2015-2016

Power Smart Annual Review

Power Smart Evaluation Department
Marketing & Customer Service

March 2017

Manitoba Hydro
POWER SMART*

Message from Manitoba Hydro's CEO

While Manitoba's population and economy continue to grow, so does our demand for electricity. At Manitoba Hydro, we've met our province's current and future energy needs through a combination of resources including conservation and energy efficiency.

In 2015/16 our employees continued to work hard to develop and deliver consumer-friendly programs empowering people and businesses to save energy and money. This commitment to educating and helping Manitobans engage in Power Smart programs saw almost 75,000 customers participate in the 2015/16 year and in turn save nearly $16 million on their energy bills.

In addition to helping customers save money, these programs also helped to minimize our collective impact on the environment. The reduced greenhouse gas emissions due to energy savings from 2015/16 Power Smart programs was equivalent to removing nearly 50,000 vehicles from the road for one year.

Manitoba Hydro staff continued to work closely with our industry partners to deliver energy and cost saving programs to Manitobans. In the 2015/16 spring and fall Residential Light-emitting diode (LED) Lighting Program's retail rebate promotion, we partnered with several retailers to reach 68 communities across Manitoba. The success of the campaign exceeded expectations, surpassing its forecasted goal by 39 per cent after rebating 671,000 bulbs.

The leadership role Manitoba Hydro has played in demand side management has been recognized within Canada and around the world. Included in our achievements for the 2015/16 year was the esteemed 2016 ENERGY STAR Utility of the Year Award recognizing excellence in promoting energy efficiency to customers in the 2015 year.

We are proud of our dedicated employees who have continued to raise awareness and champion the growing culture of energy conservation in Manitoba. They have worked with customers, manufacturers, retailers, and industry to increase the market acceptance and adoption of energy efficient products. This approach to energy conservation will continue to reduce our impact on the environment and will assist in meeting Manitoba's energy needs now and into the future.

Kelvin Shepherd
President & Chief Executive Officer,
Manitoba Hydro

Executive Summary

The 2015/16 Power Smart Annual Review reports the energy and demand savings, customer energy cost savings, customer participation and associated greenhouse gas emissions reduction achieved through Manitoba Hydro's Power Smart initiative, including an assessment against the 2015/16 planned targets outlined in the 2015 Power Smart Plan.

The California Evaluation Framework is used as a guide in Manitoba Hydro's DSM evaluations and related activities. This framework, which is widely used in the DSM evaluation industry, provides a consistent, systemized, cyclic approach for planning and conducting evaluations of energy efficiency programs. When verifying the energy and demand savings of its DSM programs, Manitoba Hydro uses the International Performance Measurement and Verification Protocol (IPMVP) and the Uniform Methods Project (UMP) as guides. Both of these resources provide an overview of current best practices for verifying the impacts of DSM activities in program impact evaluations.

The Power Smart initiative, including persisting savings, has achieved 2,928 GW.h and 797 MW in electric savings (at generation), and 112 million cubic metres in natural gas savings. This level of savings represents 11.2% of electric load and 6.7% of natural gas volume in 2015/16 (excluding natural gas volume from power stations and special contracts).

As a result of electric and natural gas Power Smart efforts in 2015/16, approximately 2.2 million tonnes of greenhouse gas emissions reduction was achieved. This combined reduction is equivalent to 10% of Manitoba's provincial emissions and equates to taking an estimated 461 thousand cars off the road for one year.

The electric savings resulting from the Power Smart initiative, including persisting savings, equate to nearly half of Winnipeg's residential and commercial power needs. The natural gas savings, including savings that persist from previous years of activity, equate to 2.25 times the residential and commercial natural gas needs of Brandon.

In 2015/16 alone, the electric Power Smart program surpassed planned savings by achieving 326 GW.h and 235 MW in electric savings (at generation). This is largely due to the success of the customer self-generation programs which saw much higher levels of program participation than planned and as a result, achieved energy and demand savings well above planned values. Additionally, higher than expected participation levels resulted in greater than planned energy and demand savings for the Commercial Lighting Program, the Commercial Building Envelope Program and the Residential LED Lighting Program. Electric savings from energy efficiency codes and standards were slightly below the planned values due to inefficient lighting products still being available in the commercial market in 2015/16.

Under the natural gas Power Smart program, 10.2 million cubic metres of natural gas savings were achieved in 2015/16, which was slightly below the planned level of savings. Natural gas savings from energy efficiency codes and standards were slightly below the planned values mainly due to a change in the methodology for determining natural gas savings from residential building codes.

After taking into account interactive effects resulting from electric programs, the natural gas portfolio achieved 8.9 million cubic metres of natural gas savings, meeting the planned target.

The savings achieved by the Power Smart portfolio in

2015/16 represent 93% of the twenty-year average annual electric load growth and 1.2% of electric load in 2015/16. As well, it represents 0.6% of natural gas volume in 2015/16 excluding interactive effects, and 0.5% of natural gas volume in 2015/16 including interactive effects (both scenarios exclude gas volume resulting from power stations and special contracts), further reducing natural gas consumption in Manitoba.

Total Power Smart expenditures in 2015/16 were $69 million, which consisted of $55 million from Power Smart electric operations, $10 million from Power Smart natural gas operations, $2 million from the Affordable Energy Fund and $2 million from the Furnace Replacement Program.

To date, $644 million has been invested in the Power Smart initiative; $491 million from Power Smart electric operations, $108 million from Power Smart natural gas operations, $31 million from the Affordable Energy Fund and $14 million from the Furnace Replacement Program.

The customer bill reduction due to 2015/16 Power Smart results, including persisting savings, amounts to an annual reduction of over $138 million, with nearly $102 million in reduced electricity bills and approximately $37 million in reduced natural gas bills. By customer sector, $38 million was saved in the residential sector, $58 million in the commercial sector and $42 million in the industrial sector. Customer bill reduction relates only to incentive-based programs and DSM support programs.

Cumulative customer bill reduction is over $1 billion, consisting of $826 million on electric bills and $231 million on natural gas bills.

In 2015/16 alone, including support costs and interactive effects, the combined total resource cost (TRC) ratio for electric and natural gas incentive-based programs was 1.8. For electric incentive-based programs, including support costs, the TRC ratio was 1.9, the rate impact measure (RIM) ratio was 1.0, the levelized utility cost (LUC) was 1.9¢/kW.h and the levelized resource cost (LRC) was 4.7¢/kW.h. For natural gas incentive-based programs, including support costs and interactive effects, the TRC ratio was 1.4, the RIM ratio was 0.5, the LUC was 17.0¢/m^3 and the LRC was 24.7¢/m^3.

Awareness of the Power Smart brand continues to remain high with 90% of Manitoba respondents saying that they recognize the brand name and one-third (28%) saying that they had participated in a Manitoba Hydro Power Smart program. Manitobans remain very satisfied with Manitoba Hydro's efforts to encourage customers to be more energy efficient with 81% reporting a satisfaction score of 7 or higher for this measure on a 1-10 scale.

2015/16 Electricity Results

In 2015/16 alone, the Power Smart portfolio realized 326 GW.h and 235 MW of electric savings, 12% and 6% above their respective savings targets. However, electric energy and demand savings resulting from codes and standards were less than planned. This is mainly due to fewer fluorescent lamps than expected being installed in Manitoba's commercial market. As well as inefficient lighting products still being available in the market in 2015/16.

The following tables outline the electricity savings achieved by the Power Smart portfolio and associated costs during 2015/16, and provide a comparison between achieved results and planned targets.

Exhibit E.1

Annual GW.h Savings (at generation) - Power Smart Portfolio

	2015/16 Actual	2015/16 Plan^	Total*
INCENTIVE-BASED PROGRAMS	275	216	2,127
CODES & STANDARDS	50	75	769
DSM SUPPORT PROGRAMS	1	1	32
OVERALL IMPACT	326	292	2,928

^ Plan estimates are from the 2015 Power Smart Plan.
* Savings include actual + persisting results, up to and including 2015/16.
Note: Figures may not add due to rounding.

Exhibit E.2

Annual Average Winter MW Savings (at generation) - Power Smart Portfolio

	2015/16 Actual	2015/16 Plan^	Total*
INCENTIVE-BASED PROGRAMS	224	203	601
CODES & STANDARDS	11	18	185
DSM SUPPORT PROGRAMS	0	1	11
OVERALL IMPACT	235	221	797

^ Plan estimates are from the 2015 Power Smart Plan.
* Savings include actual + persisting results, up to and including 2015/16.
Note: Figures may not add due to rounding.
MW savings are based on the average of the winter AM & PM system peak savings.
For the Curtailable Rates Program, MW savings reported is expected curtailable load on system at the time a curtailment occurs.

In 2015/16 alone, electric Power Smart expenditures were 89% of budget. Electric efficiency programs experienced a $5.1 million variance resulting from significantly lower than expected incentive costs as various programs across all customer sectors experienced lower participation and smaller projects than planned. As well, electric customer self-generation programs had a variance of $0.8 million as a result of lower incentive and administration costs due to customer delays in the implementation of Load Displacement Program projects and lower incentive costs for the Bioenergy Optimization Program.

Exhibit E.3

2015/16 Power Smart Portfolio Electricity Costs

Power Smart Portfolio	2015/16 Actual	2015/16 Plan^	Total*
		millions of nominal dollars	
INCENTIVE-BASED PROGRAMS			
Efficiency Programs	39.4	44.5	301.0
Customer Self-Generation Programs	5.5	6.3	17.7
Rate/Load Management Programs	6.1	6.0	93.9
	51.1	56.8	412.5
SUPPORT COSTS, DSM SUPPORT PROGRAMS & STANDARDS	3.7	4.8	78.2
TOTAL ELECTRICITY PROGRAM COSTS	54.8	61.6	490.7

^ Plan estimates are from the 2015 Power Smart Plan.
* Costs up to and including 2015/16.
Note: Figures may not add due to rounding.

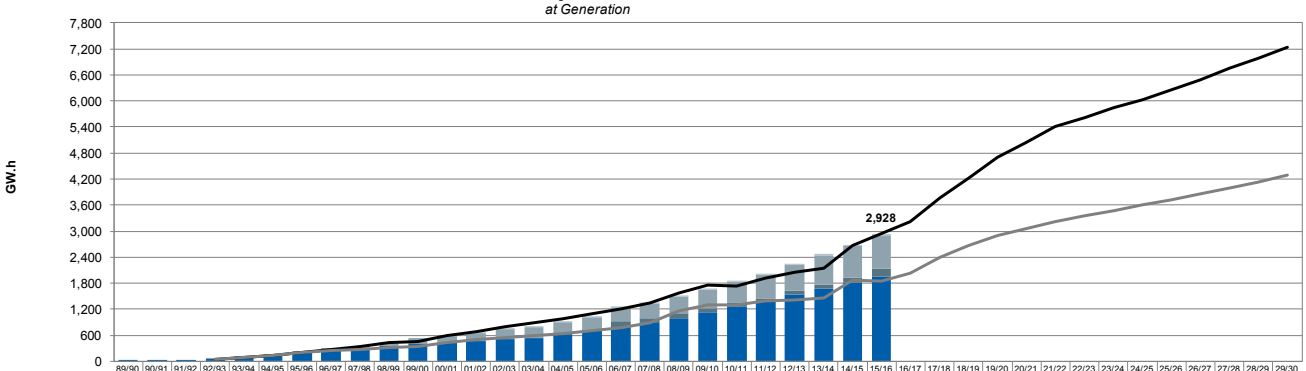
Total Electricity Results (2015/16 Results & Persisting Savings)

Cumulatively, the Power Smart portfolio has saved a total of 2,928 GW.h and 797 MW, which essentially met planned values to the end of 2015/16. Cumulative savings to date represent 40% and 43% of the forecasted energy and demand savings at the benchmark year of 2029/30.

To date, $491 million has been invested in Power Smart electric activities.

The following graphs present the cumulative energy and average winter demand savings achieved, as well as the corresponding targets.

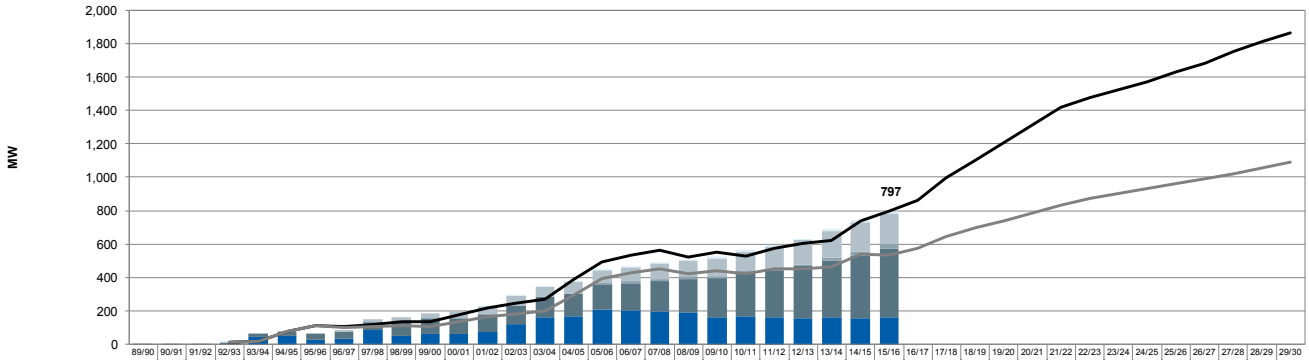
Exhibit E.4
Electric Energy Savings - Power Smart Portfolio
Total Savings Achieved vs. Plan
at Generation



	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
DSM Support Programs													2	4	7	11	13	16	20	22	25	26	27	29	31	32	32														
Codes & Standards	-	-	-	2	8	16	25	40	63	93	125	156	189	228	248	274	298	323	352	382	430	481	541	601	661	719	769														
Incentive-Based - Customer Self-Generation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	132	93	103	88	95	77	91	109	133	168														
Incentive-Based - Efficiency	6	10	31	59	99	151	209	259	285	363	407	419	467	511	546	620	715	799	895	1,002	1,135	1,260	1,374	1,539	1,670	1,806	1,959														
Plan	-			50	86	138	195	281	336	422	466	602	686	810	891	970	1,088	1,199	1,350	1,569	1,753	1,736	1,906	2,063	2,140	2,679	2,954	3,227	3,760	4,213	4,697	5,052	5,407	5,625	5,834	6,031	6,262	6,493	6,757	6,994	7,233
Plan (Incentive-Based Programs only)	-			50	86	138	195	252	279	327	350	435	491	544	603	634	713	782	879	1,157	1,310	1,293	1,388	1,425	1,469	1,871	1,849	2,034	2,403	2,680	2,905	3,052	3,228	3,356	3,476	3,598	3,722	3,856	4,001	4,142	4,298
Total Achieved	6	10	31	62	107	167	235	299	348	456	532	575	659	743	801	904	1,037	1,270	1,359	1,509	1,678	1,863	2,019	2,259	2,472	2,690	2,928														

Note: Figures may not add due to rounding.

Exhibit E.5
Average Winter Demand Savings - Power Smart Portfolio
Total Savings Achieved vs. Plan
at Generation



	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
DSM Support Programs													1	1	2	3	3	4	6	6	8	9	9	10	11	11	11														
Codes & Standards				1	2	4	6	10	15	23	32	40	49	59	64	70	76	82	89	97	105	113	127	142	159	174	185														
Incentive-Based - Customer Self-Generation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	16	16	16	16	16	16	10	16	24	30														
Incentive-Based - Efficiency	0	1	4	10	17	26	34	42	46	86	91	93	105	113	119	131	146	162	179	200	231	258	280	311	341	375	411														
Incentive-Based - Rate/Load	-	-	-	-	45	51	27	36	88	53	64	63	75	121	163	169	208	202	199	190	164	170	162	159	161	157	160														
Plan				12	18	75	114	108	118	134	135	178	216	249	273	385	491	535	564	524	551	531	578	603	620	741	800	863	996	1102	1209	1314	1415	1474	1524	1571	1627	1684	1750	1808	1863
Plan (Incentive-Based Programs only)				12	18	75	114	101	104	110	105	136	166	183	200	296	394	429	449	421	442	421	454	454	462	541	533	573	647	696	739	785	834	873	903	932	961	992	1023	1055	1087
Total	0	1	4	10	64	80	68	87	149	162	187	196	230	295	348	373	450	466	488	509	523	566	594	633	687	741	797														

Note: Figures may not add due to rounding.

2015/16 Natural Gas Results

In 2015/16, the Power Smart portfolio realized natural gas savings of 10.2 million cubic metres before interactive effects from electric Power Smart programs, and 8.9 million cubic metres after interactive effects, achieving the portfolio's target. However, natural gas savings from energy efficiency codes and standards were slightly less than planned due to a change in the methodology for determining natural gas savings from residential building codes.

Natural gas Power Smart expenditures in 2015/16 were $10.1 million, which is 98% of the budget.

The following tables provide a comparison between achieved results and planned targets.

Exhibit E.6

Annual Natural Gas Savings - Power Smart Portfolio

	2015/16 Actual	2015/16 Plan^	Total*
	millions of cubic metres		
PROGRAM & INITIATIVE			
Incentive-Based Programs	7.1	6.9	84.8
Codes & Standards	2.8	3.4	21.8
DSM Support Programs	0.3	0.4	21.4
	10.2	10.7	127.9
INTERACTIVE EFFECTS			
Incentive-Based Interactive Effects	(1.3)	(1.9)	(15.8)
NET IMPACT OVERALL	8.9	8.9	112.1

^ Plan estimates are from the 2015 Power Smart Plan.
* Savings include actual + persisting results, up to and including 2015/16.
Note: Figures may not add due to rounding.

Exhibit E.7

2015/16 Power Smart Portfolio Natural Gas Costs

Power Smart Portfolio	2015/16 Actual	2015/16 Plan^	Total*
	millions of nominal dollars		
INCENTIVE-BASED PROGRAMS			
Efficiency Programs	9.6	9.3	88.4
Customer Self-Generation Programs	-	-	0.1
	9.6	9.3	88.5
SUPPORT COSTS, DSM SUPPORT PROGRAMS & STANDARDS	0.6	1.0	19.6
TOTAL ELECTRICITY PROGRAM COSTS	10.1	10.3	108.1

^ Plan estimates are from the 2015 Power Smart Plan.
* Costs up to and including 2015/16.
Note: Figures may not add due to rounding.

Total Natural Gas Results (2015/16 Results & Persisting Savings)

Cumulatively, the Power Smart portfolio has saved 127.9 million cubic metres of natural gas before interactive effects resulting from electric Power Smart programs, exceeding targets to the end of 2015/16.

The following graph presents cumulative natural gas savings achieved, as well as the corresponding targets.

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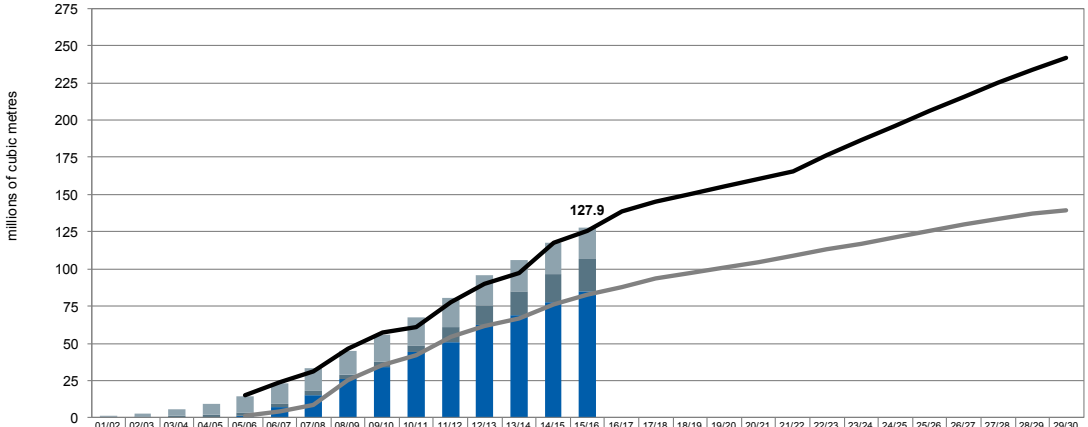
Exhibit E.8
Natural Gas Savings - Power Smart Portfolio
Total Savings Achieved vs. Plan



	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
DSM Support Programs	1.2	2.4	4.3	7.7	11.3	13.2	15.3	16.4	18.3	19.0	19.7	20.3	20.8	21.1	21.4														
Codes & Standards	0.3	0.7	1.1	1.6	2.0	2.4	2.7	3.0	3.5	4.4	9.9	13.2	16.0	19.0	21.8														
Incentive-Based Efficiency	0.0	0.1	0.1	0.2	1.6	7.3	15.5	25.9	34.1	44.0	50.9	62.2	69.2	77.7	84.8														
Plan					15.4	23.9	31.2	46.4	57.3	61.2	78.0	89.8	97.6	117.4	125.8	138.6	145.1	150.5	155.4	160.3	165.5	176.2	186.3	196.3	206.1	215.7	225.1	233.6	241.7
Plan (incentived-based programs only)					1.5	4.3	9.0	25.7	35.6	41.7	54.1	61.4	67.0	76.4	82.5	87.9	93.3	97.5	101.1	104.8	109.0	113.3	117.2	121.2	125.8	130.2	133.8	136.9	139.6
Total Achieved	1.6	3.1	5.5	9.4	14.8	22.8	33.5	45.2	55.9	67.5	80.4	95.7	106.0	117.7	127.9														

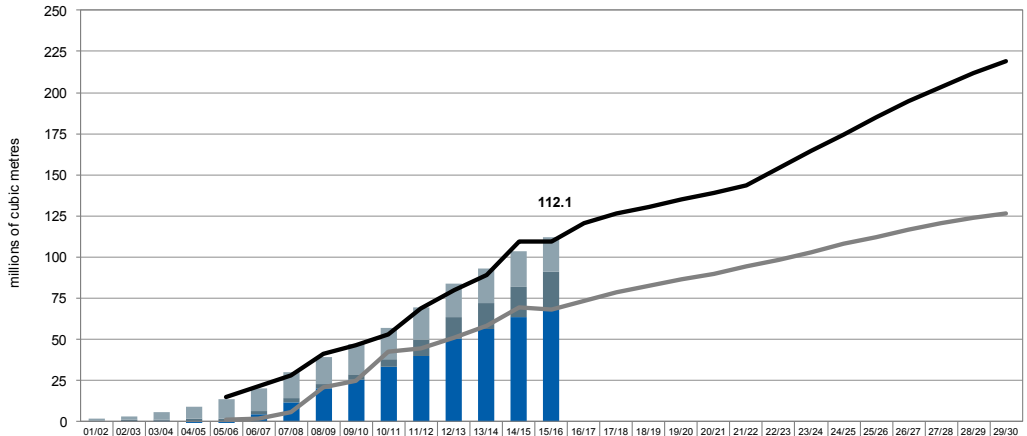
Note: Figures may not add due to rounding.

Natural Gas Integrated Results

Some electric Power Smart programs have interactive effects which increase the consumption of natural gas. For example, a more energy efficient lighting system emits less heat and therefore results in more energy required for space heating.

Including interactive effects resulting from electric Power Smart programs, the natural gas Power Smart portfolio saved 112.1 million cubic metres of natural gas, surpassing planned savings by 3%. To date, savings represent 51% of the forecasted savings at the benchmark year of 2029/30. Cumulatively, $108.1 million has been invested in Power Smart natural gas activity.

Exhibit E.9
Integrated Natural Gas Savings - Power Smart Portfolio
Total Savings Achieved vs. Plan



	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
DSM Support Programs	1.2	2.4	4.3	7.7	11.3	13.2	15.3	16.4	18.3	19.0	19.7	20.3	20.8	21.1	21.4														
Codes & Standards	0.3	0.7	1.1	1.6	2.0	2.4	2.7	3.0	3.5	4.4	9.9	13.2	16.0	19.0	21.8														
Incentive-Based Integrated	0.0	0.1	0.1	-1.0	-1.0	4.3	11.7	20.0	25.3	33.5	39.6	50.1	56.2	63.2	68.9														
Integrated Plan					14.8	21.5	27.9	41.4	46.3	52.8	68.6	79.6	88.7	109.3	109.3	120.4	126.4	130.7	134.9	139.1	143.8	154.0	164.4	174.7	184.7	194.6	203.5	211.7	219.3
Integrated Plan (Incentive-Based Programs only)					0.8	1.9	5.7	20.8	24.6	42.2	44.7	51.3	58.2	69.3	67.8	73.4	78.9	82.7	86.3	90.0	94.1	98.4	103.1	107.8	112.4	116.8	120.6	123.7	126.3
Total Achieved	1.6	3.1	5.5	8.2	12.2	19.8	29.7	39.4	47.0	57.0	69.1	83.6	93.0	103.2	112.1														

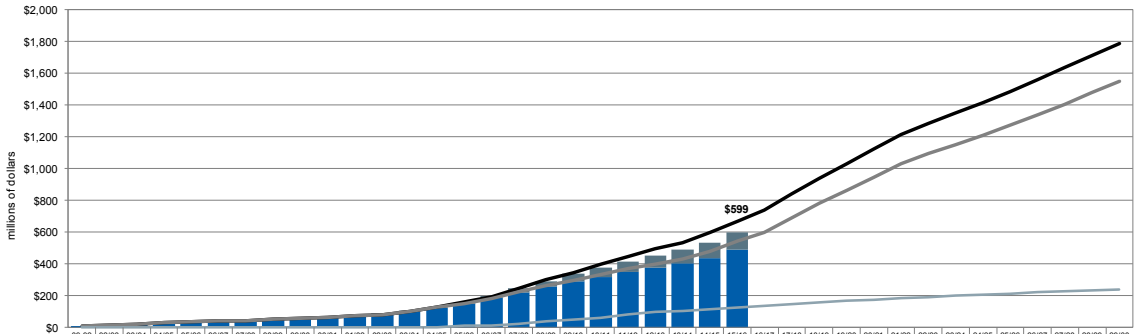
Note: Figures may not add due to rounding.

Power Smart Utility Costs

Total Power Smart expenditures in 2015/16 were $65 million, of which $55 million was spent on electric initiatives and $10 million was spent on natural gas initiatives. Cumulative Power Smart expenditures were $599 million, or 10% less than the budgeted amount of $669 million. The spending variance can be credited to electric and natural gas efficiency program spending, which were both below budget by 10% and 14% respectively. These costs do not include the Affordable Energy Fund or the Furnace Replacement Program.

Cumulative Power Smart expenditures of $599 million represent 33% of the overall cumulative 2029/30 budget, as reported in the IFF15. The following graph depicts actual annual expenditures against planned.

Exhibit E.10
Utility Costs- Power Smart Portfolio
Cumulative Total Utility Cost vs. Plan
nominal dollars



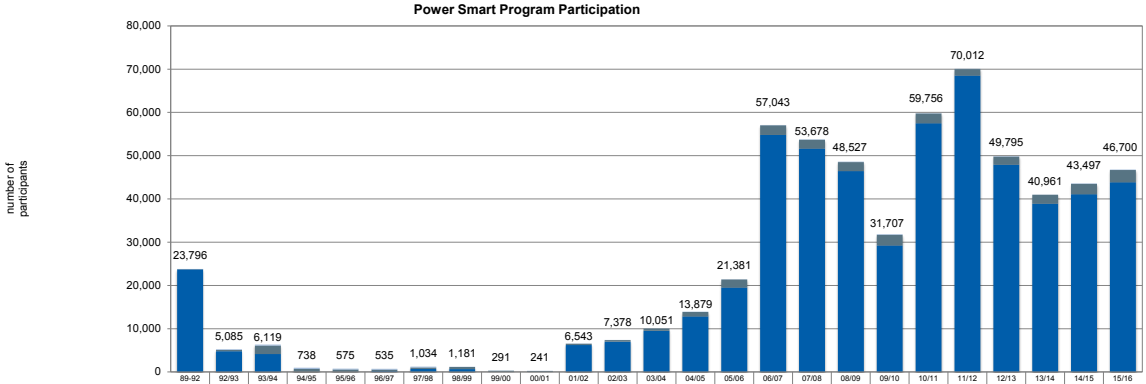
	89-92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
Eval - Natural Gas	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1	$1	$2	$3	$6	$14	$24	$35	$47	$58	$69	$79	$88	$98	$108														
Eval - Electricity	$7	$14	$22	$29	$37	$42	$48	$52	$58	$63	$71	$84	$100	$121	$149	$185	$222	$257	$290	$319	$348	$375	$402	$436	$491														
Plan- Electricity & Natural Gas	$10	$16	$20	$32	$36	$41	$44	$54	$58	$63	$72	$81	$102	$130	$161	$195	$248	$302	$347	$396	$449	$496	$535	$597	$669	$738	$842	$939	$1,030	$1,121	$1,214	$1,284	$1,349	$1,416	$1,486	$1,559	$1,634	$1,713	$1,790
Plan- Electricity	$10	$16	$20	$32	$36	$41	$44	$54	$58	$63	$72	$80	$100	$128	$150	$182	$225	$265	$298	$335	$369	$400	$429	$481	$543	$599	$693	$781	$863	$946	$1,030	$1,093	$1,150	$1,209	$1,271	$1,337	$1,406	$1,479	$1,552
Plan - Gas	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1	$1	$2	$11	$13	$23	$37	$49	$61	$80	$96	$106	$116	$126	$139	$149	$158	$167	$175	$184	$191	$199	$207	$215	$222	$228	$234	$238
Total Eval	$7	$14	$22	$29	$37	$42	$48	$52	$58	$63	$72	$86	$102	$124	$155	$199	$246	$293	$337	$378	$417	$454	$490	$534	$599														

Note: Figures may not add due to rounding.

Customer Participation

The following graph illustrates that participation levels in Manitoba Hydro's Power Smart programs remain strong.

Exhibit E.11
Power Smart Program Participation



	89-92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Industrial	24	157	202	229	185	182	195	8	4	9	17	25	32	48	50	49	81	99	116	90	73	110	57	82	81
Commercial (excluding LED Roadway Lighting Program conversions)	65	273	1,959	738	575	334	325	500	291	241	304	363	538	1,019	1,848	2,235	2,005	2,079	2,463	2,263	1,487	1,859	2,049	2,410	2,848
Residential (excluding CFLs & LEDs)	23,731	4,812	4,160	0	0	201	709	681	0	0	6,239	7,015	9,513	12,860	19,533	54,808	51,673	46,448	29,244	57,493	68,525	47,936	38,912	41,087	43,852
Total Achieved (excluding CFLs, LEDs & Roadway Lighting)	23,796	5,085	6,119	738	575	535	1,034	1,181	291	241	6,543	7,378	10,051	13,879	21,381	57,043	53,678	48,527	31,707	59,756	70,012	49,795	40,961	43,497	46,700

Note: Includes electric and natural gas participants of DSM support programs, cost recovery programs and incentive-based programs.
Participation associated with codes and standards is excluded.
Curtailable Rates Program participation is included within the industrial sector.
Customers may participate in more than one Power Smart program.
The 343,381 sales under the Residential Compact Fluorescent Lighting Program during 2004/05-2010/11 are excluded.
The 28,868 conversions completed under the LED Roadway Lighting Program during 2013/14-2015/16 are excluded.
The 892,446 sales under the Residential LED Lighting Program during 2014/15-2015/16 are excluded.
Figures may not add due to rounding.

h

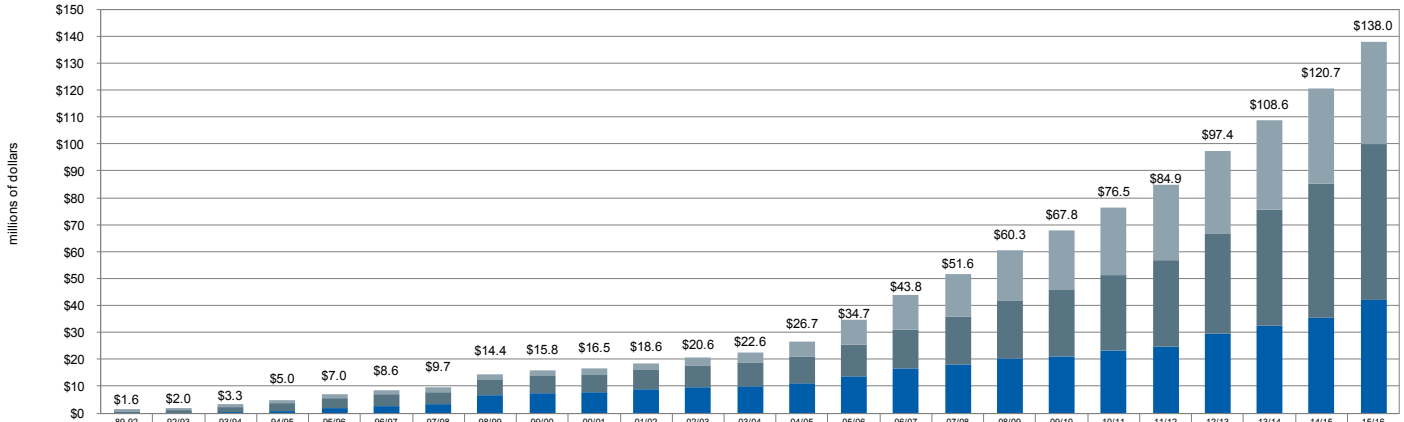
During 2015/16, there were nearly 534,000 participants in Power Smart DSM support programs and incentive-based programs. Excluding the Residential Compact Fluorescent Lighting (CFL) Program and the Residential LED Lighting Program, there have been over 631,000 participants cumulatively.

Participants of the Residential CFL Program and the Residential LED Lighting Program have been excluded to provide a better indication of participation trends. The Residential CFL Program and Residential LED Lighting Program both provide low-cost options for achieving energy efficiency. The Residential CFL Program represents 19% of residential and 18% of overall Power Smart program participation. The Residential LED Lighting Program represents 49% of residential and 48% of overall Power Smart participation.

Customer Bill Reduction

The annual bill reduction for participating customers due to annual and persisting savings in 2015/16 of over $138 million is comprised of nearly $102 million of savings on electric bills and approximately $37 million of savings on natural gas bills. Cumulatively, over $1 billion has been saved on electricity and natural gas bills.

Exhibit E.12
Combined Electricity & Natural Gas Customer Bill Reduction (Nominal$)
Total Annual Reductions by Sector
millions of dollars



	89-92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Residential	$1.3	$1.0	$1.2	$1.4	$1.5	$1.8	$1.9	$1.9	$1.9	$2.0	$2.5	$3.0	$3.7	$5.6	$9.3	$12.8	$16.0	$18.8	$22.2	$25.2	$28.1	$30.7	$32.9	$35.4	$38.2
Commercial	$0.3	$0.8	$1.8	$2.8	$3.7	$4.1	$4.6	$5.7	$6.5	$6.9	$7.4	$8.0	$8.8	$9.9	$11.7	$14.4	$17.6	$21.4	$24.5	$28.1	$31.9	$37.4	$43.1	$49.9	$57.6
Industrial	$0.0	$0.2	$0.3	$0.8	$1.8	$2.7	$3.2	$6.7	$7.4	$7.6	$8.7	$9.7	$10.1	$11.2	$13.7	$16.6	$18.0	$20.1	$21.1	$23.2	$24.9	$29.4	$32.6	$35.4	$42.2
Total	$1.6	$2.0	$3.3	$5.0	$7.0	$8.6	$9.7	$14.4	$15.8	$16.5	$18.6	$20.6	$22.6	$26.7	$34.7	$43.8	$51.6	$60.3	$67.8	$76.5	$84.9	$97.4	$108.6	$120.7	$138.0

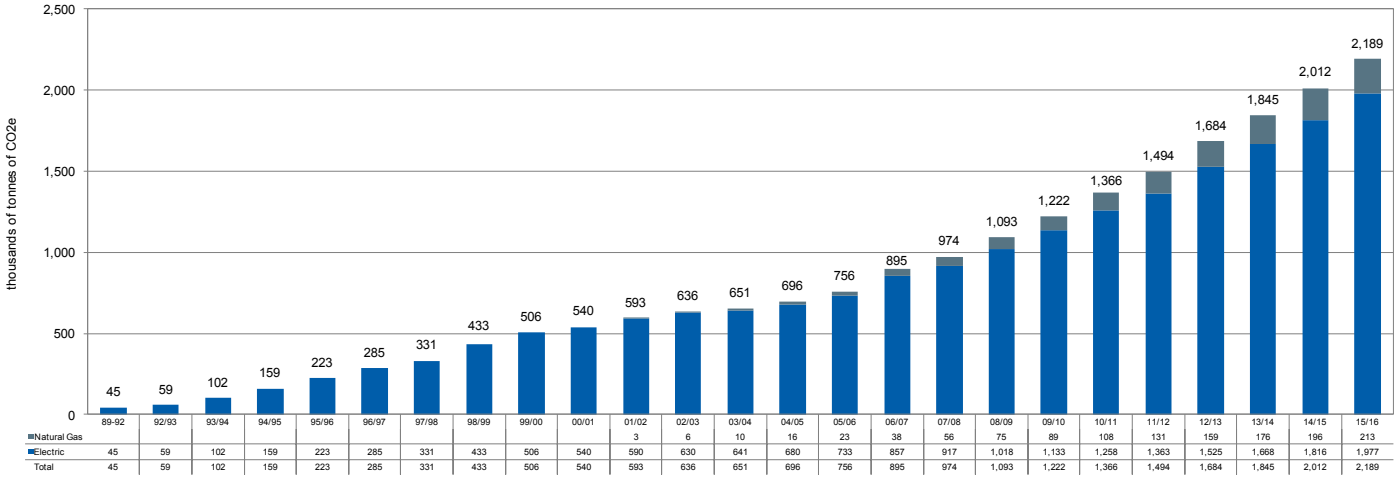
Note: Includes electric and natural gas participants.
Savings due to codes & standards, and demand savings resulting from the Curtailable Rates Program are excluded from the calculation of bill reduction.
Natural gas bill reduction includes primary and distribution rates only.
Figures may not add due to rounding.

Greenhouse Gas Emissions Reduction

The 2,928 GW.h of savings from electric Power Smart programs and 112 million cubic metres of savings from natural gas Power Smart programs equate to a greenhouse gas emissions reduction of approximately 2.2 million tonnes of carbon dioxide equivalent emissions. This is comparable to removing nearly 461 thousand vehicles from the road for one full year.

The majority (90%) of the greenhouse gas emissions reduction is a result of electric Power Smart program activity through indirect emissions reduction from Manitoba Hydro export sales displacing coal and natural gas fuelled generation outside of Manitoba. The remaining 10% of emissions reduction is direct reduction that occurs as a result of lower natural gas consumption in Manitoba.

Exhibit E.13
Total Annual Greenhouse Gas Emission Reductions
Due to Electric & Natural Gas Savings
thousands of tonnes of CO2e



	89-92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Natural Gas											3	6	10	16	23	38	56	75	89	108	131	159	176	196	213
Electric	45	59	102	159	223	285	331	433	506	540	590	630	641	680	733	857	917	1,018	1,133	1,258	1,363	1,525	1,668	1,816	1,977
Total	45	59	102	159	223	285	331	433	506	540	593	636	651	696	756	895	974	1,093	1,222	1,366	1,494	1,684	1,845	2,012	2,189

Additional Measurable Non-Energy Benefits

In 2015/16, the following Power Smart programs achieved additional measurable non-energy benefits in the form of water savings: Affordable Energy Program, Water & Energy Saver Program, Commercial Kitchen Appliances Program and Power Smart Shops Program. The following table depicts in-year and cumulative water savings in litres achieved by the Power Smart programs.

Exhibit E.14

Water Savings by Power Smart Program	2015/16 Actual	2015/16 Total*
	millions of litres	
RESIDENTIAL PROGRAMS		
Water & Energy Saver	202	1,284
Affordable Energy	21	105
COMMERCIAL PROGRAMS		
Commercial Kitchen Appliances	157	269
Power Smart Shops	2	12
DISCONTINUED/ COMPLETED PROGRAMS		
Commercial Rinse & Save	-	653
Residential Appliances	-	299
Commercial Clothes Washers	-	33
TOTAL	382	2,653

*Savings include actual + persisting savings, up to and including 2015/16
Note: Figures include Winnipeg and rural litres saved.
Figures may not add due to rounding.

In addition to water savings, The Power Smart programs have achieved further non-energy benefits. To date, the Refrigerator Retirement Program has recycled over 3,800 metric tons of materials (metals, mercury, oil, etc.). By recycling these materials, future production of these materials has been avoided, nearly 20,000 kilograms of CFCs have been collected and destroyed and emissions have been reduced by more than 120,000 metric tons of C02e cumulatively. Another example is the Performance Optimization Program. This program reduces maintenance costs (approximately 30% reduction for air compressor projects) and increases production.

As well, Power Smart programs have provided socio-economic benefits through job creation within the province. The Affordable Energy Program (two positions within the North End Community Renewal Corporation and Brandon Neighbourhood Renewal Corporation, plus local labour in First Nations communities, private contractors and social enterprise contractors); Refrigerator Retirement Program (fifteen to twenty positions, depending on the season, including office staff, warehouse staff and drivers); Residential LED Lighting Program (eight part-time in-store ambassador positions have been created at Summerhill Group); and Water & Energy Saver Program (four full-time office positions, as well as ten full-time and up to forty part-time installer positions have been created at Ecofitt) have all created additional jobs for Manitobans. Also, Power Smart programs yield increased tax dollars resulting from the wages associated with jobs created specifically for the programs.

Another example of how Power Smart programs are creating opportunities for Manitobans, specifically within First Nations communities, is with the Community Geothermal Program. To date, Manitoba Hydro has provided training for approximately forty-five members of the Ground Source Heat Pump Association, seventeen of which have received full installer accreditation.

The Affordable Energy Fund

The Affordable Energy Fund was established in 2006/07 through the Winter Heating Cost Control Act. The purpose of the fund is to provide support for programs and services that achieve specific objectives. Theses objectives include encouraging energy efficiency and conservation through programs and services for rural and northern Manitobans, lower income customers and seniors, as well as encouraging the use of alternative energy sources such as renewable energy.

Exhibit E.15 outlines Affordable Energy Fund expenditures in 2015/16 and cumulatively.

Exhibit E.15

Summary of Affordable Energy Fund Expenditures

	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	Cumulative
						thousands of nominal dollars					
Affordable Energy Program	256	219	893	1,672	2,666	3,131	3,332	3,122	4,508	1,831	21,630
Geothermal Support											
Waverley West Demonstration Project*	619	252	5	-	-1	-1	-1	-1	-1	-1	871
Residential Earth Power Loan Subsidy	-	19	69	105	108	108	91	-	-	-	500
Province of MB Cooperative Advertising	-	-	18	-	-	-	-	-	-	-	18
Interest Expense to Bill 11	-	-	-	-	-	-	-	28	22	14	65
Geothermal Support Total	619	270	92	104	108	107	91	27	21	14	1,454
Community Support & Outreach	-	-	35	130	133	139	114	123	112	-55	732
Oil & Propane Heated Homes	-	75	85	31	32	24	-	4	-0	-	250
Special Projects											
Res. Energy Assessment Services (ecoENERGY Audits)	-	61	241	85	119	39	-	-	-	-	545
Oil & Propane Furnace Replacement	-	-	6	36	42	17	10	23	24	24	183
Res. Solar Water Heating Program	-	-	89	119	56	11	10	0	0	0	286
Power Smart Residential Loan	-	-	-	130	312	354	510	365	216	119	2,007
Residential PAYS Program	-	-	-	-	-	-	-	-	44	58	102
Oil & Propane Heated Homes - Add'l Funding	-	-	-	-	-	10	26	19	45	29	129
Special Projects Total	-	61	336	371	529	431	556	407	329	231	3,252
Community Energy Development											
ecoENERGY Program Funding - Add'l Funding	-	-	-	-	-	2,817	1,241	0	-	-	4,059
Community Energy Development Total	-	-	-	-	-	2,817	1,241	0	-	-	4,059
DSM INITIATIVES SUBTOTAL	875	625	1,441	2,308	3,468	6,649	5,334	3,685	4,970	2,021	31,376
Manitoba Electric Bus	-	-	-	-	-	700	75	225	114	-	1,114
Energy & Resource Fund	-	-	-	750	-	-	-	-	-	-	750
Fort Whyte EcoVillage	-	-	-	-	-	120	-	-	-	-	120
Diesel Community Green Pilot Demonstration**	-	-	-	-	-	3	-3	-	83	-	83
Métis Generation Fund	-	-	-	-	-	-	-	500	-	-	500
TOTAL EXPENDITURES	875	625	1,441	3,058	3,468	7,472	5,406	4,410	5,167	2,021	32,942

* Negative costs represent loop lease payments from customer to Manitoba Hydro.

** Reversal of an incorrect charge that took place in 2011/12 is indicated by the negative cost.

Furnace Replacement Program

The Furnace Replacement Budget was established in 2007/08 as a result of Public Utilities Board Order 99/07. The purpose of the budget is to establish and administer a Furnace Replacement Program for lower income customers. In 2015/16 alone, customers installed 547 furnaces and 10 boilers through the Furnace Replacement Program. Cumulatively, 4,469 furnaces and 106 boilers have been installed as a result of the program. Exhibit E.16 outlines Furnace Replacement Program expenditures to date.

Exhibit E.16

Summary of Furnace Replacement Program Expenditures

	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	Cumulative
					thousands of nominal dollars				
Natural Gas Furnace Replacement Program	264	815	1,312	1,627	2,165	2,012	3,117	2,400	13,712
TOTAL EXPENDITURES	264	815	1,312	1,627	2,165	2,012	3,117	2,400	13,712

Table of Contents

1.0 Introduction

1.1 Background

In 1989, Manitoba Hydro launched the first of many Demand Side Management (DSM) programs, the Outdoor Timer Program. Soon after in 1991, Manitoba Hydro established Power Smart, the customer-oriented brand for all of Manitoba Hydro's DSM programs, initiatives and activities. DSM resource options are assessed and included in Manitoba Hydro's Integrated Resource Planning process. These resource options are developed to provide alternatives to traditional sources of power generation. Power Smart initiatives are justified based on their relative cost compared to traditional generation resource options and the customer service value realized by customers.

Since purchasing Centra Gas in 1999, Manitoba Hydro has integrated natural gas conservation into the Corporation's overall Power Smart initiative. This report provides an integrated approach to evaluating the results. Net energy savings reported are due to the combined electricity and natural gas energy conservation efforts. In this regard, any increased natural gas consumption resulting from electricity efficiency efforts (due to interactive effects) are captured and netted against natural gas conservation efforts. Interactive effects were not accounted for prior to the 2002/03 reporting period.

Energy conservation initiatives are designed to reduce customer energy requirements through energy efficient measures (i.e. using less energy to obtain comparable or superior services). Rate/Load management activities are put in place to reduce energy demands through programs offered to alter the timing of customer demand (i.e. Curtailable Rates Program). Customer self-generation programs are created to encourage customer on-site generation.

Manitoba Hydro's Power Smart strategy focuses on creating a sustainable market change where energy efficient technologies and practices become the market standard (market transformation). The approach used to create and maintain market transformation varies by product and market segment, and generally involves a combination of the following activities:

- DSM support programs & cost recovery programs;
- Incentive-based promotional programs, including:
    - Efficiency programs,
    - Customer self-generation programs and
    - Rate/Load management programs.
- Efforts to encourage and support implementation of energy efficiency into codes and standards.

Work in each of these different areas supports the overall Power Smart objective as well as other corporate goals, including: providing customers with exceptional value, protecting the environment and capturing additional electricity export sales.

The Power Smart DSM initiative is designed to encourage the efficient use of energy in the residential, commercial, agricultural, institutional and industrial customer sectors. More than fifty incentive-based programs and DSM support programs have been offered over the last twenty-seven years, with impact evaluations of all incentive-based programs prepared annually.

By evaluating the incentive-based programs, Manitoba Hydro can determine its overall progress in achieving its corporate objectives, and can adjust individual program targets and strategies to reflect market reaction and market changes.

1.2 Power Smart Strategy

Manitoba Hydro's Power Smart strategy is to create a sustainable market change where energy efficient technologies and practices become the market standard (market transformation). To be effective in achieving the desired outcome, the corporation's strategy involves working along multiple tracks, including:

- Providing customers with information and services related to energy efficiency;
- Offering incentive-based Power Smart programs designed to create market awareness, knowledge and acceptance of energy efficient technologies and products;
- Making available cost recovery financing to help customers overcome the financial barriers to the adoption of energy efficient technologies;
- Working with industry and trade allies to gain support for the Corporation's Power Smart efforts;
- Working with other utilities and government agencies in joint efforts to incorporate energy efficiency in codes, standards and regulations;
- Undertaking communication and marketing efforts focused on promoting Power Smart programs and the Power Smart brand name;
- Leveraging the Power Smart brand through activities such as establishing "Power Smart Design Standards"; and
- Making a sustainable and long-term commitment to the efficient use of energy.

1.3 Power Smart Brand & Perception

Power Smart is the brand name used by Manitoba Hydro since 1991 to promote its energy efficiency programs and services.

