101	\$101	\$111	\$111	\$120	\$120	\$130	\$130	\$140	\$157	\$1,525	
New Buildings Program	\$1,725	\$2,300	\$2,875	\$0	\$288	\$575	\$863	\$1,150	\$1,438	\$0	\$0	\$0	\$0	\$0	\$0	\$11,213	
Commercial Refrigeration Program	\$429	\$261	\$174	\$193	\$200	\$212	\$230	\$249	\$268	\$287	\$296	\$308	\$290	\$310	\$329	\$4,037	
Commercial Kitchen Appliance Program	\$40	\$52	\$64	\$40	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$196	
Network Energy Management Program	\$48	\$80	\$112	\$144	\$176	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$560	
Internal Retrofit Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Power Smart Shops	\$0	\$37	\$125	\$138	\$152	\$161	\$56	\$57	\$51	\$46	\$41	\$0	\$0	\$0	\$0	\$863	
Subtotal	\$16,635	\$17,827	\$17,268	\$15,105	\$16,525	\$13,810	\$11,875	\$8,787	\$8,942	\$7,530	\$7,495	\$7,312	\$7,189	\$7,452	\$7,675	\$171,428	33%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	\$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%
INDUSTRIAL																	
Performance Optimization Program	\$3,559	\$4,153	\$4,746	\$5,339	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$83,055	
Subtotal	\$3,559	\$4,153	\$4,746	\$5,339	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$5,932	\$83,055	16%
ENERGY EFFICIENCY SUBTOTAL	\$24,221	\$25,777	\$25,911	\$25,799	\$27,166	\$24,139	\$20,379	\$17,197	\$17,269	\$15,778	\$14,138	\$13,763	\$13,553	\$13,384	\$13,607	\$292,081	56%
LOAD MANAGEMENT																	
Curtable Rate Program	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$89,201	
LOAD MANAGEMENT SUBTOTAL	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$5,947	\$89,201	17%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	\$1,812	\$1,949	\$1,530	\$1,441	\$1,041	\$982	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,754	
Customer Sited Load Displacement	\$1,500	\$5,048	\$21,210	\$14,443	\$20,422	\$6,230	\$6,230	\$1,500	\$1,500	\$1,500	\$750	\$750	\$750	\$750	\$750	\$83,333	
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	\$3,312	\$6,997	\$22,740	\$15,884	\$21,462	\$7,212	\$6,230	\$1,500	\$1,500	\$1,500	\$750	\$750	\$750	\$750	\$750	\$92,088	18%
CONSERVATION RATES																	
Conservation Rates - Residential	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Conservation Rates - Commercial	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
CONSERVATION RATES SUBTOTAL	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
FUEL CHOICE																	
Fuel Choice	\$0	\$0	\$0	\$9,234	\$9,234	\$9,234	\$9,234	\$9,234	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$46,171	
FUEL CHOICE SUBTOTAL	\$0	\$0	\$0	\$9,234	\$9,234	\$9,234	\$9,234	\$9,234	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$46,171	9%
Total Incentive Costs (2014 to 2028)	\$33,480	\$38,720	\$54,597	\$56,863	\$63,809	\$46,532	\$41,790	\$33,878	\$24,716	\$23,225	\$20,835	\$20,460	\$20,250	\$20,081	\$20,304	\$519,540	100%
Total Committed to Date																\$262,568	
TOTAL INCENTIVE COSTS (1989 to 2028)	\$33,480	\$38,720	\$54,597	\$56,863	\$63,809	\$46,532	\$41,790	\$33,878	\$24,716	\$23,225	\$20,835	\$20,460	\$20,250	\$20,081	\$20,304	\$782,108	

Note: May not add up due to rounding.

2014 - 2017 Power Smart Plan
Annual Utility Costs
(1989/90 - 2013/14)
(000's in 2014 \$)

2015/16 & 2016/17 General Rate Application

	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	2008/09	2009/10	2010/11	2011/12	2012/13	Interim Estimate 2013/14	Cumulative 2013/14
RESIDENTIAL																										
Incentive Based																										
Home Insulation Program	0	0	0	0	269	410	256	239	431	48	5	48	76	75	147	809	1204	2054	1656	1831	1819	1468	1324	1314	1149	16,631
Lower Income Energy Efficiency Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	96	226	223	79	141	102	118	421	1,446	
Lower Income First Nations Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	2	6	42	61	150	193	0	475	
New Home Program	0	0	42	161	102	230	131	67	35	1	20	141	311	238	325	652	974	699	694	624	236	263	47	0	5,982	
Refrigerator Retirement Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	86	1,561	1,661	0	4,925	
Community Geothermal Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	350	510	
Water and Energy Saver Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	19	0	0	86	54	493	463	805	1,095	3,113	
Subtotal	0	0	0	42	430	512	486	369	498	83	6	68	217	386	385	1,134	1,922	3,139	2,584	2,839	2,629	2,473	3,863	4,137	46,202	
Customer Service Initiatives																										
Power Smart Residential Loan Program	0	0	0	0	0	0	0	0	0	0	0	48	83	21	10	1	10	-1	-6	-79	-40	-30	-74	51	-7	
Residential Earth Power Program	0	0	0	0	0	0	0	0	0	0	0	0	3	51	105	373	947	-100	77	225	174	110	90	129	81	
ecology	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	527	
Residential PAYS 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	180	
Solar H2O Heater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	
Subtotal	0	0	0	0	0	0	0	0	0	0	0	48	85	72	114	362	902	-13	252	198	256	179	178	25	2,971	
Discontinued/Completed																										
Appliances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	15	11	103	1,663	2,115	1,800	431	13	1	0	6,253
Seasonal LED Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	421	392	371	25	0	0	0	0	1,900	
Outdoor Timer	210	306	262	204	100	58	20	3	10	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1,178	
Res Hot Water	0	0	186	0	0	0	2	65	27	16	4	0	0	0	0	0	0	0	0	0	0	0	0	0	300	
Water Heater Rental	0	0	0	0	0	0	0	423	418	80	5	0	0	0	0	0	0	0	0	0	0	0	0	0	946	
Thermostat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	4	8	76	37	11	0	0	0	0	146	
Retrofits/Demonstration	0	69	29	129	0	0	5	0	0	0	0	0	0	0	15	50	0	0	0	0	0	0	0	0	295	
RRR	0	0	56	13	0	0	0	0	0	0	0	0	0	0	56	18	30	5	71	26	0	0	0	0	18	
High Efficiency Furnace & Boiler	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	
Energy Efficient Light Fixtures	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	168	537	416	201	261	327	0	0	1,909	
Aboriginal Programs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	15	0	0	0	0	0	0	0	21	
Set Top Boxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	1	0	0	0	0	23	
Compact Fluorescent Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	851	1,101	881	1,009	1,390	1,714	1,079	2	0	0	8,049
Subtotal	210	375	531	346	100	58	47	491	455	100	10	0	39	76	887	1,433	3,250	4,089	4,067	2,992	1,354	331	1	0	20,642	
Residential Exploratory Programs																										
Exploratory Programs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	29	0	33
RESIDENTIAL TOTAL	210	375	531	387	530	570	533	861	953	183	16	116	302	498	576	2,382	4,257	6,375	6,925	7,104	5,277	4,007	4,374	4,191	4,932	56,468
COMMERCIAL																										
Incentive Based																										
Commercial Lighting Program	0	0	115	1,229	2,634	3,108	3,050	1,267	1,078	2,133	952	697	1,081	1,281	2,891	5,696	6,870	7,877	8,140	8,444	7,875	7,148	6,684	8,054	7,027	95,362
Commercial Earth Power Program	0	0	0	0	15	52	20	83	207	124	142	117	179	304	684	294	550	681	242	416	320	306	275	224	5,698	
Commercial Insulation Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	232	279	260	248	268	245	468	523	2,541	
Commercial 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	0	0	431
Internal Retrofit Program	0	0	124	295	493	594	172	223	184	243	120	309	146	301	661	754	642	850	653	778	1,158	987	785	842	645	12,959
Commercial Cost Measures Program	0	0	0	0	21	70	113	84	0	231	561	140	157	87	168	12	9	129	204	260	228	248	250	58	33	3,061
Commercial Refrigeration Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	253	335	321	190	199	183	353	636	510	2,980
Commercial HVAC Program - Chiller	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	190	220	78	231	174	336	221	152	261	1,864
City of Winnipeg Power Smart Agreement	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3,053	2,093	5,005	1,980	218	69	49	85	-47	-125	0	12,385
Commercial Clothes Washers Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	47	148	69	66	61	0	0	451	
Commercial Kitchen Appliance Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	89	38	33	12	5	277	
Power Smart Shops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	66	262	153	48	0	0	531
Commercial Building Optimization Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196	63	43	30	28	39	42	95	127	664	
Network Energy Management Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	22	74	89	24	6	56	274	
New Buildings Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	152	104	176	311	314	120	87	1,266	
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	3	2	4
Power Smart Energy Manager Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	87	125	94	117	23	0	0	0	448
Subtotal	0	0	240	1,524	3,171	3,851	3,463	1,779	1,679	2,797	1,821	1,344	1,634	2,141	7,584	9,107	14,057	12,796	11,038	11,450	12,311	12,719	10,387	11,619	101,63	148,678
Customer Service Initiatives																										
Power Smart for Business PAYS 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	91	91
Discontinued/Completed																										
Commercial Showerhead	0	69	127	37	4	128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	365
Infrared Heat Lamp	0	19	304	35	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	363
Livestock Waterer	0	0	0	0	0	163	141	98	25	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	431
Roadway Lighting	0	119	1,582	2,231	2,038	1,548	19	0	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,387
Sentinel Lighting	0	34	1,395	1,168	1,199	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,796
Commercial Air Barrier	0	0	0	0	9	30	48	104	82	3	11	35	23	19	20	7	4	0	0	0	0	0	0	0	0	401
Agricultural Demand Controller	0	0	24	666	227	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	927
Commercial Air Conditioning	0	0	0	1	2	3	85	80	0	0	0	0	0	0	8	57	0	146	11	0	0	0	0	1	0	394
Aboriginal Commercial	0	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
Parking Lot Controllers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,566
Spray Valves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	30	24	10	5	0	0	0	0	0	111