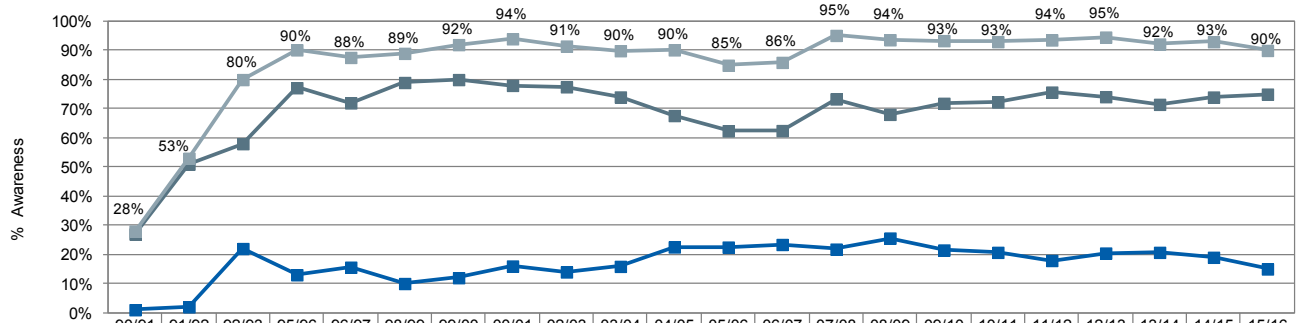
As displayed in Exhibit 1.3, Manitoba Hydro continues to successfully maintain the Power Smart brand's profile with 90% of respondents currently indicating they recognize the brand name. This includes 15% of respondents who independently recall (unaided recall) the Power Smart brand name, and 75% of respondents who say they recognize the brand name when the Power Smart brand name is identified (aided recall).

The Power Smart campaign, being distinct from the marketing/promotional activities associated with specific Power Smart DSM programs, is a mass communication campaign undertaken to improve public awareness of the Power Smart brand and its association with energy efficiency, low electricity rates and environmental conservation.

Approximately one-third (28%) of respondents said they had participated in a Manitoba Hydro Power Smart Program.

The vast majority of customers report they are very satisfied with Manitoba Hydro's 'Efforts to Encourage Customers to be More Energy Efficient' with 81% reporting a satisfaction level of 7 or higher on a 1-10 satisfaction scale.

Exhibit 1.3
Power Smart Brand Awareness



	90/91	91/92	92/93	95/96	96/97	98/99	99/00	00/01	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Unaided Awareness	1%	2%	22%	13%	16%	10%	12%	16%	14%	16%	23%	23%	23%	22%	26%	22%	21%	18%	20%	21%	19%	15%
Aided Awareness	27%	51%	58%	77%	72%	79%	80%	78%	78%	74%	68%	62%	63%	73%	68%	72%	72%	76%	74%	72%	74%	75%
Total Awareness	28%	53%	80%	90%	88%	89%	92%	94%	91%	90%	90%	85%	86%	95%	94%	93%	93%	94%	95%	92%	93%	90%

Note: Power Smart awareness was not measured in 93/94, 94/95, 97/98 or 01/02.
Figures may not add due to rounding.

1.4 Purpose of Report

Power Smart is an important component of Manitoba Hydro's Integrated Power Resource Plan.

Manitoba Hydro's Power Smart DSM targets for electric energy and average winter demand savings at generation are 7,233 GW.h and 1,863 MW by 2029/30, as outlined in the 2015 Power Smart Plan. These targets represent the expected impact of efficiency codes and standards, DSM support programs and incentive-based program activities. Manitoba Hydro's incentive-based Power Smart program activity is expected to contribute the greatest portion of the savings, with projected energy and demand savings of 4,298 GW.h and 1,087 MW by 2029/30.

Manitoba Hydro's Power Smart DSM target for natural gas savings is 219 million cubic metres by 2029/30, as outlined in the 2015 Power Smart Plan. This target represents the expected impact of incentive-based efficiency program activities, DSM support programs, interactive effects from electricity programs, as well as savings resulting from efficiency codes and standards. Manitoba Hydro's incentive-based Power Smart program activity is expected to contribute the greatest portion of the savings, with projected savings of 126 million cubic metres by 2029/30.

While this report highlights all activities and results from the overall Power Smart portfolio, the emphasis will be on incentive-based programs. Annual results for 2015/16 will be measured against the planned targets specified in the 2015 Power Smart Plan.

More specifically, this report will detail:

- Energy and demand savings achieved by incentive-based Power Smart programs;
- Utility costs associated with all Power Smart programs and initiatives;
- Cost-effectiveness of incentive-based Power Smart programs.

Refer to APPENDIX A - 'Sources of Evaluation and Planning Estimates' for details of the information considered when preparing program plan estimates and program evaluation results. Refer to APPENDIX B - 'Explanation of Benefit-Cost Ratios used in DSM Economic Metrics' for formulas used to assess cost-effectiveness.

1.5 Demand Side Management Evaluation

Manitoba Hydro evaluates its DSM programs on an annual basis to validate electric and natural gas savings, and to provide feedback to program managers on program achievements and improving data collection. Manitoba Hydro's DSM evaluation objectives are to provide timely, credible, actionable and cost-effective evaluations.

The California Evaluation Framework is used as a guide in Manitoba Hydro's DSM evaluations and related activities. This framework, which is widely used in the DSM evaluation industry, provides a consistent, systemized, cyclic approach for planning and conducting evaluations of energy efficiency programs. When verifying the energy and demand savings of its DSM programs, Manitoba Hydro uses the International Performance Measurement and Verification Protocol (IPMVP) and the Uniform Methods Project (UMP) as guides. Both of these resources provide an overview of current best practices for verifying the impacts of DSM activities in program impact evaluations.

Manitoba Hydro takes a comprehensive approach to evaluating its DSM programs. Impact evaluations are undertaken internally on an annual basis on all DSM programs to document Manitoba Hydro's DSM efforts and to determine the electric and natural gas savings and cost-effectiveness of the DSM programs. Furthermore, Manitoba Hydro has begun to contract with consultants to undertake impact evaluations to provide an objective review and analysis, and to validate achieved energy and demand savings and cost-effectiveness results. An action plan is developed for each impact evaluation based on recommendations from the consultant's report.

1.5.1 External Impact Evaluations

Results from three external impact evaluations covering the 2015/16 fiscal year have been included in this report:

- Commercial New Buildings
  (completed December 22, 2016)
- Refrigerator Retirement
  (completed January 5, 2017)
- Residential LED Lighting
  (completed January 9, 2017)

2.0 Power Smart Portfolio Review

Manitoba Hydro's Power Smart efforts include DSM support programs, cost recovery programs, energy efficient codes and standards and incentive-based Power Smart programs. The following section includes a synopsis of the current Power Smart initiatives.

2.1 Power Smart DSM Support Programs & Cost Recovery Programs

One of the primary drivers of Manitoba Hydro's Power Smart activities is providing value-added customer service. This is achieved by offering customers information and advice, financing services, access to energy efficiency information and providing energy efficient solutions. Through these efforts, Manitoba residents and businesses are provided a number of benefits including:

- Enabling customers to improve the comfort and productivity of their work and home environments while reducing their energy bills;
- Lower electricity rates;
- Assisting businesses in becoming more competitive in national and international markets; and
- Creating employment opportunities within Manitoba for manufacturers, distributors, retailers, trade allies and installers of energy efficient products and services.

2.1.1 Launch Date of DSM Support Programs & Cost Recovery Programs

Exhibit 2.1.1-A identifies the launch dates of all current and discontinued DSM support programs and cost recovery programs.

Exhibit 2.1.1-A
Launch Date of DSM Support Programs & Cost Recovery Programs

INITIATIVE	LAUNCH DATE
RESIDENTIAL	
Power Smart Residential Loan Program	February, 2001
Residential Earth Power Program	April, 2002
Power Smart Residential PAYS Program	November, 2012
COMMERCIAL	
Power Smart Recreation Facility Survey	May, 1998
Religious Buildings Initiative	May, 2001
Power Smart for Business PAYS Program	September, 2013
DISCONTINUED/COMPLETED PROGRAMS	
ecoENERGY Program^	March, 2001
Wisdom in Saving Energy (W.I.S.E.) Home Program	June, 2001
Power Smart Energy Manager - Pilot	September, 2001
Energy Saver Presentations^^	January, 2002
New Home Program Workshop	January, 2002
R-2000 Home Program Component of the New Home Program*	February, 2002
Power Smart Design Standards**	September, 2002
Solar Hot Water Heating	November, 2008

^ Formerly called EnerGuide.
^^ Formerly called Home Energy Saver Workshops.
* In 2004/05, the R-2000 Home Program was grouped under the New Home Program.
** In 2009/10, Power Smart Design Standards became a component of the incentive-based New Buildings Program.

Exhibit 2.1.1-B provides an overview of the annual and total number of participants of DSM support programs and cost recovery programs.

Refer to APPENDIX C - 'Total Power Smart Participation' for detailed historical participation.

Exhibit 2.1.1-B

DSM Support Programs & Cost Recovery Programs Participation

INITIATIVE	2015/16	Cumulative
	Number of Participants	
RESIDENTIAL		
Financing Programs		
Power Smart Residential Loan*	4,922	85,948
Power Smart Residential PAYS Program	165	718
Residential Earth Power Program		
Geothermal Loan	15	1,260
Solar Hot Water Heating	-	14
Mail-In/Online Energy Assessments	223	5,101
	5,325	93,041
COMMERCIAL		
Power Smart for Business PAYS Program	27	48
Religious Buildings Initiative	2	239
Power Smart Recreation Facility Survey	2	75
	31	362
DISCONTINUED/COMPLETED PROGRAMS		
ecoENERGY Program^	-	54,272
Wisdom in Saving Energy (W.I.S.E.) Home Program	-	5,391
Energy Saver Presentations^^	-	3,956
New Home Program Workshops	-	854
Earth Power Consumer Workshops**	-	688
R-2000 Home Program Component of the New Home Program^^^	-	63
Power Smart Energy Manager - Pilot	-	38
Solar Hot Water Heating	-	36
	-	65,298
TOTAL	5,356	158,701

* Participation includes only completed projects.
** Includes residential and commercial participants.
^ Formerly called EnerGuide. Participation includes 'D' & 'E' audits. As Manitoba Hydro highly subsidized the evaluation costs of Amerispec and EnerGuy participants, they are included in the participation figures for 2011/12 and 2012/13.
^^ Formerly called Home Energy Saver Workshops.
^^^ In 2004/05, the R-2000 Home Program was grouped under the New Home Program.
Note: This table includes electric and natural gas Power Smart participants.
Customers may participate in more than one Power Smart program.
Participation is measured by completed projects, includes free riders, and excludes free drivers and market transformation.

2.1.2 DSM Support Programs & Cost Recovery Programs Activity

DSM support programs and cost recovery programs provide numerous benefits to Manitobans. Depending on the nature of the program, savings resulting from specific programs will be quantified to the extent that these savings can be reasonably determined. Estimated savings are generally calculated using engineering estimates, as well as sales and market data provided by program coordinators. Regular assessments include a qualitative evaluation of the benefits, with service levels adjusted accordingly. The following outlines the Power Smart DSM support programs and cost recovery programs that were running in 2015/16.

Power Smart Residential Assistance

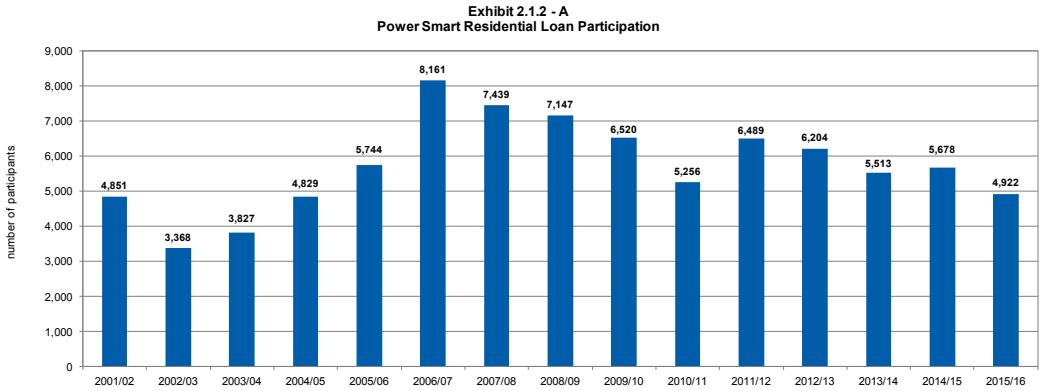
A number of tools are offered to residential customers to encourage and assist homeowners to make energy efficient renovations and energy use decisions that increase comfort and reduce home energy bills. The following services are offered under this initiative:

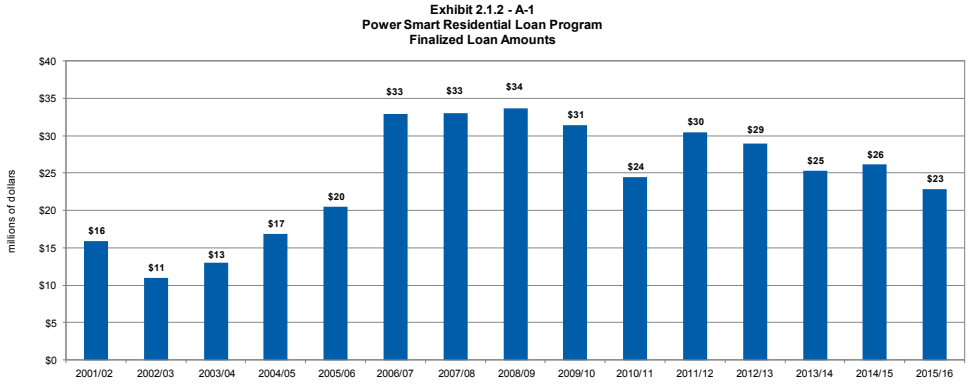
- Customers can complete a mail-in or online survey to evaluate energy use in their home. Regardless of the method of participation, the customer receives a customized report that includes easy-to-read graphs summarizing overall energy use, a breakdown of the house characteristics contributing to heating costs, a list of recommended upgrades and a Power Smart target comparing energy consumption of their home to a home upgraded with the recommended Power Smart measures;
- Detailed brochures and renovation booklets providing information for selecting and installing Power Smart measures and, tips for achieving low cost or no-cost energy savings in the home;
- Customers can email a Power Smart Energy Expert their energy conservation-related questions; and
- Convenient on-bill financing to complete energy efficient renovations as outlined below.

Power Smart Residential Loan

The Power Smart Residential Loan Program offers convenient on-bill financing to encourage homeowners to complete energy efficient renovations to increase comfort and reduce home heating bills. Eligible upgrades include heating systems, ventilation, insulation, windows, doors and water heating equipment. Participants can borrow up to $7,500 ($5,500 for natural gas furnaces) and repay the amount on their energy bill.

Since its inception, the Power Smart Residential Loan Program has had more than 85,000 participants, borrowing more than $364 million in total. To date, just over $63 million in loans remain outstanding. Exhibit 2.1.2-A displays participation under the Power Smart Residential Loan Program, and Exhibit 2.1.2-A-1 summarizes finalized loan amounts.





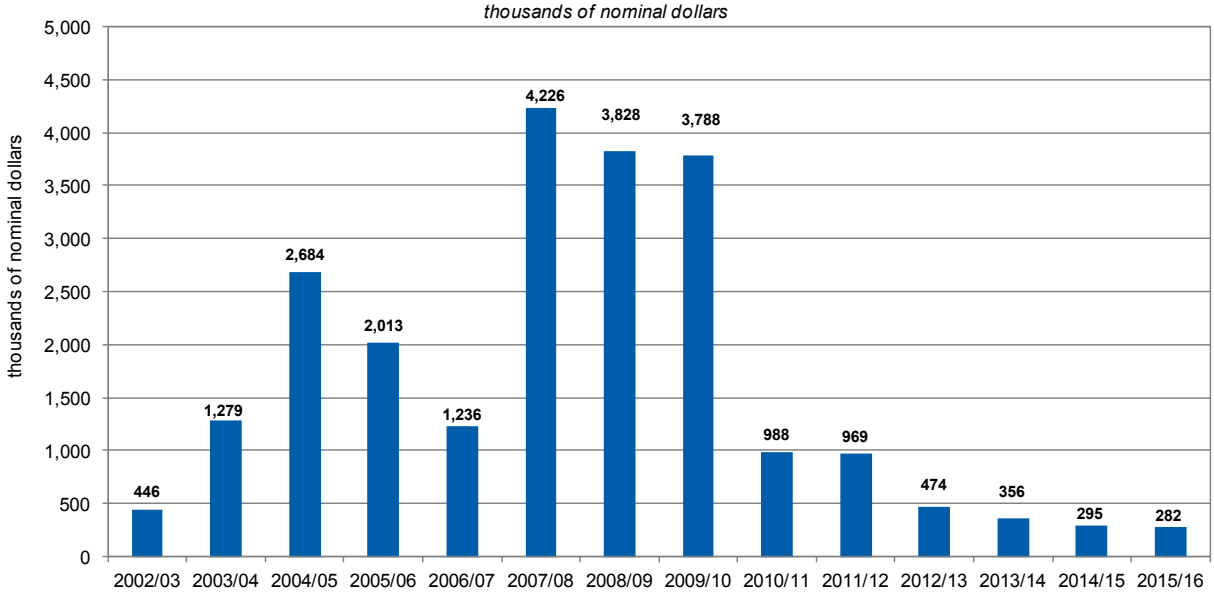
Residential Earth Power Program

It is estimated that over 9,000 residential geothermal heat pump installations have occurred in the province to date. Encouraging and supporting these installations is the Residential Earth Power Program, whose primary objective is to maximize the adoption of geothermal heat pump technology in order to offset the use of conventional electric heating systems. The program offers convenient financing through the Residential Earth Power Loan. Participants can borrow up to $20,000 over a 15-year period. Since its inception in 2002, over 1,260 customers have participated in the program, equating to nearly $23 million in financing, as displayed in Exhibit 2.1.2-B.

In recent years, the number of installations has been declining and has currently hit a plateau because of low natural gas prices due to an increased supply through the emergence of shale gas exploration.

The loan also offers financing for residential solar water heating systems. For a maximum term of 15 years, up to $7,500 can be borrowed. To date, there have been a total of 14 solar installations, which is equivalent to $92,700 in financing.

Exhibit 2.1.2 - B
Residential Earth Power Loan
Annual Loan Amounts
thousands of nominal dollars



Power Smart Residential PAYS Program

In June 2012, the Province of Manitoba passed Bill 24 - The Energy Savings Act. In response, Manitoba Hydro launched the Power Smart Residential PAYS Program on November 5, 2012.

The Power Smart Residential PAYS Program offers extended financing terms for energy efficient upgrades. Customers can use their estimated annual utility bill savings from installing a particular efficient measure, to pay for that measure (or part thereof). Customers have the option to transfer the monthly payment to the next homeowner or tenant, who will also benefit from the upgrade.

Since March 31, 2016, the Power Smart Residential PAYS Program has had 718 participants, borrowing over $4.9 million, as displayed in Exhibits 2.1.2-C and 2.1.2-C-1.

Exhibit 2.1.2-C
Power Smart Residential PAYS Program

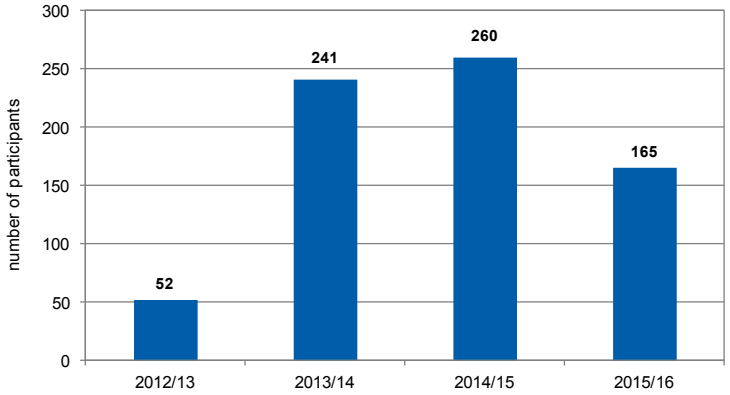
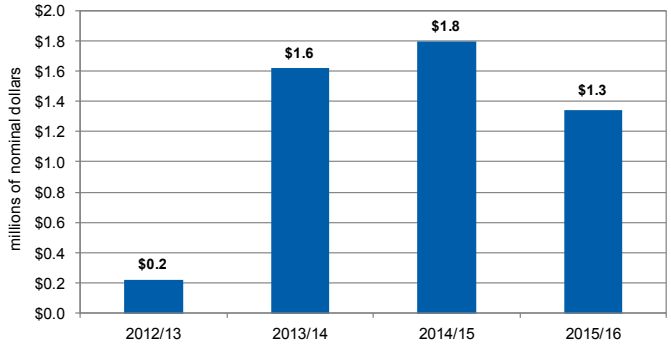


Exhibit 2.1.2 - C-1
Power Smart Residential PAYS Program
Finalized Loan Amounts
millions of nominal dollars



Power Smart for Business PAYS Financing Program

Manitoba Hydro launched the Power Smart for Business PAYS Program September 3, 2013. This financing program offers extended financing terms for commercial and industrial energy efficient upgrades. The upgrades eligible for financing under the program will result in a monthly repayment that is based on estimated annual bill savings generated by the upgrade and averaged out on a monthly basis over a year. As of March 31, 2016 the Power Smart for Business PAYS Program has had 48 participants, borrowing approximately $1,657,000.

Religious Buildings Initiative

The Religious Buildings Initiative was designed to assist religious organizations in finding ways to make their buildings more energy efficient. This initiative offers a benchmark audit and a loan (5.5% interest rate) to assist religious facilities in carrying out efficiency improvements. The benchmark audit report outlines how energy is being used in the building and indicates potential energy saving measures. As part of the Religious Buildings Initiative, a guide called *Energy Efficiency Guide for Religious Buildings* was created. This energy and water efficiency guide assists people involved in the operation and maintenance of religious buildings to develop an action plan and take steps toward improving the efficiency of their buildings.

Power Smart Recreation Facilities Survey

The Power Smart Recreation Facilities Survey was created to help ice arenas and curling rinks reduce their operating costs by providing operators with an understanding of the energy use and potential energy saving measures within the facility. Technical staff at Manitoba Hydro review comprehensive surveys completed by facility operators and an evaluation report is prepared. The report compares the energy use of the facility with similar facilities in Manitoba and provides a list of possible energy saving opportunities. In October 2002, a guide called *Saving Money Through Energy Efficiency - Guidelines for Operators of Manitoba's Rinks and Arenas* was developed to assist rink operators to operate their facilities more efficiently, and to present practical ideas for saving money by reducing energy use. This guide has been updated and is now called *Energy Efficiency Guide for Ice Arenas and Curling Rinks*. An online version of the guide became available in January 2014.

2.2 Energy Codes, Standards & Energy Efficiency Regulations

Energy codes and performance standards are important tools for advancing energy efficiency at every stage of market transformation, starting with initial evaluations of energy efficiency improvement opportunities, through to the design and implementation of incentive-based and non-incentive-based conservation programs intended to accelerate the adoption of energy efficient measures. And finally, as core ingredients for efficiency regulations aimed at removing laggard technologies from the market.

Performance standards provide the fundamental basis on which to measure, report and compare energy performance. As such, they form a core building block for evaluating the performance of energy efficient measures and comparing performance between competing products and technologies. Energy codes establish the criteria for understanding, quantifying and managing the energy performance of buildings and energy-consuming equipment operating within them. Performance standards are generally a key component of energy codes, providing the basis on which to measure energy performance, while energy codes establish the metrics for evaluating building design and overall performance. Together, these two mechanisms are used to develop programs that support the optimal or minimum use of energy in the marketplace, limited only by technical potential and economic constraints.

Energy efficiency regulations are typically implemented towards the end of the market transformation process as energy efficient technologies mature and become generally accepted within the industry. Regulations are designed to remove technologies from the market that lag behind an established performance baseline agreed to by industry and government regulators. While the level of efficiency achieved through energy efficiency regulations is typically less than the optimal or minimum level of energy consumption achieved through directed incentive-based and non-incentive-based programming, regulation continues to be an effective and permanent method for removing products from the market with lower than desired energy performance.

Manitoba Hydro has adopted a proactive strategy that supports the development and acceptance of industry-wide performance standards and energy codes, through active participation in standards organizations such as the Canadian Standards Association Strategic Steering Committee on Performance, Energy Efficiency and Renewables (SCOPEER) and work with energy code steering committees at both federal and provincial levels. In many instances, Manitoba Hydro representatives are leaders within these working groups, driving forward development and acceptance of new performance standards and energy codes. Further to this, Manitoba Hydro adopts the use of these standards and codes in the design and implementation of its conservation programs, enhancing the overall effectiveness and market acceptance of these efforts. Finally, Manitoba Hydro works closely with federal, provincial and municipal regulators to identify and remove technologies from the market that lag behind accepted performance thresholds, providing support for the development and adoption of energy efficiency regulations. These efforts prevent products and measures with poor energy performance from gaining a foothold in the market and compromising efforts to transform markets to a more energy efficient state.

2.3 Power Smart Incentive-Based Programs

Power Smart incentive-based programs are designed in consideration of specific market parameters and characteristics impacting market acceptance of the targeted energy efficient technology or product. Examples of such factors are industry/customer awareness and appetite for acceptance, availability of competing products, state of product life cycles, cost barriers, training barriers, state of existing codes and standards, etc.

2.3.1 Launch Date & Participation of Incentive-Based Power Smart Programs

Exhibit 2.3.1-A identifies the launch dates of current and past Power Smart incentive-based programs.

Exhibit 2.3.1-B provides the annual and total participation of each incentive-based program.

Refer to APPENDIX C - 'Total Power Smart Participation' for a detailed summary of historical participation.

For a description of current incentive-based Power Smart programs, see list in Section 2.3.2. APPENDIX D provides a synopsis of discontinued Power Smart programs.

Exhibit 2.3.1-A

Launch Date of Incentive-Based Programs

PROGRAM	LAUNCH DATE
RESIDENTIAL	
Home Insulation	May, 2004
Affordable Energy	December, 2007
Affordable Energy Fund - Propane & Oil Furnace/Boiler	May, 2009
Water & Energy Saver	September, 2010
Refrigerator Retirement	June, 2011
Community Geothermal	June, 2013
Residential LED Lighting	October, 2014
Solar Hot Water Tank Pilot	December, 2014
Drain Water Heat Recovery	April, 2015
New Home (Redesign)	October, 2015
COMMERCIAL	
Commercial Lighting	April, 1992
Internal Retrofit	July, 1995
Commercial Custom Measures	December, 1995
Commercial Building Envelope	December, 1995
Commercial Geothermal	December, 1995
Commercial HVAC	September, 2003
Commercial Building Optimization	April, 2006
Commercial Refrigeration	April, 2006
Commercial Kitchen Appliances	January, 2008
Commercial Network Energy Management	May, 2008
Commercial New Buildings	April, 2009
Commercial CO2 Sensors	April, 2009
LED Roadway Lighting	February, 2013
Commercial Water Heating	April, 2015
Power Smart Shops (Re-launch)	October, 2015
INDUSTRIAL	
Performance Optimization	June, 1993
Natural Gas Optimization	September, 2006
CUSTOMER SELF-GENERATION	
Bioenergy Optimization	March, 2006
Load Displacement	April, 2014
RATE/LOAD MANAGEMENT	
Curtailable Rates	November, 1993

Exhibit 2.3.1-A (Continued)

Launch Date of Incentive-Based Programs

PROGRAM	LAUNCH DATE
RESIDENTIAL DISCONTINUED/COMPLETED	
Outdoor Timer	October, 1989
Refrigerator/Freezer Buy-Back Pilot	1991/92
Residential Showerhead Pilot	1991/92
EE Water Savings Measures Component of the 'No Worry Plan'	November, 1996
EE Water Tank Measures Component of the 'No Worry Plan'	November, 1996
New Home	February, 2004
Compact Fluorescent Lighting	September, 2004
Seasonal LED Lighting	November, 2005
High Efficiency Furnace/Boiler	November, 2005
Residential Appliances	June, 2006
Programmable Thermostat Pilot	October, 2006
Energy Efficient Light Fixtures	October, 2006
Solar Hot Water Heating (Incentive Component)	November, 2008
COMMERCIAL DISCONTINUED/COMPLETED	
Roadway Lighting	April, 1991
Sentinel Lighting Conversion	April, 1991
Commercial Showerhead Pilot	1991/92
Infrared Heat Lamps	1991/92
Agricultural Demand Controller	July, 1992
Livestock Waterer	October, 1994
Commercial Construction - Air Barrier Component	December, 1995
Commercial Construction - Air Conditioning Component	December, 1995
Commercial Parking Lot Controllers	December, 1995
Agricultural Heat Pads	April, 1998
City of Winnipeg Power Smart Agreement	September, 2002
Commercial Rinse & Save	July, 2006
Commercial Clothes Washers	July, 2008
Power Smart Energy Manager*	November, 2008
Power Smart Shops	February, 2009
INDUSTRIAL DISCONTINUED/COMPLETED	
High Efficiency Motor	September, 1991

* During 2015/16, this program was undergoing redesign.

Exhibit 2.3.1-B

Incentive-Based Power Smart Program Participation

PROGRAM	2015/16	Cumulative
	*Number of Participants**	
RESIDENTIAL		
Residential LED Lighting	458,890	892,446
Water & Energy Saver	22,852	162,229
Refrigerator Retirement	10,710	45,622
Affordable Energy	2,759	13,653
Home Insulation	2,103	38,756
Community Geothermal	67	242
Drain Water Heat Recovery	36	87
Solar Hot Water Tank Pilot	-	-
New Home (Redesign)	-	-
	497,417	1,153,035
COMMERCIAL		
LED Roadway Lighting	27,932	28,868
Commercial Lighting	1,059	14,993
Commercial Kitchen Appliances	587	1,059
Commercial Building Envelope	359	3,352
Commercial Refrigeration	290	2,077
Power Smart Shops (Re-launch)	195	903
Internal Retrofit	145	1,630
Commercial HVAC	142	860
Commercial New Buildings	29	79
Commercial Custom Measures	6	89
Commercial Geothermal	5	140
Commercial Building Optimization	-	16
Commercial Network Energy Manager	-	12
	30,749	50,078
INDUSTRIAL		
Performance Optimization	55	841
Natural Gas Optimization	9	104
	64	945
DISCONTINUED/COMPLETED	-	500,543^
EFFICIENCY PROGRAMS SUBTOTAL	528,241	1,708,612
CUSTOMER SELF-GENERATION		
Bioenergy Optimization**	13	32
Load Displacement**	1	1
	14	33
RATE/LOAD MANAGEMENT		
Curtailable Rates**	3	5
	3	5
TOTAL	528,247	1,708,639

* Participation is defined as one household for residential programs, and one project for commercial/industrial programs.
* * Annual participation represents the number of customers who participate each year. Cumulative participation represents the number of unique participants to date.
^ This includes 343,381 sales under the Residential Compact Fluorescent Lighting Program.
Notes: This table includes electric and natural gas Power Smart participants.
Customers may participate in more than one Power Smart program and are counted multiple times (except for Bioenergy Optimization, Load Displacement and Curtailable Rates, where only unique participants are counted).
Participation is measured by number of completed projects, includes free riders, and excludes free drivers and market transformation.

2.3.2 Residential Programs

The residential programs have been established to serve homeowners throughout the province.

Water & Energy Saver Program

The Water & Energy Saver Program offers free Water & Energy Saver kits to residential customers. Each kit contains up to two low-flow showerheads, low-flow faucet aerators, water heater pipe wrap and a refrigerator/freezer thermometer.

Affordable Energy Program

The Affordable Energy Program is designed to assist qualifying lower income homeowners and renters in implementing energy efficiency upgrades. Energy efficiency measures include insulation upgrades, high-efficiency natural gas furnace upgrades, pre and post in-home energy evaluations, and installation of basic energy efficiency items such as LEDs and low-flow showerheads. These upgrades can provide significant energy savings and decrease customer energy bills, while increasing the level of home comfort. The program has now completed over 13,500 homes, achieving cumulative annual energy savings of nearly 21.8 GW.h and natural gas savings of 8.4 million cubic metres. These energy savings have reduced participating customers' bills by approximately $1.7 million in electricity bills and more than $2.3 million in natural gas bills each year.

Home Insulation Program

Information and financial incentives are offered to encourage owners of existing homes to upgrade their insulation to Power Smart levels.

Community Geothermal Program

The Power Smart Community Geothermal Program launched in June 2013. The program utilizes the existing framework of a pilot conducted with AKI Energy, an indigenous non-profit social enterprise group, whereby geothermal heat pump systems are installed on a mass scale throughout First Nations communities. Bulk purchasing heat pumps helps mitigate the high capital cost barrier to installing geothermal systems. Manitoba Hydro's Residential PAYS Program allows community members to pay for the majority of the geothermal system through the energy savings realized by converting their heating/air conditioning systems to a geothermal system. In cases where customers will not achieve enough savings to justify the cost of the geothermal system, Manitoba Hydro will provide a financial incentive. Through partnership with AKI Energy, the program also creates employment opportunities for First Nations communities. Band members are trained to take part in the installation and ongoing maintenance of the geothermal systems. The training is funded by the First Nations communities themselves. As of March 31, 2016, the program has had four First Nations communities participating, with 242 installations to date.

Refrigerator Retirement Program

The Refrigerator Retirement Program provides residential customers with free in-home pick-up of their old, inefficient refrigerators and freezers, paying customers a $50 incentive for each appliance retired.

First Nations Power Smart Program

Manitoba Hydro continues to have great success in delivering the First Nations Power Smart Program by working directly with First Nations Bands while building strong relationships. Manitoba Hydro is committed to increasing the energy efficiency in First Nations Communities as evidenced by its aggressive approach with a dedicated First Nations Energy Advisor. The program provides free basic energy savings measures such as LED light bulbs, showerheads, faucet aerators, pipe wrap, window kits, draft stoppers and free insulation upgrades for qualifying homes. A new direct install program was launched for basic measures that provides employment for members in the community to complete the installations. During the 2015/16 fiscal year, a total of 1,340 homes were retrofitted with basic measures through the direct install program, and 569 insulation upgrades were completed.

Residential Solar Hot Water Tank Pilot

In December 2014, Manitoba Hydro launched a Residential Solar Hot Water Tank Pilot, with the conversion of 9 homes from electric hot water tank systems to solar hot water tank systems in Peguis First Nation. The program, which was led through a partnership with Aki Energy, an indigenous non-profit social enterprise group, focuses on reducing the cost of water heating for First Nations communities, providing much needed bill reductions. The other key aspect of the program is the provision of real and transferable job training and employment for local community members receiving technical and hands-on solar hot water tank system installation training.

Drain Water Heat Recovery Program

The Residential New Homes - Drain Water Heat Recovery (DWHR) Program was established in April 2015. The program aimed to reduce energy consumption in homes with electric water heaters through the installation of DWHR systems. The program covered the costs to the home-builder of the DWHR device, as well as an incremental installation rebate of up to $150.

DWHR systems capture lost heat from hot water going down the drain, using it to pre-heat cold water entering the water heater. This results in less energy needed to heat water to the desired temperature. Energy is saved during simultaneous flow consumption. DWHR systems can reduce a water heater's energy consumption by up to 25%, as well as extend the life of the water heater.

Drain water heat recovery (DWHR) was adopted into the Manitoba Building Code Amendment 9.36 and became enforceable on April 1, 2016. The code revision requires the inclusion of a minimum 42% efficient vertical DWHR system in most buildings of residential occupancy. The addition of DWHR is regarded by many as the most significant change in the 9.36 amendment. The adoption of this code change effectively ended the Residential New Homes – DWHR program.

Residential LED Lighting Program

The Residential LED Lighting Program encourages customers to install ENERGY STAR® certified LED bulbs throughout their home with retail point-of-sale rebates and comprehensive lighting education initiatives.

New Home Program (Redesign)

The redesigned Power Smart for New Homes Program is an incentive program launched in late-2015, targeting Manitoba homebuilders.

The program encourages builders to build homes which are at least 20% more efficient than conventional homes. Power Smart for New Homes offers a unique incremental incentive structure that provides progressively larger incentives for greater levels of performance, along with rebates for energy modeling and integrated design services. The program offers flexibility in participation by accepting prescriptive and custom designs, as well as complementary certification programs and approaches, including Passive House, Net-Zero and Net-Zero Ready designs, R-2000 and others.

2.3.3 Commercial Programs

The commercial programs have been established to serve commercial, institutional and industrial customers.

Commercial Lighting Program

The Commercial Lighting Program incents commercial and industrial customers to upgrade to energy efficient lighting systems. Manitoba Hydro provides education, training and technical support to customers and industry to assist customers in choosing lighting systemsd that meet the needs of their business, reduce maintenance costs and save electricity.

Commercial Building Optimization Program

The Commercial Building Optimization Program encourages commercial customers with existing buildings to use an investigation and adjustment process known as retro-commissioning to help return their buildings to their intended operating methods.

Internal Retrofit Program

The Internal Retrofit Program promotes energy efficiency improvements at Manitoba Hydro owned facilities including generating stations, commercial buildings and corporate housing. The program provides technical support and financial assistance for the design and implementation of various energy efficient measures such as lighting, building envelope, HVAC and custom measures. The program provides up to 100% of the material and labour costs associated with the upgrade.

Commercial HVAC Program

The Commercial HVAC Program encourages the use of high efficiency heating, ventilation and cooling systems, such as near-condensing and condensing boilers, CO2 sensors and energy efficient water-cooled chillers.

Commercial Building Envelope Program

The Commercial Building Envelope Program encourages building owners to install window systems and/or upgrade insulation levels in order to meet Power Smart levels in their renovation plans. Upgrading a building's envelope can reduce air leakage which will result in lowering energy costs to heat and cool the building, while providing improved thermal comfort and indoor air quality for occupants.

Network Energy Management Program

The Network Energy Management Program encourages the installation of network management software. The software shuts down PCs when they are inactive, while still allowing network administrators to perform regular maintenance tasks, such as software upgrades and security patches.

Custom Measures Program

The Custom Measures Program encourages commercial customers who are renovating, undergoing plant expansion or building new facilities to improve system performance by installing or upgrading technologies such as direct digital controllers, variable frequency drives and heat recovery ventilation systems. The program is designed to serve customers undertaking energy efficient projects that are not specifically supported by the other existing Power Smart programs.

Commercial Kitchen Appliances Program

The Commercial Kitchen Appliances Program encourages customers to upgrade to ENERGY STAR® qualified steamers and fryers, and energy efficient low-flow pre-rinse spray valves.

Commercial Refrigeration Program

The Commercial Refrigeration Program offers more than 15 different incentives to encourage grocery stores, restaurants, convenience stores and more to install energy efficient refrigeration equipment for their walk-ins, display cases and mechanical rooms in order to reduce energy consumption. In addition to lowering energy bills, the program offers many other benefits including: increased profitability, longer life for perishables, lower maintenance costs, longer equipment life and a more comfortable environment for customers.

Commercial Water Heater Program

The Commercial Water Heater Program encourages the use of high efficiency natural gas water heaters (>90% thermal efficiency) in existing commercial buildings through financial incentives and educational initiatives.

Power Smart Shops Program

The Power Smart Shops Program is designed specifically for small businesses, offering a variety of free water and energy saving measures installed directly on the spot, such as low-flow faucet aerators, low-flow spray valves and basic LED screw-in lamps.

For customers interested in pursuing further lighting retrofits, the program also offers a free lighting assessment and covers up to 70% of total project costs associated with further lighting upgrades, such as T8 ballast upgrades, LED linear lamps and specialty LED screw-in lamps.

New Buildings Program

The New Buildings Program provides technical guidance and financial incentives for designing, constructing and operating new, energy efficient buildings in Manitoba.

LED Roadway Lighting Program

The LED Roadway Lighting Program began as a pilot program in February 2013, then formally launched in June 2014. The goal of the program is to convert all existing high pressure sodium roadway lighting in the province to LED over the next five years.

Commercial Geothermal

This program provides technical information and financial incentives to customers who install a geothermal heat pump system to offset a conventional electric heating system in commercial buildings.

2.3.4 Industrial Programs

The industrial programs have been established to serve the industrial customers throughout the province to encourage the optimization and efficiency of their processes.

Performance Optimization Program

The Performance Optimization Program encourages industrial and large commercial customers to study and implement energy efficiency measures in their electrotechnology processes and motor-drive systems.

Natural Gas Optimization Program

This program provides industrial and large commercial customers with the technical support and financial incentives necessary to identify, investigate and implement systematic efficiency improvements in the natural gas-fired systems throughout their facilities.

2.3.5 Rate/Load Management Programs

Curtailable Rates Program

Large industrial customers are provided with financial incentives by way of a monthly credit on their electricity bill in exchange for having electrical load available for curtailment if called upon by Manitoba Hydro.

2.3.6 Customer Self-Generation Programs

Bioenergy Optimization Program

The Bioenergy Optimization Program encourages customers to install, operate and maintain customer-sited load displacement generation systems that employ heat-only and combined heat and power (CHP) systems fueled by renewable energy sources, primarily biomass. The target market consists of customers that have readily available, low-cost sources of biomass, a continual need for heat and/or power, and the capability to operate and maintain biomass-to-energy conversion systems.

Load Displacement Program

The Load Displacement Program encourages customers to install, operate and maintain customer-sited load displacement generation systems that employ combined heat and power (CHP) and rely on the use of waste streams and by-products, locally available, low-cost sources of biomass fuel and other renewable energy sources. The target market consists of several large-sized customers or customer sectors that are striving to optimize their operations and improve environmental performance.

3.0 Power Smart Success Stories

Manitoba Hydro Presented with 2016 Energy Star Utility of the Year Award

Manitoba Hydro was the recipient of the prestigious 2016 Utility of the Year award, presented by the ENERGY STAR Program of Natural Resources Canada.

The award recognized excellence in the promotion of energy efficiency in the 2015 year by a utility to its customers. Energy efficient products save energy, lower utility bills and reduce impacts on the environment. Manitoba Hydro promotes the use of ENERGY STAR certified products as critical for energy conservation and sustainability goals.

Manitoba Hydro Says Farewell to 30,000th Refrigerator

The Refrigerator Retirement Program celebrated the removal of 30,000 refrigerators from Manitoba households. Since the launch of the program in 2011, 30,000 refrigerators and 7,500 freezers have been retired. The removal of these appliances from the electrical grid has resulted in savings to the province of approximately 50 GW.h of electricity. This level of electric energy savings is equivalent to the electricity required to power a town the size of Stonewall for one year.

LEDs Lighting Their Way into Manitoban Homes

The 2015 spring Residential LED Lighting Program retail rebate promotion ran from March 12th to April 12, 2015. Manitoba Hydro partnered with 11 participating retailers, reaching 68 communities across Manitoba through 119 retail outlets. The 2015 fall campaign also ran a promotion through 13 participating retailers across the province from October 1 to October 31, 2015.

The goal of these two campaigns was to rebate 483,000 bulbs by offering a discount at participating retailers. A total of 671,000 bulbs were rebated which was 39% higher than forecasted.

New Flyer Delivers on Energy Efficiency and Environmental Responsibility

With technical assistance and financial support from Power Smart, New Flyer Industries optimized energy efficiency, safety, lighting quality and control, as well as staff comfort through upgrades to existing lighting systems.

The massive lighting project upgraded existing metal halide fixtures to LED fixtures, which use only one-third the energy to produce the same amount of light. The installation of this lighting system will provide an estimated annual energy savings of over 2 GW.h, resulting in annual utility bill reductions of nearly $100,000. The project also reduces greenhouse gas emissions by nearly 1,500 tonnes of CO2e annually, which is equivalent to taking over 300 cars off the road each year.

Brandon General Hospital Caring for Patients and the Environment

Made possible through the support of Power Smart, Brandon General Hospital significantly enhanced energy efficiency while simultaneously reducing water consumption. Supplied and installed free-of-charge to the customer, over 20 inefficient spray valves were replaced with low-flow spray valves throughout Brandon General Hospital operations. The new low-flow spray valves use nearly 50 percent less water than standard flow valves and therefore use less energy to heat the water.

The project is estimated to provide annual savings of 10 thousand cubic metres of natural gas and over 2 million litres of water, resulting in combined energy and water utility bill reductions of nearly $10,000 per year. The project also reduces greenhouse gas emissions by nearly 20 tonnes of CO2e annually, which is equivalent to taking 5 cars off the road each year.

New Power Smart Water Heater Program Launched for Commercial Customers

The Commercial Water Heater Program launched on April 1, 2015, serving to complement the existing suite of programs designed to reduce commercial customers' energy use. Tank and tankless condensing water heaters have several benefits over standard efficiency water heaters, including reduced heating costs, improved first-hour heat recovery, more hot water per input BTU and due to sealed combustion, they are not impacted by negative building air pressure.

Savings over the life of the program are expected to be 18 million cubic metres of natural gas, thus reducing greenhouse gases emissions by 35 thousand tonnes of CO2e, which is comparable to taking nearly 7,000 cars off the road each year.

École Taché – One of Winnipeg's Newest Power Smart Buildings

The new 22,000 square foot school expansion and childcare centre at École Taché exceeds the requirements of the Power Smart New Buildings Program and is designed to be nearly 45% more energy efficient than a typical centre its size. The school has also been designed to obtain a Leadership in Energy and Environmental Design (LEED®) Silver certification.

Energy efficient features of the building include high performance roof and wall insulation, energy efficient dual and triple-pane windows, a high-efficiency electric boiler for in-floor space and water heat, demand-control ventilation with heat recovery, energy efficient fluorescent and LED lighting systems with occupancy controls, low-flow water fixtures and direct digital controls for optimizing HVAC systems.

4.0 Market Results

In the past, the success of Manitoba Hydro's Power Smart initiative was evaluated based on DSM incentive-based program activity alone. However, the true impact of Power Smart also includes the impact of the programs on the market as a whole, or market transformation. Although market transformation is more difficult to measure, Manitoba Hydro has made significant in-roads in developing program-specific methodologies for measuring Power Smart's impact. Wherever possible, Manitoba Hydro has attempted to obtain sales/technology-specific data to calculate a program's true impact. In some instances, qualitative information is used to determine a program's impact on the market. Manitoba Hydro will continue to further quantify and report the influence of market transformation within the Manitoba marketplace.

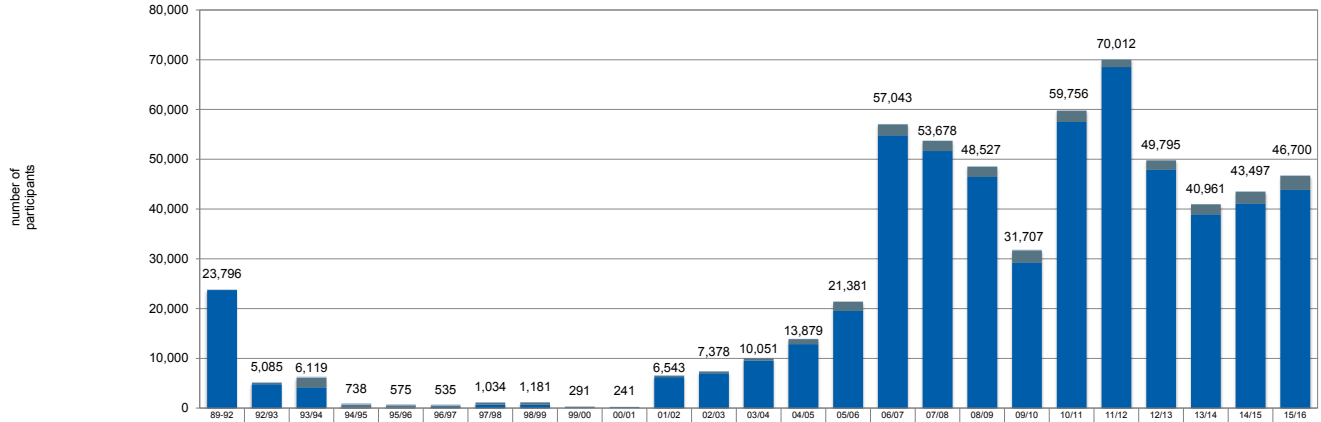
4.1 Power Smart Portfolio Results

The following sections provide an overview of Power Smart portfolio results to date.

4.1.1 Participation in Power Smart Programs

The following graph outlines total Power Smart participation in incentive-based programs, DSM support programs and cost-recovery programs, with participation presented by sector (i.e. residential, commercial and industrial programs).

Exhibit 4.1.1
Power Smart Program Participation



	89-92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Industrial	24	157	202	229	185	182	195	8	4	9	17	25	32	48	50	49	81	99	116	90	73	110	57	82	81
Commercial (excluding LED Roadway Lighting Program conversions)	65	273	1,959	738	575	334	325	500	291	241	304	363	538	1,019	1,848	2,235	2,005	2,079	2,463	2,263	1,487	1,859	2,049	2,410	2,848
Residential (excluding CFLs & LEDs)	23,731	4,812	4,160	0	0	201	709	681	0	0	6,239	7,015	9,513	12,860	19,533	54,808	51,673	46,448	29,244	57,493	68,525	47,936	38,912	41,087	43,852
Total Achieved (excluding CFLs, LEDs & Roadway Lighting)	23,796	5,085	6,119	738	575	535	1,034	1,181	291	241	6,543	7,378	10,051	13,879	21,381	57,043	53,678	48,527	31,707	59,756	70,012	49,795	40,961	43,497	46,700

Note: Includes electric and natural gas participants of DSM support programs, cost recovery programs and incentive-based programs.
Participation associated with codes and standards is excluded.
Curtailable Rates Program participation is included within the industrial sector.
Customers may participate in more than one Power Smart program.
The 343,381 sales under the Residential Compact Fluorescent Lighting Program during 2004/05-2010/11 are excluded.
The 28,868 conversions completed under the LED Roadway Lighting Program during 2013/14-2015/16 are excluded.
The 892,446 sales under the Residential LED Lighting Program during 2014/15-2015/16 are excluded.
Figures may not add due to rounding.