2014 - 2017 Power Smart Plan
Annual Program Administration Costs
(1989/90 - 2013/14)
(000's in 2014 \$)

	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	2008/09	2009/10	2010/11	2011/12	2012/13	Interim Estimate 2013/14	Cumulative 2013/14	
RESIDENTIAL																											
Incentive Based																											
Home Insulation Program	0	0	0	0	269	410	256	239	431	48	5	48	76	75	147	293	461	310	231	230	204	230	254	457	441	5,115	
Lower Income Energy Efficiency Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	0	185	918	1,262	86	35	26	105	2,663	
Lower Income First Nations Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	15	2	6	42	61	150	0	282		
New Home Program	0	0	0	42	161	102	230	131	67	35	1	20	141	311	238	314	580	837	578	584	502	96	215	35	0	5,217	
Refrigerator Retirement Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	86	1,224	1,287	0	1,233		
Community Geothermal 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	153	153	
Water and Energy Saver Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	19	0	0	86	54	90	269	564	900	1,983	
Subtotal	0	0	0	42	430	512	486	369	498	83	6	68	217	386	385	606	1,113	1,161	995	1,824	2,074	649	2,148	2,369	2,832	19,255	
Customer Service Initiatives																											
Power Smart Residential Loan Program	0	0	0	0	0	0	0	0	0	0	48	83	21	10	0	1	10	-1	-6	-79	-40	-30	-74	51	-7		
Residential Earth Power Program	0	0	0	0	0	0	0	0	0	0	0	0	0	51	105	373	947	-100	77	225	174	110	90	129	81	2,343	
ecoEnergy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-11	-46	77	177	-21	154	108	119	-30	0	527	
Residential PAYS 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	180	180
Solar H2O Heater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7
Subtotal	0	0	0	0	0	0	0	0	0	0	48	83	21	10	0	1	10	-13	252	198	256	179	178	24	312	2,970	
Discontinued/Completed																											
Appliances	0	0	0	0	0	0	0	0	0	0	0	0	0	22	15	11	103	607	659	442	116	12	1	1	0	1,990	
Seasonal LED Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	250	270	298	2	0	0	0	0	0	878
Outdoor Timer	158	234	199	167	69	58	20	3	10	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	923	
Res Hot Water	0	0	176	0	0	0	2	65	27	16	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	290	
Water Heater Rental	0	0	0	0	0	20	423	418	80	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	946	
Thermostat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	4	8	52	26	5	0	0	0	0	0	105	
Retrofit/Demonstration	0	69	29	129	0	0	0	0	0	0	0	0	0	0	15	50	0	0	0	0	0	0	0	0	0	290	
RRB	0	0	29	13	0	0	0	0	0	0	0	0	18	30	5	71	0	0	0	0	0	0	0	0	0	166	
High Efficiency Furnace & Boiler	0	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	
Energy Efficient Light Fixtures	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	425	340	133	102	192	0	0	1,258	
Aboriginal Programs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Set Top Boxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Compact Fluorescent Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	22	682	818	631	736	682	554	437	2	0	0	0	4,564	
Subtotal	158	303	432	309	69	58	42	491	455	100	10	0	0	39	76	717	1,111	1,607	2,115	1,767	806	551	196	1	0	11,413	
Residential Exploratory Programs																											
Exploratory Programs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	29	0	50	
RESIDENTIAL TOTAL	158	303	432	350	499	570	528	861	953	183	16	116	302	498	576	1,685	3,126	2,755	3,363	3,789	3,157	1,378	2,521	2,423	3,145	33,688	
COMMERCIAL																											
Incentive Based																											
Commercial Lighting Program	0	0	115	906	1,009	836	675	462	600	448	330	353	432	875	1,194	2,023	1,970	2,331	2,220	1,999	2,054	2,002	1,943	1,831	1,829	28,437	
Commercial Earth Power Program	0	0	0	0	15	52	83	38	80	29	14	42	85	153	306	157	217	217	231	142	131	105	128	85	82	2,389	
Commercial Insulation Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	153	154	47	48	34	32	153	136	757		
Commercial HVAC Program - Chiller	0	0	0	0	0	28	45	84	80	0	1	26	14	45	34	65	57	167	174	109	125	127	122	128	132	1,638	
Internal Retrofit Program	0	0	124	240	216	192	66	71	74	66	47	96	53	110	130	190	204	246	289	569	252	182	158	320	161	4,057	
Commercial Custom Measures Program	0	0	0	21	70	113	52	0	96	94	85	102	64	68	9	1	84	37	224	93	96	145	11	12	1,477		
Commercial Refrigeration Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	253	235	210	102	104	90	141	124	118	1,378		
Commercial HVAC Program - Chiller	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76	23	15	14	18	18	9	0	18		
City of Winnipeg Power Smart Agreement	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2,214	1,090	1,046	468	59	69	49	-84	-122	-144	0	4,647	
Commercial Clothes Washers Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	41	44	37	30	0	0	190	
Commercial Kitchen Appliance Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	38	14	19	9	3	132		
Power Smart Shops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	66	260	149	48	0	0	0	525	
Commercial Building Optimization Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196	63	43	22	19	29	28	71	78	549		
Network Energy Management Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	69	76	24	6	5	203	
New Buildings Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104	176	193	197	39	36	745		
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	2	
Power Smart Energy Manager Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	123	94	117	23	0	0	0	359	
Subtotal	0	0	240	1,146	1,269	1,177	983	707	834	647	486	601	686	1,251	3,945	3,534	4,020	3,989	3,433	3,699	3,570	3,192	2,943	2,723	2,609	47,682	
Customer Service Initiatives																											
Power Smart for Business PAYS 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	91	91
Discontinued/Completed																											
Commercial Showerhead	0	69	96	37	4	128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	333	
Infrared Heat Lamp	0	19	164	35	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	223
Livestock Waterer	0	0	0	0	0	141	122	87	25	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	388
Roadway Lighting	0	119	1,582	2,231	2,038	1,548	19	0	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,587
Sentinel Lighting	0	34	1,395	1,168	1,199	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,796
Commercial Air Barrier	0	0	0	0	9	30	48	84	80	1	1	18	11	10	10	5	1	0	1	0	0	0	0	0	0	0	308
Agricultural Demand Controller	0	0	34	480	163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	673
Commercial Air Conditioning	0	0	0	0	1	2	3	84	80	0	0	0	3	21	0	12	2	0	0	0	0	0	0	0	1	0	209
Aboriginal Commercial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Parking Lot Controllers	0	0	0	0	41	140	226	84	80	72	5	34	165	94	231	304	531	193	126	155	157	85	33	1	0	2,759	
Spray Valves	0	0	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 Pads	0	0	0																								

2014 - 2017 Power Smart Plan
Annual Program Incentive Costs
(1989/90 - 2013/14)
(000's in 2014 \$)