As displayed in the preceding graph, participation in Manitoba Hydro's Power Smart programs continues to be strong. During 2015/16 there were over 533,000 participants in Power Smart DSM support programs and incentive-based programs. Excluding the Residential Compact Fluorescent Lighting (CFL) Program and Residential LED Lighting Program, there have been over 631,000 participants cumulatively. Participation of the Residential CFL Program and Residential LED Program has been excluded to provide a better indication of participation trends. The Residential CFL Program and Residential LED Lighting Program both provide low-cost options for achieving energy efficiency. The Residential CFL Program represents 19% of residential and 18% of overall Power Smart program participation. The Residential LED Lighting Program represents 49% of residential and 48% of overall Power Smart participation. Refer to APPENDIX C for historical Power Smart participation.

4.1.2 Power Smart Portfolio - Impact of Electric Programs

The following tables outline the electricity savings achieved by the Power Smart portfolio during 2015/16 and provide a comparison between achieved results and planned targets, where applicable.

Exhibit 4.1.2-A

Annual GW.h Savings (at generation) - Power Smart Portfolio

	2015/16 Actual	2015/16 Plan^	Total*
INCENTIVE-BASED PROGRAMS	275	216	2,127
CODES & STANDARDS	50	75	769
DSM SUPPORT PROGRAMS	1	1	32
OVERALL IMPACT	326	292	2,928

^ Plan estimates are from the 2015 Power Smart Plan.
* Savings include actual + persisting results, up to and including 2015/16.
Note: Figures may not add due to rounding.

Exhibit 4.1.2-B

Annual Average Winter MW Savings (at generation) - Power Smart Portfolio

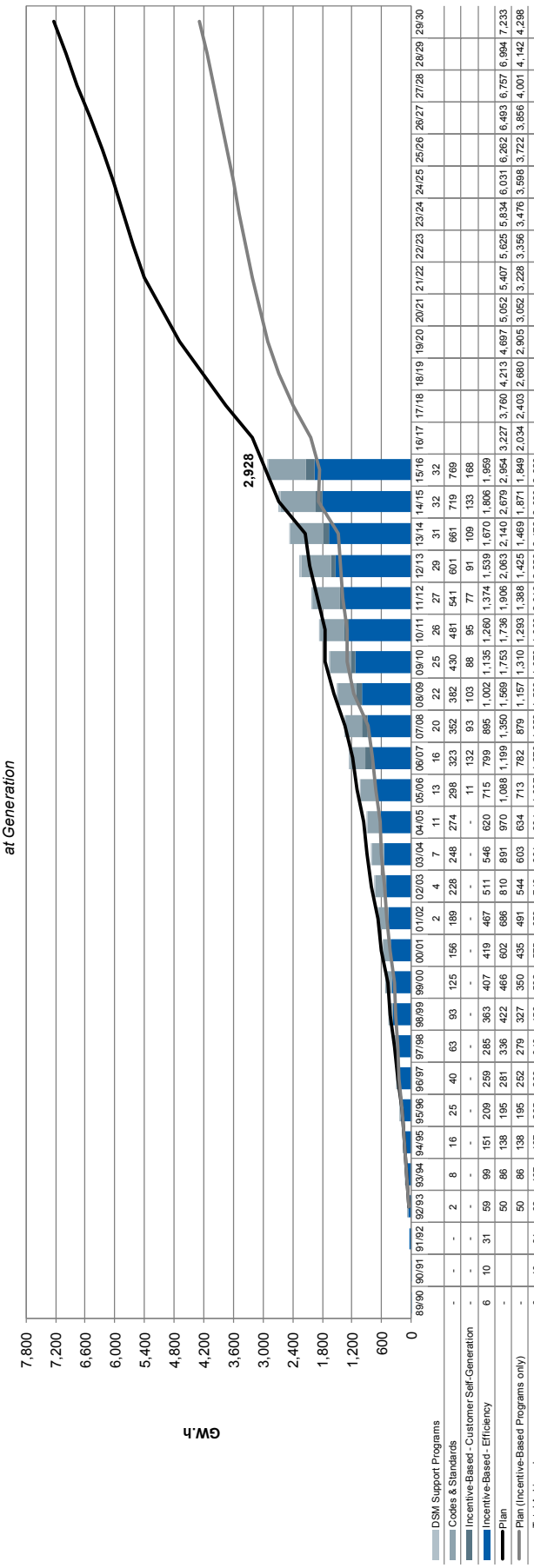
	2015/16 Actual	2015/16 Plan^	Total*
INCENTIVE-BASED PROGRAMS	224	203	601
CODES & STANDARDS	11	18	185
DSM SUPPORT PROGRAMS	0	1	11
OVERALL IMPACT	235	221	797

^ Plan estimates are from the 2015 Power Smart Plan.
* Savings include actual + persisting results, up to and including 2015/16.
Note: MW savings are based on the average of the winter AM & PM system peak savings.
For the Curtailable Rates Program, MW savings reported is expected curtailable load on system at the time a curtailment occurs.
Figures may not add due to rounding.

In 2015/16, the Power Smart portfolio surpassed its electric energy and demand savings targets by 12% and 6%, respectively. However, electric savings resulting from codes and standards were less than planned mainly due to fewer fluorescent lamps than expected installed in Manitoba, as well as inefficient lighting products still available in the market.

The following graphs present the electric savings achieved to date, along with the corresponding targets.

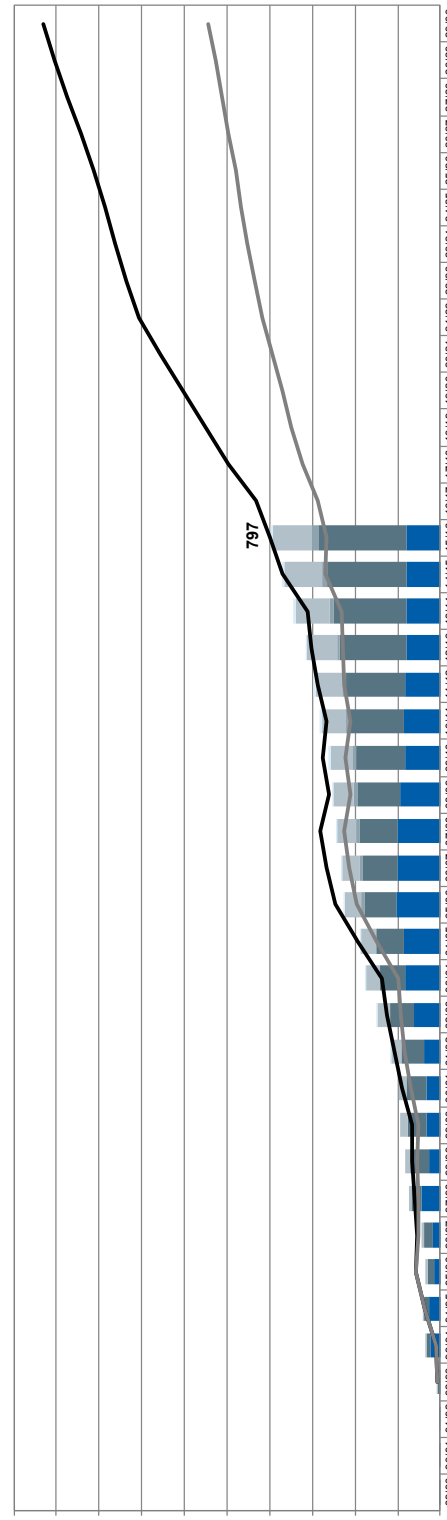
Exhibit 4.1.2 - C
Electric Energy Savings - Power Smart Portfolio
Total Savings Achieved vs. Plan
at Generation



	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
DSM Support Programs	-	-	-	2	8	16	25	40	63	93	125	156	189	228	248	274	298	323	352	382	430	481	541	601	661	719	769														
Codes & Standards	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-														
Incentive-Based - Customer Self-Generation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	132	93	103	88	95	77	91	109	133	168														
Incentive-Based - Efficiency	6	10	31	59	99	151	209	259	285	363	407	419	467	511	546	620	715	799	895	1,002	1,135	1,260	1,374	1,539	1,670	1,806	1,959														
Plan	-			50	86	138	195	281	336	422	466	602	686	810	891	970	1,088	1,199	1,350	1,569	1,753	1,736	1,906	2,063	2,140	2,679	2,954	3,227	3,760	4,213	4,697	5,052	5,407	5,625	5,834	6,031	6,262	6,493	6,757	6,994	7,233
Plan (Incentive-Based Programs only)	-			50	86	138	195	252	279	327	350	435	491	544	603	634	713	782	879	1,157	1,310	1,293	1,388	1,425	1,469	1,871	1,849	2,034	2,403	2,680	2,905	3,052	3,228	3,356	3,476	3,598	3,722	3,856	4,001	4,142	4,298
Total Achieved	6	10	31	62	107	167	235	299	348	456	532	575	659	743	801	904	1,037	1,270	1,359	1,509	1,678	1,863	2,019	2,259	2,472	2,690	2,928														

Note: Figures may not add due to rounding.

Exhibit 4.1.2 - D
Average Winter Demand Savings - Power Smart Portfolio
Total Savings Achieved vs. Plan
at Generation



	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
DSM Support Programs																																										
Codes & Standards				1	2	4	6	10	15	23	32	40	49	59	64	70	76	82	89	97	105	113	127	142	159	174	185														
Incentive-Based - Customer Self-Generation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	16	16	16	16	16	16	10	16	24	30														
Incentive-Based - Efficiency	0	1	4	10	17	26	34	42	46	86	91	93	105	113	119	131	146	162	179	200	231	258	280	311	341	375	411														
Incentive-Based - Rate/Load	-	-	-	-	45	51	27	36	88	53	64	63	75	121	163	169	208	202	199	190	164	170	162	159	161	157	160	863	996	1102	1209	1314	1415	1474	1524	1571	1627	1684	1750	1808	1863
Plan				12	18	75	114	108	118	134	135	178	216	249	273	385	491	535	564	524	551	531	578	603	620	741	800	741	647	696	739	785	834	873	903	932	961	992	1023	1055	1087
Plan (Incentive-Based Programs only)				12	18	75	114	101	104	110	105	136	166	183	200	296	394	429	449	421	442	421	454	454	462	541	533	573	647	696	739	785	834	873	903	932	961	992	1023	1055	1087
Total	0	1	4	10	64	80	68	87	149	162	187	196	230	295	348	373	450	466	488	509	523	566	594	633	687	741	797														

Note: Figures may not add due to rounding.

Cumulatively, the entire Power Smart portfolio has saved 2,928 GW.h and 797 MW (at generation), meeting their respective targets.

4.1.3 Power Smart Portfolio - Impact of Natural Gas Programs

The following table and graph present natural gas savings achieved by the Power Smart portfolio:

Exhibit 4.1.3 - A

Annual Natural Gas Savings - Power Smart Portfolio

	2015/16 Actual	2015/16 Plan^	Total*
		millions of cubic metres	
PROGRAM & INITIATIVE			
Incentive-Based Programs	7.1	6.9	84.8
Codes & Standards	2.8	3.4	21.8
DSM Support Programs	0.3	0.4	21.4
	10.2	10.7	127.9
INTERACTIVE EFFECTS			
Incentive-Based Interactive Effects	(1.3)	(1.9)	(15.8)
NET IMPACT OVERALL	8.9	8.9	112.1

^ Plan estimates are from the 2015 Power Smart Plan.
* Savings include actual + persisting results, up to and including 2015/16.
Note: Figures may not add due to rounding.

The Power Smart portfolio provided natural gas savings of 10.2 million cubic metres in 2015/16, which was 5% less than planned.

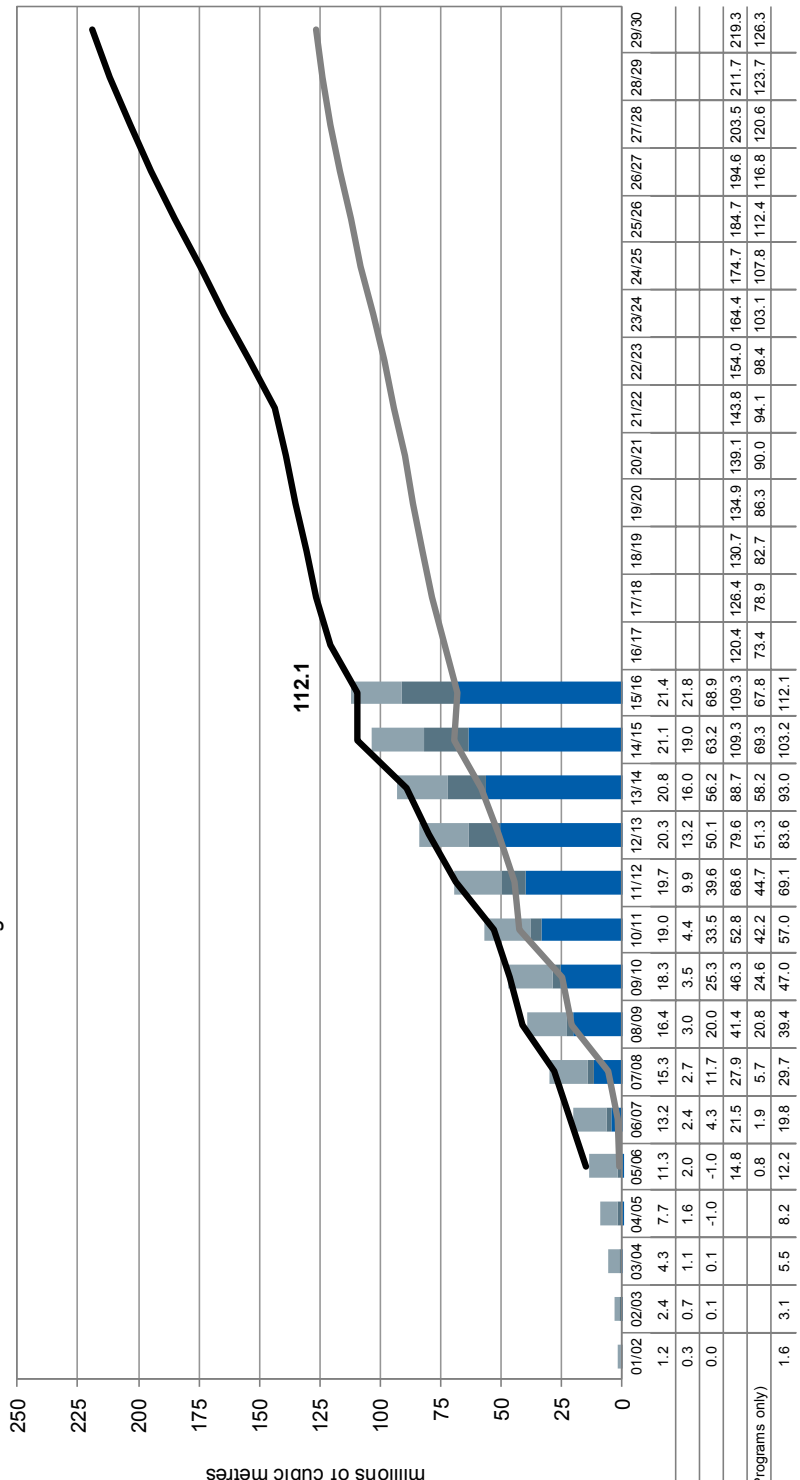
Some electric Power Smart programs result in an increase or decrease in natural gas consumption (interactive effects). For example, a more energy efficient lighting system emits less heat, requiring more energy to heat the space. When the heat is produced through natural gas heating systems, the interactive effects are taken into account when determining the natural gas savings. These interactive effects represent the increase in natural gas consumption for gas-heated homes resulting from the installation of energy efficient lighting systems.

After interactive effects, the Power Smart portfolio achieved net natural gas savings of 8.9 million cubic metres in 2015/16, 1% more than planned.

To date, after interactive effects, the Power Smart portfolio has saved over 112 million cubic metres of natural gas, 3% above target.

The following graph presents the natural gas savings, after interactive effects, achieved to date by the Power Smart portfolio along with the corresponding targets.

Exhibit 4.1.3 - B
Integrated Natural Gas Savings - Power Smart Portfolio
Total Savings Achieved vs. Plan



	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
DSM Support Programs	1.2	2.4	4.3	7.7	11.3	13.2	15.3	16.4	18.3	19.0	19.7	20.3	20.8	21.1	21.4														
Codes & Standards	0.3	0.7	1.1	1.6	2.0	2.4	2.7	3.0	3.5	4.4	9.9	13.2	16.0	19.0	21.8														
Incentive-Based Integrated	0.0	0.1	0.1	-1.0	-1.0	4.3	11.7	20.0	25.3	33.5	39.6	50.1	56.2	63.2	68.9														
Integrated Plan					14.8	21.5	27.9	41.4	46.3	52.8	68.6	79.6	88.7	109.3	109.3	120.4	126.4	130.7	134.9	139.1	143.8	154.0	164.4	174.7	184.7	194.6	203.5	211.7	219.3
Integrated Plan (Incentive-Based Programs only)					0.8	1.9	5.7	20.8	24.6	42.2	44.7	51.3	58.2	69.3	67.8	73.4	78.9	82.7	86.3	90.0	94.1	98.4	103.1	107.8	112.4	116.8	120.6	123.7	126.3
Total Achieved	1.6	3.1	5.5	8.2	12.2	19.8	29.7	39.4	47.0	57.0	69.1	83.6	93.0	103.2	112.1														

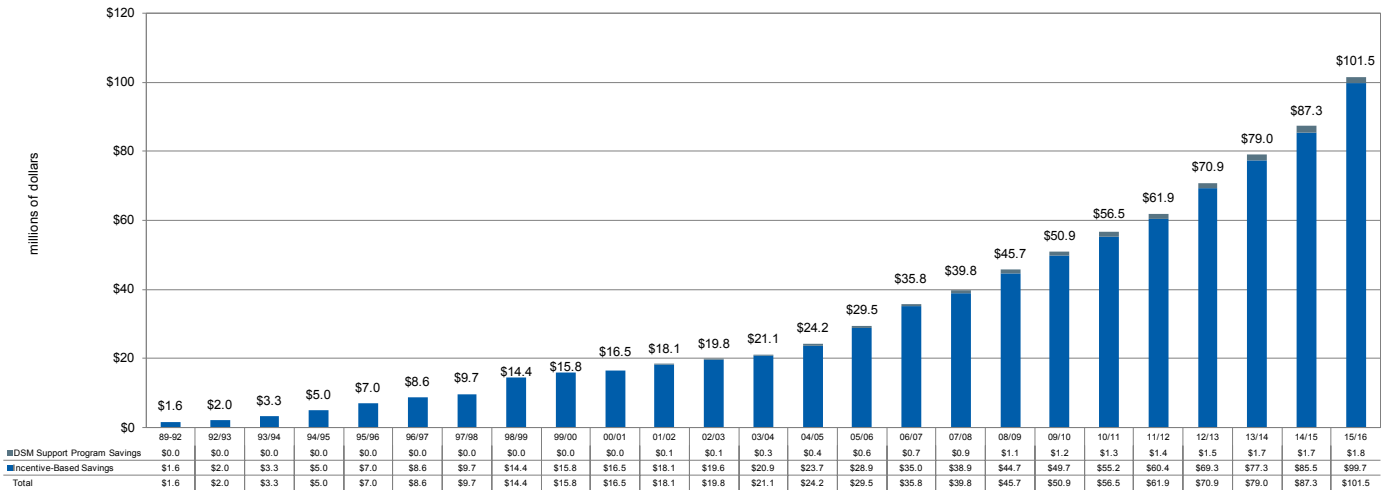
Note: Figures may not add due to rounding.

4.1.4 Customer Bill Reduction

Electricity Bill Reduction

When customers save electricity through Manitoba Hydro's Power Smart programs, it translates into lower electricity bills for participating customers. Displayed in Exhibit 4.1.4-A are the annual customer bill reductions resulting from DSM support program and incentive-based Power Smart program electric savings to date.

Exhibit 4.1.4 - A
Customer Electricity Bill Reduction (Nominal$)
millions of dollars



	89-92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
DSM Support Program Savings	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1	$0.1	$0.3	$0.4	$0.6	$0.7	$0.9	$1.1	$1.2	$1.3	$1.4	$1.5	$1.7	$1.7	$1.8
ncentive-Based Savings	$1.6	$2.0	$3.3	$5.0	$7.0	$8.6	$9.7	$14.4	$15.8	$16.5	$18.1	$19.6	$20.9	$23.7	$28.9	$35.0	$38.9	$44.7	$49.7	$55.2	$60.4	$69.3	$77.3	$85.5	$99.7
Total	$1.6	$2.0	$3.3	$5.0	$7.0	$8.6	$9.7	$14.4	$15.8	$16.5	$18.1	$19.8	$21.1	$24.2	$29.5	$35.8	$39.8	$45.7	$50.9	$56.5	$61.9	$70.9	$79.0	$87.3	$101.5

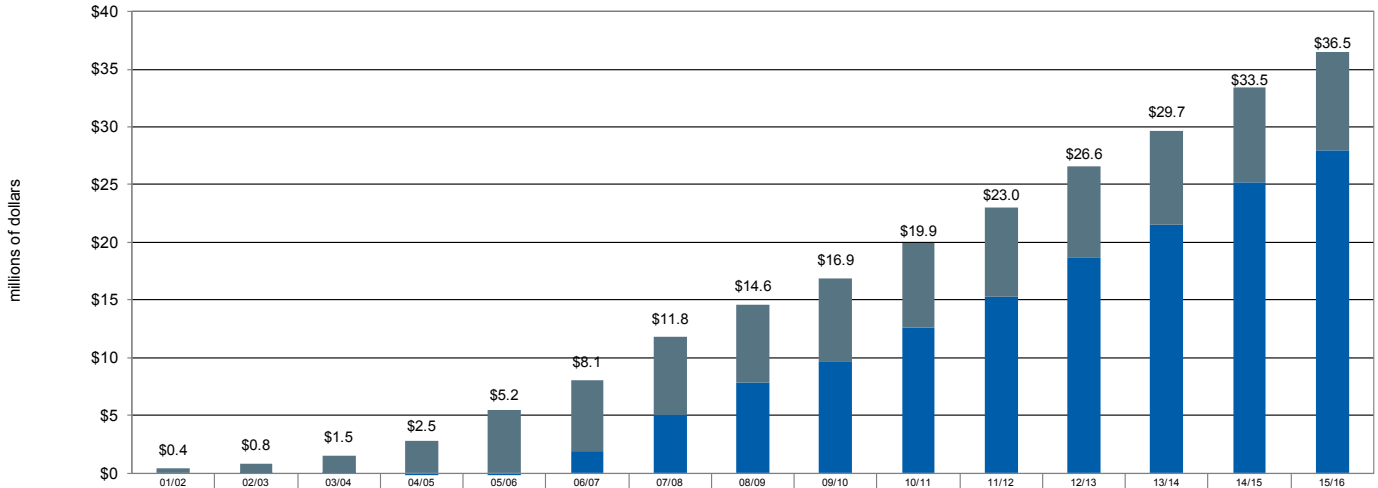
Note: Bill reductions exclude savings due to codes & standards.
Demand savings resulting from the Curtailable Rates Program are excluded from this analysis.
Figures may not add due to rounding.

Power Smart DSM support programs and incentive-based programs saved participating customers approximately $102 million in 2015/16 and nearly $826 million cumulatively on their electricity bills.

Natural Gas Bill Reduction

Customers also save on their natural gas bills when participating in applicable Power Smart initiatives. Exhibit 4.1.4-B displays annual customer bill reductions resulting from Power Smart natural gas savings to date (net of interactive effects).

Exhibit 4.1.4-B
Customer Natural Gas Bill Reduction (Nominal$)
millions of dollars



	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
DSM Support Program Savings	$0.4	$0.8	$1.5	$2.8	$5.5	$6.2	$6.7	$6.7	$7.2	$7.3	$7.6	$7.9	$8.1	$8.3	$8.5
Incentive-Based Savings	$0.0	$0.0	$0.0	($0.3)	($0.3)	$1.9	$5.1	$7.9	$9.7	$12.6	$15.3	$18.7	$21.6	$25.2	$28.0
Total	$0.4	$0.8	$1.5	$2.5	$5.2	$8.1	$11.8	$14.6	$16.9	$19.9	$23.0	$26.6	$29.7	$33.5	$36.5

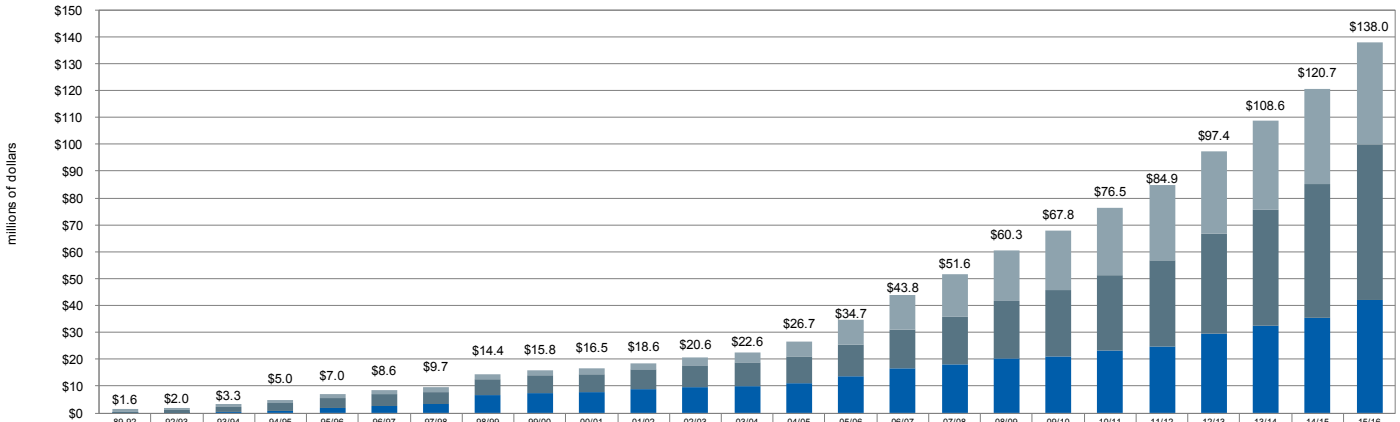
Note: Bill reduction excludes savings due to codes & standards.
Interactive effects in 2015/16 resulted in a $2.4 million increase in customer bills, which is captured within incentive-based savings.
Natural gas bill reduction includes primary and distribution rates only.
Figures may not add due to rounding.

As a result of Power Smart initiatives, participating customers saved approximately $37 million in 2015/16, and more than $231 million cumulatively on their natural gas bills.

Combined Bill Reduction

The following graph presents the annual combined customer bill reduction for participants of Power Smart DSM support programs and incentive-based programs by sector. Savings include those from both electric and natural gas initiatives.

Exhibit 4.1.4 - C
Combined Electricity & Natural Gas Customer Bill Reduction (Nominal$)
Total Annual Reductions by Sector
millions of dollars



	89-92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Residential	$1.3	$1.0	$1.2	$1.4	$1.5	$1.8	$1.9	$1.9	$1.9	$2.0	$2.5	$3.0	$3.7	$5.6	$9.3	$12.8	$16.0	$18.8	$22.2	$25.2	$28.1	$30.7	$32.9	$35.4	$38.2
Commercial	$0.3	$0.8	$1.8	$2.8	$3.7	$4.1	$4.6	$5.7	$6.5	$6.9	$7.4	$8.0	$8.8	$9.9	$11.7	$14.4	$17.6	$21.4	$24.5	$28.1	$31.9	$37.4	$43.1	$49.9	$57.6
Industrial	$0.0	$0.2	$0.3	$0.8	$1.8	$2.7	$3.2	$6.7	$7.4	$7.6	$8.7	$9.7	$10.1	$11.2	$13.7	$16.6	$18.0	$20.1	$21.1	$23.2	$24.9	$29.4	$32.6	$35.4	$42.2
Total	$1.6	$2.0	$3.3	$5.0	$7.0	$8.6	$9.7	$14.4	$15.8	$16.5	$18.6	$20.6	$22.6	$26.7	$34.7	$43.8	$51.6	$60.3	$67.8	$76.5	$84.9	$97.4	$108.6	$120.7	$138.0

Note: Bill reduction excludes savings due to codes & standards.
Demand savings resulting from the Curtailable Rates Program are excluded from this analysis.
Natural gas bill reduction includes primary and distribution rates only.
Figures may not add due to rounding.

Power Smart DSM support programs and incentive-based programs saved participating customers over $138 million in 2015/16 alone. These savings are distributed relatively evenly between industrial, commercial and residential customers.

Cumulatively, participating customers have saved over $1 billion on electricity and natural gas bills. These cumulative bill reductions are split between the customer sectors as 33% industrial, 39% commercial and 28% residential.

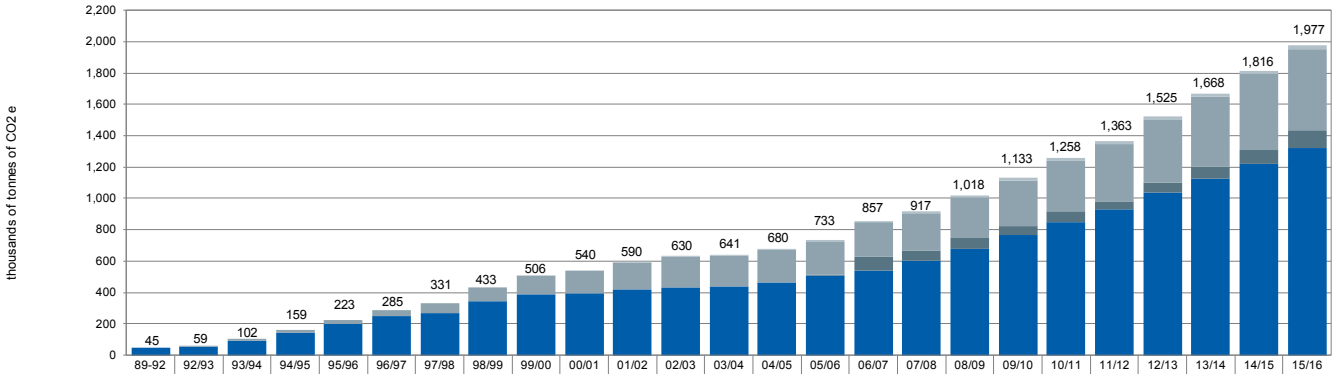
4.1.5 Power Smart Program Impact on Greenhouse Gas Emissions

The energy efficiency measures and improvements installed through Manitoba Hydro's Power Smart programs reduce the amount of greenhouse gas and other air polluting emissions indirectly from power generation, and directly from the transmission and distribution of natural gas, and will continue to do so over their product lives. Both electricity and natural gas consumption reductions have a positive impact on global greenhouse gas emissions.

Impact of Electricity Savings

As Manitobans conserve electric energy through Power Smart programs, more hydro electricity is available for export. These exports displace coal and natural gas fuelled generation outside of Manitoba, which results in significant global reduction of greenhouse gases and other emissions. Therefore, the impact of Power Smart programs on global greenhouse gas emissions is quantified based on estimates of reduced coal and natural gas fuelled generation outside the province, and is measured in carbon dioxide equivalent emissions. Because the emission reductions do not occur at the site of the participating customer, these reductions are referred to as *indirect* emissions reduction. Exhibit 4.1.5-A shows the equivalent reduction in carbon dioxide emissions resulting from Power Smart electric program activity to date.

Exhibit 4.1.5 - A
Total Annual Indirect Greenhouse Gas Emission Reductions due to Electric Savings
thousands of tonnes of CO2 e



	89-92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
DSM Support Programs	-	-	-	-	-	-	-	-	-	-	2	3	5	8	9	11	13	15	17	18	19	20	21	22	22
Codes & Standards	-	2	7	15	24	38	60	88	119	147	170	194	198	206	210	218	237	258	290	325	365	406	446	485	519
Customer Self-Generation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	89	63	70	59	64	52	61	74	90	113
Incentive-based Programs	45	56	95	144	199	246	271	345	386	393	418	433	437	466	505	539	604	676	766	851	927	1,039	1,127	1,219	1,322
Total	45	59	102	159	223	285	331	433	506	540	590	630	641	680	733	857	917	1,018	1,133	1,258	1,363	1,525	1,668	1,816	1,977

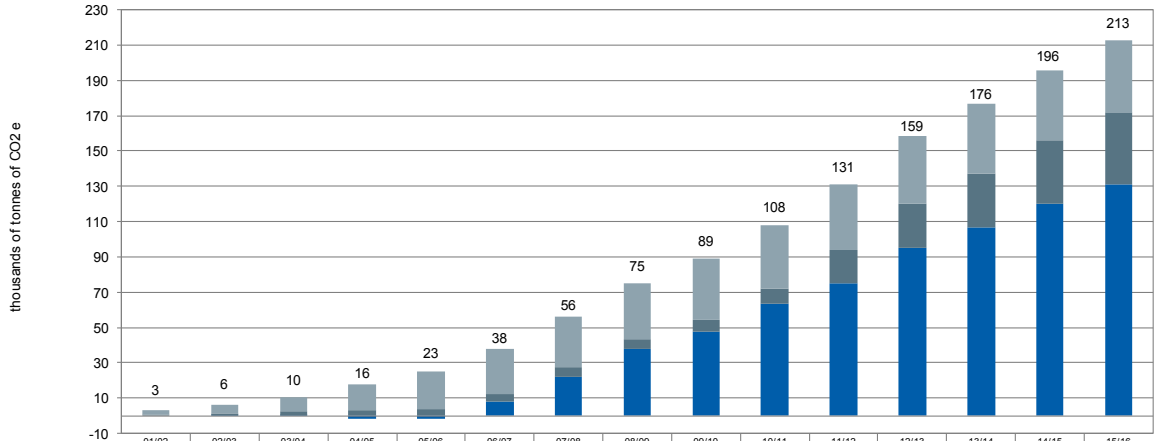
Note: Figures may not add due to rounding.

The 2,928 GW.h of savings to date resulting from electric Power Smart program activity and codes and standards efforts have displaced greenhouse gas emissions by nearly 1,977 thousand tonnes of carbon dioxide equivalent emissions. This is comparable to removing 416 thousand cars off the road for one full year.

Impact of Natural Gas Savings

Power Smart natural gas programs result in *direct* emissions reduction at the location of the participating customer. The following chart displays direct greenhouse gas emissions reduction resulting from lower natural gas consumption in Manitoba.

Exhibit 4.1.5 - B
Total Annual Direct Greenhouse Gas Emission Reductions due to Natural Gas Savings
thousands of tonnes of CO2 e



	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
DSM Support Programs	2	5	8	15	21	25	29	31	35	36	37	38	39	40	41
Codes & Standards	1	1	2	3	4	4	5	6	7	8	19	25	30	36	41
Incentive-based Programs	0	0	0	-2	-2	8	22	38	48	64	75	95	107	120	131
Total	3	6	10	16	23	38	56	75	89	108	131	159	176	196	213

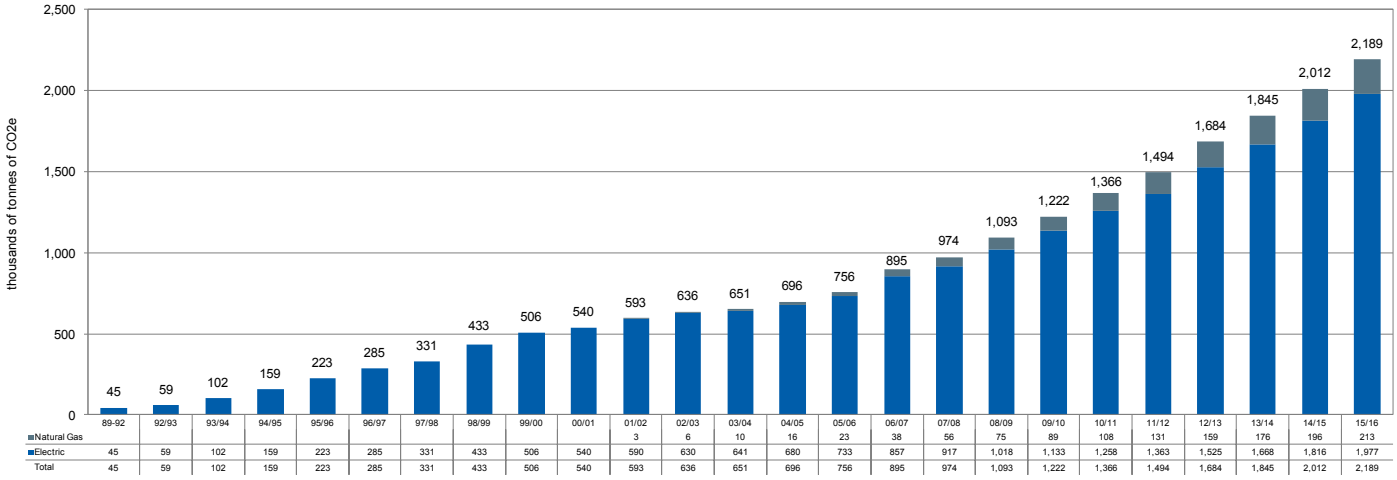
Note: Figures may not add due to rounding.

The 112 million cubic metres of reduced natural gas consumption (after interactive effects) to date from Power Smart programs and codes and standards efforts has displaced approximately 213 thousand tonnes of greenhouse gas emissions. This is equivalent to removing nearly 45 thousand vehicles off the road for one full year.

Combined Impact of Electricity and Natural Gas Savings

The following graph presents the greenhouse gas emissions reduction to date that has resulted from all electric and natural gas Power Smart program activity, and well as codes and standards efforts.

Exhibit 4.1.5 - C
Total Annual Greenhouse Gas Emission Reductions Due to Electric & Natural Gas Savings
thousands of tonnes of CO2e



	89-92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Natural Gas											3	6	10	16	23	38	56	75	89	108	131	159	176	196	213
Electric	45	59	102	159	223	285	331	433	506	540	590	630	641	680	733	857	917	1,018	1,133	1,258	1,363	1,525	1,668	1,816	1,977
Total	45	59	102	159	223	285	331	433	506	540	593	636	651	696	756	895	974	1,093	1,222	1,366	1,494	1,684	1,845	2,012	2,189

Note: Figures may not add due to rounding.

The 2,928 GW.h of electric savings and 112 million cubic metres of natural gas savings achieved by the Power Smart programs have resulted in greenhouse gas emissions reduction of approximately 2.2 million tonnes of carbon dioxide equivalent emissions. This is comparable to removing nearly 461 thousand vehicles off the road for one full year.

4.1.6 Additional Measurable Non-Energy Benefits

Additional Measurable Non-Energy Benefits

In 2015/16, the following Power Smart programs achieved additional measurable non-energy benefits in the form of water savings:

- Affordable Energy Program,
- Water & Energy Saver Program,
- Commercial Kitchen Appliances Program
- Power Smart Shops Program

The subsequent table depicts in-year and cumulative water savings in litres achieved by the Power Smart programs.

Exhibit 4.1.6

Water Savings by Power Smart Program

	2015/16 Actual	2015/16 Total*
	millions of litres	
RESIDENTIAL PROGRAMS		
Water & Energy Saver	202	1,284
Affordable Energy Program	21	105
COMMERCIAL PROGRAMS		
Commercial Kitchen Appliances	157	269
Power Smart Shops	2	12
DISCONTINUED/ COMPLETED PROGRAMS		
Commercial Rinse & Save	-	653
Residential Appliances	-	299
Commercial Clothes Washers	-	33
TOTAL	382	2,653

*Savings include actual + persisting savings, up to and including 2015/16
Note: Figures include Winnipeg and rural litres saved.
Figures may not add due to rounding.

As well as water savings, the Power Smart programs have achieved additional non-energy benefits. Examples of this are as follows:

- The Refrigerator Retirement Program has recycled over 3,800 metric tons of materials (metals, mercury, oil, etc.). By recycling these materials, future production of these materials has been avoided, and nearly 20,000 kilograms of CFCs have been collected and destroyed.
- The Performance Optimization Program reduces maintenance costs by approximately 30% (for air compressor projects) and increases production.
- Both the Commercial Kitchen Appliances Program's spray valve offer and the Power Smart Shops Program

have a recycling component as part of their full-service delivery model. Participants are required to release their old water and lighting measures to Manitoba Hydro, thus ensuring that these materials are recycled in an environmentally responsible manner.

- Through retrofits to LED technologies under the Commercial Lighting Program, commercial customers can expect savings from both product and labor costs, as the long life of LED products results in less lamp and fixture changes.
- The Commercial Building Envelope Program provides participants better indoor air quality and improved comfort, both of which are directly correlated to staff productivity, sick time and turnover rates. As well, upgrading the building envelope results in a more durable and aesthetically pleasing building façade, attracting and retaining quality tenants, while reducing maintenance costs.

In addition to this, Power Smart programs have provided socio-economic benefits through job creation within the province:

- The Affordable Energy Program has created two positions within the North End Community Renewal Corporation and Brandon Neighbourhood Renewal Corporation, plus local labour in First Nations communities, private contractors and social enterprise contractors.
- Nine energy advisors contracted from prairieHOUSE Performance Inc. complete in-home reviews and pre- and post-inspections for the Home Insulation Program (shared with the Affordable Energy Program).
- The Refrigerator Retirement Program provides fifteen to twenty positions, depending on the season, including office staff, warehouse staff and drivers.
- Eight part-time in-store ambassador positions have been created at Summerhill Group as a result of the Residential LED Lighting Program.
- The Water & Energy Saver Program contributes four full-time office positions, four full-time technical positions for the Multi-Unit Residential Building (MURB) program (shared with the Affordable Energy Program), ten full-time door-to-door technical positions, as well as up to thirty part-time door-to-door technical positions created at Ecofitt.
- The Power Smart Energy Manager Program creates Power Smart Energy Manager positions within participating school divisions.
- Both the Commercial Kitchen Appliances Program and the Power Smart Shops Program have created numerous jobs in Manitoba, as required to deliver the program.

Another example of how Power Smart programs are creating opportunities for Manitobans is with the geothermal programs. To date, Manitoba Hydro has provided training for approximately forty-five members of the Ground Source Heat Pump Association, seventeen of which have received full installer accreditation.

As well, Power Smart programs yield increased tax dollars resulting from the wages associated with jobs created specifically for the Power Smart programs.

4.1.7 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. As displayed in Exhibits 4.1.7-A and 4.1.7-B, it is estimated that savings of 375,000 litres of fuel oil and 314,000 litres of propane have been achieved since 2006/07. Exhibits 4.1.7-C and 4.1.7-D go on to display that as a result of the fuel oil and propane savings, greenhouse gas emissions have been reduced by 1,509 tonnes of CO2e since 2006/07.

Exhibit 4.1.7 - A

Affordable Energy Fund - Fuel Oil Savings

	2015/16	2006/07 - 2015/16
	thousands of litres	
FUEL OIL SAVINGS		
Home Insulation	1.6	121.3
Water & Energy Saver	5.5	27.9
Oil & Propane Furnace Replacement - Residential	21.7	220.2
Oil & Propane Furnace Replacement - AEP	-	5.4
ANNUAL FUEL OIL SAVINGS	28.8	374.7

Exhibit 4.1.7 - B

Affordable Energy Fund - Propane Savings

	2015/16	2006/07 - 2015/16
	thousands of litres	
PROPANE SAVINGS		
Home Insulation	5.1	91.8
Water & Energy Saver	4.4	21.8
Oil & Propane Furnace Replacement - Residential	8.6	137.1
Oil & Propane Furnace Replacement - AEP	17.1	62.8
ANNUAL PROPANE SAVINGS	35.1	313.5

Exhibit 4.1.7 - C

Affordable Energy Fund -
GHG Emissions Reduction from Fuel Oil Savings

	2015/16	2006/07 - 2015/16
	tonnes of CO2e	
GHG EMISSIONS REDUCTION FROM FUEL OIL SAVINGS		
Home Insulation	4.3	331.9
Water & Energy Saver	15.1	75.8
Oil & Propane Furnace Replacement - Residential	59.2	602.3
Oil & Propane Furnace Replacement - AEP	-	14.8
ANNUAL GHG EMISSIONS REDUCTION FROM FUEL OIL SAVINGS	78.7	1,024.8

Exhibit 4.1.7 - D

Affordable Energy Fund -
GHG Emissions Reduction from Propane Savings

	2015/16	2006/07 - 2015/16
	tonnes of CO2e	
GHG EMISSIONS REDUCTION FROM PROPANE SAVINGS		
Home Insulation	7.8	141.7
Water & Energy Saver	6.7	33.6
Oil & Propane Furnace Replacement - Residential	13.2	211.7
Oil & Propane Furnace Replacement - AEP	26.5	97.0
ANNUAL GHG EMISSIONS REDUCTION FROM PROPANE SAVINGS	54.2	484.0

4.2 DSM Support Programs & Cost-Recovery Programs

4.2.1 Annual Energy & Demand Savings from DSM Support Programs & Cost-Recovery Programs

Exhibits 4.2.1-A through 4.2.1-C provide an overview of the estimated electricity and natural gas savings achieved through DSM support programs and cost-recovery programs, for those programs where energy savings can be reasonably measured or estimated using engineering calculations.

Exhibit 4.2.1 - A

Annual GW.h Savings - Electric DSM Support Programs & Cost-Recovery Programs

	2015/16 Actual	2015/16 Plan^	Total*	2029/30 Plan^
RESIDENTIAL				
Power Smart Residential Loan	0.4	0.5	9.6	15.6
Power Smart Residential PAYS	0.1	0.2	1.5	4.4
Residential Earth Power Loan	0.0	0.6	13.4	29.3
	0.5	1.3	24.5	49.3
COMMERCIAL				
Power Smart for Business PAYS Program	-	-	0.1	0.1
	-	-	0.1	0.1
DISCONTINUED/EXPLORATORY PROGRAMS	-	-	3.8	3.8
	-	-	3.8	3.8
TOTAL (at customer meter)	0.5	1.3	28.5	53.3
TOTAL (at generation)	0.6	1.4	32.5	60.7

^ Plan estimates are from the 2015 Power Smart Plan.
* Savings include actual + persisting results, up to and including 2015/16.
Note: Figures may not add due to rounding.

In 2015/16, Power Smart DSM Support Programs fell short of savings targets by 0.80 GW.h. The greatest contributor to this shortfall was the Residential Earth Power Loan. In recent years, the low price of natural gas and the weak Canadian dollar have put the Manitoba residential geothermal heat pump market in a slow, continuous decline. As a result, Residential Earth Power Loan participation has steadily decreased. However, Residential Earth Power Loan participation is expected to increase starting in 2016/17, with the addition of two new technologies available for financing: air source heat pumps and solar photovoltaic systems.

Exhibit 4.2.1 - B

Average Winter MW Savings - Electric DSM Support Programs & Cost-Recovery Programs

	2015/16 Actual	2015/16 Plan^	Total*	2029/30 Plan^
RESIDENTIAL				
Power Smart Residential Loan	0.2	0.2	5.4	8.4
Power Smart Residential PAYS	0.0	0.1	0.4	1.9
Residential Earth Power Loan	0.0	0.3	3.9	11.9
	0.2	0.6	9.7	22.2
COMMERCIAL				
Power Smart for Business PAYS Program	-	-	0.0	0.0
	-	-	0.0	0.0
DISCONTINUED/EXPLORATORY PROGRAMS	-	-	0.2	0.2
	-	-	0.2	0.2
TOTAL (at customer meter)	0.2	0.6	9.9	22.4
TOTAL (at generation)	0.3	0.7	11.3	25.5

^ Plan estimates are from the 2015 Power Smart Plan.
* Savings include actual + persisting results, up to and including 2015/16.
Note: Figures may not add due to rounding.

Exhibit 4.2.1 - C

Annual m^3 Savings - Natural Gas DSM Support Programs & Cost-Recovery Programs

	2015/16 Actual	2015/16 Plan^	Total*	2029/30 Plan^
			millions of cubic metres	
RESIDENTIAL				
Power Smart Residential Loan	0.2	0.3	15.7	19.4
Residential Earth Power Loan	0.1	0.1	3.0	4.4
Power Smart Residential PAYS Program	-	0.0	(0.0)	(0.0)
	0.3	0.4	18.7	23.8
COMMERCIAL				
Power Smart for Business PAYS Program	-	-	-	-
	-	-	-	-
DISCONTINUED/EXPLORATORY PROGRAMS	-	-	2.7	2.7
	-	-	2.7	2.7
TOTAL	0.3	0.4	21.4	26.4

^ Plan estimates are from the 2015 Power Smart Plan.
* Savings include actual + persisting results, up to and including 2015/16.
Note: Figures may not add due to rounding.

4.3 Energy Efficiency Codes, Standards & Regulations

In addition to DSM activities, some utilities, including Manitoba Hydro, are actively involved in a number of provincial and national committees. These committees work with governments and equipment manufacturers to gain acceptance of higher efficiency levels for energy-consuming technologies, and to encourage adoption of energy efficiency standards and regulations.

Manitoba Hydro prepares an annual forecast that highlights the expected influence of codes and standards, and since 1995, this forecast has been used to adjust Manitoba Hydro's system load forecast.

In many cases, legislation and regulations are the most effective and permanent form of market transformation, as it ensures customers do not revert to less efficient technologies/practices once the incentives and/or promotional activities are discontinued. Traditionally, changing legislation can be complex when faced with lack of market acceptance. These changes impact building design and construction, as well as industry manufacturing processes, and therefore do not always receive strong industry support without preceding market intervention which is why voluntary incentive programs and capacity building offered by Manitoba Hydro are critical components to successful implementation of code and regulation strategies.

4.3.1 Development of Standards

Manitoba Hydro is a key player on the CSA Strategic Steering Committee on Performance, Energy Efficiency and Renewables (SCOPEER). This committee is responsible for changes to national minimum energy performance standards, which are subsequently entrenched in energy efficiency legislation. A key facet of the work undertaken by SCOPEER in cooperation with NRCan relates to the harmonization of minimum energy performance standards with the US and other countries, creating a more substantive and global initiative to enhance the performance of energy consuming equipment. This work is coordinated through the Regulatory Cooperation Council (RCC) that coordinates harmonization activities in regulations between Canada and the US. This work which has resulted in significant energy efficiency improvements of numerous appliances and technologies that are uniformly applied in both Canada and the US, easing compliance and importing of goods into North America. For example, as a result of SCOPEER working with Canadian manufacturers, refrigerator manufacturers now market products which exceed the current minimum efficiency standards for inter-provincial exporting.

Manitoba Hydro is actively working with the Canadian Standards Association in developing strategic solutions for measuring the energy performance of common industrial systems. These in-site standards will be designed for use on the factory floor, enabling industrial users to measure the energy performance on their industrial processes during commissioning and therefore to ensure that energy performance is maintained over time. While these standards are not yet entrenched in regulation, they serve as precursors to a future generation of standards that address the interaction between equipment, which provide large opportunities for energy efficiency improvements.

4.3.2 Development of Codes

National Energy Code for Buildings (NECB)

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 reconvened in Fall 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 December 2013 for implementation, and enforcement in December 2014.

Manitoba Hydro staff continue 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. The culmination of these efforts resulted in the release of the 2015 National Energy Code for Buildings in December 2015. Manitoba Hydro staff are also members of the Manitoba Building Standards Board Sub-Committee on Energy and Water Efficiency, which is responsible for reviewing the most recent national code and making a recommendation that the Province adopt the standard along with any potential regional amendments.

Manitoba Hydro continues to assess the New Buildings program. Commercial building code savings realized over the term beyond that of the New Buildings program have also been accounted for. Manitoba Hydro has used a placeholder post-2020 Building Code which reflects current regulatory intentions beyond the 2011 NECB described above.

Model National Energy Code for Houses (MNECH)

Initially, an energy code for residential homes was proposed by the federal government and was to be adopted by the Province of Manitoba in 1997 as part of the building code. Due to a decline in new house starts and the perceived impact on building costs of a proposed Model National Energy Code for Houses (MNECH), it was anticipated that members of the new home construction industry would be reluctant to support the proposed MNECH. Recognizing this, Manitoba Hydro initiated and sponsored amendments to the insulation tables for new houses in the Manitoba building code as an interim measure to improve upon eroding insulation practices throughout Manitoba. The interim measures improved insulation practices in new housing north of the 53rd parallel. As anticipated, the MNECH was not adopted; however, Manitoba Hydro's amendments were introduced in Manitoba in November 1998 with the support of the new home construction industry.

In July 2006, the requirements under the insulation tables for new houses in the Manitoba Building Code were simplified. Manitoba Hydro played a key role in ensuring that efficiency requirements were not significantly diluted. As a result, Manitoba's minimum requirements for insulation in new homes were the highest in Canada.

In September 2007, Manitoba Hydro presented research on the life cycle benefits of improved basement insulation to homeowners, and successfully convinced the Building Standards Board of Manitoba to request R20 in foundation walls for all homes in Manitoba.

In 2009 through 2010, Manitoba Hydro provided input into Manitoba amendments made to Part 9 (Residential) of the Building Code that came into effect December 1, 2010. The amendments stipulated minimum performance requirements for newly-constructed homes in the areas of insulation, windows, heating and ventilation systems and plumbing fixtures. Manitoba Hydro played a key role in developing the recommendations through technical re-

view of proposed efficiency levels, and perhaps even more critically, through preparing the industry for accepting the code recommendations by offering the Power Smart New Home Program. With the final approved efficiency levels consisting largely of the technologies which made up the Power Smart Gold standard, testament can be given to the importance of voluntary incentive-based programs in accelerating market acceptance and penetration of energy efficient technologies, thereby making the transition to building codes more seamless. Most recently, the committee that recommended the amendments in 2010 reconvened in late-2013, and worked through to the Fall of 2014 to review Section 9.36 of the Building Code, which was the first National effort at incorporating energy efficiency into the code. Given that Manitoba had already proceeded with incorporating energy efficiency into building codes, the adjustments that were recommended were relatively minor with the exception of the addition of the requirement to install a drain water heat recovery system. The revised code came into force on April 1, 2016, and Manitoba is the first jurisdiction in Canada to require drain water heat recovery as an energy savings measure.

4.3.3 Development of Regulations

As of January, 2010, The Manitoba Energy Act regulations state that all natural gas furnaces sold in Manitoba must be at least 92% annual fuel utilization efficiency (AFUE). Meanwhile, federal regulations require a minimum efficiency of only 90%. As a result, Manitoba Hydro's Natural Gas Furnace Program had a direct impact on market transformation in Manitoba. For this reason, the additional 2% in energy savings relative to the federal regulations have been claimed from all furnaces sold in Manitoba's residential and commercial market from January 2010 and forward.

Staff continue to collaborate with provincial government representatives at the Energy Division to discuss utilizing the Energy Act for regulations of energy consuming products and appliances.

4.3.4 Annual Energy & Demand Savings Resulting from Energy Efficiency Codes, Standards & Regulations

The following table outlines the estimated energy and demand savings resulting from code, standard and regulation improvements in the Manitoba marketplace.

Savings resulting from future codes, standards and regulations are included in targeted cost-effectiveness metrics. However, savings due to codes, standards and regulations are not included in the calculation of cost-effectiveness metrics based on actual activity (i.e. savings due to codes, standards and regulations are not included in the Power Smart Annual Review metrics).

Exhibit 4.3.4-A

Savings Resulting from Energy Efficiency Codes, Standards & Regulations

		SAVINGS (AT GENERATION)			
CODE CATEGORY & COMPONENTS	CODE & MANITOBA HYDRO'S INFLUENCE	2015/16		Cumulative	
Residential Insulation	-Manitoba Building Code Regulation 4/2008 (Oct. 2008) increased minimum required level of insulation from R12 to R20	2.8 1.4 311,917	GW.h MW m^3	36.0 17.4 2,337,018	GW.h MW m^3
Residential Appliances: Ranges, dishwashers, clothes washers, clothes dryers, refrigerators, freezers	-Member of Strategic Steering Committee on Performance, Energy Efficiency & Renewables (SCOPEER) -Savings based on Energy Star efficiency improvements	25.5 4.4 -	GW.h MW m^3	470.6 94.6 3,847,338	GW.h MW m^3
Other Residential Equipment: Central air conditioning, electric hot water tanks, furnaces, attic insulation, windows, HRVs, efficient showerheads	-CSA Standard C191-00 (July 2004) for electric hot water tanks -CSA Standard C656-05 (Nov. 2006) for central air conditioning -MB Energy Act (Dec. 2009) states furnaces must be ≥92% AFUE (≥94% AFUE for new homes, 2010) -Manitoba Building Code Regulation 142/2010 (Dec. 2010) increased attic insulation from R40 to R50, and specified level of windows, HRVs and efficient shower heads -Manitoba Plumbing Code Regulation 32/2011 (March 2011)	18.9 3.7 2,469,863	GW.h MW m^3	123.9 35.6 15,031,058	GW.h MW m^3
Commercial Lighting: T12 lamps, LED exit signs, fluorescent ballasts	-Member of Strategic Lighting Initiative Committee (SLIC), etc. -National Energy Efficiency Act (1996): Increased min. efficiency requirement of T12 lamps from 40 to 34 watts -National Energy Efficiency Act (Nov. 2004): Min. efficiency requirements only met by LED exit signs -National Energy Efficiency Act (Nov. 2006): Increased min. efficiency requirement of fluorescent ballasts (new construction) -National Energy Efficiency Act (April 2010): Increased min. efficiency requirement of fluorescent ballasts (renovation)	2.6 0.9 -	GW.h MW m^3	120.6 34.1 -	GW.h MW m^3
Other Commercial Equipment: Furnaces	-MB Energy Act (Dec. 2009) states furnaces must be ≥92% AFUE	- - 38,039	GW.h MW m^3	- - 579,043	GW.h MW m^3
Industrial Equipment: High Efficiency Motors	-Member of Coordinated Utilities Approach (CUA) -Oct. 1997 code change (min. efficiency increased to 82.5-95.0%) -Last year of claimed savings was 2006/07	- - -	GW.h MW m^3	17.8 3.0 -	GW.h MW m^3
TOTAL		49.8 10.5 2,819,820	GW.h MW m^3	769.0 184.7 21,794,457	GW.h MW m^3

In 2015/16 alone, as a result of efforts to achieve energy savings through energy efficient codes and standards, approximately 50 GW.h and 11 MW of electric savings (at generation), and 3 million cubic metres of natural gas savings were achieved. This resulted in nearly 39 thousand tonnes of greenhouse gas emissions reduction.

Cumulatively, it is estimated that 769 GW.h and 185 MW of electric savings (at generation), and 22 million cubic metres of natural gas savings were achieved (as displayed in Exhibits 4.3.4-B through 4.3.4-D), resulting in 560 thousand tonnes of greenhouse gas emissions reduction in 2015/16.

Exhibit 4.3.4 - B
Efficiency Codes & Standards
Cumulative GW.h Savings Achieved
(at Generation)

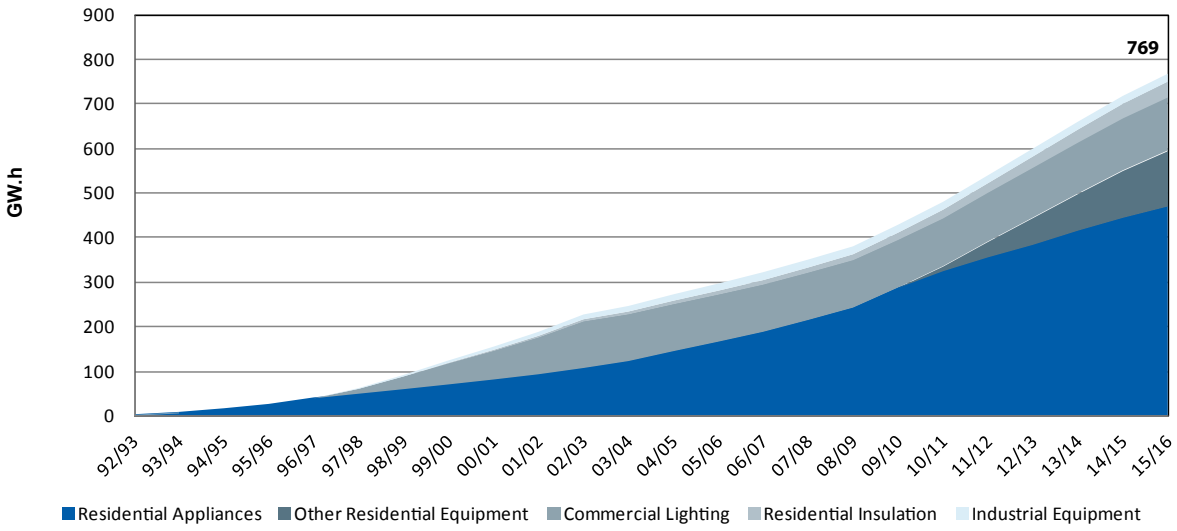


Exhibit 4.3.4 - C
Efficiency Codes & Standards
Cumulative MW Savings Achieved
(at Generation)

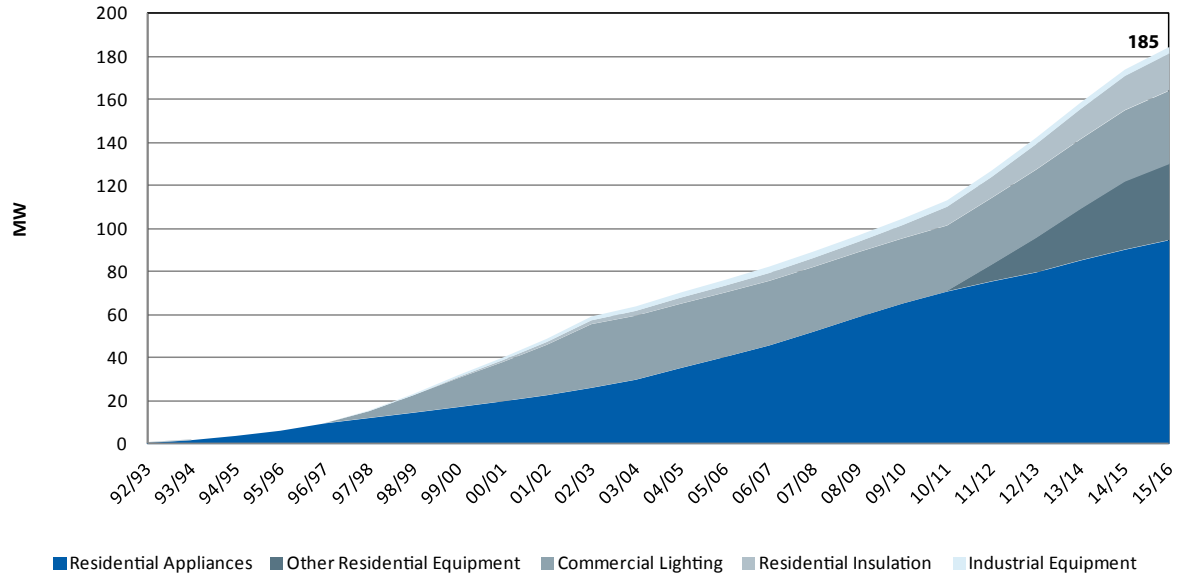
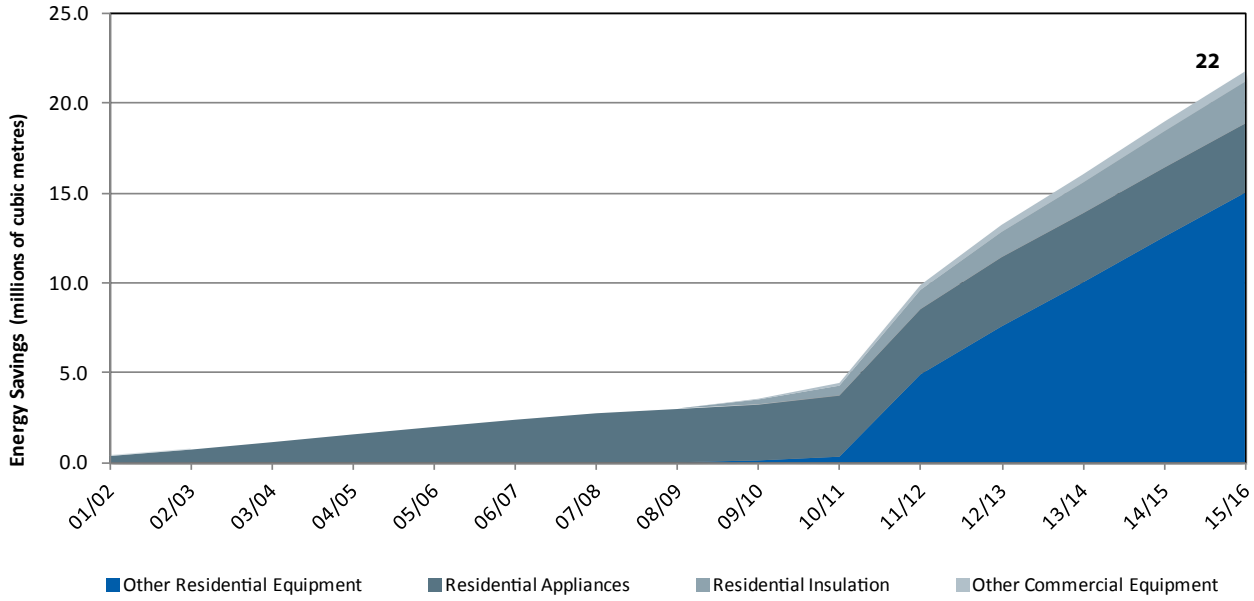


Exhibit 4.3.4 - D
Efficiency Codes & Standards
Cumulative Natural Gas Savings Achieved



Because there are many participants (utilities, governments, manufacturers, environmental groups, etc.) contributing to the formation of energy efficiency codes and standards, it is difficult to allocate specific credit for energy and demand savings among the various participants. For this reason, Manitoba Hydro only reports the estimated savings resulting from energy efficiency codes and standards. In other words, the estimated savings resulting from codes and standards are not included in the calculation of Power Smart Annual Review cost effectiveness metrics.

4.4 Incentive-Based Power Smart Programs

Power Smart incentive-based programs are designed to accelerate market awareness and acceptance of energy efficient technologies and practices.

4.4.1 Power Smart Electric Program Results

The following sections outline the Power Smart program results in terms of electric energy and demand savings and benefit/cost analyses.

4.4.1.1 Annual Energy Savings

Electric energy savings achieved by incentive-based Power Smart programs in 2015/16 is displayed by sector and program in Exhibits 4.4.1.1-A and 4.4.1.1-B respectively. Exhibit 4.4.1.1-B also provides cumulative electric energy savings achieved by incentive-based Power Smart programs.

Exhibit 4.4.1.1 - A
Percentage of Annual GW.h Savings
Electric Incentive-Based Programs

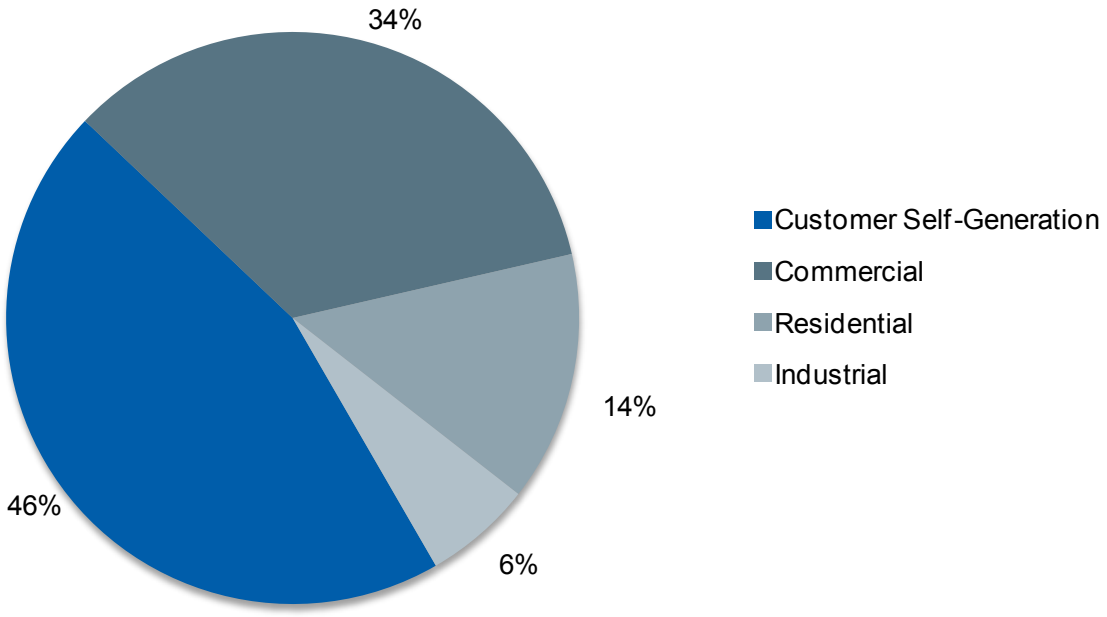


Exhibit 4.4.1.1 - B

Annual GW.h Savings - Electric Incentive-Based Programs

	2015/16 Actual	2015/16 Plan^	Total*	2029/30 Plan^
RESIDENTIAL				
Residential LED Lighting	13.1	11.2	25.4	22.0
Refrigerator Retirement	9.4	13.3	48.3	14.6
Affordable Energy	4.1	5.5	19.1	53.8
Home Insulation	3.9	3.8	58.4	82.7
Water & Energy Saver	3.5	4.0	22.2	33.3
Community Geothermal	0.9	3.3	2.5	58.0
Drain Water Heat Recovery	0.0	1.7	0.1	1.8
New Home (Redesign)	-	-	-	16.9
Residential Discontinued/Exploratory Programs	-	-	172.6	172.6
	34.8	42.7	348.6	455.5
COMMERCIAL				
Commercial Lighting	45.6	34.5	417.4	754.3
LED Roadway Lighting	9.8	9.4	10.2	52.4
Commercial Building Envelope	7.4	3.8	52.5	99.5
Commercial Refrigeration	5.6	8.3	47.4	99.7
Commercial New Buildings	5.4	12.3	19.1	145.2
Commercial HVAC	3.1	4.7	15.9	48.1
Internal Retrofit	1.6	0.7	58.4	65.1
Commercial Kitchen Appliances	1.3	0.8	2.4	2.8
Commercial Geothermal	1.2	2.1	38.9	114.1
Commercial Custom Measures	0.9	0.6	22.3	47.3
Power Smart Shops	0.5	0.5	1.2	4.1
Commercial Network Energy Management	-	0.3	2.3	4.1
Commercial Building Optimization	-	0.3	2.9	19.1
Commercial Discontinued/Exploratory Programs	1.9	-	142.7	144.7
	84.4	78.1	833.6	1,600.5
INDUSTRIAL				
Performance Optimization	15.0	15.5	501.0	793.8
Industrial Discontinued/Exploratory Programs	-	-	54.5	54.5
	15.0	15.5	555.4	848.3
EFFICIENCY PROGRAMS SUBTOTAL	134.3	136.3	1,737.6	2,904.4
CUSTOMER SELF-GENERATION PROGRAMS				
Load Displacement`	75.7	52.0	75.7	539.2
Bioenergy Optimization	36.1	3.5	77.1	174.4
	111.8	55.5	152.8	713.7
CONSERVATION RATES				
Conservation Rates - Commercial	-	-	-	213.7
Conservation Rates - Residential	-	-	-	141.7
	-	-	-	355.4
FUEL CHOICE				
Fuel Choice	-	-	-	255.5
	-	-	-	255.5
TOTAL (at customer meter)	246.1	191.8	1,890.5	4,228.9
TOTAL (at generation)	275.4	215.8	2,126.8	4,758.5

^ Plan estimates are from the 2015 Power Smart Plan.
* Savings include actual + persisting results, up to and including 2015/16.
Note: Figures may not add due to rounding.
Free driver participation is included in the above figures.

In 2015/16 alone, Power Smart electric incentive-based programs, including both efficiency-based programs and customer self-generation, exceeded planned savings values by 54.2 GW.h. While efficiency-based programs were slightly below planned savings, customer self-generation programs achieved 56.3 GW.h more savings than planned.

The variances within Power Smart electric incentive-based programs in 2015/16 are highlighted below.

Residential:

The residential sector, which accounted for 14% of total GW.h savings in 2015/16, contributed 34.8 GW.h, which is 7.9 GW.h less than planned.

- The Residential LED Lighting Program achieved 13.1 GW.h of savings, exceeding its target by 2.0 GW.h or 18%. This variance is a result of higher than expected participation and per bulb savings, which softened the effects of the higher than planned free ridership rate.
- The Community Geothermal Program achieved 0.9 GW.h of savings, 2.4 GW.h less than planned. This is due to participation levels falling 71% below planned levels.

Commercial:

The commercial sector, which accounted for 34% of savings in 2015/16, contributed 84.4 GW.h of savings, 6.3 GW.h more than planned.

- The Commercial Lighting Program achieved 45.6 GW.h of savings, above target by 11.1 GW.h or 32%. This variance is due to higher than planned incremental sales (42% more than planned), which minimized the blow of the higher free ridership rate.
- The Commercial Building Envelope Program achieved savings of 7.4 GW.h, exceeding planned savings by 3.6 GW.h or 96%. This variance was driven by markedly higher participation on the insulation side of the program (exceeding plan by 61%), as well as higher than planned savings per square foot, which more than doubled planned figures.

Industrial:

- The industrial sector accounted for 6.1% of total GW.h savings in 2015/16, with 15.0 GW.h resulting from the Performance Optimization Program, 0.4 GW.h less than planned.

Customer Self-Generation:

- Customer Self-Generation accounted for 45% of total GW.h savings in 2015/16, 56.3 GW.h more than planned. The Load Displacement Program accounted for 75.7 GW.h of savings, while the remaining 36.1 GW.h came from the Bioenergy Optimization Program.

4.4.1.2 Average Winter Peak Demand Savings

Demand savings achieved by electric incentive-based Power Smart programs in 2015/16 is displayed by sector and program in Exhibits 4.4.1.2-A and 4.4.1.2-B respectively. Exhibit 4.4.1.2-B also provides cumulative demand savings achieved by electric incentive-based Power Smart programs. The demand savings are presented as an average of the winter AM and PM system peak savings.

Exhibit 4.4.1.2 - A
Percentage of Average Winter MW Savings
Electric-Incentive Based Programs

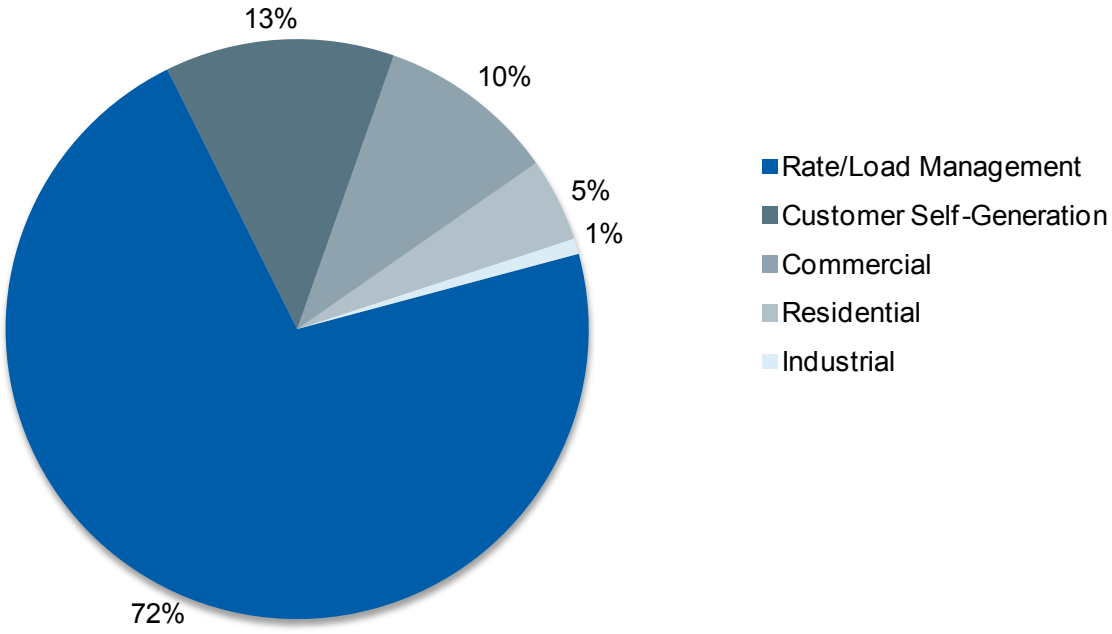


Exhibit 4.4.1.2 - B

Average Winter MW Savings - Electric Incentive-Based Programs

	2015/16 Actual	2015/16 Plan^	Total*	2029/30 Plan^
RESIDENTIAL				
Residential LED Lighting	4.1	3.5	8.0	6.9
Home Insulation	1.9	1.9	28.8	40.9
Affordable Energy	1.6	2.3	8.5	19.6
Refrigerator Retirement	1.0	1.4	4.8	1.5
Water & Energy Saver	0.6	0.7	3.8	5.8
Community Geothermal	0.2	1.6	0.6	28.6
Drain Water Heat Recovery	0.0	0.2	0.0	0.2
New Home (Redesign)	-	-	-	7.3
Residential Discontinued/Exploratory Programs	-	-	31.7	31.7
	9.4	11.7	86.2	142.7
COMMERCIAL				
Commercial Lighting	12.0	9.0	85.9	173.0
Commercial Building Envelope	3.6	1.8	23.9	46.0
LED Roadway Lighting	1.4	1.4	1.4	7.8
Commercial New Buildings	1.0	3.6	5.5	43.6
Commercial Refrigeration	0.7	1.0	6.6	13.3
Commercial Geothermal	0.5	1.0	14.8	52.5
Internal Retrofit	0.3	0.2	12.6	14.4
Commercial Kitchen Appliances	0.2	0.1	0.8	1.0
Power Smart Shops	0.1	0.1	0.3	1.0
Commercial Custom Measures	0.1	0.1	1.9	7.7
Commercial HVAC	0.0	0.1	0.2	6.9
Commercial Building Optimization	-	0.1	0.4	3.9
Commercial Network Energy Management	-	0.0	0.2	0.6
Commercial Discontinued/Exploratory Programs	0.2	-	20.2	20.9
	20.1	18.6	174.7	392.5
INDUSTRIAL				
Performance Optimization	1.8	1.9	94.7	131.7
Industrial Discontinued/Exploratory Programs	-	-	8.2	8.2
	1.8	1.9	102.9	139.9
EFFICIENCY PROGRAMS SUBTOTAL	31.3	32.3	363.7	675.0
CUSTOMER SELF-GENERATION PROGRAMS				
Bioenergy Optimization	13.9	0.5	15.5	62.5
Load Displacement	12.0	7.3	12.0	68.5
	25.9	7.8	27.5	131.1
RATE/LOAD MANAGEMENT PROGRAMS				
Curtailable Rates	145.7	143.5	145.7	143.5
	145.7	143.5	145.7	143.5
CONSERVATION RATES				
Conservation Rates - Commercial	-	-	-	25.9
Conservation Rates - Residential	-	-	-	17.2
	-	-	-	43.0
FUEL CHOICE				
Fuel Choice	-	-	-	127.7
TOTAL (at customer meter)	202.9	183.5	536.9	1,120.4
TOTAL (at generation)	224.4	203.1	601.0	1,260.6

^ Plan estimates are from the 2015 Power Smart Plan.
* Savings include actual + persisting results, up to and including 2015/16.
Note: Figures may not add due to rounding.
Free driver participation is included in the above figures.

In 2015/16 alone, Power Smart electric incentive-based programs, including efficiency-based, customer self-generation and rate/load management programs, exceeded planned savings by 19.4 MW.

The variances within Power Smart electric incentive-based programs in 2015/16 are highlighted below.

Residential:

The residential sector, which accounted for 5% of total demand savings in 2015/16, contributed 9.4 MW, which is 2.3 MW less than planned.

- The Residential LED Lighting Program achieved 4.1 MW, exceeding planned demand savings by 0.6 MW or 18%. This variance is the result of greater participation than anticipated, in addition to higher per bulb demand savings.
- The Community Geothermal Program achieved 0.2 MW, which is 1.5 MW less than planned. This variance is the result of significantly lower than expected participation.

Commercial:

The commercial sector, which accounted for 10% of total demand savings in 2015/16, contributed 20.1 MW of savings, 1.5 MW above target.

- The Commercial Lighting Program achieved 12.0 MW, surpassing planned demand savings by 2.9 MW or 32%. This variance is a result of the previously mentioned higher than expected incremental sales.
- The Commercial Building Envelope Program achieved 3.6 MW, essentially doubling planned demand savings. As mentioned earlier, this variance is a result of the insulation side of the program's participation levels, which were markedly higher than anticipated.

Industrial:

- The industrial sector accounted for 1% of total demand savings in 2015/16 with 1.8 MW resulting from the Performance Optimization Program. Demand savings achieved by the Performance Optimization Program were 0.2 MW less than planned.

Customer Self-Generation:

- Customer Self-Generation accounted for 13% of total MW savings in 2015/16, with 25.9 MW of savings, 18.1 MW below plan. This resulted from both the Bioenergy Optimization and Load Displacement Programs achieving significantly higher demand savings than planned.

Rate/Load Management:

- The Curtailable Rates Program, which accounted for 72% of total demand savings in 2015/16, contributed 145.7 MW of savings, 2.2 MW higher than planned. For further details, please see APPENDIX E - "Curtailable Rates Program Information & Methodology".

4.4.1.3 Electric Total Resource Cost - Benefit/Cost Analysis

Exhibits 4.4.1.3-A and 4.4.1.3-B show the electric benefit/cost analysis results under the total resource cost (TRC) metric by program. The calculation of the benefit/cost ratio was based on a 30-year evaluation period. Refer to APPENDIX B - 'Explanation of Benefit/Cost Ratios used in DSM Economic Metrics' for formulas and criteria used to determine cost-effectiveness.

Exhibit 4.4.1.3 - A
2015/16 TRC - Electric Incentive-Based Programs

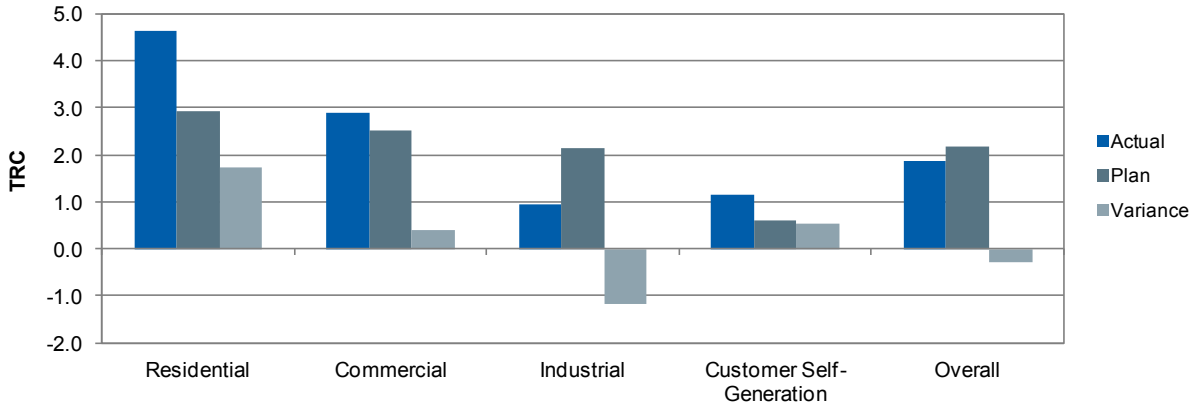


Exhibit 4.4.1.3 - B

Total Resource Cost Benefit/Cost Analysis - Electric Incentive-Based Programs

	2015/16 Actual	2015/16 Plan^^	Total***	2029/30 Plan^^
		TRC		
RESIDENTIAL				
Residential LED Lighting*	19.9	1.7	16.1	12.8
Water & Energy Saver †	9.7	5.9	10.4	6.1
Home Insulation	4.7	4.1	5.0	3.8
Affordable Energy**†	3.3	4.4	2.0	2.8
Refrigerator Retirement	2.5	1.9	1.7	1.9
Drain Water Heat Recovery	1.1	3.8	1.2	3.8
Community Geothermal	0.7	1.5	0.8	1.7
New Homes (Redesign)	-	-	-	1.4
	4.6	2.9	3.6	2.4
COMMERCIAL				
Commercial Kitchen Appliances †	22.9	16.7	9.2	16.2
Commercial Building Envelope	10.8	4.6	5.9	4.8
Commercial Lighting	4.9	2.9	2.9	3.0
Commercial HVAC	3.0	3.6	2.5	1.9
Commercial Refrigeration	2.6	3.1	3.2	3.7
Commercial New Buildings	2.5	3.2	3.7	3.7
Commercial Geothermal	2.4	2.8	1.9	3.0
Power Smart Shops	1.8	2.3	1.4	3.0
Internal Retrofit	1.7	1.2	2.1	1.1
Commercial Custom Measures	1.4	1.4	1.7	1.6
LED Roadway Lighting	0.7	1.0	0.7	1.4
Commercial Building Optimization	-	1.4	1.4	3.9
Commercial Network Energy Management	-	0.9	0.8	1.5
	2.9	2.5	2.7	3.0
INDUSTRIAL				
Performance Optimization	1.0	2.1	2.8	2.2
	1.0	2.1	2.8	2.2
DISCONTINUED/EXPLORATORY PROGRAMS †	6.7	-	2.6	1.0
	6.7	-	2.6	1.0
CUSTOMER SELF-GENERATION PROGRAMS				
Bioenergy Optimization	1.2	1.3	1.6	1.6
Load Displacement	0.9	0.3	0.8	1.5
	1.1	0.6	1.6	1.5
CONSERVATION RATES				
Conservation Rates - Residential	-	-	-	15.7
Conservation Rates - Commercial	-	-	-	19.7
	-	-	-	17.9
FUEL CHOICE				
Fuel Choice	-	-	-	6.6
	-	-	-	6.6
OVERALL: PROGRAM COSTS	1.9	2.3	2.7	2.4
OVERALL: PROGRAM COSTS + SUPPORT COSTS^	1.9	2.2	2.3	2.3

* The large positive variance between Residential LED Lighting Program's targeted and actual TRC values is a result of higher than expected participation and savings, combined with lower than anticipated costs.

** Includes all Affordable Energy Fund and Furnace Replacement Program expenditures, as well as external funding.

*** "Total" values represent the results of the program/portfolio since its inception.

† Includes water savings benefits.

^ Support costs contain DSM support programs, basic information services and program support costs.

^^ Plan estimates are from the 2015 Power Smart Plan.

Note: Free driver participation is included in the above figures.

4.4.1.4 Electric Rate Impact Measure - Benefit/Cost Analysis

Exhibits 4.4.1.4-A and 4.4.1.4-B identify the electric benefit/cost ratios under the rate impact measure (RIM) metric by program. The calculation of the benefit/cost ratio is based on a 30-year evaluation period. Refer to APPENDIX B - 'Explanation of Benefit/Cost Ratios used in DSM Economic Metrics' for formulas and criteria used to determine cost-effectiveness.

Exhibit 4.4.1.4 - A
2015/16 RIM - Electric Incentive -Based Programs

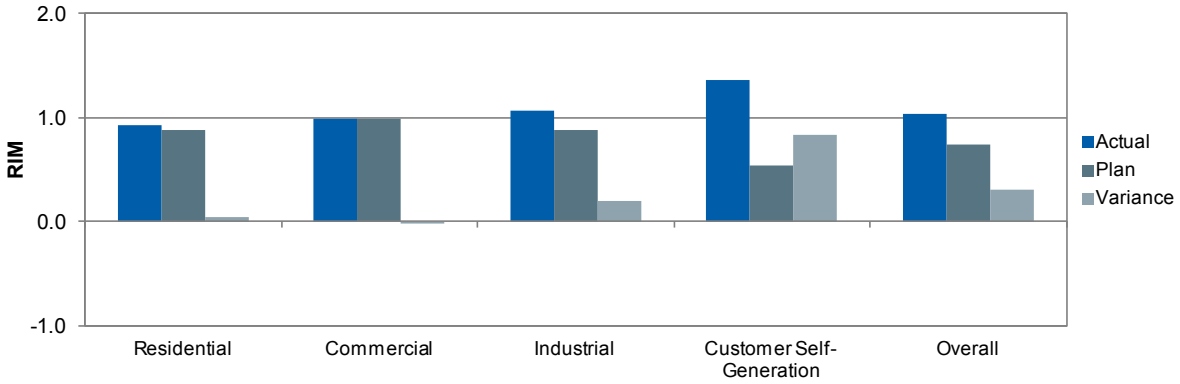


Exhibit 4.4.1.4 - B

Rate Impact Cost Benefit/Cost Analysis - Electric Incentive-Based Programs

	2015/16 Actual	2015/16 Plan^^	Total*	2029/30 Plan^^
		RIM		
RESIDENTIAL				
Home Insulation	1.2	1.2	1.5	1.1
Residential LED Lighting	1.0	0.3	0.9	1.0
Affordable Energy**	1.0	1.1	0.9	0.9
Water & Energy Saver	0.8	0.8	0.9	0.8
Community Geothermal	0.6	1.1	0.7	1.1
Refrigerator Retirement	0.6	0.6	0.6	0.6
Drain Water Heat Recovery	0.5	0.7	0.5	0.7
New Home (Redesign)	-	-	-	1.3
	0.9	0.9	1.1	1.0
COMMERCIAL				
Internal Retrofit	1.7	1.2	2.1	1.1
Commercial Building Envelope	1.5	1.2	1.5	1.2
Commercial Geothermal	1.3	1.4	1.6	1.2
Commercial New Buildings	1.1	1.2	1.4	1.3
Commercial Lighting	1.1	1.0	1.0	1.0
Commercial Custom Measures	1.0	0.9	1.3	1.0
Commercial Kitchen Appliances	0.9	1.0	1.1	1.0
Commercial Refrigeration	0.9	0.8	1.1	1.0
Power Smart Shops	0.8	0.7	0.7	0.8
Commercial HVAC	0.6	0.7	0.9	0.8
LED Roadway Lighting	0.5	0.6	0.5	0.7
Commercial Network Energy Management	-	0.7	0.5	1.0
Commercial Building Optimization	-	0.7	0.7	1.0
	1.0	1.0	1.1	1.1
INDUSTRIAL				
Performance Optimization	1.1	0.9	1.3	0.9
	1.1	0.9	1.3	0.9
DISCONTINUED/EXPLORATORY PROGRAMS	1.0	-	0.9	0.7
	1.0	-	0.9	0.7
CUSTOMER SELF-GENERATION PROGRAMS				
Bioenergy Optimization	1.6	1.0	1.4	1.4
Load Displacement	0.4	0.3	0.4	1.1
	1.4	0.5	1.3	1.2
CONSERVATION RATES				
Conservation Rates - Residential	-	-	-	0.8
Conservation Rates - Commercial	-	-	-	1.1
	-	-	-	0.9
FUEL CHOICE				
Fuel Choice	-	-	-	1.3
	-	-	-	1.3
OVERALL PROGRAM COSTS	1.1	0.9	1.2	1.0
OVERALL PROGRAM COSTS + SUPPORT COSTS^	1.0	0.7	1.1	1.0

* "Total" values represent the results of the program/portfolio since its inception.
** Includes all Affordable Energy Fund expenditures, excludes external funding (there was no external funding in 2015/16).
^ Support costs contain DSM support programs, basic information services and program support costs.
^^ Plan estimates are from the 2015 Power Smart Plan.
Note: Benefit/Cost analysis is not calculated for rate/load management programs.
Free driver participation is included in the above figures.

4.4.1.5 Electric Average Levelized Utility Cost - ¢/kW.h Saved

Exhibits 4.4.1.5-A and 4.4.1.5-B highlight the average levelized utility cost of 2015/16 electric incentive-based programs in ¢/kW.h saved. The calculation of ¢/kW.h saved is based upon current program kW.h savings at generation over a 30-year evaluation period. Refer to APPENDIX B - 'Explanation of Benefit/Cost Ratios used in DSM Economic Metrics' for formulas and criteria used to determine cost-effectiveness. The utility costs presented do not include costs associated with DSM support programs, standards activities or the customer costs of DSM measures.

Exhibit 4.4.1.5 - A
2015/16 Average Levelized Utility Cost
Electric Incentive-Based Programs
at Generation

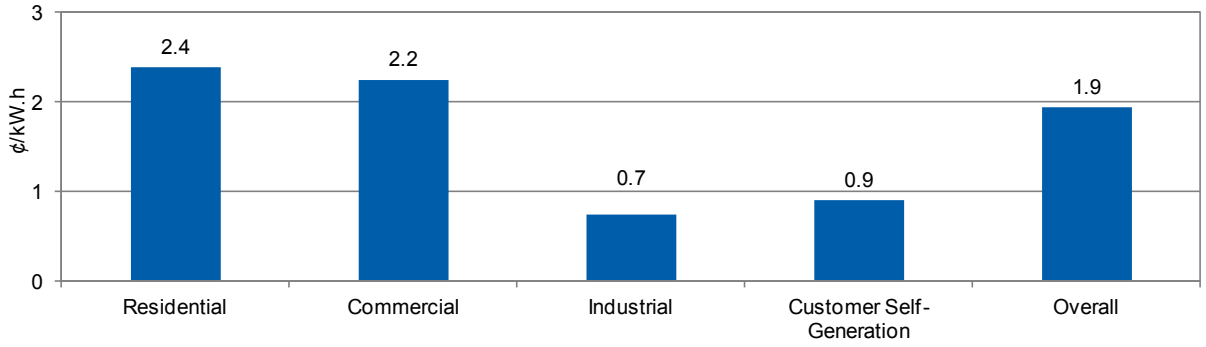


Exhibit 4.4.1.5 - B

Average Levelized Utility Cost at Generation - ¢/kW.h Saved by Power Smart Programs

	2015/16 Actual	2015/16 Total**	2029/30 Plan^^
		LUC (¢/kW.h)	
RESIDENTIAL			
Drain Water Heat Recovery	7.3	7.1	1.9
Community Geothermal	4.2	3.4	2.9
Affordable Energy*	3.6	4.7	4.6
Refrigerator Retirement	2.5	1.9	1.9
Home Insulation	2.4	2.4	3.1
Residential LED Lighting	1.7	1.9	2.0
Water & Energy Saver	1.3	1.2	2.4
New Home (Redesign)	-	-	0.9
Discontinued/Exploratory Programs	-	1.4	3.9
	2.4	1.9	3.1
COMMERCIAL			
LED Roadway Lighting	9.9	10.1	4.5
Internal Retrofit	4.0	4.1	6.4
Power Smart Shops	3.7	7.2	3.3
Commercial Refrigeration	1.4	0.9	0.8
Commercial New Buildings	1.2	1.4	0.4
Commercial Lighting	1.2	1.7	1.8
Commercial Geothermal	1.1	1.3	3.1
Commercial Building Envelope	0.9	1.8	2.3
Commercial HVAC	0.8	1.3	2.1
Commercial Custom Measures	0.7	0.9	2.2
Commercial Kitchen Appliances	0.5	1.8	0.7
Commercial Network Energy Management	-	8.4	0.7
Commercial Building Optimization	-	3.2	1.3
Discontinued/Exploratory Programs	0.1	1.8	3.6
	2.2	1.9	1.9
INDUSTRIAL			
Performance Optimization	0.7	0.5	2.3
Discontinued/Exploratory Programs	-	0.9	4.0
	0.7	0.6	2.5
CUSTOMER SELF-GENERATION PROGRAMS			
Load Displacement	6.0	6.9	1.1
Bioenergy Optimization	0.1	0.8	1.7
	0.9	1.0	1.2
CONSERVATION RATES			
Conservation Rates - Residential	-	-	0.5
Conservation Rates - Commercial	-	-	0.4
	-	-	0.4
FUEL CHOICE			
Fuel Choice	-	-	1.1
	-	-	1.1
OVERALL: PROGRAM COSTS	1.8	1.4	1.7
OVERALL: PROGRAM COSTS + SUPPORT COSTS^	1.9	1.6	1.8

* Includes all Affordable Energy Fund expenditures, excludes external funding (there was no external funding in 2015/16).
** "Total" values represent the results of the program/portfolio since its inception.
^ Support costs contain DSM support programs, basic information services and program support costs.
^^ Plan estimates are from the 2015 Power Smart Plan.
Note: Average levelized utility cost analysis is not provided for rate/load management programs.
Free driver participation is included in the above figures.

4.4.1.6 Electric Levelized Resource Cost- ¢/kW.h Saved

Exhibits 4.4.1.6-A and 4.4.1.6-B highlight the average levelized resource cost of 2015/16 electric incentive-based programs in ¢/kW.h saved. The calculation of ¢/kW.h saved is based upon current program kW.h savings at generation over a 30-year evaluation period. Refer to APPENDIX B - 'Explanation of Benefit/Cost Ratios used in DSM Economic Metrics' for formulas and criteria used to determine cost-effectiveness. The resource costs presented do not include costs associated with DSM support programs or standards activities, however they do include the customer costs of DSM measures.