	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	2008/09	2009/10	2010/11	2011/12	2012/13	Interim Estimate 2013/14	Cumulative 2013/14
RESIDENTIAL																										
Incentive Based																										
Home Insulation Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	516	743	1,744	1,426	1,601	1,615	1,238	1,070	856	707	11,516
Lower Income Energy Efficiency Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110	44	326	815	641	67	91	315	2,410	
Lower Income First Nations Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193	0	193
New Home Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	72	138	122	110	122	130	48	12	0	765
Refrigerator Retirement Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	336	274	1,083
Community Geothermal 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	197	197
Water and Energy Saver Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	401	194	241	195	1,031	
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	528	815	1,992	1,591	2,037	2,553	2,409	1,716	1,767	1,788	17,195
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	0	0	0	0	0	0	0	0	0
Residential Earth Power 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
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
Residential PAYS 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
Solar H2O Heater	0	0	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	0	0	0	0	0	0	0	0	0
Discontinued/Completed																										
Appliances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,056	1,455	1,437	314	0	0	0	0	0	4,263
Seasonal LED Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	171	122	73	23	0	0	0	0	0	422
Outdoor Timer	52	72	63	37	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	255
Res Hot Water	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
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
Thermostat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	11	6	0	0	0	0	0	0	41
Retrofit/Demonstration	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
RRB	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0	0	0	0	0	0	0	54
High Efficiency Furnace & Boiler	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy Efficient Light Fixtures	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101	112	76	68	160	135	0	0	0	652
Aboriginal Programs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Set Top Boxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Compact Fluorescent Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	169	284	250	273	708	1,160	642	0	0	0	3,485
Subtotal	52	72	100	37	31	0	5	0	0	0	0	0	0	0	0	169	317	1,628	1,974	2,300	1,565	802	135	0	0	9,186
Residential Exploratory Programs																										
Exploratory Programs	0	0	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 TOTAL	52	72	100	37	31	0	5	0	0	0	0	0	0	0	0	697	1,132	3,620	3,565	4,336	4,118	3,211	1,850	1,767	1,788	26,381
COMMERCIAL																										
Incentive Based																										
Commercial Lighting Program	0	0	0	323	1,626	2,272	2,374	805	478	1,685	622	344	649	406	1,697	3,673	4,900	5,546	5,920	6,446	5,821	5,146	4,741	6,223	5,229	66,925
Commercial Earth Power Program	0	0	0	0	0	0	32	157	94	151	378	75	94	151	378	137	333	464	154	100	285	215	178	190	143	3,309
Commercial Insulation Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79	124	212	200	252	213	315	387	1,784	
Commercial Windows Program	0	0	0	0	0	52	99	57	45	55	58	123	94	193	206	259	241	373	970	1,182	917	782	501	626	6,266	
Internal Retrofit Program	0	0	0	54	277	402	106	152	111	177	73	213	93	190	531	563	438	604	364	209	906	1,805	627	522	484	8,901
Commercial Custom Measures Program	0	0	0	0	0	0	32	0	135	467	55	55	23	100	3	7	45	168	36	134	152	105	47	21	1,584	
Commercial Refrigeration Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	111	89	94	93	212	512	392	1,602	
Commercial HVAC Program - Chiller	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	114	197	62	217	156	319	202	144	245	1,657
City of Winnipeg Power Smart Agreement	0	0	0	0	0	0	0	0	0	0	0	0	0	840	1,003	3,959	1,512	160	0	0	170	75	20	0	7,738	
Commercial Clothes Washers Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	107	25	29	31	0	0	262	
Commercial Kitchen Appliance Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	52	25	14	4	3	145	3	
Power Smart Shops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	5
Commercial Building Optimization Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	10	10	13	25	49	115	49
Network Energy Management Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	5	13	0	0	51	71
New Buildings Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	152	0	0	118	117	82	50	521	
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	1
Power Smart Energy Manager Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	3	0	0	0	0	0	0	0	89
Subtotal	0	0	0	378	1,902	2,674	2,480	1,072	846	2,150	1,335	742	949	890	3,640	5,573	10,037	8,808	7,605	7,751	8,741	9,527	7,444	8,896	7,555	100,996
Customer Service Initiatives																										
Power Smart for Business PAYS 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
Discontinued/Completed																										
Commercial Showerhead	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31
Infrared Heat Lamp	0	0	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	140
Livestock Waterer	0	0	0	0	21	19	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
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
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
Commercial Air Barrier	0	0	0	0	0	0	20	2	3	10	17	12	8	10	3	3	0	5	0	0	0	0	0	0	0	93
Agricultural Demand Controller	0	0	0	186	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250
Commercial Air Conditioning	0	0	0	0	0	0	1	0	0	0	0	4	36	0	134	9	0	0	0	0	0	0	0	0	0	185
Aboriginal Commercial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Parking Lot Controllers	0	0	0	0	0	0	36	28	130	17	21	51	24	76	84	619	801	511	258	395	484	264	9	0	3,807	
Spray Valves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	14	18	3	5	0	0	1	
Agricultural Heat Pads	0	0	0	0	0	0	0	0	0	52	65	29	39	39	34	52	32	26	36	26	90	77	0	0	0	599
Subtotal	0	0	171	186	64	21	19	69	30	185	91	68	107	107	122	272	663	853	566	303	489	566	264	9	0	5,225
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NATURAL GAS DSM

**2014 - 2017 Power Smart Plan
Annual Energy Savings (million m3)**

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	
RESIDENTIAL																
Incentive Based																
New Home Program	0.0	0.0	0.0	0.0	0.0	0.1	0.8	1.5	2.2	2.9	3.6	4.3	5.0	5.7	6.4	
Home Insulation Program	0.8	1.5	2.3	3.0	3.7	4.4	5.1	5.7	6.4	7.1	7.7	8.3	8.9	8.9	8.9	
Water and Energy Saver Program	0.8	1.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Affordable Energy Program	1.3	2.6	3.8	4.9	5.7	6.1	6.4	6.5	6.5	6.5	6.4	6.3	6.4	6.2	6.1	
Subtotal	2.9	5.7	8.5	10.3	11.9	13.1	14.7	16.2	17.6	19.0	20.2	21.4	22.8	23.3	23.9	74%
Customer Service Initiatives / Financial Loan Programs																
Power Smart Residential Loan	0.3	0.6	0.9	1.2	1.5	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3	4.6	
Power Smart PAYS Financing	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	
Residential Earth Power Loan	0.2	0.4	0.6	0.7	0.9	1.1	1.3	1.5	1.7	1.9	2.0	2.0	2.0	2.0	2.0	
Subtotal	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	5.8	6.2	6.5	6.8	21%
COMMERCIAL																
Incentive Based																
Commercial Building Envelope - Windows Program	0.4	0.7	1.0	1.2	1.5	1.8	2.0	2.3	2.6	2.9	3.1	3.4	3.7	3.9	4.2	
Commercial Building Envelope - Insulation Program	0.9	1.8	2.6	3.5	4.3	5.2	6.1	6.9	7.8	8.7	9.6	10.5	11.3	12.2	13.1	
Commercial HVAC Program - Boilers	1.0	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.7	
Commercial HVAC Program - CO2 Sensors	0.1	0.3	0.5	0.8	1.0	1.3	1.7	2.1	2.5	2.9	2.9	2.9	2.9	2.8	2.8	
Commercial HVAC Program - Water Heaters	0.0	0.0	0.1	0.2	0.3	0.4	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.7	0.7	
Commercial Custom Measures Program	0.1	0.2	0.3	0.4	0.6	0.7	0.8	1.0	1.1	1.3	1.4	1.6	1.8	1.9	2.1	
Commercial Building Optimization Program	0.1	0.2	0.5	0.7	0.9	1.2	1.4	1.8	2.1	2.5	2.7	3.0	3.2	3.5	3.7	
New Buildings Program	0.3	0.7	1.2	1.2	1.2	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Commercial Kitchen Appliance Program	0.2	0.5	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	
Internal Retrofit 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	
Power Smart Shops	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	
Subtotal	3.2	6.6	9.4	11.5	13.6	15.9	18.2	20.6	23.0	25.3	27.1	29.0	30.7	32.3	33.9	105%
Customer Service Initiatives / Financial Loan Programs																
Power Smart for Business PAYS Financing	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	
Subtotal	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%
INDUSTRIAL																
Natural Gas Optimization Program	1.2	2.4	3.6	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	
Subtotal	1.2	2.4	3.6	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	15%
ENERGY EFFICIENCY SUBTOTAL	7.9	15.8	23.1	28.7	32.8	36.8	41.3	45.7	50.0	54.2	57.7	61.1	64.5	67.0	69.5	214%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																
Bioenergy Optimization Program	0.0	0.7	0.9	1.4	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	0.0	0.7	0.9	1.4	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	5%
FUEL CHOICE																
Fuel Choice	0.0	0.0	0.0	-7.8	-15.5	-23.3	-31.1	-38.8	-38.8	-38.8	-38.8	-38.8	-38.8	-38.8	-38.8	
FUEL CHOICE SUBTOTAL	0.0	0.0	0.0	-7.8	-15.5	-23.3	-31.1	-38.8	-38.8	-38.8	-38.8	-38.8	-38.8	-38.8	-38.8	-120%
Impacts	8	17	24	22	19	15	12	9	13	17	21	24	27	30	32	100%
Interactive Effects	-1.0	-2.0	-3.0	-3.3	-3.6	-3.8	-3.8	-3.8	-3.9	-4.0	-3.5	-2.9	-2.4	-2.3	-2.2	
Subtotal	7	15	21	19	15	11	8	5	9	13	17	21	25	28	30	
Codes, Standards & Regulations	3	7	11	17	22	28	33	39	45	50	56	62	67	73	78	
POWER SMART 2014 to 2028 Impacts	10	21	32	36	37	39	41	44	54	63	73	83	92	100	108	
POWER SMART SAVINGS TO DATE																
Incentive Based Program Impacts	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	
Customer Service Initiatives Program Impacts	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
Discontinued Programs	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
Interactive Effects	-7	-5	-5	-5	-6	-6	-6	-6	-6	-5	-5	-4	-4	-4	-3	
Impacts of Codes & Standards (at meter)	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	
TOTAL m3	109	122	133	137	138	140	141	144	153	164	174	185	194	203	211	

**2014 - 2017 Power Smart Plan
Annual Utility Costs
(000's in 2014 \$)**

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Cumulative Total	
RESIDENTIAL																	
Incentive Based																	
New Home Program	\$0	\$0	\$0	\$6	\$19	\$39	\$27	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$91	
Home Insulation Program	\$1,346	\$1,335	\$1,314	\$1,242	\$1,237	\$1,219	\$1,174	\$1,156	\$1,134	\$1,080	\$1,038	\$1,032	\$1,016	\$83	\$0	\$15,404	
Water and Energy Saver Program	\$1,070	\$1,070	\$1,070	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,211	
Affordable Energy Program	\$622	\$567	\$2,603	\$2,816	\$2,654	\$2,509	\$2,369	\$2,474	\$2,444	\$2,565	\$2,470	\$2,527	\$2,506	\$0	\$0	\$29,126	
Subtotal	\$3,037	\$2,972	\$4,988	\$4,065	\$3,910	\$3,766	\$3,571	\$3,630	\$3,578	\$3,645	\$3,508	\$3,559	\$3,521	\$83	\$0	\$47,832	50%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Power Smart PAYS Financing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Residential Earth Power Loan	\$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%
COMMERCIAL																	
Incentive Based																	
Commercial Building Envelope - Windows Program	\$873	\$578	\$395	\$398	\$398	\$398	\$398	\$402	\$402	\$402	\$402	\$402	\$402	\$402	\$402	\$6,657	
Commercial Building Envelope - Insulation Program	\$1,466	\$1,467	\$1,352	\$1,374	\$1,374	\$1,374	\$1,374	\$1,391	\$1,391	\$1,391	\$1,391	\$1,391	\$1,391	\$1,391	\$1,391	\$20,906	
Commercial HVAC Program - Boilers	\$1,127	\$1,177	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$2,379	
Commercial HVAC Program - CO2 Sensors	\$131	\$160	\$169	\$182	\$190	\$199	\$208	\$217	\$226	\$233	\$5	\$5	\$5	\$5	\$5	\$1,940	
Commercial HVAC Program - Water Heaters	\$0	\$83	\$77	\$86	\$97	\$111	\$119	\$69	\$71	\$73	\$74	\$0	\$0	\$0	\$0	\$860	
Commercial Custom Measures Program	\$199	\$199	\$199	\$199	\$209	\$209	\$209	\$209	\$209	\$219	\$218	\$218	\$218	\$218	\$217	\$3,151	
Commercial Building Optimization Program	\$209	\$189	\$236	\$236	\$236	\$284	\$284	\$308	\$308	\$332	\$332	\$356	\$356	\$380	\$380	\$4,425	
New Buildings Program	\$575	\$767	\$958	\$0	\$96	\$192	\$288	\$383	\$479	\$0	\$0	\$0	\$0	\$0	\$0	\$3,738	
Commercial Kitchen Appliance Program	\$104	\$132	\$163	\$72	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$471	
Internal Retrofit Program	\$53	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$53	
Power Smart Shops	\$0	\$14	\$13	\$13	\$14	\$14	\$14	\$14	\$14	\$13	\$13	\$0	\$0	\$0	\$0	\$135	
Subtotal	\$4,738	\$4,765	\$3,568	\$2,566	\$2,620	\$2,787	\$2,899	\$2,999	\$3,106	\$2,668	\$2,441	\$2,378	\$2,378	\$2,401	\$2,401	\$44,716	47%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	\$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%
INDUSTRIAL																	
Natural Gas Optimization Program	\$575	\$575	\$575	\$575	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,300	
Subtotal	\$575	\$575	\$575	\$575	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,300	2%
ENERGY EFFICIENCY SUBTOTAL	\$8,350	\$8,313	\$9,131	\$7,206	\$6,530	\$6,552	\$6,469	\$6,629	\$6,683	\$6,314	\$5,949	\$5,937	\$5,899	\$2,484	\$2,401	\$94,848	99%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	\$25	\$467	\$65	\$163	\$64	\$64	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$848	
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	\$25	\$467	\$65	\$163	\$64	\$64	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$848	1%
FUEL CHOICE																	
Fuel Choice	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
FUEL CHOICE SUBTOTAL	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Subtotal of Programs	\$8,375	\$8,780	\$9,196	\$7,369	\$6,594	\$6,616	\$6,469	\$6,629	\$6,683	\$6,314	\$5,949	\$5,937	\$5,899	\$2,484	\$2,401	\$95,696	100%
Program Support	\$1,621	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$24,252	
Contingency	\$200	\$400	\$400	\$500	\$500	\$500	\$500	\$500	\$500	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$10,000	
Total Utility Costs (2014 to 2028)	\$10,196	\$10,796	\$11,212	\$9,486	\$8,711	\$8,733	\$8,586	\$8,745	\$8,800	\$8,930	\$8,566	\$8,554	\$8,516	\$5,101	\$5,018	\$129,948	
Total Committed to Date																\$102,073	
TOTAL UTILITY COSTS (1989 to 2028)	\$10,196	\$10,796	\$11,212	\$9,486	\$8,711	\$8,733	\$8,586	\$8,745	\$8,800	\$8,930	\$8,566	\$8,554	\$8,516	\$5,101	\$5,018	\$232,021	

Note: May not add up due to rounding.