Exhibit 4.4.1.6 - A
2015/16 Average Levelized Resource Cost at Generation

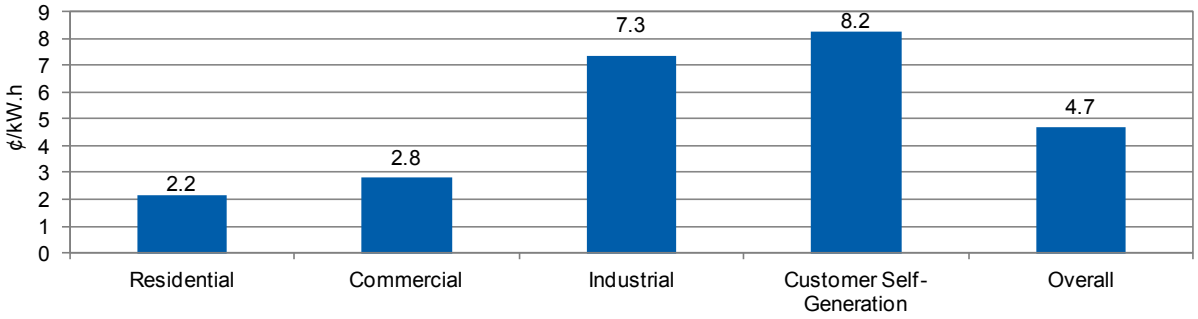


Exhibit 4.4.1.6 - B

Average Levelized Resource Cost at Generation - ¢/kW.h Saved by Power Smart Programs

	2015/16 Actual	2015/16 Total**	2029/30 Plan^^
		LRC (¢/kW.h)	
RESIDENTIAL			
Community Geothermal	11.2	11.0	8.0
Drain Water Heat Recovery	6.9	6.8	1.9
Affordable Energy*	3.6	6.9	4.7
Home Insulation	2.7	3.0	3.5
Refrigerator Retirement	2.3	3.1	3.2
Water & Energy Saver	1.3	1.1	2.5
Residential LED Lighting	0.5	0.6	0.8
New Home (Redesign)	-	-	9.0
Discontinued/Exploratory Programs	-	2.8	10.1
	2.2	3.0	6.7
COMMERCIAL			
LED Roadway Lighting	9.9	10.1	6.9
Power Smart Shops	4.9	7.8	3.8
Commercial Geothermal	4.8	5.9	4.6
Commercial Custom Measures	4.4	3.6	5.8
Internal Retrofit	4.0	3.9	6.4
Commercial New Buildings	3.2	2.7	3.4
Commercial Refrigeration	2.4	2.1	1.9
Commercial Lighting	1.7	2.6	3.2
Commercial Building Envelope	1.2	2.4	2.8
Commercial HVAC	1.2	2.4	2.7
Commercial Kitchen Appliances	0.5	2.2	1.2
Commercial Building Optimization	-	5.2	2.2
Commercial Network Energy Management	-	10.0	4.7
Discontinued/Exploratory Programs	-	2.0	8.2
	2.8	2.9	4.2
INDUSTRIAL			
Performance Optimization	7.3	2.2	3.6
Discontinued/Exploratory Programs	-	2.3	5.7
	7.3	2.2	3.9
CUSTOMER SELF-GENERATION PROGRAMS			
Bioenergy Optimization	8.8	4.7	8.3
Load Displacement	4.5	5.0	4.7
	8.2	4.8	5.3
CONSERVATION RATES			
Conservation Rates - Residential	-	-	0.5
Conservation Rates - Commercial	-	-	0.4
	-	-	0.4
FUEL CHOICE			
Fuel Choice	-	-	2.0
	-	-	2.0
OVERALL: PROGRAM COSTS	4.5	2.7	4.0
OVERALL: PROGRAM COSTS + SUPPORT COSTS^	4.7	2.9	4.1

* Includes all Affordable Energy Fund expenditures, excludes external funding (there was no external funding in 2015/16).
** "Total" values represent the results of the program/portfolio since its inception.
^ Support costs contain DSM support programs, basic information services and program support costs.
^^ Plan estimates are from the 2015 Power Smart Plan.
Note: Average levelized resource cost analysis is not provided for rate/load management programs.
Free driver participation is included in the above figures.

4.4.2 Power Smart Natural Gas Program Results

The following sections outline the Power Smart program results in terms of natural gas energy savings and benefit/ cost analyses.

4.4.2.1 Annual Natural Gas Energy Savings

Natural gas energy savings achieved by incentive-based Power Smart programs in 2015/16 is displayed by sector and program in Exhibits 4.4.2.1-A and 4.4.2.1-B respectively. Exhibit 4.4.2.1-B also provides cumulative natural gas energy savings achieved by incentive-based Power Smart programs.

Exhibit 4.4.2.1 - A
Percentage of Annual Natural Gas Savings
Incentive-Based Programs

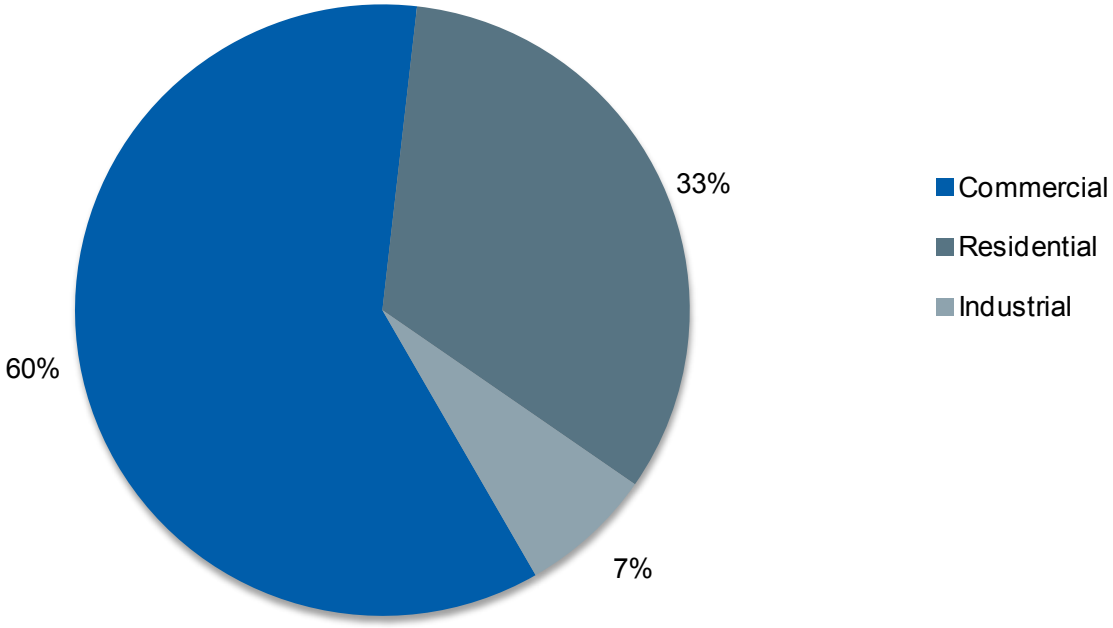


Exhibit 4.4.2.1 - B

Annual Natural Gas Savings - Incentive-Based Programs

	2015/16 Actual	2015/16 Plan^	Total*	2029/30 Plan^
		millions of cubic metres		
RESIDENTIAL				
Affordable Energy	1.2	1.4	8.4	13.4
Water & Energy Saver	0.6	0.8	4.5	5.5
Home Insulation	0.6	0.7	13.4	20.0
New Home (Redesign)	-	-	-	5.4
Residential Discontinued/Exploratory Programs	-	-	7.7	9.1
	2.3	2.8	33.9	53.5
COMMERCIAL				
Commercial Building Envelope	1.7	1.1	15.3	30.6
Commercial HVAC	0.9	1.1	12.1	21.9
Commercial New Buildings	0.7	0.4	3.7	7.1
Commercial Kitchen Appliances	0.6	0.3	1.0	1.1
Commercial Custom Measures	0.3	0.1	1.9	3.4
Power Smart Shops	0.0	0.0	0.0	0.1
Commercial Building Optimization	-	0.1	0.6	4.9
Internal Retrofit	-	-	0.0	0.0
Commercial Discontinued/Exploratory Programs	-	-	0.8	1.2
	4.3	3.2	35.5	70.4
INDUSTRIAL				
Natural Gas Optimization	0.5	1.0	15.4	25.0
Industrial Discontinued/Exploratory	-	-	-	-
	0.5	1.0	15.4	25.0
EFFICIENCY PROGRAMS SUBTOTAL	7.1	6.9	84.8	148.9
FUEL CHOICE				
Fuel Choice	-	-	-	(27.7)
	-	-	-	(27.7)
INTERACTIVE EFFECTS SUBTOTAL	(1.3)	(1.9)	(15.8)	(20.6)
NET IMPACT OVERALL	5.8	5.0	68.9	100.6

^ Plan estimates are from the 2015 Power Smart Plan.
* Savings include actual + persisting results, up to and including 2015/16.
Note: Figures may not add due to rounding.
Free driver participation is included in the above figures.

In 2015/16, Power Smart natural gas incentive-based programs exceeded plan by 0.8 million cubic meters.

The variances within Power Smart natural gas incentive-based programs in 2015/16 are highlighted below.

Residential:

The residential sector, which contributed 2.3 million cubic meters in savings, accounted for 33% of total savings in 2015/16, below planned savings by 0.5 million cubic meters.

- The Affordable Energy Program achieved 1.2 million cubic meters of savings, 16% below plan. This variance was driven by the program's participation, which was significantly less than planned.
- The Water and Energy Saver Program achieved 0.6 million cubic meters in savings, below plan by 23%. This variance was also a direct result of lower than expected participation.

Commercial:

The commercial sector, contributed 4.3 million cubic meters of savings. It accounted for 60% of total savings in 2015/16, and surpassed planned savings by 1.1 million cubic meters.

- The Commercial Building Envelope Program achieved savings of 1.7 million cubic meters, surpassing plan by 0.6 million cubic meters or 49%. This variance is primarily due to participation on the insulation side of the program which exceeded targets by 42%.

Industrial:

- The Natural Gas Optimization Program contributed 0.5 million cubic meters of natural gas savings, 48% less than planned. This variance can be attributed to lower than planned participation, with completion dates for several projects being moved to the next fiscal year.

Some electric Power Smart programs result in an increase or decrease in natural gas consumption, referred to as interactive effects. For example, a more energy efficient lighting system emits less heat, requiring more energy to heat the space. In cases where the heat is produced through natural gas heating systems, the interactive effects are taken into account when determining the natural gas savings. These interactive effects represent the increase in natural gas consumption in natural gas-heated homes resulting from the installation of energy efficient lighting systems.

In 2015/16, interactive effects increased consumption by 1.3 million cubic meters, reducing incentive-based natural gas savings to 5.8 million cubic meters. Interactive effects were higher than planned by 0.6 million cubic meters.

4.4.2.2 Natural Gas Total Resource Cost - Benefit/Cost Analysis

Exhibits 4.4.2.2-A and 4.4.2.2-B show the natural gas benefit/cost analysis results under the total resource cost (TRC) metric by program. The calculation of the benefit/cost ratio was based on a 30-year evaluation period. Refer to APPENDIX B - 'Explanation of Benefit/Cost Ratios Used in DSM Economic Metrics' for formulas and criteria used to determine cost-effectiveness.

Exhibit 4.4.2.2 - A
2015/16 TRC - Natural Gas Incentive-Based Programs

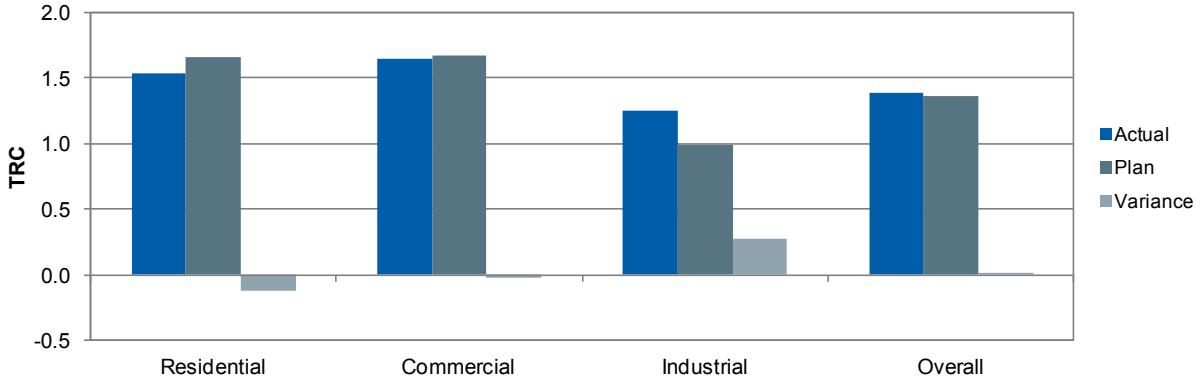


Exhibit 4.4.2.2 - B

Total Resource Cost Benefit/Cost Analysis - Natural Gas Incentive-Based Program

	2015/16 Actual	2015/16 Plan^^	Total**	2029/30 Plan^^
		TRC		
RESIDENTIAL				
Water & Energy Saver †	5.0	7.1	6.6	7.2
Home Insulation	1.1	1.2	1.6	1.2
Affordable Energy* †	0.8	0.8	0.6	0.7
New Home (Redesign)	-	-	-	0.6
	1.5	1.7	1.4	0.9
COMMERCIAL				
Commercial Kitchen Appliances †	19.8	12.8	11.3	13.7
Commercial Custom Measures	2.2	1.2	1.3	1.3
Commercial Building Envelope	1.7	1.7	2.0	1.8
Commercial HVAC	1.5	2.3	2.5	2.2
Power Smart Shops	1.4	27.9	1.1	28.2
Commercial New Buildings	0.6	0.7	1.9	0.8
Commercial Building Optimization	-	0.4	0.8	1.3
Internal Retrofit	-	-	0.7	-
	1.6	1.7	2.2	1.4
INDUSTRIAL				
Industrial Natural Gas Optimization	1.3	1.0	1.6	1.1
	1.3	1.0	1.6	1.1
DISCONTINUED/EXPLORATORY PROGRAMS †	-	-	2.1	1.3
	-	-	2.1	1.3
OVERALL: PROGRAM COSTS	1.4	1.4	1.6	1.0
OVERALL: PROGRAM COSTS + SUPPORT COSTS^	1.4	1.4	1.5	1.0

* Includes all apportioned Affordable Energy Fund and Furnace Replacement Program expenditures, as well as external funding (there was no external funding in 2015/16). Excluding Furnace Replacement Program, an 'Actual' TRC of 0.9 is achieved. Including only Furnace Replacement Program, an 'Actual' TRC of 0.5 is achieved.

** "Total" values represent the results of the program/portfolio since its inception.

† Includes water savings benefits.

^ Support costs contain DSM support programs, basic information services and program support costs.

^^ Plan estimates are from the 2015 Power Smart Plan.

Note: Increased or decreased natural gas benefits resulting from electric incentive-based programs have been included in the overall calculation.

Free driver participation is included in the above figures.

4.4.2.3 Natural Gas Rate Impact Measure - Benefit/Cost Analysis

Exhibits 4.4.2.3-A and 4.4.2.3-B identify the benefit/cost ratios under the rate impact measure (RIM) metric. The calculation of the benefit/cost ratio is based on a 30-year evaluation period. Refer to APPENDIX B - 'Explanation of Benefit/Cost Ratios Used in DSM Economic Metrics' for formulas and criteria used to determine cost-effectiveness.

Exhibit 4.4.2.3 - A
2015/16 RIM - Natural Gas Incentive-Based Programs

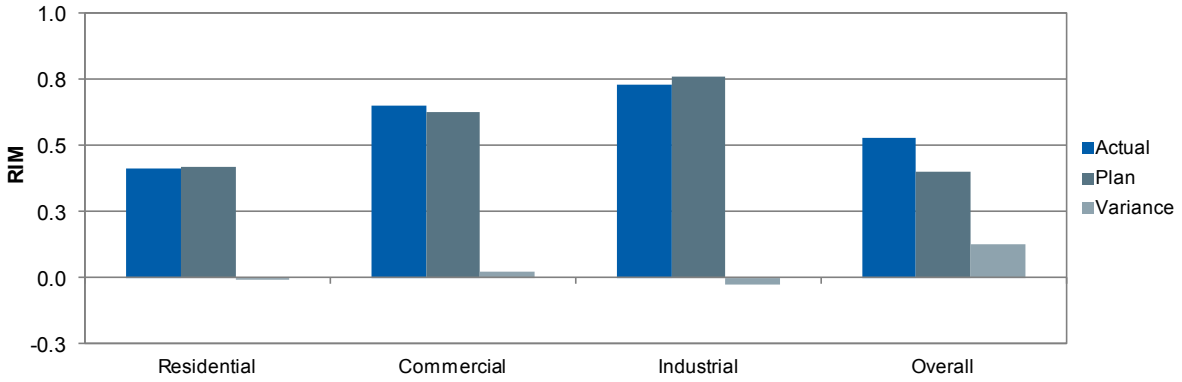


Exhibit 4.4.2.3 - B

Rate Impact Cost Benefit/Cost Analysis - Natural Gas Incentive-Based Programs

	2015/16 Actual	2015/16 Plan^^	Total*	2029/30 Plan^^
			RIM	
RESIDENTIAL				
Home Insulation	0.6	0.6	0.7	0.6
Water & Energy Saver	0.5	0.6	0.6	0.6
Affordable Energy**	0.3	0.3	0.4	0.3
New Home (Redesign)	-	-	-	0.8
	0.4	0.4	0.6	0.5
COMMERCIAL				
Commercial Custom Measures	0.7	0.6	0.7	0.7
Commercial Kitchen Appliances	0.7	0.6	0.6	0.7
Commercial HVAC	0.7	0.7	0.8	0.7
Commercial Building Envelope	0.7	0.6	0.7	0.6
Commercial New Buildings	0.6	0.7	0.7	0.8
Commercial Building Optimization	-	0.3	0.4	0.6
Internal Retrofit	-	-	0.6	-
Power Smart Shops	-	0.7	-	0.7
	0.7	0.6	0.7	0.7
INDUSTRIAL				
Natural Gas Optimization	0.7	0.8	0.9	0.8
	0.7	0.8	0.9	0.8
DISCONTINUED/EXPLORATORY PROGRAMS	-	-	0.7	0.7
	-	-	0.7	0.7
OVERALL: PROGRAM COSTS	0.6	0.5	0.7	0.6
OVERALL: PROGRAM COSTS incl. INTERACTIVE EFFECTS	0.5	0.5	0.7	0.6
OVERALL: PROGRAM COSTS + SUPPORT COSTS incl. INTERACTIVE EFFECTS^	0.5	0.4	0.6	0.6

^ Support costs contain DSM support programs, basic information services and program support costs.
^^ Plan estimates are from the 2015 Power Smart Plan.
* "Total" values represent the results of the program/portfolio since its inception.
** Includes all apportioned Affordable Energy Fund and Furnace Replacement Program expenditures, and excludes external funding (there was no external funding in 2015/16). AEP's 'Actual' RIM including apportioned Affordable Energy Fund, but excluding Furnace Replacement Program was 0.4. AEP's "Actual' RIM including only the Furnace Replacement Program was 0.1.
Note: Free driver participation is included in the above figures.

4.4.2.4 Natural Gas Average Levelized Utility Cost - ¢/m³ Saved

Exhibits 4.4.2.4-A and 4.4.2.4-B highlight the average levelized utility cost of 2015/16 natural gas incentive-based programs in ¢/m³ saved. The calculation of ¢/m³ saved is based upon current program natural gas savings over a 30-year evaluation period. Refer to APPENDIX B - 'Explanation of Benefit/Cost Ratios used in DSM Economic Metrics' for formulas and criteria used to determine cost-effectiveness. The utility costs presented do not include costs associated with future Power Smart incentive-based programs, DSM support programs, standards activities or the customer costs of DSM measures.

Exhibit 4.4.2.4 - A
2015/16 Average Levelized Utility Cost (¢/m³)

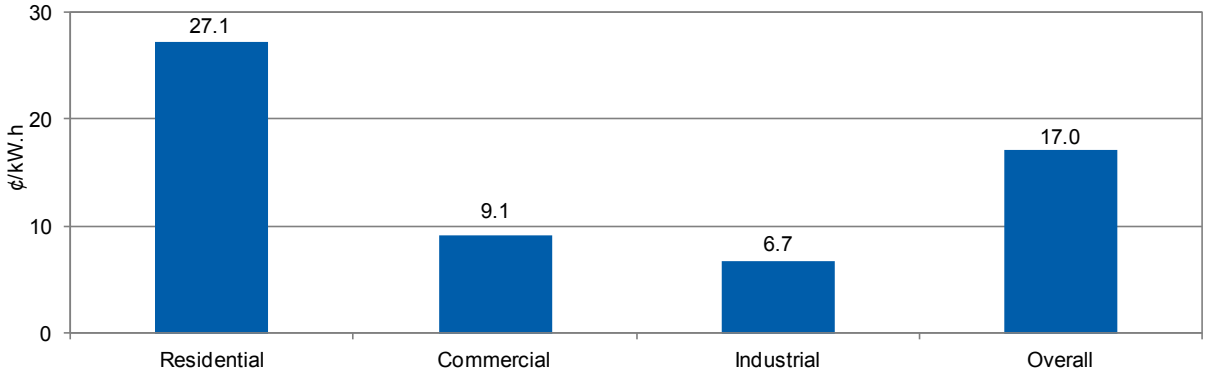


Exhibit 4.4.2.4 - B

Average Levelized Utility Cost - ¢/m³ Saved by Power Smart Programs

	2015/16 Actual	2015/16 Total**	2029/30 Plan^^
		LUC(¢/m³)	
RESIDENTIAL			
Affordable Energy*	46.1	51.2	54.2
Water & Energy Saver	15.6	12.2	10.5
Home Insulation	11.1	11.4	12.2
New Home (Redesign)	-	-	0.5
	27.1	20.5	23.7
COMMERCIAL			
Power Smart Shops	110.2	82.1	4.0
Commercial New Buildings**	15.6	7.1	3.4
Commercial HVAC	7.9	7.2	6.1
Commercial Building Envelope	7.7	11.1	12.2
Commercial Custom Measures	7.1	7.4	9.8
Commercial Kitchen Appliances	4.9	7.9	4.9
Commercial Building Optimization	-	41.0	12.7
Internal Retrofit	-	38.9	-
	9.1	9.3	8.7
INDUSTRIAL			
Natural Gas Optimization	6.7	3.0	4.8
	6.7	3.0	4.8
DISCONTINUED/EXPLORATORY PROGRAMS	-	8.9	4.9
OVERALL: PROGRAM COSTS	14.3	11.4	12.8
OVERALL: PROGRAM COSTS incl. INTERACTIVE EFFECTS†	16.2	12.8	14.6
OVERALL: PROGRAM COSTS + SUPPORT COSTS incl. INTERACTIVE EFFECTS^	17.0	14.9	16.1

* Includes all apportioned Affordable Energy Fund and Furnace Replacement Program expenditures, and excludes external funding (there was no external funding in 2015/16). AEP's 'Actual' levelized utility cost including apportioned Affordable Energy Fund, but excluding the Furnace Replacement Program was 30.3 ¢/m³. AEP's 'Actual' levelized utility cost including only the Furnace Replacement Program was 142.0 ¢/m³.

** "Total" values represent the results of the program/portfolio since its inception.

^ Support costs contain DSM support programs, basic information services and program support costs.

^^ Plan estimates are from the 2015 Power Smart Plan.

Note: Free driver participation is included in the above figures.

4.4.2.5 Natural Gas Levelized Resource Cost- ¢/m³ Saved

Exhibits 4.4.2.5-A and 4.4.2.5-B highlight the average levelized resource cost of 2015/16 natural gas incentive-based programs in ¢/m³. The calculation of ¢/m³ saved is based upon current program natural gas savings over a 30-year evaluation period. Refer to APPENDIX B - 'Explanation of Benefit/Cost Ratios used in DSM Economic Metrics' for formulas and criteria used to determine cost-effectiveness. The resource costs presented do not include costs associated with future Power Smart incentive-based programs, DSM support programs or standards activities, however they do include the customer costs of DSM measures.

Exhibit 4.4.2.5 - A

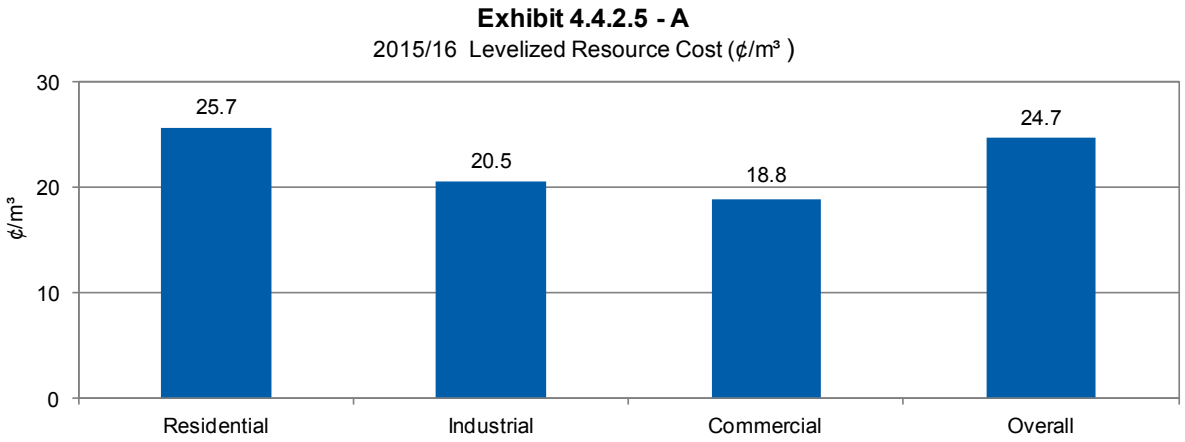


Exhibit 4.4.2.5 - B

Natural Gas Levelized Resource Cost - ¢/m³ Saved by Power Smart Programs

	2015/16 Actual	2015/16 Total**	2029/30 Plan^^
		LRC (¢/m³)	
RESIDENTIAL			
Affordable Energy*	32.4	56.3	43.0
Home Insulation	24.4	22.2	24.1
Water & Energy Saver	15.5	10.1	10.4
New Home (Redesign)	-	-	49.5
	25.7	28.0	35.9
COMMERCIAL			
Power Smart Shops	84.9	80.0	4.0
Commercial New Buildings**	40.7	15.4	39.2
Commercial HVAC	17.1	13.0	12.3
Commercial Building Envelope	15.7	16.3	15.6
Commercial Custom Measures	11.2	23.4	21.3
Commercial Kitchen Appliances	4.5	8.6	7.2
Commercial Building Optimization	-	41.8	21.7
Internal Retrofit	-	38.9	-
	18.8	15.5	20.8
INDUSTRIAL			
Natural Gas Optimization	20.5	19.3	24.4
	20.5	19.3	24.4
DISCONTINUED/EXPLORATORY PROGRAMS	-	21.9	22.9
OVERALL: PROGRAM COSTS	21.0	20.7	26.0
OVERALL: PROGRAM COSTS incl. INTERACTIVE EFFECTS	23.8	23.2	29.8
OVERALL: PROGRAM COSTS + SUPPORT COSTS incl. INTERACTIVE EFFECTS^	24.7	25.2	31.3

* Includes all apportioned Affordable Energy Fund and Furnace Replacement Program expenditures, and excludes external funding (there was no external funding in 2015/16). AEP's 'Actual' levelized resource cost including apportioned Affordable Energy Fund, but excluding the Furnace Replacement Program was 30.3 ¢/m³. AEP's 'Actual' levelized resource cost including only the Furnace Replacement Program was 45.4 ¢/m³.

** "Total" values represent the results of the program/portfolio since its inception.

^ Support costs contain DSM support programs, basic information services and program support costs.

^^ Plan estimates are from the 2015 Power Smart Plan.

Note: Average levelized resource cost analysis is not provided for rate/load management programs.
Free driver participation is included in the above figures.

4.4.3 Power Smart Combined Electric & Natural Gas Program Results

Total Resource Cost - Benefit/Cost Analysis

Exhibits 4.4.3-A and 4.4.3-B show the combined electricity and natural gas benefit/cost analysis results under the total resource cost (TRC) metric by program. The calculation of the benefit/cost ratio was based on a 30-year evaluation period.

Exhibit 4.4.3 - A
2015/16 TRC - Combined Electric & Gas Incentive-Based Programs

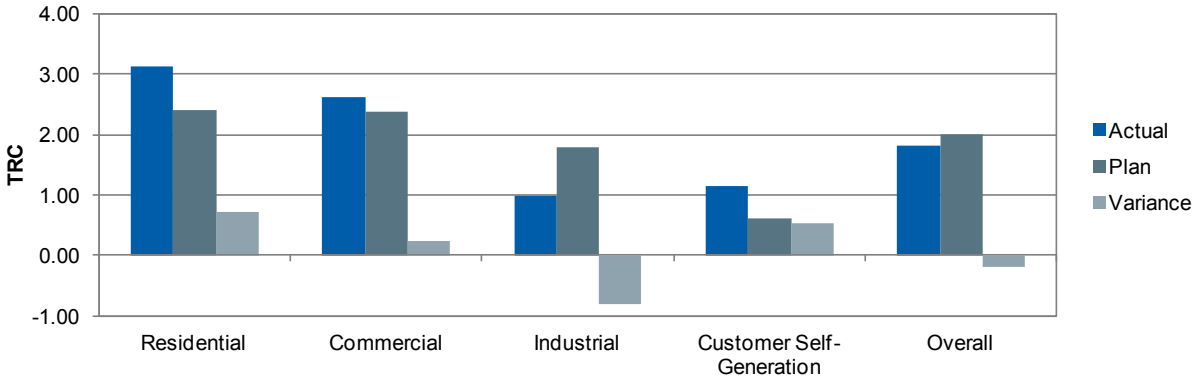


Exhibit 4.4.3 - B

Total Resource Cost Benefit Analysis - Combined Electric & Natural Gas Incentive-Based Programs

	2015/16 Actual	2015/16 Plan^^	Total***	2029/30 Plan^^
		TRC		
RESIDENTIAL				
Residential LED Lighting*	16.6	1.4	12.8	10.5
Water & Energy Saver†	6.6	6.5	8.0	6.5
Home Insulation	2.8	2.6	2.9	2.3
Refrigerator Retirement	2.3	1.4	1.3	1.7
Affordable Energy**†	1.8	2.1	0.9	1.6
Drain Water Heat Recovery	1.1	3.8	1.2	3.8
Community Geothermal	0.7	1.5	0.8	1.7
New Home (Redesign)	-	-	-	0.9
	3.1	2.4	2.3	1.8
COMMERCIAL				
Commercial Kitchen Appliances†	20.5	13.9	10.5	14.5
Commercial Lighting	4.9	2.8	2.8	2.8
Commercial Building Envelope	4.2	2.9	3.3	3.0
Commercial Refrigeration	2.8	3.6	3.5	4.2
Commercial Geothermal	2.4	2.8	1.9	3.0
Commercial HVAC	1.9	2.8	2.5	2.1
Commercial Custom Measures	1.8	1.3	1.6	1.5
Power Smart Shops	1.7	2.5	1.2	3.4
Internal Retrofit	1.6	1.1	2.0	1.1
Commercial New Buildings	1.4	2.6	2.8	3.0
LED Roadway Lighting	0.7	1.0	0.7	1.4
Commercial Network Energy Management	-	0.9	0.8	1.4
Commercial Building Optimization	-	0.7	1.0	2.1
	2.6	2.4	2.6	2.7
INDUSTRIAL				
Natural Gas Optimization	1.3	1.0	1.6	1.1
Performance Optimization	1.0	2.1	2.8	2.2
	1.0	1.8	2.5	2.0
DISCONTINUED/EXPLORATORY PROGRAMS†	6.4	-	2.4	1.0
	6.4	-	2.4	1.0
CUSTOMER SELF-GENERATION PROGRAMS				
Bioenergy Optimization	1.2	1.3	1.6	1.6
Load Displacement	0.9	0.3	0.8	1.5
	1.1	0.6	1.6	1.5
CONSERVATION RATES				
Conservation Rates - Residential	-	-	-	15.7
Conservation Rates - Commercial	-	-	-	19.7
	-	-	-	17.9
FUEL CHOICE				
Fuel Choice	-	-	-	6.6
	-	-	-	6.6
OVERALL: PROGRAM COSTS	1.9	2.1	2.4	2.2
OVERALL: PROGRAM COSTS + SUPPORT COSTS^	1.8	2.0	2.1	2.1

* The large positive variance between Residential LED Lighting Program's targeted and actual TRC values is a result of higher than expected participation and savings, combined with lower than anticipated costs.

** Includes all Affordable Energy Fund and Furnace Replacement Program expenditures, as well as external funding.

*** "Total" values represent the results of the program/portfolio since its inception.

† Includes water savings benefits.

^ Support costs contain DSM support programs, basic information services and program support costs.

^^ Plan estimates are from the 2015 Power Smart Plan.

Note: Increased or decreased natural gas benefits resulting from electric incentive-based programs have been included in the above table.
Benefit/Cost analysis is not calculated for rate/load management programs.
Free driver participation is included in the above figures.

For 2015/16, the combined overall TRC benefit/cost ratio including support costs was 1.8, which fell 10% short of the planned target. All evaluated Power Smart programs, with the exception of Community Geothermal, LED Roadway Lighting and Load Displacement, were cost-effective under the combined TRC metric in 2015/16.

4.5 Fuel Choice

As part of the provincial government's climate change plan, in 2011 they announced an upcoming tax and ban on heating with coal. In July 2013, they formally announced phasing in North America's first coal heating ban effective January 1, 2014, with a grace period up to July 1, 2017, if an approved conversion plan was filed by June 30, 2014.

To assist customers, Manitoba Hydro provided information on the fuel source options available to a number of impacted Hutterite Colonies. As a result of these efforts, twelve colonies switched to biomass, with savings already accounted for under the Bioenergy Optimization Program. In addition, twenty-eight colonies switched to natural gas.

The following table outlines the impacts of the Hutterite colonies that have switched to natural gas. It details the avoided electric impacts, as well as the increased natural gas consumption.

The fuel choice impacts are included in the report for information purposes only, and have not been utilized in the tabulation of overall Power Smart program savings or metrics.

Exhibit 4.5
Fuel Choice Impacts

CONVERSION TO NATURAL GAS FROM:	Resulting from Avoided Electric Heat:					
	Annual Energy Savings (GW.h savings at meter)		Average Winter Demand Savings (MW savings at meter)		Increased Annual Natural Gas Consumption (millions of m^3)	
	2015/16	Total*	2015/16	Total*	2015/16	Total*
Lignite Coal	67.5	235.5	26.3	91.7	7.9	27.3
Sub-bituminous Coal	3.0	12.2	1.2	4.7	0.2	0.9
Bioenergy (Oat Pellets)	4.4	9.0	1.7	3.5	0.5	1.1
Propane	19.5	75.9	7.6	29.6	2.4	9.2
Total	94.5	332.6	36.8	129.5	11.0	38.5

* Cumulative savings to the end of 2015/16.
Note: Figures may not add up due to rounding.

5.0 Total Power Smart Utility Costs

Total Power Smart utility costs include all costs incurred by the utility in the planning, development, design, implementation and evaluation of the Power Smart programs.

Program costs are attributed to a specific program and include program administration costs and incentive costs, while support costs are associated with activities supporting Power Smart programs which cannot be assigned to any one specific program. These costs include Power Smart promotions (general branding), promoting sustainability and standards, and DSM administration (overall planning and evaluation). Support costs also include costs attributed to running DSM support programs and the basic information portion of the efficiency programs.

5.1 Summary of Total Power Smart Utility Costs

Exhibit 5.1 summarizes the utility costs of the Power Smart programs cumulative to the end of 2015/16. The reported utility costs are presented in nominal dollars and detail actual accounting expenditures to 2015/16 for all Power Smart initiatives and activities.

Exhibit 5.1
Summary of Utility Costs Cumulative to 2015/16

UTILITY COSTS	Cumulative
	millions of nominal dollars
TOTAL UTILITY COSTS	
Program Cost	501.0
Support Cost	97.8
TOTAL UTILITY COSTS	598.8

Note: Support costs include both DSM support programs and support activity costs, but do not include Affordable Energy Fund or Furnace Replacement Program expenditures.
Figures may not add due to rounding.

As of March 31, 2016, Manitoba Hydro had invested approximately $599 million in the Power Smart initiative. The highest component of this expenditure was program utility costs of $501 million, which makes up 84% of total expenditures cumulative to 2015/16.

5.2 Utility Costs by Program

Exhibits 5.2-A and 5.2-B outline the costs to the utility for Power Smart initiatives implemented between April 1, 1989 and March 31, 2016.

Exhibit 5.2 - A
Utility Costs for Support, DSM Support Programs & Standards

	Actual 2015$	Cumulative nominal $
	thousands of dollars	
DSM SUPPORT PROGRAMS		
DSM Support Programs & Standards Electric Cost	*55*	*2,782*
DSM Support Programs & Standards Natural Gas Cost	*-460*	*-2,241*
	-405	541
Discontinued/Completed DSM Support Programs		
Discontinued/Completed DSM Support Programs Electric Cost	*-*	*489*
Discontinued/Completed DSM Support Programs Natural Gas Cost	*-*	*3,481*
	-	3,970
BASIC INFORMATION SERVICES		
Basic Information Services Electric Cost	*3*	*23,442*
Basic Information Services Natural Gas Cost	*3*	*5,223*
	5	28,665
Discontinued/Completed Basic Information Services		
Discontinued/Completed Basic Information Services Electric Cost	*-*	*2,885*
Discontinued/Completed Basic Information Services Natural Gas Cost	*-*	*20*
	-	2,905
SUPPORT COSTS		
Integrated Plan/Targets		
Integrated Plan/Targets Electric Cost	*383*	*4,713*
Integrated Plan/Targets Natural Gas Cost	*68*	*1,155*
	451	5,868
DSM Market Potential Study		
DSM Market Potential Study Electric Cost	*-*	*361*
DSM Market Potential Study Natural Gas Cost	*-*	*266*
	-	627
DSM Benchmarking Study		
DSM Benchmarking Study Electric Cost	*72*	*72*
DSM Benchmarking Study Natural Gas Cost	*13*	*13*
	84	84
DSM Administration		
DSM Administration Electric Cost	*487*	*5,298*
DSM Administration Natural Gas Cost	*80*	*1,522*
	567	6,820
DSM Tracking System		
DSM Tracking System Electric Cost	*17*	*658*
DSM Tracking System Natural Gas Cost	*3*	*209*
	20	867
Process Evaluations		
Process Evaluations Electric Cost	*47*	*78*
Process Evaluations Natural Gas Cost	*66*	*159*
	113	236
External Program Reviews		
External Program Reviews Electric Cost	*2*	*11*
External Program Reviews Natural Gas Cost	*17*	*99*
	19	110
External Impact Evaluations		
External mpact Evaluations Electric Cost	*69*	*149*
External Impact Evaluations Natural Gas Cost	*39*	*74*
	108	223
Power Smart Communications		
Power Smart Communications Electric Cost	*656*	*17,715*
Power Smart Communications Natural Gas Cost	*116*	*5,029*
	772	22,744
Power Smart Residential Support		
Power Smart Residential Support Electric Cost	*248*	*991*
Power Smart Residential Support Natural Gas Cost	*372*	*1,590*
	620	2,581
Power Smart for Business		
Power Smart for Budiness Electric Cost	*214*	*2,305*
Power Smart for Business Natural Gas Cost	*113*	*1,292*
	326	3,597
Power Smart Industrial Support		
Power Smart Industrial Support Electric Cost	*860*	*860*
Power Smart Industrial Support Natural Gas Cost	*-*	*-*
	860	860
Earth Energy & Emerging Technologies Residential Support		
Earth Energy & Emerging Technologies Residential Support Electric Cost	*49*	*192*
Earth Energy & Emerging Technologies Residential Support Natural Gas Cost	*22*	*68*
	71	260
Earth Energy & Emerging Technologies Commercial Support		
Earth Energy & Emerging Technologies Commercial Support Electric Cost	*57*	*101*
Earth Energy & Emerging Technologies Commercial Support Natural Gas Cost	*-*	*-*
	57	101
Power Smart Sales Support		
Power Smart Sales Support Electric Cost	*71*	*137*
Power Smart Sales Support Natural Gas Cost	*-*	*-*
	71	137

Exhibit 5.2 - A (Continued)
Utility Costs for Support, DSM Support Programs & Standards

	Actual 2015$	Cumulative nominal $
	thousands of dollars	
Retrofit Demonstrations		
Retrofit Demonstrations Electric Cost	*-*	*9,548*
Retrofit Demonstrations Natural Gas Cost	*-*	*80*
	-	9,628
Commercial Audits		
Commercial Audits Electric Cost	*20*	*199*
Commercial Audits Natural Gas Cost	*13*	*99*
	33	298
Energy Efficiency Screening Studies		
Energy Efficiency Screening Studies Electric Cost	*76*	*348*
Energy Efficiency Screening Studies Natural Gas Cost	*33*	*242*
	109	590
Sustainabilities & Standards		
Sustainabilities & Standards Electric Cost	*269*	*1,683*
Sustainabilities & Standards Natural Gas Cost	*62*	*1,186*
	331	2,869
Community Energy Plan Initiative - Program Costs		
Community Energy Plan Initiative - Program Costs - Electric Cost	*10*	*10*
Community Energy Plan Initiative - Program Costs - Natural Gas Cost	*2*	*2*
	12	12
Community Energy Plan Initiative - First Nations Electric Cost	7	7
DSM Subsidiary Transition		
DSM Subsidiary Transition Electric Cost	*28*	*28*
DSM Subsidiary Transition Natural Gas Cost	*2*	*2*
	30	30
Discontinued/Completed Support Cost		
Discontinued/Completed Electric Cost	*-*	*3,157*
Discontinued/Completed Natural Gas Cost	*-*	*0*
	-	3,157
Total Support, DSM Support Programs & Standards Electric Cost	*3,698*	*78,218*
Total Support, DSM Support Programs & Standards Natural Gas Cost	*562*	*19,569*
TOTAL SUPPORT, DSM SUPPORT PROGRAMS & STANDARDS COSTS	4,261	97,788

Note: Figures may not add due to rounding.

Exhibit 5.2 - B

Utility Costs for Incentive-Based Programs

	Actual 2015$	Cumulative nominal $
	thousands of dollars	
EFFICIENCY PROGRAMS		
RESIDENTIAL		
Home Insulation		
Home Insulation Electric Cost	*1,773*	*18,225*
Home Insulation Natural Gas Cost	*1,021*	*20,089*
	2,794	38,314
Affordable Energy		
First Nations Electric Cost	*537*	*1,376*
Affordable Energy Electric Cost	*1,359*	*2,500*
Affordable Energy Natural Gas Cost	*1,754*	*6,788*
	3,650	10,664
New Home Program (Redesign)		
New Home Program (Redesign) Electric Cost	*106*	*166*
New Home Program (Redesign) Natural Gas Cost	*0*	*0*
	106	166
Water & Energy Saver		
Water & Energy Saver Electric Cost	*566*	*3,241*
Water & Energy Saver Natural Gas Cost	*1,050*	*5,150*
	1,616	8,391
Residential LED Lighting Electric Cost	2,517	5,178
Community Geothermal Electric Cost	549	1,613
Refrigerator Retirement Electric Cost	2,292	8,916
Drainwater Heat Recovery Electric Cost	48	108
Solar Hot Water Tank Pilot		
Solar Hot Water Tank Pilot Electric Cost	*9*	*12*
Solar Hot Water Tank Pilot Natural Gas Cost	*2*	*6*
	11	17
Residential Exploratory Programs		
Residential Exploratory Programs Electric Cost	*213*	*253*
Residential Exploratory Programs Natural Gas Cost	*-*	*15*
	213	269
Discontinued/Completed Residential Programs		
Discontinued/Completed Residential Programs Electric Cost	*5*	*22,441*
Discontinued/Completed Residential Programs Natural Gas Cost	*-*	*9,618*
	5	32,059
Total Residential Programs Electric Cost	*9,972*	*64,030*
Total Residential Programs Natural Gas Cost	*3,828*	*41,667*
RESIDENTIAL EFFICIENCY PROGRAMS SUBTOTAL	13,800	105,697

Note: Figures may not add due to rounding.

Exhibit 5.2 - B (Continued)

Utility Costs for Incentive-Based Programs

	Actual 2015$	Cumulative nominal $
	thousands of dollars	
COMMERCIAL		
Commercial Custom Measures		
Commercial Custom Measures Electric Cost	114	2,887
Commercial Custom Measures Natural Gas Cost	342	1,808
	455	4,695
Commercial Building Envelope - Insulation		
Commercial Bulding Envelope - Insulation Electric Cost	608	3,864
Commercial Building Evelope - Insulation Natural Gas Cost	1,424	13,338
	2,032	17,202
Commercial Building Envelope - Windows		
Commercial Building Envelope - Windows Electric Cost	526	7,890
Commercial Building Envelope - Windows Natural Gas Cost	555	7,464
	1,081	15,354
Commercial Geothermal Electric Cost	237	5,083
Commercial HVAC		
Commercial HVAC Electric Cost	428	2,884
Commercial HVAC Natural Gas Cost	902	11,478
	1,330	14,362
CO2 Sensors		
CO2 Sensors Electric Cost	11	28
CO2 Sensors Natural Gas Cost	104	318
	116	346
Internal Retrofit Electric Cost	840	22,394
Commercial Lighting Electric Cost	8,091	97,568
LED Roadway Lighting Electric Cost	14,824	15,561
Commercial Refrigeration Electric Cost	513	4,326
Commercial Building Optimization		
Commercial Building Optimization Electric Cost	75	731
Commercial Building Optimization Natural Gas Cost	226	1,738
	302	2,469
New Buildings		
New Buildings Electric Cost	847	3,898
New Buildings Natural Gas Cost	1,270	3,554
	2,117	7,452
Commercial Kitchen Appliances		
Commercial Kitchen Appliances Electric Cost	56	336
Commercial Kitchen Appliances Natural Gas Cost	224	617
	280	953
Power Smart Shops		
Power Smart Shops Electric Cost	205	742
Power Smart Shops Natural Gas Cost	36	245
	241	987
Commercial Hot Water Natural Gas Cost	83	196
Commercial Network Energy Management Electric Cost	2	274
Commercial Exploratory Programs		
Commercial Exploratory Programs Electric Cost	11	386
Commercial Exploratory Programs Natural Gas Cost	16	423
	26	808
Discontinued/Completed Commercial Programs		
Discontinued/Completed Commercial Programs Electric Cost	4	27,363
Discontinued/Completed Commercial Programs Natural Gas Cost	-	356
	4	27,719
Total Commercial Programs Electric Cost	27,393	196,213
Total Commercial Programs Natural Gas Cost	5,180	41,535
COMMERCIAL EFFICIENCY PROGRAMS SUBTOTAL	32,573	237,748

Note: Figures may not add due to rounding.

Exhibit 5.2 - B (Continued)

Utility Costs for Incentive-Based Programs

	Actual 2015$	Cumulative nominal $
	thousands of dollars	
INDUSTRIAL		
Performance Optimization Electric Cost	2,033	37,823
Natural Gas Optimization Natural Gas Cost	551	5,176
	2,584	42,999
Industrial Exploratory Programs		
Industrial Exploratory Programs Electric Cost	-	*39*
Industrial Exploratory Programs Natural Gas Cost	-	*17*
	-	56
Discontinued/Completed Industrial Programs		
Discontinued/Completed Industrial Programs Electric Cost	-	*2,867*
Discontinued/Completed Industrial Programs Natural Gas Cost	-	-
	-	2,867
Total Industrial Programs Electric Cost	*2,033*	*40,729*
Total Industrial Programs Natural Gas Cost	*551*	*5,193*
INDUSTRIAL EFFICIENCY PROGRAMS SUBTOTAL	2,584	45,922
EFFICIENCY PROGRAMS COSTS		
Total Efficiency Programs Electric Cost	*39,398*	*300,972*
Total Efficiency Programs Natural Gas Cost	*9,560*	*88,395*
EFFICIENCY PROGRAMS SUBTOTAL	48,957	389,367
LOAD DISPLACEMENT & ALTERNATIVE ENERGY		
Load Displacement		
Load Displacement Electric Cost	*4,993*	*5,667*
Load Displacement Natural Gas Cost	-	-
	4,993	5,667
Bioenergy Optimization		
Bioenergy Optimization Electric Cost	*533*	*11,984*
Bioenergy Optimization Natural Gas Cost	-	*112*
	533	12,096
Total Load Displacement & Alternative Energy Electric Cost	*5,527*	*17,651*
Total Load Displacement & Alternative Energy Natural Gas Cost	-	*112*
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	5,527	17,763
LOAD MANAGEMENT		
Curtailable Rate Electric Cost	*6,114*	*93,903*
	6,114	93,903
TOTAL PROGRAM COSTS		
Total Program Electric Cost	*51,069*	*412,526*
Total Program Natural Gas Cost	*9,560*	*88,507*
TOTAL PROGRAM COSTS	60,629	501,033

Note: Figures may not add due to rounding.

5.3 Utility Costs by Energy Source

Exhibit 5.3 provides a summary of electric and natural gas utility costs. Power Smart electric initiatives represent 84% of total Power Smart expenditures in 2015/16, and 82% of total Power Smart expenditures to date.

Exhibit 5.3
Summary of Electricity & Natural Gas Utility Costs

	Actual 2015$	Cumulative nominal $
	millions of dollars	
ELECTRICITY		
Program Cost	51.1	412.5
Support Cost	3.7	78.2
	54.8	490.7
NATURAL GAS		
Program Cost	9.6	88.5
Support Cost	0.6	19.6
	10.1	108.1
TOTAL UTILITY COSTS (ELECTRICITY + NATURAL GAS)	64.9	598.8

Note: Support costs include both DSM support programs and support activity costs, but do not include Affordable Energy Fund or Furnace Replacement Program expenditures.
Figures may not add due to rounding.

5.4 Affordable Energy Fund

The Affordable Energy Fund was established in 2006/07 through the Winter Heating Cost Control Act and it supports Manitoba Hydro's sustainable development initiatives. The purpose of the fund is to provide support for programs and services that encourage energy efficiency and conservation through programs and services for rural and northern Manitobans, lower income customers and seniors, as well as promoting the use of alternative energy sources such as renewable energy.

Exhibit 5.4 provides a summary of Affordable Energy Fund expenditures.

Exhibit 5.4

Summary of Affordable Energy Fund Expenditures

	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	Cumulative
						thousands of nominal dollars					
Affordable Energy Program	256	219	893	1,672	2,666	3,131	3,332	3,122	4,508	1,831	21,630
Geothermal Support											
Waverley West Demonstration Project*	619	252	5	0	-1	-1	-1	-1	-1	-1	871
Residential Earth Power Loan Subsidy	-	19	69	105	108	108	91	-	-	-	500
Province of MB Cooperative Advertising	-	-	18	-	-	-	-	-	-	-	18
Interest Expense to Bill 11	-	-	-	-	-	-	-	28	22	14	65
Geothermal Support Total	619	270	92	104	108	107	91	27	21	14	1,454
Community Support & Outreach	-	-	35	130	133	139	114	123	112	-55	732
Oil & Propane Heated Homes	-	75	85	31	32	24	0	4	-0	-	250
Special Projects											
Res. Energy Assessment Services (ecoENERGY Audits)	-	61	241	85	119	39	-	-	-	-	545
Oil & Propane Furnace Replacement	-	-	6	36	42	17	10	23	24	24	183
Res. Solar Water Heating Program	-	-	89	119	56	11	10	0	0	0	286
Power Smart Residential Loan	-	-	-	130	312	354	510	365	216	119	2,007
Residential PAYS Program	-	-	-	-	-	-	-	-	44	58	102
Oil & Propane Heated Homes - Add'l Funding	-	-	-	-	-	10	26	19	45	29	129
Special Projects Total	-	61	336	371	529	431	556	407	329	231	3,252
Community Energy Development											
ecoENERGY Program Funding - Add'l Funding	-	-	-	-	-	2,817	1,241	0	-	-	4,059
Community Energy Development Total	-	-	-	-	-	2,817	1,241	0	-	-	4,059
DSM INITIATIVES SUBTOTAL	875	625	1,441	2,308	3,468	6,649	5,334	3,685	4,970	2,021	31,376
Manitoba Electric Bus	-	-	-	-	-	700	75	225	114	-	1,114
Energy & Resource Fund	-	-	-	750	-	-	-	-	-	-	750
Fort Whyte EcoVillage	-	-	-	-	-	120	-	-	-	-	120
Diesel Community Green Pilot Demonstration**	-	-	-	-	-	3	-3	-	83	-	83
Métis Generation Fund	-	-	-	-	-	-	-	500	-	-	500
TOTAL EXPENDITURES	875	625	1,441	3,058	3,468	7,472	5,406	4,410	5,167	2,021	32,942

* Negative costs represent loop lease payments from customer to Manitoba Hydro.
** Reversal of an incorrect charge that took place in 2011/12 is indicated by the negative cost.

5.5 Furnace Replacement Budget

The Furnace Replacement Budget was established in 2007/08 as a result of Public Utility Board Order 99/07. The purpose of the budget is to support the implementation of a natural gas Furnace Replacement Program for lower income customers.

In 2015/16 alone, customers installed 547 furnaces and 10 boilers through the Furnace Replacement Program. Cumulatively, 4,469 furnaces and 106 boilers have been installed as a result of the program.

Exhibit 5.5 outlines Furnace Replacement Program expenditures.

Exhibit 5.5

Summary of Furnace Replacement Program Expenditures

	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16	Cumulative
	thousands of nominal dollars								
Natural Gas Furnace Replacement	264	815	1,312	1,627	2,165	2,012	3,117	2,400	13,712
TOTAL EXPENDITURES	264	815	1,312	1,627	2,165	2,012	3,117	2,400	13,712

Appendix A

Sources of Evaluation & Planning Estimates

Many sources are used to estimate the load savings and utility costs resulting from the Power Smart programs. These include:

Evaluation Estimate Sources

Impact Evaluation Reports:

Impact evaluation reports are prepared annually for the Power Smart programs to identify net program load savings and costs, as well as the cost-effectiveness of these savings. Net savings and costs differ from gross savings and costs as they take into consideration factors such as free riders, free drivers, heating/cooling interactive effects and persistence.

A number of variables potentially affect the cost-effectiveness of Power Smart programs. These variables include energy, demand and natural gas reduction; hours of operation; measure persistence; average measure life; measure reinvestment and changes in marginal cost values.

Life to Date DSM Expenditures Report:

The utility costs cumulative to 2015/16 are sourced from the Life to Date DSM Expenditures Report.

Engineering Estimates:

Engineering expertise is used to quantify usage and savings data. Computer simulation and modeling may also be utilized.

Sales & Market Data:

In-depth market knowledge, product specifications and ratings, sales and replacement data, etc. are used to determine market acceptance and uptake.

Planning Estimate Sources

2015/16 Planning Estimates:

The 2015/16 electric and natural gas planning estimates were taken from the 2015 Power Smart Plan.

In all cases, the 2015 Power Smart Plan estimates were used regardless of delays in program launches or modifications. Consistent usage of the same plan helps reduce the probability of errors and provides a verifiable public target to compare against. Utilizing the same source information also helps ensure that a realistic and objective evaluation of the programs/portfolio is conducted, and improves the reliability and verifiability of the Power Smart Annual Review.

2029/30 Planning Estimates:

The 2029/30 electric planning targets for energy and demand savings are from the 2015 Power Smart Plan which includes forecasts for 2015/16 through 2029/30. The 1992/93 through 2015/16 planning estimates for energy and demand savings are from the respective Power Smart Resource Options reports or Power Smart Plan. Electric DSM long range planning targets did not exist at Manitoba Hydro prior to 1992/93.

The 2029/30 natural gas planning targets for energy savings are from the 2015 Power Smart Plan which includes forecasts for 2015/16 through 2029/30. Natural gas DSM long range planning targets did not exist at Manitoba Hydro prior to 2005/06.

The 2015/16 through 2029/30 planning estimates for utility costs are included in the Integrated Financial Forecast report current during the evaluation year (IFF15). The planned estimates for utility costs for the years 1990/91 through 2014/15 are included in Integrated Financial Forecast reports IFF90 through IFF14.

Appendix B

Explanation of Benefit/Cost Ratios Used in DSM Metrics

Total Resource Cost (TRC) Metric

The Total Resource Cost (TRC) metric is used to assess the benefits of an energy efficiency program irrespective of who realizes the benefits and who pays the costs. Any economic transfers between Manitoba Hydro and the participating customer are excluded from the calculation.

The TRC is calculated based on the following formula:

$$TRC = \frac{PV(\text{Marginal Benefit})}{PV(\text{Total Program Administration + Incremental Product Cost})}$$

Where:

- For electricity, the marginal benefit includes the revenue realized by Manitoba Hydro from conserved electricity being sold in the export market, the avoided cost of new infrastructure (i.e. electric transmission facilities) and measurable non-energy benefits (i.e. water savings).
- For natural gas, the marginal benefit includes Manitoba Hydro's avoided cost of purchasing natural gas, avoided transportation costs, the value of reduced greenhouse gas emissions and measurable non-energy benefits (i.e. water savings).
- Total program administration costs include 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.
    - Note: The City of Winnipeg Power Smart Agreement evaluation treats commitment payments paid by Manitoba Hydro as administration costs.
- Incremental product costs include the total incremental costs associated with implementing a Power Smart measure. 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 energy efficient technology.

Levelized Utility Cost (LUC) / Rate Impact Measure (RIM) Ratio

The Levelized Utility Cost (LUC) is used to provide an economic cost value for the energy saved by 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 DSM programs occurring over different time frames.

The Rate Impact Measure (RIM) metric is used in conjunction with the LUC to provide an indication of the long term impact of an energy efficient program on energy rates. This metric is especially valuable in interpreting the LUC of electric energy efficiency programs due to the varying summer/winter values of Manitoba Hydro's marginal cost. This 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 LUC and RIM are calculated based on the following formulas:

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

$$RIM = \frac{PV\ (Utility\ Marginal\ Benefit)}{PV\ (Revenue\ Loss + Utility\ Program\ Administration\ Costs + Incentives)}$$

Where:

- Utility program administration costs include the costs to Manitoba Hydro associated with 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.
- Energy includes the annual energy savings associated with the energy efficiency measure.
- For electricity, the utility marginal benefit includes the revenue realized by Manitoba Hydro from conserved electricity being sold in the export market and the avoided cost of new infrastructure (i.e. electric transmission facilities).
- For natural gas, the utility marginal benefit includes Manitoba Hydro's avoided cost of purchasing natural gas, avoided transportation costs and the value of reduced greenhouse gas emissions.
- Revenue loss includes Manitoba Hydro's lost revenue associated with the participants' reduced energy consumption (i.e. customer bill reductions)
- Incentives include the funds transferred from Manitoba Hydro to the participant associated with implementing the Power Smart measure.

Levelized Resource Cost (LRC)

The Levelized Resource Cost (LRC) is used to provide an economic cost value for the energy saved through an energy efficiency program. The LRC provides the total resource cost of the conserved energy on a per unit basis levelized over a fixed time period. The cost value allows for a comparison to other supply options.

The LRC is calculated based on the following formula:

$$LRC = \frac{PV\ (Total\ Program\ Administration + Incremental\ Product\ Cost)}{PV\ (Energy)}$$

Where:

- Total program administration costs include 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 cost is the difference in cost between the energy efficient technology and the standard technology that would have been installed in the absence of the energy efficient technology.
- Energy includes the annual energy savings associated with the energy efficiency measure.

Appendix C

Total Power Smart Participation

Power Smart Participants Annual Incremental*†	**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**	**2013/14**	**2014/15**	**2015/16**	***Cumulative******
Residential																												
Residential DSM Support Programs																												
Financing Programs																												
Power Smart Residential Loan	-	-	-	-	-	-	-	-	-	-	-	-	4,851	3,368	3,827	4,829	5,744	8,161	7,439	7,147	6,520	5,256	6,489	6,204	5,513	5,678	4,922	85,948
Power Smart Residential PAYS Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52	241	260	165	718
Residential Earth Power Loan																												
Geothermal Loan	-	-	-	-	-	-	-	-	-	-	-	-	-	35	92	185	139	85	224	207	114	53	52	24	19	16	15	1,260
Solar Hot Water Heating Loan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	-	-	-	-	-	14
Financing Programs Subtotal	-	-	-	-	-	-	-	-	-	-	-	-	4,851	3,403	3,919	5,014	5,883	8,246	7,663	7,354	6,641	5,316	6,541	6,280	5,773	5,954	5,102	87,940
Mail-In/On-Line Energy Assessments	-	-	-	-	-	-	-	-	-	-	-	-	570	532	338	378	234	455	421	251	153	263	416	286	303	278	223	5,101
Residential DSM Support Programs SUBTOTAL	-	-	-	-	-	-	-	-	-	-	-	-	5,421	3,935	4,257	5,392	6,117	8,701	8,084	7,605	6,794	5,579	6,957	6,566	6,076	6,232	5,325	93,041
Residential DSM Support Programs Discontinued/Completed Programs																												
ecoENERGYi	-	-	-	-	-	-	-	-	-	-	-	-	411	1,094	4,085	5,298	6,939	5,001	3,171	4,967	7,009	3,428	11,683	1,186	-	-	-	54,272
WISE Home	-	-	-	-	-	-	-	-	-	-	-	-	297	506	570	900	859	612	312	425	450	460	-	-	-	-	-	5,391
Energy Saver Presentations	-	-	-	-	-	-	-	-	-	-	-	-	58	1,156	453	467	337	610	392	291	192	-	-	-	-	-	-	3,956
New Home Workshops	-	-	-	-	-	-	-	-	-	-	-	-	40	305	116	158	119	116	-	-	-	-	-	-	-	-	-	854
R-2000 Component of the 'New Home Program'ii	-	-	-	-	-	-	-	-	-	-	-	-	12	19	32	-	-	-	-	-	-	-	-	-	-	-	-	63
Solar Water Heating (Incentive Component)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	18	-	-	-	-	-	36
Residential Earth Power																												
Earth Power Consumer Workshops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	475	63	-	-	-	-	-	-	-	-	-	688
Residential DSM Support Programs Discontinued/Completed Programs	-	-	-	-	-	-	-	-	-	-	-	-	818	3,080	5,256	6,973	8,729	6,402	3,875	5,683	7,669	3,906	11,683	1,186	-	-	-	65,260
RESIDENTIAL DSM Support Programs TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	6,239	7,015	9,513	12,365	14,846	15,103	11,959	13,288	14,463	9,485	18,640	7,752	6,076	6,232	5,325	158,301
Residential Incentive-Based Programs																												
Residential LED Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	433,556	458,890	892,446
Water & Energy Saver	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38,448	33,411	27,338	19,659	20,521	22,852	162,229
Refrigerator Retirement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,437	8,298	8,982	9,195	10,710	45,622
Affordable Energy Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	139	143	716	2,056	1,908	1,653	1,847	2,432	2,759	13,653
Home Insulation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	459	1,433	5,211	4,551	4,578	5,093	3,923	3,682	2,894	2,266	2,563	2,103	38,756
Community Geothermal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82	93	67	242
Drain Water Heat Recovery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	36	87
Residential Air Source Heat Pumps	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential Conservation Rates	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential Incentive-Based Programs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	459	1,433	5,211	4,690	4,721	5,809	44,427	47,438	40,183	32,836	468,411	497,417	1,153,035
Residential Incentive-Based Discontinued/Completed Programs																												
Compact Fluorescent Lightingv	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21,663	26,623	17,296	28,933	73,228	99,817	75,821	-	-	-	-	-	343,381
Energy Efficient Appliances	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10,374	15,436	13,277	2,451	-	-	-	-	-	-	41,538
Outdoor Timer	6,169	8,954	8,134	4,812	4,160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32,229
High Efficiency Furnace/Boiler Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,228	7,028	6,630	7,295	5,190	-	-	-	-	-	-	27,371
Seasonal LEDs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,900	10,880	8,144	4,956	-	-	-	-	-	-	-	25,880
Energy Efficient Light Fixtures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,047	2,380	2,691	1,126	3,351	2,305	-	-	-	-	12,900
Programmable Thermostat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,948	2,230	-	-	-	-	-	-	-	-	7,178
EE Water Tank/ Water Savings Measures of the 'No Worry Plan'	-	-	-	-	-	-	-	201	709	681	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,591
New Home	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	126	217	204	220	205	230	142	1	-	-	-	1,381
Refrigerator/Freezer Buy-Back Pilot	-	-	474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	474
Residential Incentive-Based Discontinued/Completed Programs	6,169	8,954	8,608	4,812	4,160	-	-	201	709	681	-	-	-	-	-	21,699	29,877	51,790	63,957	101,667	108,789	79,402	2,447	1	-	-	-	493,923
Residential Incentive-Based TOTAL	6,169	8,954	8,608	4,812	4,160	-	-	201	709	681	-	-	-	-	-	22,158	31,310	57,001	68,647	106,388	114,598	123,829	49,885	40,184	32,836	468,411	497,417	1,646,958
Residential TOTAL	6,169	8,954	8,608	4,812	4,160	-	-	201	709	681	-	-	6,239	7,015	9,513	34,523	46,156	72,104	80,606	119,676	129,061	133,314	68,525	47,936	38,912	474,643	502,742	1,805,259
Commercial																												
Commercial DSM Support Programs																												
Commercial PAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	15	27	48
Religious Buildings Initiative	-	-	-	-	-	-	-	-	-	-	-	-	14	6	25	13	34	63	40	19	9	5	3	-	4	2	2	239
Power Smart Recreation Facility Survey	-	-	-	-	-	-	-	-	-	-	-	-	30	5	6	4	4	5	6	4	1	2	1	-	2	3	2	75
Commercial DSM Support Programs SUBTOTAL	-	-	-	-	-	-	-	-	-	-	-	-	44	11	31	17	38	68	46	23	10	7	4	-	12	20	31	362
Commercial DSM Support Programs Discontinued/Completed Programs																												
Power Smart Energy Manageriii	-	-	-	-	-	-	-	-	-	-	-	-	18	-	20	-	-	-	-	-	-	-	-	-	-	-	-	38
Commercial DSM Support Programs Discontinued/Completed Programs	-	-	-	-	-	-	-	-	-	-	-	-	18	-	20	-	-	-	-	-	-	-	-	-	-	-	-	38
Commercial DSM Support Programs TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	18	44	31	31	17	38	68	46	23	10	7	4	-	12	20	31	400

Power Smart Participants ***Annual Incremental*†***	**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**	**2013/14**	**2014/15**	**2015/16**	***Cumulative*****
Commercial Incentive-Based Programs																												
LED Roadway Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	911	27,932	28,868
Commercial Lighting	-	-	-	129	634	556	488	264	235	384	178	122	152	184	373	742	871	999	1,116	1,292	1,111	991	788	748	779	798	1,059	14,993
Commercial Kitchen Appliances	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	27	16	11	6	7	384	587	1,059
Building Envelope	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	105	183	244	371	453	404	337	438	458	359	3,352
Commercial Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	27	17	41	36	31	565	605	453	290	2,077
Power Smart Shops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	330	378	-	-	-	-	195	903
Internal Retrofit	-	-	-	8	15	21	30	24	49	60	37	52	42	55	31	135	425	59	32	68	42	39	36	29	35	161	145	1,630
Commercial HVAC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	72	74	78	96	73	92	90	105	142	860
New Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	15	12	16	29	79
Custom Measures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	3	1	13	8	13	27	8	6	6	89
Commercial Geothermal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	15	11	23	19	13	10	9	7	5	140
Commercial Building Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	4	-	2	6	1	-	16
Network Energy Manager	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	2	-	-	3	1	-	12
Commercial Incentive-Based Programs SUBTOTAL	-	-	-	137	649	577	518	288	284	444	215	174	194	239	404	877	1,296	1,245	1,448	1,729	2,044	2,042	1,376	1,831	2,017	3,301	30,749	54,078
Commercial Incentive-Based Discontinued/Completed Programs																												
Spray Valves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	655	202	224	97	-	-	-	-	-	-	1,178
Parking Lot Controllers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	253	296	89	137	168	82	10	-	-	-	1,035
Infrared Heat Lamps	-	-	-	-	1,016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,016
Commercial Construction & Renovation	-	-	-	-	-	-	-	46	41	40	54	42	56	76	88	102	232	-	-	-	-	-	-	-	-	-	-	777
City of Winnipeg Power Smart Agreement	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	11	274	9	7	1	4	2	4	1	-	-	-	322
Commercial Clothes Washers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	161	37	21	17	45	-	-	290
Livestock Waterer	-	-	-	-	129	96	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	282
Sentinel Lighting	-	-	65	63	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	199
Roadway Lighting	-	-	-	73	71	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	199
Agricultural Heat Pads	-	-	-	-	-	-	-	-	-	16	22	7	10	13	10	12	8	5	6	4	10	7	-	-	-	-	-	130
Agricultural Demand Controller	-	-	-	-	24	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34
Commercial Incentive-Based Discontinued/Completed Programs SUBTOTAL	-	-	65	136	1,310	161	57	46	41	56	76	49	66	93	103	125	514	922	511	327	409	214	107	28	45	-	-	5,462
Commercial Incentive-Based TOTAL	-	-	65	273	1,959	738	575	334	325	500	291	223	260	332	507	1,002	1,810	2,167	1,959	2,056	2,453	2,256	1,483	1,859	2,062	3,301	30,749	59,540
Commercial TOTAL	-	-	65	273	1,959	738	575	334	325	500	291	241	304	363	538	1,019	1,848	2,235	2,005	2,079	2,463	2,263	1,487	1,859	2,074	3,321	30,780	59,940
Industrial																												
Industrial Incentive-Based Programs																												
Performance Optimization	-	-	-	-	3	1	4	4	4	8	2	7	15	22	28	44	46	44	66	84	97	72	55	71	44	65	55	841
Natural Gas Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	14	14	13	14	8	12	9	104
Industrial Incentive-Based Programs	-	-	-	-	3	1	4	4	4	8	2	7	15	22	28	44	46	44	76	94	111	86	68	85	52	77	64	945
Industrial Incentive-Based Discontinued/Completed Programs																												
High Efficiency Motors	-	-	24	157	199	228	181	178	191	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,158
Industrial Incentive-Based Discontinued/Completed Programs	-	-	24	157	199	228	181	178	191	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,158
Customer Self-Generation Programs																												
Bioenergy Optimization Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	2	22	2	2	13	32
Load Displacement Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Customer Self-Generation Programs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	2	22	2	2	14	33
Rate/Load Management Programs																												
Curtailable Ratesiv	-	-	-	-	-	-	-	-	-	-	2	2	2	3	4	4	4	4	4	4	4	3	3	3	3	3	3	5
Rate/Load Management Programs	-	-	-	-	-	-	-	-	-	-	2	2	2	3	4	4	4	4	4	4	4	3	3	3	3	3	3	5
Industrial TOTAL	-	-	24	157	202	229	185	182	195	8	4	9	17	25	32	48	50	49	81	99	116	90	73	110	57	82	81	2,141
DSM SUPPORT PROGRAMS ACTIVE & DISCONTINUED/COMPLETED	-	-	-	-	-	-	-	-	-	-	-	18	6,283	7,046	9,544	12,382	14,884	15,171	12,005	13,311	14,473	9,492	18,644	7,752	6,088	6,252	5,356	158,701
INCENTIVE-BASED PROGRAMS ACTIVE & DISCONTINUED/COMPLETED	6,169	8,954	8,697	5,242	6,321	967	760	717	1,229	1,189	295	232	277	357	539	23,208	33,170	59,217	70,687	108,543	117,167	126,175	51,441	42,153	34,955	471,794	528,247	1,708,639
ALL PROGRAMS ACTIVE & DISCONTINUED/COMPLETED TOTAL	**6,169**	**8,954**	**8,697**	**5,242**	**6,321**	**967**	**760**	**717**	**1,229**	**1,189**	**295**	**250**	**6,560**	**7,403**	**10,083**	**35,590**	**48,054**	**74,388**	**82,692**	**121,854**	**131,640**	**135,667**	**70,085**	**49,905**	**41,043**	**478,046**	**533,603**	**1,867,340**

† Customers may participate in more than one Power Smart Program.

*Participation is measured by completed projects, and excludes free drivers and market transformation.

** A summation of annual participation columns will not necessarily correspond with the total participation to date. This is a result of the Curtailable Rates Program participation (see footnote iv).

i The program offering in-home energy assessments prior to 2007/08 was known as the EnerGuide for Houses program. As Manitoba Hydro highly subsidized the evaluation cost of Amerispec and EnerGuy participants, they are included in the participation figures for 2011/12 and 2012/13.

ii Starting in 2004/05, the R-2000 Program was grouped into the Power Smart New Home Program.

iii Power Smart Energy Manager participation is measured by schools. Schools that joined the program in 2000/01 participated for 4 years, and schools that joined in 2002/03 participated for 2 years.

iv Annual participation represents the number of customers who participate each year. Since most customers participate year after year, the cumulative number represents the actual number of unique customers who have participated to date.

v Participation in the CFL Program is defined as 1 household.

Appendix D

Synopsis of Discontinued Power Smart Incentive-Based Programs

Residential Programs

Outdoor Timer Program

Manitoba Hydro's first Power Smart Program, this program encouraged the use of outdoor timers to control block heaters and interior car warmers at existing homes.

Refrigerator/Freezer Buy-Back Pilot

This pilot program encouraged the removal of older, inefficient second refrigerators and freezers in existing homes.

Residential Showerhead Pilot

This pilot program encouraged the installation of energy efficient showerheads in existing homes.

Energy Efficient Water Saving Measures Component of the "No Worry Plan"

This program encouraged participants of the "No Worry Plan" hot water tank program to install energy saving devices (faucet aerators, heat traps, energy efficient showerheads and pipe wrap) as part of a bonus package when installing new hot water tanks.

Energy Efficient Water Tank Component of the "No Worry Plan"

This program encouraged residential customers with electric hot water heaters to purchase, finance or lease the most energy efficient water heater available when replacing or installing new electric water heaters.

New Home Program

This program provided customers in the residential new construction market with prescriptive Power Smart standards and incentives to implement energy saving features and construction techniques into the construction of new homes.

Compact Fluorescent Lighting Program

This program encouraged residential customers and property managers of multi-unit residential buildings to install energy efficient compact fluorescent light bulbs.

Seasonal LED Lighting Program

This program encouraged customers to replace their existing incandescent seasonal light strings with energy efficient LED light strings.

High Efficiency Furnace/Boiler Program

This program encouraged residential customers to replace their existing natural gas furnaces or boilers with ENERGY STAR-qualified high efficiency natural gas furnaces or boilers.

Residential Appliances Program

This program encouraged residential customers to purchase ENERGY STAR-qualified clothes washers and chest freezers.

Programmable Thermostat Pilot

This pilot program encouraged customers to replace non-programmable thermostats with ENERGY STAR programmable models.

Energy Efficient Light Fixtures Program

The Energy Efficient Light Fixtures Program provided financial incentives to residential customers and property managers of multi-unit residential buildings to encourage the installation of ENERGY STAR® qualified light fixtures, dimmer switches and LED night lights.

Commercial Programs

Roadway Lighting Program

This program converted existing incandescent and mercury vapor street lighting to more energy efficient, high pressure sodium lighting.

Sentinel Lighting Program

This program encouraged the conversion of yard lighting and sentinel lighting from mercury vapor and incandescent lighting to the more energy efficient, high pressure sodium lighting.

Commercial Showerhead Pilot

This pilot program encouraged commercial operations to retrofit shower facilities with energy efficient showerheads.

Infrared Heat Lamps

This program encouraged swine farrowing operations to use energy efficient heat lamps in place of standard heat lamps.

Agricultural Demand Controller

This program encouraged large agricultural operations to install demand controllers to reduce peak demand consumption.

Livestock Waterer

This program encouraged dairy and cattle operations to install energy efficient waterers to reduce energy and demand consumption.

Commercial Parking Lot Controllers

This program encouraged customers to install the parking lot controller technology to effectively manage electricity usage in their parking lots.

Commercial Clothes Washers Program

This program encouraged customers to install energy efficient front-loading clothes washers at their business or facility.

Air Conditioning Component of the "Commercial Construction Program"

This program encouraged commercial customers to replace their existing air conditioning system with a more energy efficient system.

Air Barrier Component of the "Commercial Construction Program"

This program encouraged commercial customers to install greater efficiency air barriers when retrofitting their building's envelope.

Agricultural Heat Pads

This program encouraged owners of swine barns to replace the traditional heat lamps in their hog farrowing crates with energy efficient heat pads.

Power Smart Energy Manger

This program provided information, training and support for Manitoba school divisions to hire dedicated energy managers.

Commercial Rinse & Save

The program offered operators of restaurants or food services businesses the free installation of a low-flow pre-rinse spray valve.

City of Winnipeg Power Smart Agreement

The City of Winnipeg Power Smart Agreement was established as part of the Winnipeg Hydro purchase agreement. The agreement's objective was to encourage and implement energy saving measures in city-owned facilities. The terms of the agreement ended in September 2012.

Industrial Programs

High Efficiency Motors

This program encouraged the installation of high efficiency motors in industrial and commercial operations.

Appendix E

Curtailable Rates Program Information & Methodology

- The Curtailable Rates Program provides incentives to large industrial customers who curtail their electrical load when called upon by Manitoba Hydro. Incentives are provided by way of a credit on the customer's monthly energy bill.
- 2015/16 reported demand savings for the Curtailable Rates Program are based on a methodology where curtailments throughout the year are analyzed to determine the amount of curtailable load that can be expected to be on the system at the time a curtailment is called. This methodology has been in place since 2000/01. For previous methodology details, refer to the applicable Power Smart Annual Review.
- Curtailable Rates Program targets are from the 2015 Power Smart Plan.
- Curtailable Rate Program targets and savings are adjusted for efficiency. This adjustment is made to equate load available for curtailment to that of an actual generator. Curtailments are not as efficient since there is risk that customers may not curtail at all or may not curtail in time for Manitoba Hydro's system peak. The efficiency factor is based on the curtailment option selected by the customer.
- Savings resulting from the Curtailable Rates Program are available as long as the service offering continues, whether or not actual curtailments are made at the time of system peak or at any other time. Curtailments may be made to:
    - Re-establish contingency reserves;
    - Maintain planning reserve obligations;
    - To protect firm load when reserves are insufficient to avoid curtailing firm load; and to
    - Meet Manitoba Hydro's non-spinning reserves to the extent necessary.
- The expected availability of this load, and not the timing of its dispatch, determine the future benefits of demand savings for this program.
- Under the 2015/16 Power Smart Annual Review, the Curtailable Rates Program has been treated as an incentive-based program. This is consistent with treatment in the 2015 Power Smart Plan. As a rate/load management program, cost-effectiveness metrics are not reported.

Appendix F

Electric Energy Savings - Incentive-Based Programs

2015/16 Annual Energy Savings - GW.h
Electric Incentive-Based Programs

	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	2029/30	At Generation 2015/16	At Generation 2029/30
RESIDENTIAL																	
Residential LED Lighting	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1	15.0	15.0
Refrigerator Retirement	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	-	-	-	-	10.7	-
Affordable Energy	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.7	4.7
Home Insulation	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.4	4.4
Water & Energy Saver	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.9	3.9
Community Geothermal	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0
Drain Water Heat Recovery	0.0	0.0	0.0	0.0	0.0	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 Hot Water Heater	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	25.4	25.4	25.4	25.4	39.7	29.0
DISCONTINUED/COMPLETED																	
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RESIDENTIAL TOTAL	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	25.4	25.4	25.4	25.4	39.7	29.0
COMMERCIAL																	
Commercial Lighting	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	52.0	52.0
LED Roadway Lighting	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	11.2	11.2
Commercial Insulation*	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	7.1	7.1
Commercial Refrigeration	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	6.4	6.4
Commercial New Buildings	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	6.2	6.2
Commercial HVAC - Chillers	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.5	3.5
Commercial Network Energy Management	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.8	1.8
Commercial Kitchen Appliances	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.5	1.5
Commercial Geothermal	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.4	1.4
Commercial Windows*	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.3	1.3
Commercial Custom Measures	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0
Power Smart Shops	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	0.5	0.6	0.6
Commercial HVAC - CO2 Sensors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commercial Building Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Internal Retrofit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	94.0	94.0
DISCONTINUED/COMPLETED																	
	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.2
COMMERCIAL TOTAL	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	96.2	96.2
INDUSTRIAL																	
Performance Optimization	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	16.6	16.6
	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	16.6	16.6
DISCONTINUED/COMPLETED																	
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
INDUSTRIAL TOTAL	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	16.6	16.6
EFFICIENCY PROGRAMS SUBTOTAL	134.3	134.3	134.3	134.3	134.3	134.3	134.3	134.3	134.3	134.3	134.3	124.9	124.9	124.9	124.9	152.5	141.8
CUSTOMER SELF-GENERATION PROGRAMS																	
Load Displacement	75.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.3	-
Bioenergy Optimization	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	39.7	39.7
	111.8	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	36.1	123.0	39.7
RATE/LOAD MANAGEMENT PROGRAMS																	
Curtailable Rates	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW.h IMPACTS (at meter)	246.1	170.4	170.4	170.4	170.4	170.4	170.4	170.4	170.4	170.4	170.4	161.0	161.0	161.0	161.0	N/A	N/A
GW.h IMPACTS (at generation)	275.4	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	181.5	181.5	181.5	181.5	275.4	181.5

Note: Subtotals may not be exact due to rounding.
* Programs comprise the Commercial Building Envelope Program.

Persisting Energy Savings - GW.h
Electric Incentive-Based Programs

	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	2013/14	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	2029/30	At Generation 2015/16	At Generation 2029/30
RESIDENTIAL																																											
Home Insulation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7	4.2	10.7	16.5	22.1	28.4	33.8	38.7	44.9	50.1	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	62.1	62.1
Refrigerator Retirement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.9	19.6	29.3	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	28.0	19.3	9.5	-	-	-	-	-	44.3	-
Water & Energy Saver	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.5	12.6	15.7	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	18.8	21.4	21.4
Affordable Energy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	1.1	2.0	4.2	6.4	9.3	11.8	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	17.1	17.1
Residential LED Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	14.0	14.0
Community Geothermal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.8	1.8
Drain Water Heat Recovery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Solar Hot Water Heater	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7	4.2	10.7	17.0	23.2	30.4	38.0	65.6	86.3	107.0	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	130.2	121.6	111.8	102.3	102.3	102.3	102.3	102.3	160.9	116.6
DISCONTINUED/COMPLETED																																										
	5.0	8.9	15.7	21.0	25.1	29.6	31.3	35.1	37.2	37.5	37.6	37.6	37.6	37.6	37.6	45.8	53.7	65.4	79.8	108.8	147.9	171.3	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	196.8	196.8
RESIDENTIAL TOTAL	5.0	8.9	15.7	21.0	25.1	29.6	31.3	35.1	37.2	37.5	37.6	37.6	37.6	37.6	37.6	47.5	57.9	76.1	96.9	132.0	178.3	209.3	238.2	258.9	279.6	313.7	313.7	313.7	313.7	313.7	313.7	313.7	313.7	302.8	294.2	284.4	274.9	274.9	274.9	274.9	274.9	357.7	313.3
COMMERCIAL																																										
Commercial Lighting	-	-	-	2.9	17.0	35.9	55.0	61.2	67.4	85.4	90.8	94.9	100.2	105.6	116.2	132.6	153.1	175.8	193.9	218.9	239.5	258.7	281.2	309.0	341.7	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	371.8	423.8	423.8
Internal Retrofit	-	-	-	0.2	1.2	2.7	3.3	3.8	4.3	4.9	5.4	5.9	6.1	6.9	9.4	12.2	14.4	17.0	18.0	19.8	29.5	41.4	53.6	55.2	57.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	66.6	66.6
Commercial Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	3.0	4.3	5.5	7.0	8.7	21.2	30.0	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	47.7	47.7
Commercial Geothermal	-	-	-	-	-	-	-	0.3	1.1	1.8	2.9	3.2	4.0	5.1	7.8	8.8	11.1	15.3	18.6	20.2	23.6	26.0	27.8	29.9	34.8	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	37.7	42.9	42.9
Commercial Insulation*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	1.9	4.1	6.6	9.7	12.5	15.6	22.6	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	30.6	30.6
Commercial Custom Measures	-	-	-	-	-	-	-	0.4	0.4	2.6	10.0	10.8	11.7	12.2	12.8	12.8	12.9	13.1	15.4	15.9	17.4	18.8	20.2	21.0	21.3	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	24.4	24.4
Commercial Windows*	-	-	-	-	-	-	-	0.1	0.4	0.6	0.7	0.9	1.0	1.4	1.8	2.3	3.2	3.9	4.5	5.2	7.3	9.7	11.7	13.9	16.4	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	20.7	20.7
Commercial New Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	6.4	8.1	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	15.6	15.6
Commercial HVAC - Chillers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	3.7	4.1	4.3	4.8	5.3	7.1	8.2	9.4	10.2	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	14.2	14.2
Commercial Building Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	0.6	0.9	0.9	1.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.0	2.0	1.9	-	-	-	-	-	-	-	3.3	-
Commercial Kitchen Appliances	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	0.5	0.6	0.7	0.7	0.8	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.3	1.3
Commercial Network Energy Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.2	0.2	0.2	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9
Power Smart Shops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8
LED Roadway Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Commercial HVAC - CO2 Sensors	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	-	-	-	3.1	18.2	38.6	58.3	65.8	73.6	95.3	109.7	115.6	123.1	131.1	147.9	171.1	198.4	231.1	259.6	293.9	336.1	380.8	428.7	484.2	547.5	608.4	608.4	608.4	608.4	608.4	608.4	607.6	607.6	607.5	605.5	605.5	605.5	605.5	605.5	605.5	605.5	693.6	690.3
DISCONTINUED/COMPLETED																																										
	-	-	11.3	23.4	35.8	42.7	42.8	43.8	44.7	50.3	52.8	54.4	58.6	62.1	66.1	72.0	87.9	100.4	109.2	115.9	120.6	127.2	125.6	127.7	130.2	140.9	140.8	140.7	140.7	140.7	140.7	140.7	140.7	140.7	140.7	140.7	140.7	140.7	140.7	140.7	140.7	160.5	160.4
COMMERCIAL TOTAL	-	-	11.3	26.5	54.0	81.3	101.1	109.6	118.3	145.5	162.5	170.0	181.7	193.2	214.0	243.1	286.3	331.5	368.9	409.8	456.7	508.0	554.3	611.9	677.8	749.3	749.2	749.1	749.1	749.1	749.1	748.3	748.3	748.2	746.2	746.2	746.2	746.2	746.2	746.2	746.2	854.1	850.7
INDUSTRIAL																																										
Performance Optimization	-	-	-	-	-	2.4	7.2	35.1	43.5	85.9	107.7	110.8	142.9	170.5	181.5	207.6	238.6	249.3	276.4	294.9	319.6	347.9	373.1	441.8	471.4	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	534.5	534.5
	-	-	-	-	-	2.4	7.2	35.1	43.5	85.9	107.7	110.8	142.9	170.5	181.5	207.6	238.6	249.3	276.4	294.9	319.6	347.9	373.1	441.8	471.4	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	485.9	534.5	534.5
DISCONTINUED/COMPLETED																																										
	-	-	0.4	4.9	8.3	20.0	46.0	50.6	54.2	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	59.9	59.9
INDUSTRIAL TOTAL	-	-	0.4	4.9	8.3	22.4	53.2	85.7	97.7	140.4	162.3	165.4	197.5	225.1	236.0	262.2	293.1	303.9	330.9	349.3	374.1	402.4	427.6	496.3	525.9	540.4	540.4	540.4	540.4	540.4	540.4	540.4	540.4	540.4	540.4	540.4	540.4	540.4	540.4	540.4	540.4	594.4	594.4
EFFICIENCY PROGRAMS SUBTOTAL	5.0	8.9	27.4	52.3	87.5	133.3	185.6	230.5	253.2	323.5	362.4	373.0	416.8	455.9	487.6	552.7	637.4	711.6	796.6	891.1	1,009.1	1,119.7	1,220.1	1,367.1	1,483.3	1,603.5	1,603.3	1,603.3	1,603.3	1,603.3	1,603.3	1,602.4	1,602.4	1,591.4	1,580.8	1,571.0	1,561.5	1,561.5	1,561.5	1,561.5	1,561.5	1,806.2	1,758.5
CUSTOMER SELF-GENERATION PROGRAMS																																										
Bioenergy Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.3	120.1	84.2	94.0	80.1	86.6	70.3	82.5	99.3	120.7	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	45.2	45.2
Load Displacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.3	120.1	84.2	94.0	80.1	86.6	70.3	82.5	99.3	120.7	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	41.1	45.2	45.2
RATE/LOAD MANAGEMENT PROGRAMS																																										
Curtailable Rates	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW.h IMPACTS (at meter)	5.0	8.9	27.4	52.3	87.5	133.3	185.6	230.5	253.2	323.5	362.4	373.0	416.8	455.9	487.6	552.7	647.6	831.6	880.8	985.1	1,089.2	1,206.2	1,290.3	1,449.6	1,582.6	1,724.2	1,644.4	1,644.3	1,644.3	1,644.3	1,644.3	1,643.5	1,643.5	1,632.4	1,621.9	1,612.1	1,602.5	1,602.5	1,602.5	1,602.5	1,602.5	N/A	N/A
GW.h IMPACTS (at generation)	5.7	10.2	31.2	59.4	99.4	151.1	209.5	259.3	284.7	363.1	406.6	418.6	467.2	510.7	546.5	619.6	726.2	931.1	987.5	1,105.3	1,223.5	1,355.6	1,451.1	1,629.4	1,779.2	1,939.1	1,851.4	1,851.3	1,851.3	1,851.3	1,851.3	1,850.3	1,850.3	1,837.7	1,825.7	1,814.5	1,803.6	1,803.6	1,803.6	1,803.6	1,803.6	1,851.4	1,803.6

Note: Subtotals may not be exact due to rounding.
* Programs comprise the Commercial Building Envelope Program.

Total Annual Energy Savings - GW.h
Electric Incentive-Based Programs

	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	2013/14	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	2029/30	At Generation 2015/16	At Generation 2029/30
RESIDENTIAL																																											
Home Insulation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7	4.2	10.7	16.5	22.1	28.4	33.8	38.7	44.9	50.1	54.5	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	66.5	66.5
Refrigerator Retirement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.9	19.6	29.3	38.9	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	37.3	28.7	18.9	9.4	-	-	-	-	55.0	-
Residential LED Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.3	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4	29.0	29.0
Water & Energy Saver	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.5	12.6	15.7	18.8	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	25.4	25.4
Affordable Energy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	1.1	2.0	4.2	6.4	9.3	11.8	15.0	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	21.8	21.8
Community Geothermal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	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	2.5	2.5	2.8	2.8
Drain Water Heat Recovery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Solar Hot Water Heater	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7	4.2	10.7	17.0	23.2	30.4	38.0	65.6	86.3	107.0	141.1	176.0	176.0	176.0	176.0	176.0	176.0	176.0	165.0	156.4	146.6	137.1	127.7	127.7	127.7	127.7	200.6	145.6
DISCONTINUED/COMPLETED																																										
	5.0	8.9	15.7	21.0	25.1	29.6	31.3	35.1	37.2	37.5	37.6	37.6	37.6	37.6	37.6	45.8	53.7	65.4	79.8	108.8	147.9	171.3	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	172.6	196.8	196.8
RESIDENTIAL TOTAL	5.0	8.9	15.7	21.0	25.1	29.6	31.3	35.1	37.2	37.5	37.6	37.6	37.6	37.6	37.6	47.5	57.9	76.1	96.9	132.0	178.3	209.3	238.2	258.9	279.6	313.7	348.6	348.6	348.6	348.6	348.6	348.6	348.6	337.6	329.0	319.2	309.7	300.3	300.3	300.3	300.3	397.4	342.3
COMMERCIAL																																										
Commercial Lighting	-	-	-	2.9	17.0	35.9	55.0	61.2	67.4	85.4	90.8	94.9	100.2	105.6	116.2	132.6	153.1	175.8	193.9	218.9	239.5	258.7	281.2	309.0	341.7	371.8	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	417.4	475.8	475.8
Internal Retrofit	-	-	-	0.2	1.2	2.7	3.3	3.8	4.3	4.9	5.4	5.9	6.1	6.9	9.4	12.2	14.4	17.0	18.0	19.8	29.5	41.4	53.6	55.2	57.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	58.4	66.6	66.6
Commercial Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	3.0	4.3	5.5	7.0	8.7	21.2	30.0	41.8	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	47.4	54.1	54.1
Commercial Geothermal	-	-	-	-	-	-	-	0.3	1.1	1.8	2.9	3.2	4.0	5.1	7.8	8.8	11.1	15.3	18.6	20.2	23.6	26.0	27.8	29.9	34.8	37.7	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	44.3	44.3
Commercial Insulation*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	1.9	4.1	6.6	9.7	12.5	15.6	22.6	26.9	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	33.1	37.8	37.8
Commercial Custom Measures	-	-	-	-	-	-	-	0.4	0.4	2.6	10.0	10.8	11.7	12.2	12.8	12.8	12.9	13.1	15.4	15.9	17.4	18.8	20.2	21.0	21.3	21.4	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	25.4	25.4
Commercial Windows*	-	-	-	-	-	-	-	0.1	0.4	0.6	0.7	0.9	1.0	1.4	1.8	2.3	3.2	3.9	4.5	5.2	7.3	9.7	11.7	13.9	16.4	18.2	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	22.0	22.0
Commercial New Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	6.4	8.1	13.7	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	21.8	21.8
Commercial HVAC - Chillers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	3.7	4.1	4.3	4.8	5.3	7.1	8.2	9.4	10.2	12.5	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	17.7	17.7
LED Roadway Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.4	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	11.6	11.6
Commercial Building Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	0.6	0.9	0.9	1.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.0	2.0	1.9	-	-	-	-	-	-	-	3.3	-
Commercial Kitchen Appliances	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	0.5	0.6	0.7	0.7	0.8	1.1	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.8	2.8
Commercial Network Energy Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.2	0.2	0.2	0.7	0.8	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.7	2.7
Power Smart Shops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.7	0.7	0.7	0.7	0.7	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.4	1.4
Commercial HVAC - CO2 Sensors	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	-	-	-	3.1	18.2	38.6	58.3	65.8	73.6	95.3	109.7	115.6	123.1	131.1	147.9	171.1	198.4	231.1	259.6	293.9	336.1	380.8	428.7	484.2	547.5	608.4	690.9	690.9	690.9	690.9	690.9	690.0	690.0	689.9	688.0	688.0	688.0	688.0	688.0	688.0	688.0	787.7	784.3
DISCONTINUED/COMPLETED																																										
	-	-	11.3	23.4	35.8	42.7	42.8	43.8	44.7	50.3	52.8	54.4	58.6	62.1	66.1	72.0	87.9	100.4	109.2	115.9	120.6	127.2	125.6	127.7	130.2	140.9	142.7	142.6	142.6	142.6	142.6	142.6	142.6	142.6	142.6	142.6	142.6	142.6	142.6	142.6	142.6	162.7	162.6
COMMERCIAL TOTAL	-	-	11.3	26.5	54.0	81.3	101.1	109.6	118.3	145.5	162.5	170.0	181.7	193.2	214.0	243.1	286.3	331.5	368.9	409.8	456.7	508.0	554.3	611.9	677.8	749.3	833.6	833.6	833.6	833.6	833.6	832.7	832.7	832.6	830.7	830.7	830.7	830.7	830.7	830.7	830.7	950.3	947.0
INDUSTRIAL																																										
Performance Optimization	-	-	-	-	-	2.4	7.2	35.1	43.5	85.9	107.7	110.8	142.9	170.5	181.5	207.6	238.6	249.3	276.4	294.9	319.6	347.9	373.1	441.8	471.4	485.9	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	551.1	551.1
	-	-	-	-	-	2.4	7.2	35.1	43.5	85.9	107.7	110.8	142.9	170.5	181.5	207.6	238.6	249.3	276.4	294.9	319.6	347.9	373.1	441.8	471.4	485.9	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	501.0	551.1	551.1
DISCONTINUED/COMPLETED																																										
	-	-	0.4	4.9	8.3	20.0	46.0	50.6	54.2	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.6	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	59.9	59.9
INDUSTRIAL TOTAL	-	-	0.4	4.9	8.3	22.4	53.2	85.7	97.7	140.4	162.3	165.4	197.5	225.1	236.0	262.2	293.1	303.9	330.9	349.3	374.1	402.4	427.6	496.3	525.9	540.4	555.4	555.4	555.4	555.4	555.4	555.4	555.4	555.4	555.4	555.4	555.4	555.4	555.4	555.4	555.4	611.0	611.0
EFFICIENCY PROGRAMS SUBTOTAL	5.0	8.9	27.4	52.3	87.5	133.3	185.6	230.5	253.2	323.5	362.4	373.0	416.8	455.9	487.6	552.7	637.4	711.6	796.6	891.1	1,009.1	1,119.7	1,220.1	1,367.1	1,483.3	1,603.5	1,737.6	1,737.6	1,737.6	1,737.6	1,737.6	1,736.7	1,736.7	1,725.7	1,715.1	1,705.3	1,695.8	1,686.4	1,686.4	1,686.4	1,686.4	1,958.7	1,900.3
CUSTOMER SELF-GENERATION PROGRAMS																																										
Bioenergy Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.3	120.1	84.2	94.0	80.1	86.6	70.3	82.5	99.3	120.7	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	84.9	84.9
Load Displacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83.3	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.3	120.1	84.2	94.0	80.1	86.6	70.3	82.5	99.3	120.7	152.8	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	77.1	168.1	84.9
RATE/LOAD MANAGEMENT PROGRAMS																																										
Curtailable Rates	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW.h IMPACTS (at meter)	5.0	8.9	27.4	52.3	87.5	133.3	185.6	230.5	253.2	323.5	362.4	373.0	416.8	455.9	487.6	552.7	647.6	831.6	880.8	985.1	1,089.2	1,206.2	1,290.3	1,449.6	1,582.6	1,724.2	1,890.5	1,814.7	1,814.7	1,814.7	1,814.7	1,813.8	1,813.8	1,802.8	1,792.2	1,782.4	1,772.9	1,763.5	1,763.5	1,763.5	1,763.5	N/A	N/A
GW.h IMPACTS (at generation)	5.7	10.2	31.2	59.4	99.4	151.1	209.5	259.3	284.7	363.1	406.6	418.6	467.2	510.7	546.5	619.6	726.2	931.1	987.5	1,105.3	1,223.5	1,355.6	1,451.1	1,629.4	1,779.2	1,939.1	2,126.8	2,043.5	2,043.5	2,043.5	2,043.5	2,042.5	2,042.5	2,029.9	2,017.9	2,006.7	1,995.8	1,985.1	1,985.1	1,985.1	1,985.1	2,126.8	1,985.1

Note: Subtotals may not be exact due to rounding.
* Programs comprise the Commercial Building Envelope Program.