NATURAL GAS DSM

**2014 - 2017 Power Smart Plan
Annual Program Administration Costs
(000's in 2014 \$)**

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Cumulative Total	
RESIDENTIAL																	
Incentive Based																	
New Home Program	\$0	\$0	\$0	\$6	\$19	\$39	\$27	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$91	
Home Insulation Program	\$355	\$361	\$358	\$302	\$313	\$312	\$283	\$281	\$274	\$236	\$209	\$218	\$217	\$83	\$0	\$3,802	
Water and Energy Saver Program	\$788	\$788	\$788	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,365	
Affordable Energy Program	\$135	\$126	\$2,201	\$2,449	\$2,316	\$2,197	\$2,082	\$2,207	\$2,196	\$2,335	\$2,256	\$2,328	\$2,317	\$0	\$0	\$25,145	
Subtotal	\$1,278	\$1,275	\$3,347	\$2,757	\$2,649	\$2,547	\$2,392	\$2,488	\$2,471	\$2,571	\$2,464	\$2,547	\$2,534	\$83	\$0	\$31,403	76%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Power Smart PAYS Financing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Residential Earth Power Loan	\$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%
COMMERCIAL																	
Incentive Based																	
Commercial Building Envelope - Windows Program	\$64	\$64	\$64	\$64	\$64	\$64	\$64	\$64	\$64	\$64	\$64	\$64	\$64	\$64	\$64	\$955	
Commercial Building Envelope - Insulation Program	\$73	\$73	\$73	\$73	\$73	\$73	\$73	\$73	\$73	\$73	\$73	\$73	\$73	\$73	\$73	\$1,095	
Commercial HVAC Program - Boilers	\$248	\$248	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$6	\$571	
Commercial HVAC Program - CO2 Sensors	\$110	\$110	\$110	\$110	\$110	\$110	\$110	\$110	\$110	\$110	\$5	\$5	\$5	\$5	\$5	\$1,129	
Commercial HVAC Program - Water Heaters	\$0	\$70	\$56	\$56	\$56	\$56	\$56	\$56	\$56	\$56	\$0	\$0	\$0	\$0	\$0	\$573	
Commercial Custom Measures Program	\$168	\$168	\$168	\$168	\$168	\$168	\$168	\$168	\$168	\$168	\$168	\$168	\$168	\$168	\$168	\$2,524	
Commercial Building Optimization Program	\$137	\$117	\$117	\$117	\$117	\$117	\$117	\$117	\$117	\$117	\$117	\$117	\$117	\$117	\$117	\$1,779	
New Buildings Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Commercial Kitchen Appliance Program	\$48	\$48	\$48	\$36	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$179	
Internal Retrofit Program	\$53	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$53	
Power Smart Shops	\$0	\$14	\$11	\$11	\$11	\$11	\$11	\$11	\$11	\$11	\$11	\$0	\$0	\$0	\$0	\$111	
Subtotal	\$902	\$912	\$653	\$641	\$605	\$605	\$605	\$605	\$605	\$605	\$500	\$433	\$433	\$433	\$433	\$8,969	22%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	\$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%
INDUSTRIAL																	
Natural Gas Optimization Program	\$215	\$215	\$215	\$215	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$860	
Subtotal	\$215	\$215	\$215	\$215	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$860	2%
ENERGY EFFICIENCY SUBTOTAL	\$2,395	\$2,402	\$4,215	\$3,613	\$3,253	\$3,152	\$2,997	\$3,093	\$3,075	\$3,176	\$2,964	\$2,980	\$2,967	\$516	\$433	\$41,232	100%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	\$12	\$13	\$12	\$13	\$11	\$10	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$71	
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	\$12	\$13	\$12	\$13	\$11	\$10	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$71	0%
FUEL CHOICE																	
Fuel Choice	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
FUEL CHOICE SUBTOTAL	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Subtotal of Programs	\$2,406	\$2,416	\$4,226	\$3,626	\$3,264	\$3,162	\$2,997	\$3,093	\$3,075	\$3,176	\$2,964	\$2,980	\$2,967	\$516	\$433	\$41,302	100%
Program Support	\$1,621	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$1,616	\$24,252	
Contingency	\$200	\$400	\$400	\$500	\$500	\$500	\$500	\$500	\$500	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$10,000	
Total Administration Costs (2014 to 2028)	\$4,228	\$4,432	\$6,243	\$5,742	\$5,381	\$5,279	\$5,113	\$5,209	\$5,192	\$5,792	\$5,581	\$5,596	\$5,583	\$3,133	\$3,050	\$75,554	
Total Committed to Date																\$45,681	
TOTAL ADMINISTRATION COSTS (1989 to 2028)	\$4,228	\$4,432	\$6,243	\$5,742	\$5,381	\$5,279	\$5,113	\$5,209	\$5,192	\$5,792	\$5,581	\$5,596	\$5,583	\$3,133	\$3,050	\$121,235	

Note: May not add up due to rounding.

NATURAL GAS DSM

**2014 - 2017 Power Smart Plan
Annual Program Incentive Costs
(000's in 2014 \$)**

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Cumulative Total	
RESIDENTIAL																	
Incentive Based																	
New Home Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Home Insulation Program	\$991	\$974	\$957	\$940	\$923	\$907	\$891	\$875	\$860	\$844	\$829	\$814	\$799	\$0	\$0	\$11,603	
Water and Energy Saver Program	\$282	\$282	\$282	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$845	
Affordable Energy Program	\$487	\$441	\$402	\$367	\$338	\$312	\$287	\$267	\$248	\$230	\$215	\$199	\$189	\$0	\$0	\$3,981	
Subtotal	\$1,759	\$1,697	\$1,641	\$1,307	\$1,261	\$1,219	\$1,179	\$1,142	\$1,107	\$1,075	\$1,043	\$1,013	\$988	\$0	\$0	\$16,430	30%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Power Smart PAYS Financing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Residential Earth Power Loan	\$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%
COMMERCIAL																	
Incentive Based																	
Commercial Building Envelope - Windows Program	\$809	\$514	\$331	\$335	\$335	\$335	\$335	\$339	\$339	\$339	\$339	\$339	\$339	\$339	\$339	\$5,702	
Commercial Building Envelope - Insulation Program	\$1,393	\$1,394	\$1,279	\$1,301	\$1,301	\$1,301	\$1,301	\$1,318	\$1,318	\$1,318	\$1,318	\$1,318	\$1,318	\$1,318	\$1,318	\$19,810	
Commercial HVAC Program - Boilers	\$879	\$929	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,808	
Commercial HVAC Program - CO2 Sensors	\$21	\$49	\$59	\$71	\$79	\$89	\$98	\$107	\$116	\$123	\$0	\$0	\$0	\$0	\$0	\$811	
Commercial HVAC Program - Water Heaters	\$0	\$13	\$21	\$30	\$42	\$55	\$63	\$13	\$15	\$17	\$18	\$0	\$0	\$0	\$0	\$287	
Commercial Custom Measures Program	\$31	\$31	\$31	\$31	\$41	\$41	\$41	\$41	\$41	\$50	\$50	\$50	\$50	\$49	\$49	\$628	
Commercial Building Optimization Program	\$72	\$72	\$119	\$119	\$119	\$167	\$167	\$191	\$191	\$215	\$215	\$238	\$238	\$262	\$262	\$2,646	
New Buildings Program	\$575	\$767	\$958	\$0	\$96	\$192	\$288	\$383	\$479	\$0	\$0	\$0	\$0	\$0	\$0	\$3,738	
Commercial Kitchen Appliance Program	\$57	\$84	\$115	\$36	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$292	
Internal Retrofit Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Power Smart Shops	\$0	\$1	\$2	\$3	\$3	\$3	\$3	\$3	\$3	\$3	\$2	\$0	\$0	\$0	\$0	\$24	
Subtotal	\$3,836	\$3,853	\$2,915	\$1,925	\$2,015	\$2,182	\$2,294	\$2,394	\$2,501	\$2,063	\$1,942	\$1,945	\$1,945	\$1,968	\$1,968	\$35,747	66%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	\$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%
INDUSTRIAL																	
Natural Gas Optimization Program	\$360	\$360	\$360	\$360	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,440	
Subtotal	\$360	\$360	\$360	\$360	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,440	3%
ENERGY EFFICIENCY SUBTOTAL	\$5,955	\$5,910	\$4,916	\$3,593	\$3,276	\$3,400	\$3,473	\$3,536	\$3,608	\$3,138	\$2,985	\$2,957	\$2,932	\$1,968	\$1,968	\$53,617	99%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	\$13	\$453	\$53	\$151	\$53	\$53	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$777	
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	\$13	\$453	\$53	\$151	\$53	\$53	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$777	1%
FUEL CHOICE																	
Fuel Choice	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
FUEL CHOICE SUBTOTAL	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	0%
Subtotal of Programs	\$5,968	\$6,364	\$4,970	\$3,744	\$3,330	\$3,454	\$3,473	\$3,536	\$3,608	\$3,138	\$2,985	\$2,957	\$2,932	\$1,968	\$1,968	\$54,394	100%
Total Incentive Costs (2014 to 2028)	\$7,590	\$7,980	\$6,586	\$5,360	\$4,946	\$5,070	\$5,089	\$5,152	\$5,224	\$4,754	\$4,601	\$4,574	\$4,549	\$3,585	\$3,584	\$78,646	
Total Committed to Date																\$58,768	
TOTAL INCENTIVE COSTS (1989 to 2028)	\$7,590	\$7,980	\$6,586	\$5,360	\$4,946	\$5,070	\$5,089	\$5,152	\$5,224	\$4,754	\$4,601	\$4,574	\$4,549	\$3,585	\$3,584	\$137,414	

Note: May not add up due to rounding.