Appendix G

Average Winter Demand Savings - Incentive-Based Programs

2015/16 Average Winter Demand Savings - MW
Electric Incentive-Based Programs

	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	2029/30	At Generation 2015/16	At Generation 2029/30
RESIDENTIAL																	
Residential LED Lighting	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.7	4.7
Home Insulation	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.2
Affordable Energy	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.9	1.9
Refrigerator Retirement	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		-	-	-	1.1	-
Water & Energy Saver	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7
Community Geothermal	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Drain Water Heat Recovery	0.0	0.0	0.0	0.0	0.0	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 Hot Water Heater	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	8.5	8.5	8.5	8.5	10.8	9.7
DISCONTINUED/COMPLETED																	
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RESIDENTIAL TOTAL	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	8.5	8.5	8.5	8.5	10.8	9.7
COMMERCIAL																	
Commercial Lighting	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	13.6	13.6
Commercial Insulation*	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6
LED Roadway Lighting	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5
Commercial New Buildings	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.2
Commercial Refrigeration	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8
Commercial Geothermal	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	0.5	0.6	0.6
Commercial Windows*	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Internal Retrofit	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Commercial Kitchen Appliances	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Power Smart Shops	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Commercial Custom Measures	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Commercial HVAC - CO2 Sensors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commercial Building Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Commercial HVAC - Chillers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Commercial Network Energy Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	22.7	22.7
DISCONTINUED/COMPLETED																	
	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
COMMERCIAL TOTAL	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	22.9	22.9
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
INDUSTRIAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Performance Optimization	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9
	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9
DISCONTINUED/COMPLETED																	
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
INDUSTRIAL TOTAL	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9
EFFICIENCY PROGRAMS SUBTOTAL	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	31.3	30.4	30.4	30.4	30.4	35.6	34.5
CUSTOMER SELF-GENERATION PROGRAMS																	
Bioenergy Optimization	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	15.3	15.3
Load Displacement	12.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.2	-
	25.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	28.5	15.3
RATE/LOAD MANAGEMENT PROGRAMS																	
Curtailable Rates	145.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160.2	-
	145.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160.2	-
MW IMPACTS (at meter)	202.9	45.2	45.2	45.2	45.2	45.2	45.2	45.2	45.2	45.2	45.2	44.3	44.3	44.3	44.3	N/A	N/A
MW IMPACTS (at generation)	224.4	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	49.8	49.8	49.8	49.8	224.4	49.8

Note: Subtotals may not be exact due to rounding.
* Programs comprise the Commercial Building Envelope Program.

Persisting Average Winter Demand Savings - MW
Electric Incentive-Based Programs

	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	2013/14	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	2029/30	At Generation 2015/16	At Generation 2029/30
RESIDENTIAL																																											
Home Insulation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	2.0	5.2	8.0	10.7	13.8	16.4	18.8	22.1	24.5	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	26.9	30.6	30.6
Affordable Energy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.4	0.7	1.5	3.0	4.1	5.1	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	7.8	7.8
Residential LED Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.4	4.4
Refrigerator Retirement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	1.7	2.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.1	2.2	-	-	-	-	-	-	4.3	-
Water & Energy Saver	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	1.3	2.0	2.6	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.6	3.6
Community Geothermal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Drain Water Heat Recovery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	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 Hot Water Heater	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	2.0	5.2	8.1	11.0	14.5	18.6	23.9	29.9	35.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	44.3	43.4	41.2	41.2	41.2	41.2	41.2	41.2	51.3	47.0
DISCONTINUED/COMPLETED																																										
	0.3	0.5	1.0	1.3	1.6	1.9	2.1	2.4	2.5	2.5	2.6	2.6	2.6	2.6	2.5	4.2	5.9	7.8	10.3	15.8	25.8	31.4	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	36.1	36.1
RESIDENTIAL TOTAL	0.3	0.5	1.0	1.3	1.6	1.9	2.1	2.4	2.5	2.5	2.6	2.6	2.6	2.6	2.5	5.0	7.9	12.9	18.4	26.8	40.3	50.0	55.5	61.5	66.6	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.7	76.0	75.1	72.9	72.9	72.9	72.9	72.9	87.5	83.1
COMMERCIAL																																										
Commercial Lighting	-	-	-	0.5	2.6	5.7	9.2	10.8	11.6	15.1	16.4	17.4	18.5	19.7	21.7	24.2	27.7	31.1	34.1	38.5	42.3	45.7	48.8	56.5	65.5	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	73.9	84.3	84.3
Commercial Geothermal	-	-	-	-	-	-	-	0.1	0.8	1.1	1.5	1.7	2.0	2.4	3.8	4.2	5.4	7.4	8.7	9.3	10.3	11.2	11.9	12.4	13.6	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	16.3	16.3
Commercial Insulation*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	0.7	1.8	3.2	4.8	6.2	7.4	11.0	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	14.4	14.4
Internal Retrofit	-	-	-	0.0	0.3	0.6	0.6	0.7	0.9	1.0	1.1	1.2	1.3	1.4	1.7	2.2	2.4	2.8	3.0	3.2	5.4	8.3	11.7	11.9	12.2	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	14.0	14.0
Commercial Windows*	-	-	-	-	-	-	-	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.1	1.5	1.7	1.8	2.1	3.0	4.0	4.8	5.6	6.9	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	8.7	8.7
Commercial Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.8	1.3	1.6	1.9	2.1	3.5	4.5	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.7	6.7
Commercial New Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	1.5	2.0	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	5.1	5.1
Commercial Custom Measures	-	-	-	-	-	-	-	0.0	0.0	0.1	0.4	0.5	0.5	0.5	0.9	0.9	0.9	1.0	1.1	1.2	1.2	1.4	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.0
Commercial Kitchen Appliances	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	0.1	0.1	0.2	0.2	0.2	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8
Commercial Building Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	-	-	-	-	-	-	-	0.5	-
Commercial Network Energy Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
Power Smart Shops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Commercial HVAC - CO2 Sensors	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
LED Roadway Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Commercial HVAC - Chillers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	0.5	2.9	6.3	9.8	11.8	13.5	17.6	19.7	21.1	22.7	24.6	28.8	32.5	37.8	44.3	50.2	57.6	67.2	77.8	88.0	101.0	118.5	134.6	134.6	134.6	134.6	134.6	134.6	134.6	134.5	134.2	134.2	134.2	134.2	134.2	134.2	134.2	134.2	153.4	152.9
DISCONTINUED/COMPLETED																																										
	-	-	2.2	5.7	9.0	10.6	10.7	10.8	10.8	11.4	11.8	12.0	12.5	12.9	13.3	13.9	15.3	15.8	16.4	16.9	17.4	17.9	17.9	18.3	18.7	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	22.8	22.8
COMMERCIAL TOTAL	-	-	2.2	6.3	11.9	16.9	20.5	22.5	24.2	29.1	31.5	33.2	35.2	37.5	42.1	46.4	53.1	60.1	66.6	74.5	84.6	95.6	105.9	119.3	137.1	154.6	154.6	154.5	154.5	154.5	154.5	154.5	154.5	154.5	154.1	154.1	154.1	154.1	154.1	154.1	154.1	176.2	175.7
INDUSTRIAL																																										
Performance Optimization	-	-	-	-	-	0.3	1.1	4.6	5.8	37.4	39.1	39.5	48.4	52.9	54.1	57.6	61.7	63.2	66.2	68.7	72.0	75.5	78.9	87.6	91.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	102.3	102.3
	-	-	-	-	-	0.3	1.1	4.6	5.8	37.4	39.1	39.5	48.4	52.9	54.1	57.6	61.7	63.2	66.2	68.7	72.0	75.5	78.9	87.6	91.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	102.3	102.3
DISCONTINUED/COMPLETED																																										
	-	-	0.1	1.0	1.7	3.4	6.6	7.4	8.1	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	9.0	9.0
INDUSTRIAL TOTAL	-	-	0.1	1.0	1.7	3.7	7.7	12.0	13.9	45.5	47.3	47.6	56.6	61.1	62.2	65.8	69.8	71.3	74.4	76.9	80.2	83.7	87.1	95.7	99.2	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	101.1	111.3	111.3
EFFICIENCY PROGRAMS SUBTOTAL	0.3	0.5	3.3	8.6	15.2	22.6	30.3	36.9	40.6	77.1	81.4	83.4	94.4	101.2	106.9	117.2	130.9	144.3	159.4	178.1	205.1	229.3	248.6	276.5	303.0	332.5	332.4	332.4	332.4	332.4	332.4	332.4	332.4	331.7	330.3	328.2	328.2	328.2	328.2	328.2	328.2	374.9	370.1
CUSTOMER SELF-GENERATION PROGRAMS																																										
Bioenergy Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.3	14.3	14.3	14.3	14.3	14.3	14.4	9.4	14.2	22.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7
Load Displacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.3	14.3	14.3	14.3	14.3	14.3	14.4	9.4	14.2	22.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7
RATE/LOAD MANAGEMENT PROGRAMS																																										
Curtailable Rates	-	-	-	-	40.7	46.4	24.7	32.7	80.0	48.2	58.0	57.1	68.0	110.3	148.5	153.8	189.1	183.3	180.6	172.8	149.2	154.5	147.2	144.8	146.3	142.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	40.7	46.4	24.7	32.7	80.0	48.2	58.0	57.1	68.0	110.3	148.5	153.8	189.1	183.3	180.6	172.8	149.2	154.5	147.2	144.8	146.3	142.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW IMPACTS (at meter)	0.3	0.5	3.3	8.6	55.9	69.0	55.0	69.6	120.6	125.3	139.4	140.5	162.4	211.4	255.4	270.9	334.2	341.9	354.3	365.2	368.5	398.1	410.2	430.7	463.4	497.1	334.0	334.0	334.0	334.0	334.0	333.9	333.9	333.2	331.9	329.7	329.7	329.7	329.7	329.7	329.7	N/A	N/A
MW IMPACTS (at generation)	0.3	0.6	3.7	9.8	62.1	76.6	61.4	77.5	133.8	139.1	154.6	155.9	180.1	234.2	282.7	300.1	370.1	379.1	393.2	405.8	410.4	443.7	457.7	481.0	517.9	556.1	376.6	376.6	376.6	376.6	376.6	376.6	376.6	375.8	374.2	371.8	371.8	371.8	371.8	371.8	371.8	376.6	371.8

Note: Subtotals may not be exact due to rounding.
* Programs comprise the Commercial Building Envelope Program.

Total Average Winter Demand Savings - MW
Electric Incentive-Based Programs

	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	2013/14	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	2029/30	At Generation 2015/16	At Generation 2029/30
RESIDENTIAL																																											
Home Insulation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	2.0	5.2	8.0	10.7	13.8	16.4	18.8	22.1	24.5	26.9	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	28.8	32.8	32.8
Affordable Energy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.4	0.7	1.5	3.0	4.1	5.1	6.9	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	9.7	9.7
Residential LED Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	9.1	9.1
Refrigerator Retirement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	1.7	2.7	3.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.1	3.1	1.0	1.0	-	-	-	-	5.4	-
Water & Energy Saver	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.7	1.3	2.0	2.6	3.2	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.3	4.3
Community Geothermal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7
Drain Water Heat Recovery	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	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 Hot Water Heater	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	2.0	5.2	8.1	11.0	14.5	18.6	23.9	29.9	35.0	45.0	54.5	54.5	54.5	54.5	54.5	54.5	54.5	53.8	52.8	50.7	50.7	49.7	49.7	49.7	49.7	62.1	56.7
DISCONTINUED/COMPLETED																																										
	0.3	0.5	1.0	1.3	1.6	1.9	2.1	2.4	2.5	2.5	2.6	2.6	2.6	2.6	2.5	4.2	5.9	7.8	10.3	15.8	25.8	31.4	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	31.7	36.1	36.1
RESIDENTIAL TOTAL	0.3	0.5	1.0	1.3	1.6	1.9	2.1	2.4	2.5	2.5	2.6	2.6	2.6	2.6	2.5	5.0	7.9	12.9	18.4	26.8	40.3	50.0	55.5	61.5	66.6	76.7	86.2	86.2	86.2	86.2	86.2	86.2	86.2	85.5	84.5	82.3	82.3	81.4	81.4	81.4	98.2	92.8
COMMERCIAL																																										
Commercial Lighting	-	-	-	0.5	2.6	5.7	9.2	10.8	11.6	15.1	16.4	17.4	18.5	19.7	21.7	24.2	27.7	31.1	34.1	38.5	42.3	45.7	48.8	56.5	65.5	73.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	97.9	97.9
Commercial Insulation*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	0.7	1.8	3.2	4.8	6.2	7.4	11.0	12.7	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	18.0	18.0
Commercial Geothermal	-	-	-	-	-	-	-	0.1	0.8	1.1	1.5	1.7	2.0	2.4	3.8	4.2	5.4	7.4	8.7	9.3	10.3	11.2	11.9	12.4	13.6	14.3	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	16.9	16.9
Internal Retrofit	-	-	-	0.0	0.3	0.6	0.6	0.7	0.9	1.0	1.1	1.2	1.3	1.4	1.7	2.2	2.4	2.8	3.0	3.2	5.4	8.3	11.7	11.9	12.2	12.3	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	14.4	14.4
Commercial Windows*	-	-	-	-	-	-	-	-	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.1	1.5	1.7	1.8	2.1	3.0	4.0	4.8	5.6	6.9	7.6	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	9.2	9.2
Commercial Refrigeration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.8	1.3	1.6	1.9	2.1	3.5	4.5	5.9	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	7.5	7.5
Commercial New Buildings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	1.5	2.0	4.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	6.3	6.3
Commercial Custom Measures	-	-	-	-	-	-	-	0.0	0.0	0.1	0.4	0.5	0.5	0.5	0.9	0.9	0.9	1.0	1.1	1.2	1.2	1.4	1.7	1.7	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.1
LED Roadway Lighting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.1	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.6	1.6
Commercial Kitchen Appliances	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	0.1	0.1	0.2	0.2	0.2	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.0	1.0
Commercial Building Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	-	-	-	-	-	-	0.5	-
Power Smart Shops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Commercial Network Energy Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
Commercial HVAC - CO2 Sensors	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Commercial HVAC - Chillers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	0.5	2.9	6.3	9.8	11.8	13.5	17.6	19.7	21.1	22.7	24.6	28.8	32.5	37.8	44.3	50.2	57.6	67.2	77.8	88.0	101.0	118.5	134.6	154.5	154.5	154.5	154.5	154.5	154.5	154.5	154.5	154.1	154.1	154.1	154.1	154.1	154.1	154.1	176.2	175.7
DISCONTINUED/COMPLETED																																										
	-	-	2.2	5.7	9.0	10.6	10.7	10.8	10.8	11.4	11.8	12.0	12.5	12.9	13.3	13.9	15.3	15.8	16.4	16.9	17.4	17.9	17.9	18.3	18.7	20.0	20.2	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	23.0	23.0
COMMERCIAL TOTAL	-	-	2.2	6.3	11.9	16.9	20.5	22.5	24.2	29.1	31.5	33.2	35.2	37.5	42.1	46.4	53.1	60.1	66.6	74.5	84.6	95.6	105.9	119.3	137.1	154.6	174.7	174.7	174.7	174.7	174.7	174.6	174.6	174.6	174.2	174.2	174.2	174.2	174.2	174.2	199.1	198.6
INDUSTRIAL																																										
Performance Optimization	-	-	-	-	-	0.3	1.1	4.6	5.8	37.4	39.1	39.5	48.4	52.9	54.1	57.6	61.7	63.2	66.2	68.7	72.0	75.5	78.9	87.6	91.0	93.0	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	104.2	104.2
	-	-	-	-	-	0.3	1.1	4.6	5.8	37.4	39.1	39.5	48.4	52.9	54.1	57.6	61.7	63.2	66.2	68.7	72.0	75.5	78.9	87.6	91.0	93.0	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	94.7	104.2	104.2
DISCONTINUED/COMPLETED																																										
	-	-	0.1	1.0	1.7	3.4	6.6	7.4	8.1	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	9.0	9.0
INDUSTRIAL TOTAL	-	-	0.1	1.0	1.7	3.7	7.7	12.0	13.9	45.5	47.3	47.6	56.6	61.1	62.2	65.8	69.8	71.3	74.4	76.9	80.2	83.7	87.1	95.7	99.2	101.1	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	102.9	113.2	113.2
EFFICIENCY PROGRAMS SUBTOTAL	0.3	0.5	3.3	8.6	15.2	22.6	30.3	36.9	40.6	77.1	81.4	83.4	94.4	101.2	106.9	117.2	130.9	144.3	159.4	178.1	205.1	229.3	248.6	276.5	303.0	332.5	363.7	363.7	363.7	363.7	363.7	363.7	363.7	363.0	361.6	359.5	359.5	358.5	358.5	358.5	410.6	404.6
CUSTOMER SELF-GENERATION PROGRAMS																																										
Bioenergy Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.3	14.3	14.3	14.3	14.3	14.3	14.4	9.4	14.2	22.2	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	17.0	17.0
Load Displacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.0	-	-	-	-	-	-	-	-	-	-	-	-	-	13.2	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.3	14.3	14.3	14.3	14.3	14.3	14.4	9.4	14.2	22.2	27.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	30.2	17.0
RATE/LOAD MANAGEMENT PROGRAMS																																										
Curtailable Rates	-	-	-	-	40.7	46.4	24.7	32.7	80.0	48.2	58.0	57.1	68.0	110.3	148.5	153.8	189.1	183.3	180.6	172.8	149.2	154.5	147.2	144.8	146.3	142.5	145.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160.2	-
	-	-	-	-	40.7	46.4	24.7	32.7	80.0	48.2	58.0	57.1	68.0	110.3	148.5	153.8	189.1	183.3	180.6	172.8	149.2	154.5	147.2	144.8	146.3	142.5	145.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160.2	-
MW IMPACTS (at meter)	0.3	0.5	3.3	8.6	55.9	69.0	55.0	69.6	120.6	125.3	139.4	140.5	162.4	211.4	255.4	270.9	334.2	341.9	354.3	365.2	368.5	398.1	410.2	430.7	463.4	497.1	536.9	379.2	379.2	379.2	379.2	379.2	379.2	378.5	377.1	375.0	375.0	374.0	374.0	374.0	N/A	N/A
MW IMPACTS (at generation)	0.3	0.6	3.7	9.8	62.1	76.6	61.4	77.5	133.8	139.1	154.6	155.9	180.1	234.2	282.7	300.1	370.1	379.1	393.2	405.8	410.4	443.7	457.7	481.0	517.9	556.1	601.0	427.6	427.6	427.6	427.6	427.5	427.5	426.7	425.2	422.7	422.7	421.6	421.6	421.6	601.0	421.6

Note: Subtotals may not be exact due to rounding.
* Programs comprise the Commercial Building Envelope Program.

Appendix H

Natural Gas Energy Savings - Incentive-Based Programs

2015/16 Annual Energy Savings - Million m^3
Natural Gas Incentive-Based Programs

	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	2029/30
RESIDENTIAL															
Affordable Energy	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Water & Energy Saver	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Home Insulation	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
DISCONTINUED/COMPLETED															
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RESIDENTIAL TOTAL	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
COMMERCIAL															
Commercial Insulation*	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Commercial HVAC	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Commercial New Buildings	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Commercial Kitchen Appliances	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Commercial Custom Measures	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Commercial Windows*	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Power Smart Shops	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commercial Building Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Internal Retrofit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.2
DISCONTINUED/COMPLETED															
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COMMERCIAL TOTAL	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.2
INDUSTRIAL															
Natural Gas Optimization	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	0.5
INDUSTRIAL TOTAL	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	0.5
EFFICIENCY PROGRAMS SUBTOTAL	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.0	7.0	7.0	7.0	7.0
CUSTOMER SELF-GENERATION															
Bioenergy Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LESS: INTERACTIVE EFFECTS	(1.3)	(1.2)	(1.0)	(1.2)	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)	(1.2)	(1.0)	(1.0)	(1.0)	(0.9)	(1.0)
NET IMPACT: OVERALL	5.8	5.9	6.1	5.9	5.8	5.7	5.8	5.8	5.8	5.9	6.0	6.0	6.0	6.1	6.0

Note: Subtotals may not be exact due to rounding.
* Programs comprise Commercial Building Envelope Program.

Persisting Energy Savings - Million m^3
Natural Gas Incentive-Based Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30
RESIDENTIAL																													
Home Insulation	-	-	-	-	0.3	2.2	3.9	5.6	7.6	9.0	10.2	11.3	12.1	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
Affordable Energy	-	-	-	-	-	-	0.0	0.1	0.7	2.3	3.5	4.6	5.8	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Water & Energy Saver	-	-	-	-	-	-	-	-	-	0.8	1.8	2.8	3.4	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
	-	-	-	-	0.3	2.2	3.9	5.6	8.3	12.2	15.4	18.7	21.3	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9	23.9
DISCONTINUED/COMPLETED																													
	-	-	-	0.0	0.7	2.9	4.4	6.3	7.5	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
RESIDENTIAL TOTAL	-	-	-	0.0	1.0	5.0	8.3	11.9	15.8	19.8	23.1	26.4	28.9	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6
COMMERCIAL																													
Commercial HVAC	-	-	-	-	-	0.4	2.5	4.8	6.2	6.2	7.2	8.4	9.7	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
Commercial Insulation*	-	-	-	-	-	0.3	1.1	2.1	3.2	5.4	6.8	7.8	9.2	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Commercial New Buildings	-	-	-	-	-	-	-	-	-	-	0.4	2.8	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Commercial Windows*	-	-	-	-	-	0.0	0.1	0.2	0.5	0.8	1.3	1.6	2.1	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Commercial Custom Measures	-	-	-	-	-	-	-	-	0.1	0.2	0.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Commercial Building Optimization	-	-	-	-	-	-	-	0.1	0.2	0.4	0.4	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.3	0.3	0.2	0.0	-	-	-	-	-	-
Commercial Kitchen Appliances	-	-	-	-	-	-	-	0.0	0.0	0.1	0.1	0.1	0.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Power Smart Shops	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Internal Retrofit	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	-	-	-	-	-	0.7	3.7	7.3	10.3	13.0	16.4	22.5	26.0	30.4	30.4	30.4	30.4	30.4	30.4	30.0	30.0	29.9	29.8	29.8	29.8	29.8	29.8	29.8	29.8
DISCONTINUED/COMPLETED																													
	-	0.1	0.1	0.2	0.6	1.5	1.8	2.8	3.1	3.2	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
COMMERCIAL TOTAL	-	0.1	0.1	0.2	0.6	2.2	5.5	10.1	13.4	16.2	17.2	23.4	26.9	31.2	31.2	31.2	31.2	31.2	31.2	30.8	30.8	30.8	30.6	30.6	30.6	30.6	30.6	30.6	30.6
INDUSTRIAL																													
Natural Gas Optimization	-	-	-	-	-	-	1.7	3.8	4.9	8.0	10.5	12.5	13.4	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
INDUSTRIAL TOTAL	-	-	-	-	-	-	1.7	3.8	4.9	8.0	10.5	12.5	13.4	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
EFFICIENCY PROGRAMS SUBTOTAL	-	0.1	0.1	0.2	1.6	7.3	15.5	25.9	34.1	44.0	50.9	62.2	69.2	77.7	77.7	77.7	77.7	77.7	77.7	77.3	77.3	77.2	77.1	77.1	77.1	77.1	77.1	77.1	77.1
CUSTOMER SELF-GENERATION																													
Bioenergy Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LESS: INTERACTIVE EFFECTS	-	(0.0)	(0.0)	(1.2)	(2.6)	(3.0)	(3.8)	(5.9)	(8.9)	(10.5)	(11.3)	(12.0)	(13.0)	(14.5)	(14.5)	(14.6)	(14.3)	(14.3)	(14.6)	(14.6)	(14.6)	(14.5)	(14.4)	(12.8)	(12.0)	(12.1)	(11.8)	(11.6)	(11.6)
NET IMPACT: OVERALL	-	0.1	0.1	(1.0)	(1.0)	4.3	11.7	20.0	25.3	33.5	39.6	50.1	56.2	63.2	63.1	63.1	63.4	63.4	63.1	62.7	62.8	62.8	62.7	64.2	65.1	65.0	65.3	65.5	65.5

Note: Subtotals may not be exact due to rounding.
* Programs comprise Commercial Building Envelope Program.

Total Annual Energy Savings - Million m^3
Natural Gas Incentive-Based Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30
RESIDENTIAL																													
Home Insulation	-	-	-	-	0.3	2.2	3.9	5.6	7.6	9.0	10.2	11.3	12.1	12.8	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
Affordable Energy	-	-	-	-	-	-	0.0	0.1	0.7	2.3	3.5	4.6	5.8	7.2	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
Water & Energy Saver	-	-	-	-	-	-	-	-	-	0.8	1.8	2.8	3.4	3.9	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	-	-	-	-	0.3	2.2	3.9	5.6	8.3	12.2	15.4	18.7	21.3	23.9	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2	26.2
DISCONTINUED/COMPLETED																													
	-	-	-	0.0	0.7	2.9	4.4	6.3	7.5	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
RESIDENTIAL TOTAL	-	-	-	0.0	1.0	5.0	8.3	11.9	15.8	19.8	23.1	26.4	28.9	31.6	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.9
COMMERCIAL																													
Commercial Insulation*	-	-	-	-	-	0.3	1.1	2.1	3.2	5.4	6.8	7.8	9.2	11.0	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
Commercial HVAC	-	-	-	-	-	0.4	2.5	4.8	6.2	6.2	7.2	8.4	9.7	11.2	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.0	12.0	12.0
Commercial New Buildings	-	-	-	-	-	-	-	-	-	-	0.4	2.8	2.9	3.0	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Commercial Windows*	-	-	-	-	-	0.0	0.1	0.2	0.5	0.8	1.3	1.6	2.1	2.6	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Commercial Custom Measures	-	-	-	-	-	-	-	-	0.1	0.2	0.3	1.4	1.5	1.5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Commercial Kitchen Appliances	-	-	-	-	-	-	-	0.0	0.0	0.1	0.1	0.1	0.1	0.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Commercial Building Optimization	-	-	-	-	-	-	-	0.1	0.2	0.4	0.4	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.3	0.3	0.2	0.0	-	-	-	-	-	-
Power Smart Shops	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Internal Retrofit	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	-	-	-	-	-	0.7	3.7	7.3	10.3	13.0	16.4	22.5	26.0	30.4	34.6	34.6	34.6	34.6	34.6	34.3	34.3	34.2	34.0	34.0	34.0	34.0	33.9	33.9	33.9
DISCONTINUED/COMPLETED																													
	-	0.1	0.1	0.2	0.6	1.5	1.8	2.8	3.1	3.2	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
COMMERCIAL TOTAL	-	0.1	0.1	0.2	0.6	2.2	5.5	10.1	13.4	16.2	17.2	23.4	26.9	31.2	35.5	35.5	35.5	35.5	35.5	35.1	35.1	35.0	34.8	34.8	34.8	34.8	34.8	34.8	34.8
INDUSTRIAL																													
Natural Gas Optimization	-	-	-	-	-	-	1.7	3.8	4.9	8.0	10.5	12.5	13.4	14.9	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4
INDUSTRIAL TOTAL	-	-	-	-	-	-	1.7	3.8	4.9	8.0	10.5	12.5	13.4	14.9	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4
EFFICIENCY PROGRAMS SUBTOTAL	-	0.1	0.1	0.2	1.6	7.3	15.5	25.9	34.1	44.0	50.9	62.2	69.2	77.7	84.8	84.8	84.8	84.8	84.8	84.4	84.4	84.3	84.1	84.1	84.1	84.1	84.1	84.1	84.1
CUSTOMER SELF-GENERATION																													
Bioenergy Optimization	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LESS: INTERACTIVE EFFECTS	-	(0.0)	(0.0)	(1.2)	(2.6)	(3.0)	(3.8)	(5.9)	(8.9)	(10.5)	(11.3)	(12.0)	(13.0)	(14.5)	(15.8)	(15.8)	(15.2)	(15.5)	(15.9)	(15.9)	(15.9)	(15.8)	(15.7)	(14.0)	(13.1)	(13.1)	(12.8)	(12.5)	(12.6)
NET IMPACT: OVERALL	-	0.1	0.1	(1.0)	(1.0)	4.3	11.7	20.0	25.3	33.5	39.6	50.1	56.2	63.2	68.9	69.0	69.5	69.3	68.9	68.5	68.5	68.6	68.4	70.1	71.0	71.0	71.3	71.6	71.5

Note: Subtotals may not be exact due to rounding.
* Programs comprise Commercial Building Envelope Program.

Appendix I

Electric Energy Savings – DSM Support Programs

2015/16 Annual Energy Savings - GW.h
Electric DSM Support Programs

	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	2029/30	At Generation 2015/16	At Generation 2029/30
RESIDENTIAL																	
Power Smart Residential Loan	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.42	0.42
Power Smart Residential PAYS	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.15	0.15
Residential Earth Power Loan	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03
	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.60	0.60
COMMERCIAL																	
Power Smart for Business PAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DISCONTINUED/COMPLETED																	
ecoENERGY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Power Smart Energy Manager	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-2000 Component of the New Home Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solar Hot Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW.h IMPACTS (at meter)	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	N/A	N/A
GW.h IMPACTS (at generation)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60

Note: Subtotals may not be exact due to rounding.

Persisting Energy Savings - GW.h
Electric DSM Support Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	At Generation 2015/16	At Generation 2029/30
RESIDENTIAL																															
Residential Earth Power Loan	-	0.3	1.0	2.8	4.8	6.1	8.8	10.2	11.2	11.8	12.8	13.3	13.2	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	15.2	15.2
Power Smart Residential Loan	0.9	1.6	2.2	2.7	3.2	3.9	4.6	5.2	6.9	7.4	7.8	8.4	8.8	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	10.6	10.6
Power Smart Residential PAYS	-	-	-	-	-	-	-	-	-	-	-	0.0	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.6	1.6
	0.9	1.9	3.1	5.6	8.0	10.0	13.4	15.4	18.1	19.2	20.6	21.7	23.3	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	27.4	27.4
COMMERCIAL																															
Power Smart for Business PAYS	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
DISCONTINUED/COMPLETED																															
Power Smart Energy Manager	0.6	1.2	2.4	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.2	3.2
ecoENERGY	-	0.1	0.3	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9
R-2000 Component of the New Home Program	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Solar Hot Water Heating	-	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	0.7	1.5	2.9	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.3	4.3
GW.h IMPACTS (at meter)	1.6	3.4	6.0	9.3	11.7	13.8	17.2	19.1	21.9	23.0	24.4	25.5	27.3	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	N/A	N/A
GW.h IMPACTS (at generation)	1.9	3.9	6.8	10.6	13.4	15.7	19.6	21.8	24.9	26.2	27.8	29.1	31.1	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9

Note: Subtotals may not be exact due to rounding.

2015/16 Total Annual Energy Savings - GW.h
Electric DSM Support Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	At Generation 2015/16	At Generation 2029/30
RESIDENTIAL																															
Residential Earth Power Loan	-	0.3	1.0	2.8	4.8	6.1	8.8	10.2	11.2	11.8	12.8	13.3	13.2	13.3	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	15.2	15.2
Power Smart Residential Loan	0.9	1.6	2.2	2.7	3.2	3.9	4.6	5.2	6.9	7.4	7.8	8.4	8.8	9.3	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	11.0	11.0
Power Smart Residential PAYS	-	-	-	-	-	-	-	-	-	-	-	0.0	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.7	1.7
	0.9	1.9	3.1	5.6	8.0	10.0	13.4	15.4	18.1	19.2	20.6	21.7	23.3	24.0	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	28.0	28.0
COMMERCIAL																															
Power Smart for Business PAYS	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
DISCONTINUED/COMPLETED																															
Power Smart Energy Manager	0.6	1.2	2.4	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.2	3.2
ecoENERGY	-	0.1	0.3	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9
R-2000 Component of the New Home Program	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Solar Hot Water Heating	-	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	0.7	1.5	2.9	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.3	4.3
GW.h IMPACTS (at meter)	1.6	3.4	6.0	9.3	11.7	13.8	17.2	19.1	21.9	23.0	24.4	25.5	27.3	27.9	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	N/A	N/A
GW.h IMPACTS (at generation)	1.9	3.9	6.8	10.6	13.4	15.7	19.6	21.8	24.9	26.2	27.8	29.1	31.1	31.9	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5

Note: Subtotals may not be exact due to rounding.

Appendix J

Average Winter Demand Savings - DSM Support Programs

2015/16 Average Winter Demand Savings - MW
Electric DSM Support Programs

	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	2029/30	At Generation 2015/16	At Generation 2029/30
RESIDENTIAL																	
Power Smart Residential Loan	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Power Smart Residential PAYS	0.0	0.0	0.0	0.0	0.0	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 Loan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
COMMERCIAL																	
Power Smart for Business PAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DISCONTINUED/COMPLETED																	
ecoENERGY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Power Smart Energy Manager	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-2000 Component of the New Home Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solar Hot Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW.h IMPACTS (at meter)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	N/A	N/A
GW.h IMPACTS (at generation)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Note: Subtotals may not be exact due to rounding.

Persisting Average Winter Demand Savings - MW
Electric DSM Support Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	At Generation 2015/16	At Generation 2029/30
RESIDENTIAL																															
Power Smart Residential Loan	0.5	0.8	1.1	1.4	1.6	2.0	2.7	3.0	3.9	4.2	4.4	4.7	5.0	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.9	5.9
Residential Earth Power Loan	-	0.1	0.2	0.6	1.1	1.4	2.1	2.5	3.0	3.3	3.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.4	4.4
Power Smart Residential PAYS	-	-	-	-	-	-	-	-	-	-	-	0.0	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	0.5	0.9	1.3	2.0	2.7	3.4	4.8	5.5	6.9	7.5	8.2	8.6	9.2	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	10.8	10.8
COMMERCIAL																															
Power Smart for Business PAYS	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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																															
Power Smart Energy Manager	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
R-2000 Component of the New Home Program	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
ecoENERGY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solar Hot Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
MW IMPACTS (at meter)	0.5	1.0	1.5	2.2	2.9	3.6	5.0	5.7	7.1	7.7	8.4	8.8	9.4	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	N/A	N/A
MW IMPACTS (at generation)	0.6	1.2	1.7	2.5	3.3	4.1	5.7	6.5	8.1	8.8	9.5	10.0	10.7	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0

Note: Subtotals may not be exact due to rounding.

Total Average Winter Demand Savings - MW
Electric DSM Support Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	At Generation 2015/16	At Generation 2029/30
RESIDENTIAL																															
Power Smart Residential Loan	0.5	0.8	1.1	1.4	1.6	2.0	2.7	3.0	3.9	4.2	4.4	4.7	5.0	5.2	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	6.1	6.1
Residential Earth Power Loan	-	0.1	0.2	0.6	1.1	1.4	2.1	2.5	3.0	3.3	3.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.5	4.5
Power Smart Residential PAYS	-	-	-	-	-	-	-	-	-	-	-	0.0	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	0.5	0.9	1.3	2.0	2.7	3.4	4.8	5.5	6.9	7.5	8.2	8.6	9.2	9.4	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	11.0	11.0
COMMERCIAL																															
Power Smart for Business PAYS	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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																															
Power Smart Energy Manager	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
R-2000 Component of the New Home Program	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
ecoENERGY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solar Hot Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
MW IMPACTS (at meter)	0.5	1.0	1.5	2.2	2.9	3.6	5.0	5.7	7.1	7.7	8.4	8.8	9.4	9.7	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	N/A	N/A
MW IMPACTS (at generation)	0.6	1.2	1.7	2.5	3.3	4.1	5.7	6.5	8.1	8.8	9.5	10.0	10.7	11.0	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3

Note: Subtotals may not be exact due to rounding.

Appendix K

Natural Gas Energy Savings - DSM Support Programs

2015/16 Annual Energy Savings - Million m^3
Natural Gas DSM Support Programs

	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	2029/30
RESIDENTIAL															
Power Smart Residential Loan	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Residential Earth Power Loan	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Power Smart Residential PAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
COMMERCIAL															
Power Smart for Business PAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DISCONTINUED/COMPLETED															
ecoENERGY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Power Smart Energy Manager	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R-2000 Component of the New Home Program	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solar Hot Water Heating	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Note: Subtotals may not be exact due to rounding.

Persisting Energy Savings - Million m^3
Natural Gas DSM Support Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30
RESIDENTIAL																													
Power Smart Residential Loan	1.2	2.1	3.5	5.6	7.8	9.6	11.3	12.3	13.9	14.3	14.6	14.9	15.2	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
Residential Earth Power Loan	-	0.1	0.1	0.5	0.8	1.0	1.3	1.4	1.7	2.1	2.4	2.7	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Power Smart Residential PAYS	-	-	-	-	-	-	-	-	-	-	-	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	1.2	2.2	3.7	6.1	8.6	10.5	12.6	13.7	15.6	16.4	17.0	17.6	18.1	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4
COMMERCIAL																													
Power Smart for Business PAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DISCONTINUED/COMPLETED																													
ecoENERGY	-	0.1	0.4	1.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Power Smart Energy Manager	(0.0)	0.0	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
R-2000 Component of the New Home Program	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Solar Hot Water Heating	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(0.0)	0.2	0.6	1.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
TOTAL	1.2	2.4	4.3	7.7	11.3	13.2	15.3	16.4	18.3	19.0	19.7	20.3	20.8	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1

Note: Subtotals may not be exact due to rounding.

Total Annual Energy Savings - Million m^3
Natural Gas DSM Support Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30
RESIDENTIAL																													
Power Smart Residential Loan	1.2	2.1	3.5	5.6	7.8	9.6	11.3	12.3	13.9	14.3	14.6	14.9	15.2	15.5	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
Residential Earth Power Loan	-	0.1	0.1	0.5	0.8	1.0	1.3	1.4	1.7	2.1	2.4	2.7	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Power Smart Residential PAYS	-	-	-	-	-	-	-	-	-	-	-	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
	1.2	2.2	3.7	6.1	8.6	10.5	12.6	13.7	15.6	16.4	17.0	17.6	18.1	18.4	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7
COMMERCIAL																													
Power Smart for Business PAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DISCONTINUED/COMPLETED																													
ecoENERGY	-	0.1	0.4	1.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Power Smart Energy Manager	(0.0)	0.0	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
R-2000 Component of the New Home Program	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Solar Hot Water Heating	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(0.0)	0.2	0.6	1.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
TOTAL	1.2	2.4	4.3	7.7	11.3	13.2	15.3	16.4	18.3	19.0	19.7	20.3	20.8	21.1	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4

Note: Subtotals may not be exact due to rounding.

Appendix L

Annual Energy & Demand Savings - Codes, Standards & Regulations

Annual Energy Savings - GW.h
Codes & Standards

	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	2013/14	2014/15	2015/16
Residential Appliances:																								
Clothes Washers	-0.3	-0.3	0.1	0.1	0.1	0.2	0.6	0.8	0.8	0.8	0.7	0.9	3.0	3.1	3.9	3.6	3.8	0.2	0.2	0.1	0.0	11.5	9.9	8.3
Refrigerators	2.0	4.7	6.1	7.1	7.0	7.2	7.1	7.2	7.8	7.8	10.1	11.0	12.9	13.2	12.8	16.2	17.1	18.7	10.9	10.2	9.1	5.7	5.4	5.2
Ranges	0.4	-0.2	-0.1	0.1	-0.3	-0.1	-0.1	-0.1	-0.3	0.2	0.2	0.0	0.0	0.1	-0.2	-0.2	-0.2	3.4	3.2	1.4	1.2	3.6	3.5	3.2
Dishwashers	0.0	0.1	0.2	0.4	0.7	0.8	0.7	0.7	0.7	0.8	0.8	1.3	2.0	2.0	2.5	3.4	3.5	0.2	0.2	0.1	0.1	4.0	3.5	2.9
Freezers	-0.3	0.3	0.4	0.5	0.7	0.4	0.5	0.5	0.5	0.5	0.3	0.3	0.5	-0.8	-0.5	-0.7	-0.8	3.1	2.6	6.5	6.2	2.2	2.1	2.0
Clothes Dryers	0.1	0.1	0.4	0.4	4.6	0.5	0.1	0.1	0.1	0.2	0.2	0.2	1.0	1.0	1.0	0.9	0.9	13.9	15.8	9.0	8.0	0.8	0.8	0.7
Residential Insulation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.0	1.0	1.1	1.2	1.5	0.8	1.2	1.3	1.5	2.8	2.9	1.7	3.5	3.5	3.1	2.5
Other Residential Equipment[1]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0	21.3	22.3	19.3	20.2	16.6
Commercial Lighting	0.0	0.0	0.0	0.0	0.0	9.7	15.4	16.5	14.9	16.3	19.2	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.4	2.1	2.2	2.2	2.2	2.3
Other Commercial Equipment[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial Equipment - High Efficiency Motors	0.0	0.0	0.0	0.0	0.0	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	1.9	4.6	7.1	8.6	12.8	20.3	26.0	28.6	27.2	29.2	34.2	16.9	22.9	21.4	22.5	24.8	26.1	42.5	45.1	52.3	52.6	52.9	50.8	43.7
GW.h IMPACTS (at meter)	1.9	4.6	7.1	8.6	12.8	20.3	26.0	28.6	27.2	29.2	34.2	16.9	22.9	21.4	22.5	24.8	26.1	42.5	45.1	52.3	52.6	52.9	50.8	43.7
GW.h IMPACTS (at generation)	2.2	5.3	8.1	9.8	14.6	23.1	29.6	32.5	30.9	33.3	39.0	19.2	26.1	24.3	25.6	28.3	29.8	48.5	51.4	59.6	59.9	60.3	58.0	49.8

Note: Subtotals may not be exact due to rounding.
[1]Category includes: central air conditioning, electric hot water tank, furnace, attic insulation, windows, heat recovery ventilator (HRV), efficient showerheads and electronic fireplace ignition.
[2]Category includes: commercial spray valves.

Annual Average Demand Savings - MW
Codes & Standards

	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	2013/14	2014/15	2015/16
Residential Appliances:																								
Clothes Washers	-0.1	-0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.7	0.8	1.0	0.9	0.9	0.0	0.0	0.0	0.0	2.2	1.9	1.6
Refrigerators	0.5	1.1	1.5	1.7	1.7	1.8	1.7	1.8	1.9	1.9	2.5	2.7	3.1	3.2	3.1	4.0	4.2	2.1	1.2	1.3	1.1	0.7	0.7	0.7
Ranges	0.1	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	1.3	1.2	0.3	0.2	0.7	0.7	0.6
Dishwashers	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.5	0.6	0.8	0.9	0.0	0.0	0.0	0.0	0.8	0.7	0.6
Freezers	-0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-0.2	-0.1	-0.2	-0.2	0.3	0.3	0.8	0.7	0.3	0.2	0.2
Clothes Dryers	0.0	0.0	0.1	0.1	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	1.8	2.1	1.8	1.6	0.2	0.2	0.1
Residential Insulation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.5	0.3	0.4	0.5	0.5	1.2	2.2	0.9	1.9	1.9	1.7	1.2
Other Residential Equipment[1]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	6.6	7.3	7.0	6.8	3.3
Commercial Lighting	0.0	0.0	0.0	0.0	0.0	2.7	4.3	4.7	4.2	4.6	5.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.6	0.6	0.6	0.8
Other Commercial Equipment[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial Equipment - High Efficiency Motors	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	0.5	1.1	1.7	2.1	3.0	5.2	6.8	7.6	7.2	7.8	9.1	4.1	5.6	5.2	5.5	6.2	6.5	6.9	7.5	12.1	13.4	14.3	13.5	9.2
MW IMPACTS (at meter)	0.5	1.1	1.7	2.1	3.0	5.2	6.8	7.6	7.2	7.8	9.1	4.1	5.6	5.2	5.5	6.2	6.5	6.9	7.5	12.1	13.4	14.3	13.5	9.2
MW IMPACTS (at generation)	0.5	1.3	2.0	2.4	3.4	5.9	7.7	8.7	8.2	8.8	10.3	4.7	6.4	5.9	6.2	7.0	7.4	7.8	8.5	13.8	15.3	16.3	15.4	10.5

Note: Subtotals may not be exact due to rounding.
[1]Category includes: central air conditioning, electric hot water tank, furnace, attic insulation, windows, heat recovery ventilator (HRV), efficient showerheads and electronic fireplace ignition.
[2]Category includes: commercial spray valves.

Annual Energy Savings - Millions m^3
Codes & Standards

	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	2013/14	2014/15	2015/16
Residential Appliances:																								
Clothes Washers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.2	0.1	0.1	0.0	0.0	0.0
Dishwashers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Furnaces:																								
Residential - Federal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1
Commercial - Federal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Residential - Provincial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Commercial - Provincial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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 Insulation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.5	0.3	0.3	0.3	0.3
Other Residential Equipment[1]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	2.5	2.3	2.4	2.3
Other Commercial Equipment[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Millions m^3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.2	0.5	0.9	5.5	3.4	2.8	2.9	2.8

Note: Subtotals may not be exact due to rounding.
[1]Category includes: furnace, attic insulation, windows, heat recovery ventilator (HRV) and electronic fireplace ignition.
[2]Category includes: commercial spray valves.

Appendix M

Electric Incentive-Based Utility, Administration & Incentive Costs

Annual Utility Costs (1000s in Nominal$)
Electric Incentive-Based Programs

	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	2013/14	2014/15	2015/16	Cumulative Total 2015/16
RESIDENTIAL																												
Residential LED 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	2,662	2,517	5,178
Affordable Energy*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	161	268	423	576	854	1,004	746	712	881	2,409	8,038
Refrigerator Retirement	0	0	0	0	0	0	0	0	0	0	0	0	0	15	25	5	61	23	13	0	11	80	1,479	1,600	1,620	1,693	2,292	8,916
Home Insulation	0	0	0	0	181	281	180	172	315	35	4	37	60	61	120	687	1,021	1,710	1,537	1,590	1,675	1,365	1,255	1,265	1,109	1,791	1,773	18,225
Water & Energy Saver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	2	0	21	78	49	457	439	775	410	438	566	3,241
Community Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	443	621	549	1,613
New Home (Redesign)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	1	33	106	166
Drain Water Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	48	108
Solar Hot Water 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	2	9	12
	0	0	0	0	181	281	180	172	315	35	4	37	60	75	148	694	1,089	1,895	1,839	2,092	2,311	2,757	4,177	4,413	4,295	8,182	10,267	45,498
DISCONTINUED/COMPLETED																												
New Home	0	0	0	27	109	70	161	94	49	26	1	15	112	253	195	300	542	695	546	635	575	210	249	45	12	11	4	4,934
Residential Appliances	0	0	0	0	0	0	0	0	0	0	0	0	0	18	12	9	89	1,376	1,919	1,719	397	12	1	1	0	0	1	5,554
Compact Fluorescent Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	638	1,251	715	810	1,271	1,578	1,004	2	0	0	0	0	7,287.257
Energy Efficient Light Fixtures	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	456	380	185	243	310	0	0	0	0	1,633
Programmable Thermostat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	4	7	67	28	10	0	0	0	0	0	0	0	123
Seasonal LED Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	328	350	339	23	0	0	0	0	0	0	1,106
Residential Hot Water	0	28	120	7			1	23	8	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	194
Outdoor Timer	124	190	169	134	68	40	14	2	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	753
Power Saver Cords	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Retrofit/Demonstration	0	14	18	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110
Refrigerator/Freezer Buy-back	0	0	36	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44
Water Heater Rental	0	0	0	0	0	0	14	304	306	69	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	696
High Efficiency Furnace/Boiler	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
	124	233	343	255	176	109	191	423	370	102	6	19	112	270	233	951	1,957	3,240	4,108	4,354	2,758	1,468	563	46	12	11	5	22,441
RESIDENTIAL EXPLORATORY PROGRAMS																												
Smart Thermostats	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139	139
Solar Technologies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	51
Air Source Heat Pumps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	19	32
Residential Conservation Rates	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
LED Light Bulbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
LED Light Fixtures	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Residential Solar Energy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	4
Set Top Boxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	1	0	0	0	0	0	21
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	4	2	0	0	13	213	253
RESIDENTIAL TOTAL	124	233	343	255	357	390	371	595	685	137	10	56	172	346	381	1,646	3,046	5,134	5,947	6,446	5,089	4,229	4,742	4,460	4,307	8,206	10,485	68,193

Note: Subtotals may not be exact due to rounding.
* Includes Affordable Energy Fund expenditures.