**2014 - 2017 Power Smart Plan
Annual Energy Savings
(Savings to Date)
(million m3)**

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Interim Estimate 2013/14	Benchmark 2028/29
RESIDENTIAL														
incentive Based														
Home Insulation Program	0.00	0.00	0.00	0.00	0.30	2.15	3.85	5.58	7.59	9.01	10.15	11.26	12.00	12.00
Lower Income Energy Efficiency Program	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.06	0.69	2.32	3.51	4.62	5.72	5.72
New Home Program	0.00	0.00	0.00	0.03	0.08	0.15	0.23	0.34	0.41	0.52	0.55	0.55	0.55	0.55
Water and Energy Saver Program	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	1.78	3.15	3.84	3.84
Subtotal	0.00	0.00	0.00	0.03	0.39	2.30	4.10	5.98	8.69	12.68	15.99	19.58	22.11	22.11
CUSTOMER SERVICE INITIATIVES														
Power Smart Residential Loan Program	1.23	2.14	3.51	5.57	7.80	9.56	11.30	12.29	13.93	14.27	14.60	14.90	15.19	15.19
Residential Earth Power Program	0.00	0.05	0.15	0.50	0.79	0.97	1.31	1.45	1.67	2.10	2.39	2.41	2.42	2.42
ecoEnergy	0.00	0.13	0.39	1.25	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32	2.32
Solar H2O Heater	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
Power Smart PAYS Financing	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
Subtotal	1.23	2.31	4.04	7.32	10.91	12.85	14.94	16.05	17.93	18.69	19.31	19.63	19.94	19.94
DISCONTINUED/COMPLETED														
Thermostat	0.00	0.00	0.00	0.00	0.00	0.11	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
High Efficiency Furnace & Boiler	0.00	0.00	0.00	0.00	0.61	2.60	4.04	5.77	6.93	6.96	6.96	6.96	6.96	6.96
Power Smart Energy Manager	-0.01	0.05	0.18	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
R2000 House	0.01	0.02	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	0.00	0.07	0.21	0.35	0.95	3.06	4.56	6.29	7.44	7.48	7.48	7.48	7.48	7.48
RESIDENTIAL TOTAL	1.23	2.38	4.25	7.70	12.25	18.21	23.59	28.32	34.06	38.85	42.77	46.69	49.52	49.52
COMMERCIAL														
Incentive Based														
Commercial Insulation Program	0.00	0.00	0.00	0.00	0.00	0.29	1.05	2.15	3.24	5.37	6.83	7.87	9.05	9.05
Commercial Windows Program	0.00	0.00	0.00	0.00	0.00	0.03	0.11	0.23	0.50	0.83	1.33	1.59	1.89	1.89
Commercial Custom Measures Program	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.17	0.26	1.38	1.41	1.41
City of Winnipeg Power Smart Agreement	0.00	0.05	0.13	0.17	0.56	0.67	0.67	0.67	0.71	0.78	0.82	0.82	0.82	0.82
Commercial Clothes Washers 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
Internal Retrofit 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
Commercial Kitchen Appliance Program	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.05	0.07	0.08	0.09	0.09
Power Smart Shops	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.04	0.04	0.04	0.04
Commercial Building Optimization Program	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.24	0.36	0.36	0.50	0.71	0.35
Network Energy Management 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
New Buildings Program	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	2.76	2.80	2.80
HVAC - CO2 Sensors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.83	0.83
HVAC - Boilers	0.00	0.00	0.00	0.00	0.00	0.42	2.52	4.81	6.20	6.20	7.17	8.38	9.18	9.18
Subtotal	0.00	0.05	0.13	0.17	0.56	1.41	4.36	8.00	11.02	13.81	17.23	23.62	26.82	26.46
DISCONTINUED/COMPLETED														
Spray Valves	0.00	0.00	0.00	0.00	0.00	0.83	1.12	2.11	2.37	2.37	0.00	0.00	0.00	0.00
Subtotal	0.00	0.00	0.00	0.00	0.00	0.83	1.12	2.11	2.37	2.37	0.00	0.00	0.00	0.00
CUSTOMER SERVICE INITIATIVES														
Power Smart for Business PAYS Financing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.02
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.02
COMMERCIAL SUBTOTAL	0.00	0.05	0.13	0.17	0.56	2.24	5.48	10.11	13.39	16.18	17.23	23.62	26.81	26.44
INDUSTRIAL														
Industrial Natural Gas Optimization	0.00	0.00	0.00	0.00	0.00	0.00	1.69	3.85	4.94	8.04	10.53	12.46	14.03	14.03
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	1.69	3.85	4.94	8.04	10.53	12.46	14.03	14.03
EFFICIENCY PROGRAMS SUBTOTAL	1.23	2.44	4.38	7.88	12.81	20.45	30.76	42.28	52.40	63.07	70.53	82.77	90.36	90.00
CUSTOMER SELF-GENERATION PROGRAMS														
BioEnergy Optimization 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
RATE/LOAD MANAGEMENT PROGRAMS														
Interactive Effects	0.00	0.00	0.00	-1.20	-2.57	-3.00	-3.79	-5.86	-8.53	-9.96	-10.59	-11.21	-10.38	-3.30
Subtotal after Interactive Effects	1.23	2.43	4.38	6.67	10.24	17.46	26.97	36.42	43.86	53.12	59.94	71.56	79.97	86.69
Codes, Standards & regulations	0.35	0.71	1.12	1.55	1.97	2.37	2.73	2.97	3.52	4.40	9.87	13.23	15.90	15.90
Power Smart 2013 to 2027 Impacts	1.58	3.14	5.50	8.23	12.21	19.83	29.70	39.39	47.38	57.52	69.81	84.79	95.87	102.59

Note: May not add up due to rounding.

**2014 - 2017 Power Smart Plan
Annual Utility Costs
(2001/02 - 2013/14)
(000's in 2014 \$)**

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Interim Estimate 2013/14	Cumulative Total 2013/14
RESIDENTIAL														
Incentive Based														
Home Insulation Program	0	0	0	0	417	2,034	3,258	3,007	3,198	2,397	2,220	1,465	1,178	19,174
Lower Income Energy Efficiency Program	0	0	0	0	88	0	181	226	808	858	868	666	3,084	6,778
New Home Program	0	14	83	102	68	103	151	0	94	117	67	5	0	804
Water and Energy Saver Program	0	0	0	0	0	0	0	0	44	737	1,081	805	1,095	3,762
Subtotal	0	14	83	102	572	2,137	3,591	3,233	4,144	4,109	4,235	2,941	5,357	30,518
CUSTOMER SERVICE INITIATIVES														
Power Smart Residential Loan Program	468	121	54	-6	16	194	-24	-117	-712	-754	-575	-670	458	-1,546
Residential Earth Power Program	0	0	0	0	0	0	0	0	0	0	38	55	35	129
ecoEnergy	269	311	314	376	-11	692	531	-118	614	410	495	-120	0	3,765
Solar H2O Heater	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Subtotal	738	432	368	370	6	887	507	-235	-96	-344	-41	-735	493	2,349
DISCONTINUED/COMPLETED														
Thermostat	0	0	0	0	0	213	144	42	1	0	0	0	0	399
High Efficiency Furnace & Boiler	0	0	0	0	644	1,457	2,320	3,461	1,663	33	0	0	0	9,579
Subtotal	0	0	0	0	644	1,670	2,464	3,503	1,664	33	0	0	0	9,978
RESIDENTIAL EXPLORATORY														
Residential Solar	0	0	0	0	0	0	0	0	0	8	9	0	0	16
RESIDENTIAL TOTAL	738	446	451	472	1,222	4,694	6,562	6,501	5,711	3,806	4,202	2,206	5,850	42,862
COMMERCIAL														
Incentive Based														
Commercial Insulation Program	0	0	0	0	0	463	903	1,105	1,349	2,371	1,848	1,150	1,794	10,983
Commercial Windows Program	0	0	0	0	0	142	307	505	846	1,072	1,153	827	927	5,778
Commercial Custom Measures Program	0	0	0	0	0	0	0	0	152	165	167	524	295	1,303
City of Winnipeg Power Smart Agreement	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial Clothes Washers Program	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	0	0	0	0	0
Commercial Kitchen Appliance Program	0	0	0	0	0	0	17	60	31	50	28	11	11	197
Power Smart Shops	0	0	0	0	0	1	16	87	102	12	0	0	0	219
Commercial Building Optimization Program	0	0	0	0	84	253	173	172	254	220	125	95	127	1,503
New Buildings Program	0	0	0	0	0	0	156	117	208	209	1,083	779	779	2,552
Commercial Boiler Program	0	0	0	0	116	669	1,812	1,508	1,216	1,319	966	1,224	891	9,719
HVAC - CO2 Sensors	0	0	0	0	0	0	0	0	0	0	0	38	29	67
Power Smart Energy Manager Program	0	0	0	0	0	0	130	103	77	0	54	0	0	364
Power Smart for Business PAYS Financing	0	0	0	0	0	0	0	0	0	0	0	0	153	153
Subtotal	0	0	0	0	200	1,526	3,326	3,583	4,157	5,487	4,583	4,969	5,006	32,838
DISCONTINUED/COMPLETED														
Spray Valves	0	0	0	0	0	141	60	133	29	22	2	0	0	388
Subtotal	0	0	0	0	0	141	60	133	29	22	2	0	0	388
COMMERCIAL EXPLORATORY														
Commercial Water Heater Program	0	0	0	0	0	0	0	0	24	33	15	0	0	72
Heat Recovery Ventilation Program	0	0	0	0	0	0	0	0	0	5	11	0	0	16
Subtotal	0	0	0	0	0	0	0	0	24	38	26	0	0	88
COMMERCIAL TOTAL	0	0	0	0	200	1,668	3,387	3,716	4,210	5,547	4,611	4,970	5,006	33,314
INDUSTRIAL														
Industrial Natural Gas Optimization Program	0	0	0	0	113	41	317	365	649	753	746	782	696	4,460
Subtotal	0	0	0	0	113	41	317	365	649	753	746	782	696	4,460
EFFICIENCY PROGRAMS SUBTOTAL	738	446	451	472	1,535	6,402	10,265	10,582	10,570	10,106	9,559	7,957	11,552	80,635
CUSTOMER SELF-GENERATION PROGRAMS														
BioEnergy Optimization Program	0	0	0	0	0	0	15	9	0	0	0	0	0	23
Support Costs	1,084	739	681	990	1,448	2,803	2,221	2,125	2,167	1,469	1,905	2,211	1,570	21,415
GRAND TOTAL	1,822	1,185	1,132	1,462	2,983	9,205	12,501	12,716	12,737	11,575	11,464	10,168	13,121	102,073

Note: May not add up due to rounding.

**2014 - 2027 Power Smart Plan
Annual Program Administration Costs
(2001/02 - 2013/14)
(000's in 2014 \$)**

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Interim Estimate 2013/14	Cumulative Total 2013/14
RESIDENTIAL														
Incentive Based														
Home Insulation Program	0	0	0	0	189	582	835	652	512	536	547	191	194	4,239
Lower Income Energy Efficiency Program	0	0	0	0	87	0	155	141	199	983	389	234	772	2,961
New Home Program	0	14	83	83	23	34	54	0	16	0	18	1	0	326
Water and Energy Saver Program	0	0	0	0	0	0	0	0	44	136	627	564	900	2,271
Subtotal	0	14	83	83	299	616	1,044	793	771	1,655	1,582	991	1,867	9,797
CUSTOMER SERVICE INITIATIVES														
Power Smart Residential Loan Program	468	121	54	-6	16	194	-24	-117	-712	-754	-575	-670	458	-1,546
Residential Earth Power Program	0	0	0	0	0	0	0	0	0	0	38	55	35	129
ecoEnergy	269	311	314	376	-11	692	531	-118	614	410	495	-120	0	3,765
Solar H2O Heater	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Subtotal	738	432	368	370	6	887	507	-235	-96	-344	-41	-736	493	2,349
DISCONTINUED/COMPLETED														
Thermostat	0	0	0	0	0	121	104	20	1	0	0	0	0	245
High Efficiency Furnace & Boiler	0	0	0	0	291	319	491	389	212	18	0	0	0	1,720
Subtotal	0	0	0	0	291	440	595	408	213	18	0	0	0	1,965
RESIDENTIAL EXPLORATORY														
Residential Solar	0	0	0	0	0	0	0	0	0	8	9	0	0	0
RESIDENTIAL TOTAL	738	446	451	454	595	1,943	2,146	966	888	1,337	1,549	256	2,360	14,111
COMMERCIAL														
Incentive Based														
Commercial Insulation Program	0	0	0	0	0	82	83	189	191	236	284	119	121	1,305
Commercial Windows Program	0	0	0	0	0	90	94	133	153	181	183	99	100	1,032
Commercial Custom Measures Program	0	0	0	0	0	0	0	0	62	64	97	98	108	430
City of Winnipeg Power Smart Agreement	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial Clothes Washers Program	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	0	0	0	0	0
Commercial Kitchen Appliance Program	0	0	0	0	0	0	0	9	25	11	29	20	4	99
Power Smart Shops	0	0	0	0	0	0	1	16	87	100	12	0	0	216
Commercial Building Optimization Program	0	0	0	0	84	253	173	126	168	164	84	71	78	1,201
New Buildings Program	0	0	0	0	0	0	0	156	117	129	131	349	325	1,208
Commercial Boiler Program	0	0	0	0	116	313	325	274	377	280	303	312	283	2,582
HVAC - CO2 Sensors	0	0	0	0	0	0	0	0	0	0	0	26	16	42
Power Smart Energy Manager Program	0	0	0	0	0	0	130	101	77	0	54	0	0	362
Power Smart for Business PAYS Financing	0	0	0	0	0	0	0	0	0	0	0	0	112	112
Subtotal	0	0	0	0	200	737	805	1,005	1,255	1,165	1,179	1,093	1,148	8,588
DISCONTINUED/COMPLETED														
Spray Valves	0	0	0	0	0	58	34	28	19	3	2	0	0	143
Subtotal	0	0	0	0	0	58	34	28	19	3	2	0	0	143
COMMERCIAL EXPLORATORY														
Commercial Water Heater Program	0	0	0	0	0	0	0	0	24	33	15	0	0	72
Heat Recovery Ventilation Program	0	0	0	0	0	0	0	0	0	0	11	0	0	0
Subtotal	0	0	0	0	0	0	0	0	24	33	26	0	0	72
COMMERCIAL TOTAL	0	0	0	0	200	795	839	1,033	1,298	1,200	1,206	1,093	1,148	8,802
INDUSTRIAL														
Industrial Natural Gas Optimization Program	0	0	0	0	113	41	101	95	179	126	182	253	212	1,302
Subtotal	0	0	0	0	113	41	101	95	179	126	182	253	212	1,302
EFFICIENCY PROGRAMS SUBTOTAL	738	446	451	454	908	2,779	3,086	2,094	2,365	2,664	2,937	1,602	3,720	24,243
CUSTOMER SELF-GENERATION PROGRAMS														
BioEnergy Optimization Program	0	0	0	0	0	0	15	9	0	0	0	0	0	23
Support Costs	1,084	739	681	990	1,448	2,803	2,221	2,125	2,167	1,469	1,905	2,211	1,570	21,415
GRAND TOTAL	1,822	1,185	1,132	1,444	2,356	5,582	5,322	4,228	4,532	4,133	4,842	3,813	5,290	45,681

Note: May not add up due to rounding.

**2014 - 2017 Power Smart Plan
Annual Program Incentive Costs
(2001/02 - 2013/14)
(000's in 2014 \$)**

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Interim Estimate 2013/14	Cumulative Total 2013/14
RESIDENTIAL														
Incentive Based														
Home Insulation Program	0	0	0	0	228	1,452	2,423	2,356	2,686	1,862	1,673	1,273	984	14,936
Lower Income Energy Efficiency Program	0	0	0	0	0	0	25	372	1,487	1,277	478	432	2,311	6,382
New Home Program	0	0	0	18	45	69	97	0	78	90	50	4	0	452
Water and Energy Saver Program	0	0	0	0	0	0	0	0	0	439	453	241	195	1,328
Subtotal	0	0	0	18	273	1,521	2,545	2,727	4,251	3,668	2,654	1,950	3,490	23,097
CUSTOMER SERVICE INITIATIVES														
Power Smart Residential Loan Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residential Earth Power Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ecoEnergy	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solar H2O Heater	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
DISCONTINUED/COMPLETED														
Thermostat	0	0	0	0	0	92	40	22	0	0	0	0	0	154
High Efficiency Furnace & Boiler	0	0	0	0	353	1,138	1,829	3,073	1,451	15	0	0	0	7,859
Subtotal	0	0	0	0	353	1,230	1,869	3,095	1,451	15	0	0	0	8,013
RESIDENTIAL EXPLORATORY														
Residential Solar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RESIDENTIAL TOTAL	0	0	0	18	626	2,751	4,414	5,822	5,702	3,683	2,654	1,950	3,490	31,110
COMMERCIAL														
Incentive Based														
Commercial Insulation Program	0	0	0	0	0	381	820	916	1,158	2,135	1,564	1,032	1,673	9,678
Commercial Windows Program	0	0	0	0	0	52	213	372	693	891	970	728	827	4,746
Commercial Custom Measures Program	0	0	0	0	0	0	0	0	90	101	70	426	186	873
City of Winnipeg Power Smart Agreement	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial Clothes Washers Program	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	0	0	0	0	0
Commercial Kitchen Appliance Program	0	0	0	0	0	0	0	9	34	20	21	8	6	99
Power Smart Shops	0	0	0	0	0	0	0	0	1	2	0	0	0	3
Commercial Building Optimization Program	0	0	0	0	0	0	46	86	56	40	25	49	49	302
New Buildings Program	0	0	0	0	0	0	0	0	79	78	734	453	1,344	
Commercial Boiler Program	0	0	0	0	0	356	1,487	1,234	839	1,043	662	912	608	7,142
HVAC - CO2 Sensors	0	0	0	0	0	0	0	0	0	0	12	13	25	
Power Smart Energy Manager Program	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Power Smart for Business PAYS Financing	0	0	0	0	0	0	0	0	0	0	0	0	41	41
Subtotal	0	0	0	0	0	789	2,521	2,578	2,902	4,327	3,405	3,876	3,858	24,255
DISCONTINUED/COMPLETED														
Spray Valves	0	0	0	0	0	84	27	105	10	20	0	0	0	245
Subtotal	0	0	0	0	0	84	27	105	10	20	0	0	0	245
COMMERCIAL EXPLORATORY														
Commercial Water Heater Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heat Recovery Ventilation Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COMMERCIAL TOTAL	0	0	0	0	0	872	2,547	2,683	2,912	4,346	3,405	3,876	3,858	24,500
INDUSTRIAL														
Industrial Natural Gas Optimization Program	0	0	0	0	0	0	216	270	469	627	564	529	483	3,157
Subtotal	0	0	0	0	0	0	216	270	469	627	564	529	483	3,157
EFFICIENCY PROGRAMS SUBTOTAL	0	0	0	18	626	3,623	7,177	8,775	9,083	8,656	6,622	6,355	7,831	58,768
CUSTOMER SELF-GENERATION PROGRAMS														
BioEnergy Optimization Program	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Support Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	0	0	0	18	626	3,623	7,177	8,775	9,083	8,656	6,622	6,355	7,831	58,768

Note: May not add up due to rounding.

Appendix E - 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.

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 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 and transportation through to its customers with no mark up on the commodity. Load management opportunities are generally not available in the natural gas market as these operational issues are handled through natural gas storage facilities.

Program Categories

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 ongoing basis and require a qualitative evaluation of the benefits. Service levels are then adjusted accordingly.

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.

Financial Loan Programs

Financial Loan Programs assists participating customers in the installation and/or upgrade of energy efficient measures by offering low interest financing opportunities.

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.

Energy Efficient Codes and Standards

In many markets, the most effective and permanent form of market transformation for energy efficient technologies and practices is the adoption of energy efficient codes and standards as it ensures that customers do not revert to less efficient technologies/practices once the incentives and/or promotional activities are discontinued. Consequently, the process of achieving these changes is complex and lengthy as it involves many stakeholders, varying environmental and market conditions and market acceptance.

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.

Economic Effectiveness Metrics

Manitoba Hydro uses a number of cost effective metrics 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 metrics:

Integrated Metrics

- Societal Cost (SC);
- Total Resource Cost (TRC);
- Total Resource Cost NPV (TRC NPV);
- Levelized Resource Cost (LRC)

Utility Metrics

- Rate Impact Measure Cost (RIM);
- Net Utility Benefit (NUB);
- Utility Net Present Value (Utility NPV)
- Levelized Utility Cost (LUC);

Customer Metrics

- Simple Customer Payback calculation;
- Participating Customer Cost (PC); and
- Participating Customer Cost Net Present Value (PC NPV).

Integrated Metrics

Societal Cost (SC)

The Societal Cost (SC) metric measures the net economic benefit as measured by the TRC, plus additional indirect benefits such the avoided environmental or societal externalities (e.g. reduced health care costs, increase productivity, employment) and “non-priced” benefits enjoyed by participants (improved comfort, improved health).

$$SC = \frac{(PV (\text{Marginal Benefits}) \times 1.10) + PV (\text{Measurable Non-Energy benefits})}{PV (\text{Total Program Admin Costs} + \text{Incremental Product Costs})}$$

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)
- 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);
- 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.

Total Resource Cost (TRC)

The Total Resource Cost (TRC) metric assesses whether the benefits that are associated with an energy efficiency 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 metric is defined as follows:

$$\text{TRC} = \frac{\text{PV (Marginal Benefits)} + \text{PV (Measurable Non-Energy Benefits)}}{\text{PV (Total Program Admin Costs + Incremental Product Costs)}}$$

Where:

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

Total Resource Cost Net Present Value (TRC NPV)

The Total Resource Cost Net Present Value (TRC NPV) calculation reveals if the economic value of the benefits that are associated with an energy efficiency program are greater than the costs.

$$\text{TRC NPV} = (\text{PV (Marginal Benefits)} + \text{PV (Measurable Non-Energy Benefits)}) - \text{PV (Total Program Admin Costs + Incremental Product Costs)}$$

Where:

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

Levelized Resource Cost (LRC)

The Levelized Resource Cost (LRC) is used to determine the overall economic resource cost of energy saved through an energy efficiency program. The LRC provides a levelized cost of energy saved per unit over a fixed time period. The Levelized Resource Cost is defined as follows:

$$\text{LRC} = \frac{\text{PV (Incremental Product Costs + Total Program Admin Costs)}}{\text{PV (Energy)}}$$

Where:

- 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.
- 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;
- Energy includes the annual energy savings.

Utility Metrics

Rate Impact Measure Cost(RIM)

The Rate Impact Measure (RIM) metric is used to provide an indication of the long term impact of an energy efficient program on energy rates. The metric 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 metric 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 and avoided transportation costs;
- 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 include the funds transferred from Manitoba Hydro to the participant associated with implementing the Power Smart measure.

Net Utility Benefit (NUB)

The Net Utility Benefit (NUB) metric is used to measure the energy saving benefits to the utility net of any revenue losses. Marginal benefits, after deductions from lost revenue are compare to the cost incurred by the by the utility. The Net Utility Benefit metric is defined as follows:

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

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 and avoided transportation costs;
- 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 include the funds transferred from Manitoba Hydro to the participant associated with implementing the Power Smart measure.

Utility Net Present Value (Utility NPV)

The Utility Net Present Value (Utility NPV) calculation reveals from the Utility's perspective, if the economic value of the benefits that are associated with an energy efficiency program are greater than the costs.

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

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 and avoided transportation costs;
- 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 include the funds transferred from Manitoba Hydro to the participant associated with implementing the Power Smart measure.

Levelized Utility Cost (LUC)

The Levelized Utility Cost (LUC) is used to provide an economic cost value for the energy saved through an energy efficiency program. The LUC provides the total cost of the conserved energy based upon the utility's investment on behalf of the ratepayer 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 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.

Customer Metrics

Simple Customer Payback Calculation (Payback)

The Simple 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 projecting customer participation rates for energy efficient opportunities. The Customer Payback is defined as follows:

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

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.
- 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 first year dollar reductions in the customer's electricity, natural gas, and water bills.

Participating Customer Cost (PC)

The Participating Customer Cost (PC) metric evaluates from a customer perspective if the benefits that are associated with an energy efficiency program are greater than the costs over the life of the measure. The Participating Customer Cost is defined as follows:

$$PC = \frac{PV (\text{Incentives} + \text{Revenue Loss})}{PV (\text{Incremental Product Costs})}$$

Where:

- Incentives include the funds transferred from Manitoba Hydro to the participant associated with implementing the Power Smart measure.
- Revenue Loss includes Manitoba Hydro's lost revenue associated with the participants' reduced energy consumption (i.e. customer energy and measurable non-energy (i.e. water) bill reductions);
- 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.

Participating Customer Cost Net Present Value (PC NPV)

The Participating Customer Cost Net Present Value (PC NPV) calculation reveals from the customer's perspective, if the economic value of the benefits that are associated with an energy efficiency program are greater than the costs over the life of the measure.

$$\text{PC NPV} = \text{PV (Incentives + Revenue Loss)} - \text{PV (Incremental Product Costs)}$$

Where:

- Incentives include the funds transferred from Manitoba Hydro to the participant associated with implementing the Power Smart measure.
- Revenue Loss includes Manitoba Hydro's lost revenue associated with the participants' reduced energy consumption (i.e. customer energy and measurable non-energy (i.e. water) bill reductions);
- 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.

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.

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.

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 often 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.