Annual Utility Costs (1000s in Nominal$)
Electric Incentive-Based Programs

	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	2013/14	2014/15	2015/16	Cumulative Total 2015/16
COMMERCIAL																												
LED 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	11	726	14,824	15,561
Commercial Lighting	0	0	75	805	1,734	2,123	2,157	915	1,395	790	710	538	836	1,046	2,270	4,863	5,944	6,840	6,882	7,723	7,253	6,650	6,336	7,757	6,642	7,194	8,091	97,568
Commercial New Buildings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	150	95	162	290	298	116	593	1,346	847	3,898
Internal Retrofit	0	0	80	153	129	108	95	161	136	172	87	186	124	140	347	705	557	4,542	4,240	2,601	2,116	1,848	744	811	760	710	840	22,394
Commercial Insulation**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	337	407	237	228	260	232	451	517	586	608	3,864
Commercial Windows**	0	0	0	0	4	14	22	33	57	19	8	36	20	72	82	86	128	314	268	441	1,008	1,214	985	925	813	815	526	7,890
Commercial Refrigeration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	218	289	274	174	183	170	335	613	651	905	513	4,326
Commercial HVAC - Chillers	0	0	0	0	4	16	26	0	0	0	0	0	0	0	0	423	171	145	66	211	159	313	207	147	193	374	418	2,874
Commercial Geothermal	0	0	0	0	14	50	82	61	241	60	74	61	121	211	532	170	437	582	333	221	383	298	290	265	168	192	237	5,083
Power Smart Shops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	60	241	142	46	0	6	40	205	742
Commercial Custom Measures	0	0	0	0	16	54	90	83	0	196	513	123	145	94	120	10	3	154	169	238	210	230	237	56	14	17	114	2,887
Commercial Building Optimization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	169	59	49	28	26	36	39	92	125	33	75	731
Commercial Kitchen Appliances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	90	82	36	31	12	4	18	56	336
Commercial HVAC - CO2 Sensors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2	1	7	11	28
Commercial HVAC - Boilers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
Commercial Network Energy Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	20	68	83	23	6	55	15	2	274
	0	0	155	957	1,901	2,365	2,473	1,254	1,829	1,237	1,391	944	1,246	1,563	3,351	6,257	7,627	13,265	12,849	12,141	12,121	11,571	9,806	11,251	10,554	12,979	27,378	168,465
DISCONTINUED/COMPLETED																												
Agricultural Heat Pads	0	0	0	0	0	0	2	52	27	73	69	42	44	64	50	121	68	54	63	42	115	99	8	1	2	3	4	1,001
Commercial Clothes Washers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	54	43	136	64	63	59	48	2	0	492
Commercial Construction - Air Conditioning	0	0	0	0	0	1	2	2					5	33		15	4	19	0	0	0	0	0	1	1	1	0	86
Parking Lot Controllers	0	0	0	0	24	82	136	166	247	183	30	49	235	183	400	463	1,199	767	574	377	508	529	281	9	0	1	0	6,444
City of Winnipeg Power Smart Agreement	0	0	0	0	0	0	0	0	0	0	0	0	0	1,035	1,471	1,760	4,310	1,739	195	63	45	79	(45)	(120)	1	0	0	10,534
Commercial Rinse & Save	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	26	21	9	5	0	0	0	0	0	93
Commercial Construction - Air Barrier	0	0	0	0	1	3	5	35	6	9	0	28	15	16	18	7	3	0	5	0	0	0	0	0	0	0	0	152
Livestock Waterer	0	0	0	0		111	98	71	18	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	301
Roadway Lighting	0	74	1,266	1,577	1,440	586	13	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,994
Sentinel Lighting	0	21	901	768	819	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,510
Agricultural Demand Controller	0	0	22	209	153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	383
Commercial Showerhead	0	43	72	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	140
Infrared Heat Lamp	0	12	187	32	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	235
	0	150	2,449	2,611	2,441	784	256	325	334	268	99	119	299	1,331	1,938	2,367	5,585	2,635	918	547	813	777	307	(50)	51	6	4	27,363
COMMERCIAL EXPLORATORY PROGRAMS																												
Commercial HVAC - HRV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	6	7	14
Power Smart Energy Manager	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	77	115	86	65	22	0	0	0	4	372
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	77	115	86	65	23	0	0	6	11	386
COMMERCIAL TOTAL	0	150	2,604	3,568	4,342	3,149	2,729	1,579	2,163	1,504	1,490	1,062	1,544	2,894	5,289	8,624	13,211	15,901	13,845	12,804	13,021	12,414	10,135	11,201	10,605	12,991	27,393	196,213

Note: Subtotals may not be exact due to rounding.
** Programs comprise the Commercial Building Envelope Program.

Annual Utility Costs (1000s in Nominal$)
Electric Incentive-Based Programs

	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	2013/14	2014/15	2015/16	Cumulative Total 2015/16
INDUSTRIAL																												
Performance Optimization	0	0	60	131	171	234	383	247	555	322	311	241	1,010	1,418	1,069	1,488	1,654	1,120	3,145	2,504	2,910	2,768	2,932	2,741	2,173	1,962	2,033	33,583
	0	0	60	131	171	234	383	247	555	322	311	241	1,010	1,418	1,069	1,488	1,654	1,120	3,145	2,504	2,910	2,768	2,932	2,741	2,173	1,962	2,033	33,583
DISCONTINUED/COMPLETED																												
High Efficiency Motors	0	15	219	519	429	325	352	369	371	37	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,638
Retrofit/Demonstration GSL	0	0	43	241	401	712	814	272	299	66	72	19	1	1,300	1	0	0	0	0	0	0	0	0	0	0	0	0	4,240
Emergency Preparedness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	70	7	1	0	0	0	0	159
Efficient Motors (QMR)	0	0	0	16	37	14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70
	0	15	262	776	867	1,051	1,168	641	670	103	74	20	1	1,300	1	0	0	0	0	81	70	7	1	0	0	0	0	7,107
INDUSTRIAL EXPLORATORY PROGRAMS																												
Customer Sited Renewable & ET Demos	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39
INDUSTRIAL TOTAL	0	15	321	906	1,038	1,284	1,551	888	1,225	425	386	262	1,010	2,718	1,070	1,488	1,654	1,120	3,145	2,585	2,980	2,775	2,933	2,741	2,173	2,001	2,033	40,729
EFFICIENCY PROGRAMS SUBTOTAL	124	398	3,268	4,729	5,738	4,824	4,651	3,062	4,073	2,067	1,886	1,380	2,726	5,957	6,741	11,757	17,911	22,155	22,937	21,835	21,090	19,417	17,811	18,402	17,086	23,198	39,910	305,134
CUSTOMER SELF-GENERATION PROGRAMS																												
Load Displacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	674	4,993	5,667
Bioenergy Optimization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,764	1,556	1,718	1,488	1,605	1,721	348	698	552	533	11,984
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,764	1,556	1,718	1,488	1,605	1,721	348	698	1,226	5,527	17,651
RATE/LOAD MANAGEMENT PROGRAMS																												
Curtailable Rates	0	0	0	60	434	1,128	1,048	1,049	922	1,195	1,493	1,986	2,672	4,122	5,451	5,609	6,403	6,388	6,454	6,382	5,767	5,741	5,788	5,751	5,971	5,945	6,144	93,903
	0	0	0	60	434	1,128	1,048	1,049	922	1,195	1,493	1,986	2,672	4,122	5,451	5,609	6,403	6,388	6,454	6,382	5,767	5,741	5,788	5,751	5,971	5,945	6,144	93,903
PROGRAMS SUBTOTAL	124	398	3,268	4,789	6,172	5,952	5,699	4,110	4,995	3,262	3,379	3,366	5,399	10,080	12,192	17,365	24,314	30,307	30,947	29,935	28,345	26,763	25,319	24,501	23,755	30,369	51,582	416,689
Support Costs[1,2]	0	234	2,340	2,864	2,084	1,178	1,434	1,181	955	1,256	1,830	2,571	2,360	3,055	3,152	3,609	3,929	6,507	6,566	5,765	5,030	3,542	4,431	3,772	3,969	4,217	3,812	81,643
UTILITY COSTS OF PROGRAMS	124	632	5,608	7,653	8,256	7,129	7,133	5,291	5,950	4,518	5,209	5,937	7,759	13,135	15,344	20,975	28,243	36,814	37,513	35,700	33,375	30,306	29,751	28,273	27,725	34,586	55,394	498,332

Note: Subtotals may not be exact due to rounding.
1 Support Costs include Affordable Energy Fund expenditures.
2 Detailed summary of Support Costs in Appendix M.1

Annual Administration Costs (1000s in Nominal$)
Electric Incentive-Based Programs

	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	2013/14	2014/15	2015/16	Cumulative Total 2015/16
RESIDENTIAL																												
Refrigerator Retirement	0	0	0	0	0	0	0	0	0	0	0	0	0	15	25	5	61	23	13	0	11	80	1,161	1,239	1,262	1,323	1,756	6,974
Home Insulation	0	0	0	0	181	281	180	172	315	35	4	37	60	61	120	247	280	124	206	210	187	214	241	440	422	658	755	5,429
Residential LED 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	798	694	1,492
Affordable Energy*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	142	190	297	369	395	391	248	244	265	693	3,235
Water & Energy Saver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	2	0	21	78	49	185	255	543	291	301	360	2,091
Community Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	198	385	346	929
New Home (Redesign)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	1	33	106	166
Drain Water Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	25	55
Solar Hot Water 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	2	9	12
	0	0	0	0	181	281	180	172	315	35	4	37	60	75	148	254	343	289	431	585	617	873	2,048	2,499	2,417	3,796	4,742	20,383
DISCONTINUED/COMPLETED																												
New Home	0	0	0	27	109	70	161	94	49	26	1	15	112	253	195	294	448	627	509	534	462	127	204	33	12	11	4	4,374
Residential Appliances	0	0	0	0	0	0	0	0	0	0	0	0	0	18	12	9	89	516	590	405	107	11	1	1	0	0	1	1,762
Compact Fluorescent Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	566	704	548	658	624	510	406	1	0	0	0	0	4,036
Energy Efficient Light Fixtures	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	380	311	122	95	173	0	0	0	0	1,139
Programmable Thermostat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	4	7	46	23	4	0	0	0	0	0	0	0	92
Seasonal LED Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	220	241	273	2	0	0	0	0	0	0	801
Residential Hot Water	0	28	114	7	0	0	1	23	8	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	187
Outdoor Timer	94	146	128	110	47	40	14	2	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	592
Power Saver Cords	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Retrofit/Demonstration	0	14	18	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110
Refrigerator/Freezer Buy-back	0	0	19	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
Water Heater Rental	0	0	0	0	0	0	14	304	306	69	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	696
High Efficiency Furnace/Boiler	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
	94	189	279	231	156	109	191	423	370	102	6	19	112	270	233	872	1,317	2,016	2,402	2,151	1,204	639	379	34	12	11	5	13,824
RESIDENTIAL EXPLORATORY PROGRAMS																												
Solar Technologies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	51
Smart Thermostats	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	48
Air Source Heat Pumps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	19	31
Residential Conservation Rates	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
LED Light Bulbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
LED Light Fixtures	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Residential Solar Energy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	4
Set Top Boxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	1	0	0	0	0	0	21
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	4	2	0	0	13	122	162
RESIDENTIAL TOTAL	94	189	279	231	337	390	371	595	685	137	10	56	172	346	381	1,126	1,659	2,305	2,833	2,735	1,842	1,516	2,429	2,534	2,429	3,820	4,869	34,369

Note: Subtotals may not be exact due to rounding.
* Includes Affordable Energy Fund expenditures.

Annual Administration Costs (1000s in Nominal$)
Electric Incentive-Based Programs

	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	2013/14	2014/15	2015/16	Cumulative Total 2015/16
COMMERCIAL																												
LED 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	11	726	14,824	15,561
Commercial Lighting	0	0	75	593	646	578	502	340	1,048	292	241	274	343	710	960	1,709	1,776	2,051	1,879	1,828	1,892	1,864	1,842	1,764	1,858	2,417	2,178	29,661
Internal Retrofit	0	0	80	153	129	108	95	161	136	172	87	186	124	140	347	705	557	4,542	4,240	2,601	2,116	1,848	744	811	760	710	840	22,394
Commercial Geothermal	0	0	0	0	14	50	82	39	127	28	35	3	46	95	231	55	364	165	188	130	120	98	121	82	87	115	215	2,491
Commercial Windows**	0	0	0	0	4	14	22	8	14	5	2	9	5	18	20	21	31	147	96	100	115	114	116	172	184	214	203	1,632
Commercial Insulation**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	134	85	43	44	27	30	147	198	227	203	1,139
Commercial New Buildings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	150	95	166	180	187	37	268	397	199	1,680
Power Smart Shops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	60	241	140	46	0	6	40	148	682
Commercial Refrigeration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	218	207	180	93	96	84	134	120	113	154	101	1,499
Commercial Building Optimization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	169	55	39	20	17	27	27	68	77	33	75	607
Commercial HVAC - Chillers	0	0	0	0	4	16	26	0	0	0	0	0	0	0	0	423	171	20	13	12	15	16	16	8	16	78	58	892
Commercial Custom Measures	0	0	0	0	16	54	90	61	0	97	161	80	145	94	120	10	3	69	81	205	86	89	138	10	7	14	47	1,677
Commercial HVAC - Boilers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
Commercial Kitchen Appliances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	46	35	13	18	9	2	9	9	149
Commercial HVAC - CO2 Sensors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	1	5	5	17
Commercial Network Energy Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	20	64	71	23	6	8	5	2	201
	0	0	155	746	813	820	818	608	1,325	593	526	552	663	1,058	1,679	2,923	3,289	7,393	6,961	5,255	5,008	4,572	3,443	3,236	3,596	5,144	19,118	80,293
DISCONTINUED/COMPLETED																												
Agricultural Heat Pads	0	0	0	0	0	0	2	52	27	34	21	17	20	27	24	72	40	40	27	18	31	27	8	1	2	3	4	496
Commercial Clothes Washers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	54	34	38	41	35	29	22	2	0	278
Commercial Construction - Air Conditioning	0	0	0	0	0	1	2	1	0	0	0	0	3	25	0	3	4	19	0	0	0	0	0	1	1	1	0	64
Parking Lot Controllers	0	0	0	0	24	82	136	140	227	87	17	33	195	163	338	393	669	169	113	142	145	79	31	1	0	1	0	3,184
City of Winnipeg Power Smart Agreement	0	0	0	0	0	0	0	0	0	0	0	0	0	1,035	787	922	922	419	53	63	45	(77)	(116)	7	1	0	0	4,060
Commercial Rinse & Save	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	14	4	6	1	0	0	0	0	0	47
Commercial Construction - Air Barrier	0	0	0	0	1	3	5	20	4	7	(8)	14	15	16	18	7	3	0	5	0	0	0	0	0	0	0	0	113
Livestock Waterer	0	0	0	0	0	97	85	62	18	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	265
Roadway Lighting	0	74	1,266	1,577	1,440	586	13	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,994
Sentinel Lighting	0	21	901	768	819	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,510
Agricultural Demand Controller	0	0	22	87	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	219
Commercial Showerhead	0	43	52	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120
Infrared Heat Lamp	0	12	97	32	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	145
	0	150	2,339	2,489	2,399	770	243	275	312	132	30	64	233	1,267	1,167	1,397	1,639	693	266	261	265	70	(42)	38	25	6	4	16,493
COMMERCIAL EXPLORATORY PROGRAMS																												
Commercial HVAC - HRV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	6	7	14
Power Smart Energy Manager	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	77	113	86	65	22	0	0	0	4	369
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	77	113	86	65	23	0	0	6	11	383
COMMERCIAL TOTAL	0	150	2,494	3,235	3,212	1,590	1,061	884	1,637	725	557	616	896	2,325	2,845	4,320	4,928	8,087	7,304	5,629	5,359	4,708	3,424	3,275	3,622	5,156	19,133	97,169

Note: Subtotals may not be exact due to rounding.

** Programs comprise the Commercial Building Envelope Program.

Annual Administration Costs (1000s in Nominal$)
Electric Incentive-Based Programs

	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	2013/14	2014/15	2015/16	Cumulative Total 2015/16
INDUSTRIAL																												
Performance Optimization	0	0	60	131	171	128	203	132	258	173	277	153	246	390	352	173	313	375	484	579	441	398	408	356	367	371	388	7,325
	0	0	60	131	171	128	203	132	258	173	277	153	246	390	352	173	313	375	484	579	441	398	408	356	367	371	388	7,325
DISCONTINUED/COMPLETED																												
High Efficiency Motors	0	15	193	236	191	148	212	214	142	37	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,391
Retrofit/Demonstration GSL	0	0	43	216	362	421	326	272	299	37	72	19	1	1,300	1	0	0	0	0	0	0	0	0	0	0	0	0	3,369
Emergency Preparedness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	70	7	1	0	0	0	0	159
Efficient Motors (QMR)	0	0	0	16	37	14	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70
	0	15	236	467	590	584	541	486	441	73	74	20	1	1,300	1	0	0	0	0	81	70	7	1	0	0	0	0	4,989
INDUSTRIAL EXPLORATORY PROGRAMS																												
Customer Sited Renewable & ET Demos	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39
INDUSTRIAL TOTAL	0	15	296	598	761	712	743	619	699	246	352	174	246	1,690	353	173	313	375	484	659	511	405	409	356	367	410	388	12,353
EFFICIENCY PROGRAMS SUBTOTAL	94	353	3,069	4,063	4,310	2,692	2,175	2,097	3,021	1,109	918	846	1,315	4,360	3,579	5,619	6,900	10,767	10,620	9,024	7,712	6,629	6,262	6,165	6,418	9,386	24,389	143,891
CUSTOMER SELF-GENERATION PROGRAMS																												
Load Displacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	371	603	974
Bioenergy Optimization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	117	73	286	306	1,721	348	685	537	528	4,613
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	117	73	286	306	1,721	348	685	909	1,131	5,588
RATE/LOAD MANAGEMENT PROGRAMS																												
Curtailable Rates	0	0	0	60	70	159	66	45	43	34	19	12	6	8	12	15	9	7	9	5	6	7	9	5	5	5	5	623
	0	0	0	60	70	159	66	45	43	34	19	12	6	8	12	15	9	7	9	5	6	7	9	5	5	5	5	623
PROGRAMS SUBTOTAL	94	353	3,069	4,123	4,379	2,851	2,241	2,142	3,064	1,143	937	858	1,320	4,368	3,591	5,634	6,908	10,784	10,747	9,102	8,005	6,943	7,992	6,518	7,109	10,300	25,525	150,101
Support Costs[1,2]	0	234	2,340	2,864	2,084	1,178	1,434	1,181	955	1,256	1,830	2,571	2,360	3,055	3,152	3,609	3,929	6,507	6,566	5,765	5,030	3,542	4,431	3,772	3,969	4,217	3,812	81,643
ADMINISTRATION COSTS OF PROGRAMS	94	588	5,409	6,987	6,463	4,029	3,675	3,323	4,018	2,399	2,767	3,429	3,681	7,424	6,743	9,243	10,837	17,291	17,313	14,867	13,035	10,485	12,423	10,290	11,078	14,516	29,337	231,745

Note: Subtotals may not be exact due to rounding.
1 Support Costs include Affordable Energy Fund expenditures.
2 Detailed summary of Support Costs in Appendix M.1.

Annual Incentive Costs (1000s in Nominal$)
Electric Incentive-Based Programs

	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	2013/14	2014/15	2015/16	Cumulative Total 2015/16
RESIDENTIAL																												
Residential LED 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	1,863	1,823	3,687
Affordable Energy*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	19	78	126	206	460	612	498	468	616	1,716	4,803
Home Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	441	741	1,586	1,330	1,381	1,488	1,152	1,014	825	687	1,133	1,018	12,796
Refrigerator Retirement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	319	360	358	370	536	1,942
Community Geothermal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	245	236	203	684
Water & Energy Saver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	272	184	232	119	137	206	1,150
Drain Water Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	24	53
Solar Hot Water 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	0	0
New Home (Redesign)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	441	746	1,605	1,408	1,507	1,694	1,884	2,129	1,914	1,878	4,386	5,525	25,115
DISCONTINUED/COMPLETED																												
New Home	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	94	68	37	101	113	83	46	12	1	0	0	560
Residential Appliances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	860	1,328	1,315	289	0	0	0	0	0	0	3,792
Compact Fluorescent Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	547	167	151	647	1,068	597	1	0	0	0	0	3,251
Energy Efficient Light Fixtures	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76	69	63	148	137	0	0	0	0	494
Programmable Thermostat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	5	5	0	0	0	0	0	0	0	31
Seasonal LED Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	109	67	21	0	0	0	0	0	0	305
Residential Hot Water	0	0	6	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
Outdoor Timer	31	45	40	24	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	161
Power Saver Cords	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retrofit/Demonstration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Refrigerator/Freezer Buy-back	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Water Heater Rental	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0
	31	45	64	24	21	0	0	0	0	0	0	0	0	0	0	79	640	1,224	1,706	2,204	1,554	829	184	12	1	0	0	8,617
RESIDENTIAL EXPLORATORY PROGRAMS																												
Smart Thermostats	0	0	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
Air Source Heat Pumps	0	0	0	0	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 Technologies	0	0	0	0	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 Conservation Rates	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LED Light Bulbs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LED Light Fixtures	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residential Solar Energy	0	0	0	0	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	0	0
	0	0	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
RESIDENTIAL TOTAL	31	45	64	24	21	0	0	0	0	0	0	0	0	0	0	520	1,387	2,829	3,114	3,711	3,248	2,712	2,313	1,926	1,878	4,386	5,616	33,824

Note: Subtotals may not be exact due to rounding.
* Includes Affordable Energy Fund expenditures.

Annual Incentive Costs (1000s in Nominal$)
Electric Incentive-Based Programs

	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	2013/14	2014/15	2015/16	Cumulative Total 2015/16
COMMERCIAL																												
Commercial Lighting	0	0	0	211	1,088	1,545	1,655	575	347	498	469	264	493	335	1,310	3,154	4,168	4,788	5,004	5,895	5,361	4,786	4,494	5,993	4,784	4,777	5,913	67,906
Commercial New Buildings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(4)	110	111	79	325	949	648	2,217
Commercial Refrigeration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83	94	81	87	86	201	493	538	752	412	2,827
Commercial Insulation**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	203	322	194	184	233	202	304	319	359	405	2,725
Commercial HVAC - Chillers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	54	199	143	297	191	138	177	296	360	1,981
Commercial Windows**	0	0	0	0	0	0	0	25	43	14	6	27	15	54	62	65	97	167	172	341	893	1,100	869	754	629	601	323	6,258
Commercial Custom Measures	0	0	0	0	0	0	0	23	0	100	352	43	0	0	0	0	0	85	89	33	124	141	99	46	7	4	67	1,210
Power Smart Shops	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	56	59
Commercial Kitchen Appliances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	47	23	13	2	2	9	47	188
Commercial Geothermal	0	0	0	0	0	0	0	23	114	32	39	58	75	116	300	115	73	417	145	91	263	200	169	183	81	77	22	2,593
Commercial HVAC - CO2 Sensors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	7	11
LED Roadway Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Internal Retrofit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial HVAC - Boilers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial Building Optimization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	10	7	9	9	13	24	48	0	0	124
Commercial Network Energy Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	12	0	0	47	10	0	74
	0	0	0	211	1,088	1,545	1,655	645	505	643	865	392	582	505	1,672	3,334	4,338	5,873	5,889	6,886	7,113	6,999	6,363	8,015	6,957	7,835	8,260	88,172
DISCONTINUED/COMPLETED																												
Agricultural Heat Pads	0	0	0	0	0	0	0	0	0	39	49	25	24	37	26	48	28	14	37	24	83	72	0	0	0	0	0	505
Commercial Clothes Washers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	98	23	28	30	26	0	0	214
Commercial Construction - Air Conditioning	0	0	0	0	0	0	0	1	0	0	0	0	1	7	0	13	0	0	0	0	0	0	0	0	0	0	0	22
Parking Lot Controllers	0	0	0	0	0	0	0	26	20	96	13	17	41	20	62	70	530	598	461	236	364	450	250	9	0	0	0	3,259
City of Winnipeg Power Smart Agreement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	684	839	3,389	1,320	142	0	0	157	71	(127)	0	0	0	6,474
Commercial Rinse & Save	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	12	17	3	5	0	0	0	0	0	46
Commercial Construction - Air Barrier	0	0	0	0	0	0	0	14	2	2	8	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
Livestock Waterer	0	0	0	0	0	15	13	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
Roadway Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sentinel Lighting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agricultural Demand Controller	0	0	0	122	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	164
Commercial Showerhead	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
Infrared Heat Lamp	0	0	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90
	0	0	110	122	43	15	13	50	22	136	69	55	65	64	772	969	3,946	1,942	652	286	549	706	349	(89)	26	0	0	10,869
COMMERCIAL EXPLORATORY PROGRAMS																												
Power Smart Energy Manager	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
Commercial HVAC - HRV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	3
COMMERCIAL TOTAL	0	0	110	333	1,131	1,560	1,668	695	526	780	934	446	648	569	2,444	4,303	8,283	7,814	6,541	7,175	7,662	7,705	6,712	7,926	6,984	7,835	8,260	99,044

Note: Subtotals may not be exact due to rounding.
** Programs comprise the Commercial Building Envelope Program.

Annual Incentive Costs (1000s in Nominal$)
Electric Incentive-Based Programs

	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	2013/14	2014/15	2015/16	Cumulative Total 2015/16
INDUSTRIAL																												
Performance Optimization	0	0	0	0	0	106	181	115	297	149	34	88	764	1,028	717	1,315	1,342	744	2,662	1,925	2,469	2,370	2,524	2,385	1,807	1,591	1,646	26,258
	0	0	0	0	0	106	181	115	297	149	34	88	764	1,028	717	1,315	1,342	744	2,662	1,925	2,469	2,370	2,524	2,385	1,807	1,591	1,646	26,258
DISCONTINUED/COMPLETED																												
High Efficiency Motors	0	0	25	283	238	177	139	155	229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,247
Retrofit/Demonstration GSL	0	0	0	26	38	290	488	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	871
Emergency Preparedness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Efficient Motors (QMR)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	25	309	277	467	627	155	229	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,118
INDUSTRIAL EXPLORATORY PROGRAMS																												
Customer Sited Renewable & ET Demos	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDUSTRIAL TOTAL	0	0	25	309	277	572	808	269	526	179	34	88	764	1,028	717	1,315	1,342	744	2,662	1,925	2,469	2,370	2,524	2,385	1,807	1,591	1,646	28,376
EFFICIENCY PROGRAMS SUBTOTAL	31	45	199	666	1,428	2,132	2,476	965	1,052	958	968	534	1,412	1,597	3,162	6,138	11,012	11,388	12,317	12,811	13,378	12,788	11,549	12,237	10,668	13,812	15,521	161,244
CUSTOMER SELF-GENERATION PROGRAMS																												
Load Displacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	302	4,390	4,693
Bioenergy Optimization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,754	1,439	1,645	1,201	1,298	0	0	13	15	6	7,371
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,754	1,439	1,645	1,201	1,298	0	0	13	317	4,396	12,064
RATE/LOAD MANAGEMENT PROGRAMS																												
Curtailable Rates	0	0	0	0	364	968	982	1,004	879	1,161	1,474	1,974	2,667	4,114	5,439	5,593	6,395	6,381	6,444	6,377	5,761	5,734	5,779	5,746	5,966	5,940	6,139	93,280
	0	0	0	0	364	968	982	1,004	879	1,161	1,474	1,974	2,667	4,114	5,439	5,593	6,395	6,381	6,444	6,377	5,761	5,734	5,779	5,746	5,966	5,940	6,139	93,280
PROGRAMS SUBTOTAL	31	45	199	666	1,792	3,100	3,458	1,968	1,931	2,119	2,442	2,508	4,078	5,711	8,600	11,731	17,406	19,523	20,200	20,833	20,340	19,820	17,328	17,983	16,647	20,070	26,056	266,588
Support Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INCENTIVE COSTS OF PROGRAMS	31	45	199	666	1,792	3,100	3,458	1,968	1,931	2,119	2,442	2,508	4,078	5,711	8,600	11,731	17,406	19,523	20,200	20,833	20,340	19,820	17,328	17,983	16,647	20,070	26,056	266,588

Note: Subtotals may not be exact due to rounding.

Appendix M.1

Detailed Summary of Electric Support Costs

Detailed Summary of Support Costs (1000s in Nominal$)
Electric DSM Support Programs, Basic Information Services and Support Costs (Excluding Affordable Energy Fund Expenditures)

	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	2013/14	2014/15	2015/16	Cumulative Total 2015/16
DSM SUPPORT PROGRAMS																												
RESIDENTIAL																												
Power Smart Residential PAYS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	229	43	27	15	340
Race to Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
Residential Earth Power Loan	0	0	0	0	0	0	0	0	0	0	0	0	2	47	97	343	872	(92)	71	207	160	102	85	125	258	(46)	(44)	2,187
Power Smart Residential Loan	0	0	0	0	0	0	0	0	0	0	0	45	76	20	9	(0)	1	9	(1)	(6)	(73)	(37)	(29)	(72)	(63)	(45)	(57)	(222)
	0	0	0	0	0	0	0	0	0	0	0	45	78	66	105	343	873	(83)	69	201	88	66	83	281	239	(64)	(73)	2,318
DISCONTINUED/COMPLETED																												
ecoENERGY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(10)	(42)	71	163	(19)	141	101	112	(29)	1	0	0	489
Solar Water Heating	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	0	0	7
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(10)	(42)	71	163	(19)	148	101	112	(29)	1	0	0	495
RESIDENTIAL TOTAL	0	0	0	0	0	0	0	0	0	0	0	45	78	66	105	333	831	(12)	232	182	236	166	196	252	239	(64)	(73)	2,813
COMMERCIAL																												
Power Smart for Business PAYS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	123	76	131	128	457
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	123	76	131	128	457
COMMERCIAL TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	123	76	131	128	457
DSM SUPPORT PROGRAMS SUBTOTAL	0	0	0	0	0	0	0	0	0	0	0	45	78	66	105	333	831	(12)	232	182	236	166	196	376	315	67	55	3,270
BASIC INFORMATION SERVICES																												
Basic Information Services	0	0	13	6	92	55	11	13	156	473	558	1,291	1,313	1,305	1,667	1,595	1,641	1,333	1,421	1,769	1,766	1,421	1,513	1,342	1,308	1,378	3	23,442
Discontinued/Completed Basic Information Services	0	0	0	0	4	23	160	141	1	75	253	312	406	298	378	434	391	11	(4)	0	0	1	0	0	0	0	0	2,885
BASIC INFORMATION SERVICES SUBTOTAL	0	0	13	6	96	77	171	154	158	548	811	1,603	1,719	1,603	2,045	2,029	2,033	1,344	1,416	1,769	1,766	1,421	1,513	1,342	1,308	1,378	3	26,327
SUPPORT COSTS																												
Power Smart Industrial Support	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	860	860
Power Smart Communications	0	9	698	1,494	1,064	520	687	648	566	490	696	622	173	507	463	898	616	588	615	1,122	858	794	779	666	754	734	684	17,743
DSM Administration	0	206	210	178	130	95	116	184	72	40	100	130	186	303	208	236	208	208	159	247	206	220	285	178	360	348	487	5,298
Integrated Plan/Targets	0	19	475	235	214	205	208	63	31	82	161	96	35	360	267	70	23	93	90	172	254	166	210	127	260	416	383	4,713
Sustainability & Standards	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	83	48	55	189	166	132	164	293	236	269	1,683
Power Smart Residential Support	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	53	65	141	141	314	248	991
Power Smart for Business	0	0	0	140	137	87	50	0	0	0	0	0	0	0	0	0	84	155	211	198	196	158	188	115	155	217	214	2,305
Energy Efficient Screening Studies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	34	49	31	64	82	76	348
DSM Benchmarking Study	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	72
Power Smart Sales Support	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	71	137
External Evaluations	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	89	71	160
Earth Energy & Emerging Technologies - 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	10	34	57	101
Earth Energy & Emerging Technologies - Residential	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	47	49	157
Process Evaluations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	47	78
Commercial Audits	0	0	0	0	0	0	0	0	0	0	0	16	22	20	30	38	5	2	0	0	0	0	1	14	5	25	20	199
DSM Tracking System	0	0	0	13	22	143	149	13	1	1	3	0	0	0	0	0	0	3	6	1	19	80	79	86	14	8	17	658
Community Energy Plan Initiative	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17
Downtown Office Project Support	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,420	3,420	1,710	950	0	0	0	0	0	0	9,500
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	6	2	0	0	0	0	9
Alternative Geothermal Financing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	1	0	0	0	26
Retrofit Demonstrations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	5	2	1	0	0	0	0	0	0	48
DSM Market Potential Study	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	147	96	121	(3)	0	361
Discontinued/Completed Support Costs	0	0	945	799	421	51	53	119	127	97	59	75	153	194	44	13	8	0	0	0	0	0	0	0	0	0	0	3,157
	0	234	2,327	2,858	1,988	1,100	1,263	1,027	797	709	1,018	923	563	1,386	1,002	1,247	1,065	4,556	4,557	3,506	2,714	1,677	1,964	1,618	2,237	2,644	3,641	48,621
TOTAL SUPPORT COSTS	0	234	2,340	2,864	2,084	1,178	1,434	1,181	955	1,256	1,830	2,571	2,360	3,055	3,152	3,609	3,929	5,888	6,206	5,457	4,716	3,265	3,672	3,336	3,859	4,090	3,698	78,218

Note: Subtotals may not be exact due to rounding.

Appendix N

Natural Gas Incentive-Based Utility, Administration and Incentive Costs

Annual Utility Costs (1000s in Nominal$)
Natural Gas Incentive-Based Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Cumulative Total 2015/16
RESIDENTIAL																
Affordable Energy*	0	0	0	0	0	257	325	1,183	2,890	4,236	4,954	5,805	5,384	8,247	5,417	38,699
Water & Energy Saver	0	0	0	0	0	0	0	0	40	686	1,024	775	761	813	1,050	5,150
Home Insulation	0	0	0	0	767	1,951	2,439	2,751	2,945	2,230	2,104	1,411	1,117	1,352	1,021	20,089
Solar Hot Water Heater	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	6
New Home (Redesign)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	767	2,207	2,765	3,934	5,876	7,152	8,083	7,992	7,263	10,413	7,491	63,944
DISCONTINUED/COMPLETED																
Programmable Thermostat	0	0	0	0	0	187	108	38	1	0	0	0	0	0	0	334
New Home	0	11	68	102	78	77	61	0	87	108	64	5	0	0	0	661
High Efficiency Furnace/Boiler	0	0	0	0	435	1,520	1,945	3,166	1,531	26	0	0	0	0	0	8,624
	0	11	68	102	513	1,784	2,114	3,204	1,619	135	64	5	0	0	0	9,618
RESIDENTIAL EXPLORATORY PROGRAMS																
Residential Solar Energy	0	0	0	0	0	0	0	0	0	7	8	0	0	0	0	15
	0	0	0	0	0	0	0	0	0	7	8	0	0	0	0	15
RESIDENTIAL TOTAL	0	11	68	102	1,281	3,991	4,879	7,138	7,494	7,294	8,155	7,997	7,263	10,413	7,491	73,578
COMMERCIAL																
Commercial Insulation**	0	0	0	0	0	182	610	1,010	1,242	2,212	1,752	1,108	1,728	2,071	1,424	13,338
Commercial New Buildings	0	0	0	0	0	1	64	143	108	193	198	1,043	198	336	1,270	3,554
Commercial HVAC - Boilers	0	0	0	0	100	670	1,502	1,370	1,091	1,227	881	1,179	1,276	1,282	902	11,478
Commercial Windows**	0	0	0	0	0	169	402	462	779	1,000	1,093	796	964	1,244	555	7,464
Commercial Custom Measures	0	0	0	0	0	0	91	0	140	154	158	505	264	154	342	1,808
Commercial Building Optimization	0	0	0	0	72	236	195	157	234	205	118	92	125	76	226	1,738
Commercial Kitchen Appliances	0	0	0	0	0	0	41	16	55	29	47	27	15	162	224	617
Commercial HVAC - C02 Sensors	0	0	0	0	0	0	0	10	28	32	35	36	11	63	104	318
Commercial Water Heater	0	0	0	0	0	0	0	0	22	31	14	0	2	44	83	196
Power Smart Shops	0	0	0	0	0	0	1	15	80	95	11	0	1	4	36	245
	0	0	0	0	172	1,257	2,908	3,182	3,780	5,176	4,307	4,786	4,584	5,438	5,165	40,756
DISCONTINUED/COMPLETED																
Commercial Rinse & Save	0	0	0	0	0	126	60	122	27	21	1	0	0	0	0	356
	0	0	0	0	0	126	60	122	27	21	1	0	0	0	0	356
COMMERCIAL EXPLORATORY PROGRAMS																
Power Smart Energy Manager	0	0	0	0	0	9	116	94	71	43	51	0	1	1	8	395
Commercial HVAC - HRV	0	0	0	0	0	0	0	0	0	4	11	0	0	6	7	28
	0	0	0	0	0	9	116	94	71	48	62	0	1	7	16	423
COMMERCIAL TOTAL	0	0	0	0	172	1,392	3,084	3,399	3,878	5,245	4,371	4,786	4,584	5,444	5,180	41,535

Note: Subtotals may not be exact due to rounding.

* Includes Affordable Energy Fund and Furnace Replacement Budget expenditures.

** Programs comprise the Commercial Building Envelope Program.

Annual Utility Costs (1000s in Nominal$)
Natural Gas Incentive-Based Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Cumulative Total 2015/16
INDUSTRIAL																
Natural Gas Optimization	0	0	0	0	97	85	285	334	597	700	707	753	480	587	551	5,176
	0	0	0	0	97	85	285	334	597	700	707	753	480	587	551	5,176
INDUSTRIAL EXPLORATORY PROGRAMS																
Customer Sited Renewable & ET Demos	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	17
	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	17
INDUSTRIAL TOTAL	0	0	0	0	97	85	285	334	597	700	707	753	480	604	551	5,193
EFFICIENCY PROGRAMS SUBTOTAL	0	11	68	102	1,550	5,468	8,248	10,870	11,970	13,239	13,232	13,536	12,328	16,462	13,223	120,306
CUSTOMER SELF-GENERATION																
Bioenergy Optimization	0	0	0	0	0	91	13	8	0	0	0	0	0	0	0	112
	0	0	0	0	0	91	13	8	0	0	0	0	0	0	0	112
PROGRAMS SUBTOTAL	0	11	68	102	1,550	5,559	8,261	10,878	11,970	13,239	13,232	13,536	12,328	16,462	13,223	120,417
Support Costs[1,2]	853	595	553	825	1,236	2,441	2,016	2,132	2,170	1,758	4,427	2,871	1,296	1,293	693	25,159
UTILITY COSTS OF PROGRAMS	853	606	621	927	2,786	7,999	10,277	13,009	14,140	14,997	17,659	16,408	13,623	17,755	13,916	145,576

Note: Subtotals may not be exact due to rounding.
1 Support Costs include Affordable Energy Fund expenditures.
2 Detailed summary of Support Costs in Appendix N.1.

Annual Administration Costs (1000s in Nominal$)
Natural Gas Incentive-Based Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Cumulative Total 2015/16
RESIDENTIAL																
Affordable Energy*	0	0	0	0	0	196	149	672	976	1,644	1,652	1,688	1,569	2,030	1,546	12,121
Water & Energy Saver	0	0	0	0	0	0	0	0	40	278	595	543	540	558	669	3,222
Home Insulation	0	0	0	0	318	411	253	596	471	498	518	184	187	382	258	4,077
Solar Hot Water Heater	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	6
New Home (Redesign)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	318	607	402	1,268	1,488	2,420	2,765	2,417	2,296	2,971	2,475	19,427
DISCONTINUED/COMPLETED																
Programmable Thermostat	0	0	0	0	0	107	93	18	1	0	0	0	0	0	0	218
New Home	0	11	68	100	78	70	57	0	15	24	17	1	0	0	0	441
High Efficiency Furnace/Boiler	0	0	0	0	72	520	315	355	195	15	0	0	0	0	0	1,473
	0	11	68	100	150	697	464	373	211	39	17	1	0	0	0	2,132
RESIDENTIAL EXPLORATORY PROGRAMS																
Residential Solar Energy	0	0	0	0	0	0	0	0	0	7	8	0	0	0	0	15
	0	0	0	0	0	0	0	0	0	7	8	0	0	0	0	15
RESIDENTIAL TOTAL	0	11	68	100	468	1,304	867	1,641	1,699	2,467	2,790	2,418	2,296	2,971	2,475	21,574
COMMERCIAL																
Commercial New Buildings	0	0	0	0	0	1	64	143	108	123	125	336	89	99	253	1,340
Commercial HVAC - Boilers	0	0	0	0	100	274	291	241	320	261	262	300	305	377	224	2,956
Commercial Building Optimization	0	0	0	0	72	222	155	116	154	153	80	68	77	76	221	1,394
Commercial Custom Measures	0	0	0	0	0	0	43	0	57	59	92	94	139	133	141	760
Commercial Insulation**	0	0	0	0	0	72	127	173	176	260	270	114	93	136	87	1,507
Commercial Windows**	0	0	0	0	0	79	144	122	140	172	174	95	69	104	67	1,165
Commercial Water Heater	0	0	0	0	0	0	0	0	22	31	14	0	2	44	54	167
Commercial HVAC - C02 Sensors	0	0	0	0	0	0	0	10	27	23	25	25	10	46	42	208
Commercial Kitchen Appliances	0	0	0	0	0	0	41	8	23	10	27	19	9	83	37	258
Power Smart Shops	0	0	0	0	0	0	1	15	78	92	11	0	1	4	26	230
	0	0	0	0	172	648	867	827	1,106	1,184	1,080	1,053	795	1,102	1,152	9,985
DISCONTINUED/COMPLETED																
Commercial Rinse & Save	0	0	0	0	0	89	32	25	17	2	1	0	0	0	0	168
	0	0	0	0	0	89	32	25	17	2	1	0	0	0	0	168
COMMERCIAL EXPLORATORY PROGRAMS																
Power Smart Energy Manager	0	0	0	0	0	9	116	92	71	43	51	0	1	1	8	393
Commercial HVAC - HRV	0	0	0	0	0	0	0	0	0	4	11	0	0	6	7	28
	0	0	0	0	0	9	116	92	71	48	62	0	1	7	16	421
COMMERCIAL TOTAL	0	0	0	0	172	747	1,015	945	1,194	1,234	1,143	1,053	796	1,109	1,167	10,574

Note: Subtotals may not be exact due to rounding.

* Includes Affordable Energy Fund and Furnace Replacement Budget expenditures.

** Programs comprise the Commercial Building Envelope Program.

Annual Administration Costs (1000s in Nominal$)
Natural Gas Incentive-Based Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Cumulative Total 2015/16
INDUSTRIAL																
Natural Gas Optimization	0	0	0	0	97	85	90	87	165	117	172	244	201	150	194	1,602
	0	0	0	0	97	85	90	87	165	117	172	244	201	150	194	1,602
INDUSTRIAL EXPLORATORY PROGRAMS																
Customer Sited Renewable & ET Demos	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	17
	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	17
INDUSTRIAL TOTAL	0	0	0	0	97	85	90	87	165	117	172	244	201	166	194	1,619
EFFICIENCY PROGRAMS SUBTOTAL	0	11	68	100	737	2,135	1,971	2,673	3,058	3,818	4,106	3,715	3,293	4,246	3,836	33,767
CUSTOMER SELF-GENERATION																
Bioenergy Optimization	0	0	0	0	0	91	13	8	0	0	0	0	0	0	0	112
	0	0	0	0	0	91	13	8	0	0	0	0	0	0	0	112
PROGRAMS SUBTOTAL	0	11	68	100	737	2,226	1,984	2,681	3,058	3,818	4,106	3,715	3,293	4,246	3,836	33,878
Support Costs[1,2]	853	595	553	825	1,236	2,441	2,016	2,132	2,170	1,758	4,427	2,871	1,296	1,293	693	25,159
ADMINISTRATION COSTS OF PROGRAMS	853	606	621	925	1,973	4,666	4,000	4,812	5,229	5,576	8,532	6,586	4,589	5,540	4,529	59,037

Note: Subtotals may not be exact due to rounding.
1 Support Costs include Affordable Energy Fund expenditures.
2 Detailed summary of Support Costs in Appendix N.1.

Annual Incentive Costs (1000s in Nominal$)
Natural Gas Incentive-Based Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Cumulative Total 2015/16
RESIDENTIAL																
Affordable Energy*	0	0	0	0	0	60	176	512	1,914	2,592	3,303	4,117	3,815	6,217	3,871	26,577
Home Insulation	0	0	0	0	450	1,540	2,186	2,155	2,474	1,732	1,585	1,226	931	970	764	16,012
Water & Energy Saver	0	0	0	0	0	0	0	0	0	408	430	232	222	255	382	1,928
Solar Hot Water Heater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Home (Redesign)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	450	1,600	2,362	2,666	4,388	4,732	5,317	5,575	4,968	7,442	5,017	44,517
DISCONTINUED/COMPLETED																
Programmable Thermostat	0	0	0	0	0	80	16	20	0	0	0	0	0	0	0	116
New Home	0	0	0	2	0	8	4	0	72	84	47	4	0	0	0	220
High Efficiency Furnace/Boiler	0	0	0	0	363	1,000	1,630	2,810	1,336	11	0	0	0	0	0	7,151
	0	0	0	2	363	1,087	1,650	2,830	1,408	95	47	4	0	0	0	7,487
RESIDENTIAL EXPLORATORY PROGRAMS																
Residential Solar Energy	0	0	0	0	0	0	0	0	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	0	0	0	2	813	2,687	4,012	5,497	5,795	4,827	5,365	5,579	4,968	7,442	5,017	52,004
COMMERCIAL																
Commercial Insulation**	0	0	0	0	0	109	483	837	1,067	1,951	1,482	993	1,635	1,935	1,337	11,831
Commercial New Buildings	0	0	0	0	0	0	0	0	0	71	74	707	108	237	1,017	2,214
Commercial HVAC - Boilers	0	0	0	0	0	395	1,212	1,128	772	966	618	878	970	905	677	8,522
Commercial Windows**	0	0	0	0	0	90	258	340	639	829	919	701	895	1,140	488	6,299
Commercial Custom Measures	0	0	0	0	0	0	48	0	83	94	66	410	125	22	200	1,048
Commercial Kitchen Appliances	0	0	0	0	0	0	0	8	32	19	20	8	6	79	187	358
Commercial HVAC - C02 Sensors	0	0	0	0	0	0	0	0	1	8	10	11	0	17	63	110
Commercial Water Heater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	29
Power Smart Shops	0	0	0	0	0	0	0	0	2	3	0	0	0	0	10	15
Commercial Building Optimization	0	0	0	0	0	14	41	42	80	52	38	24	48	0	5	343
	0	0	0	0	0	609	2,041	2,356	2,674	3,993	3,227	3,733	3,788	4,336	4,013	30,771
DISCONTINUED/COMPLETED																
Commercial Rinse & Save	0	0	0	0	0	36	28	96	9	18	0	0	0	0	0	188
	0	0	0	0	0	36	28	96	9	18	0	0	0	0	0	188
COMMERCIAL EXPLORATORY PROGRAMS																
Power Smart Energy Manager	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Commercial HVAC - HRV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
COMMERCIAL TOTAL	0	0	0	0	0	645	2,069	2,454	2,684	4,011	3,227	3,733	3,788	4,336	4,013	30,962

Note: Subtotals may not be exact due to rounding.
* Includes Affordable Energy Fund and Furnace Replacement Budget expenditures.
** Programs comprise the Commercial Building Envelope Program.

Annual Incentive Costs (1000s in Nominal$)
Natural Gas Incentive-Based Programs

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Cumulative Total 2015/16
INDUSTRIAL																
Natural Gas Optimization	0	0	0	0	0	0	195	247	432	583	535	509	278	438	357	3,574
	0	0	0	0	0	0	195	247	432	583	535	509	278	438	357	3,574
INDUSTRIAL EXPLORATORY PROGRAMS																
Customer Sited Renewable & ET Demos	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDUSTRIAL TOTAL	0	0	0	0	0	0	195	247	432	583	535	509	278	438	357	3,574
EFFICIENCY PROGRAMS SUBTOTAL	0	0	0	2	813	3,333	6,277	8,197	8,911	9,421	9,127	9,821	9,034	12,215	9,387	86,539
CUSTOMER SELF-GENERATION																
Bioenergy Optimization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PROGRAMS SUBTOTAL	0	0	0	2	813	3,333	6,277	8,197	8,911	9,421	9,127	9,821	9,034	12,215	9,387	86,539
Support Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INCENTIVE COSTS OF PROGRAMS	0	0	0	2	813	3,333	6,277	8,197	8,911	9,421	9,127	9,821	9,034	12,215	9,387	86,539

Note: Subtotals may not be exact due to rounding.

Appendix N.1

Detailed Summary of Natural Gas Support Costs

Detailed Summary of Support Costs (1000s in Nominal$)
Natural Gas DSM Support Programs, Basic Information Services and Support Costs (Excluding Affordable Energy Fund Expenditures)

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Cumulative Total 2015/16
DSM SUPPORT PROGRAMS																
RESIDENTIAL																
Power Smart Residential PAYS	0	0	0	0	0	0	0	0	0	0	18	425	90	91	28	652
Race to Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Residential Earth Power Loan	0	0	0	0	0	0	0	0	0	0	36	53	111	(20)	(19)	162
Power Smart Residential Loan	431	112	50	(5)	15	179	(22)	(108)	(655)	(702)	(545)	(646)	(563)	(404)	(513)	(3376)
	431	112	50	(5)	15	179	(22)	(108)	(655)	(702)	(491)	(167)	(362)	(333)	(492)	(2550)
DISCONTINUED/COMPLETED																
ecoENERGY	248	287	289	346	(10)	637	489	(108)	566	382	470	(116)	2	0	0	3,481
Solar Water Heating	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
	248	287	289	346	(10)	637	489	(108)	567	382	470	(116)	2	0	0	3,483
RESIDENTIAL TOTAL	679	398	339	341	5	816	467	(216)	(88)	(320)	(21)	(283)	(360)	(333)	(492)	933
COMMERCIAL																
Power Smart for Business PAYS	0	0	0	0	0	0	0	0	0	0	0	151	92	33	32	308
COMMERCIAL TOTAL	0	0	0	0	0	0	0	0	0	0	0	151	92	33	32	308
DSM SUPPORT PROGRAMS SUBTOTAL	679	398	339	341	5	816	467	(216)	(88)	(320)	(21)	(133)	(267)	(300)	(460)	1,241
BASIC INFORMATION SERVICES																
Basic Information Services	173	196	214	484	512	727	689	648	636	463	430	19	23	7	3	5,223
Discontinued/Completed Basic Information Services	0	0	0	0	4	26	(10)	0	0	0	0	0	0	0	0	20
BASIC INFORMATION SERVICES SUBTOTAL	173	196	214	484	516	753	679	648	636	463	430	19	23	7	3	5,243

Note: Subtotals may not be exact due to rounding.

Detailed Summary of Support Costs (1000s in Nominal$)
Natural Gas DSM Support Programs, Basic Information Services and Support Costs (Excluding Affordable Energy Fund Expenditures)

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Cumulative Total 2015/16
SUPPORT COSTS																
Power Smart Residential Support	0	0	0	0	0	0	0	0	42	79	98	262	422	314	372	1,590
Power Smart Communications	0	0	0	0	332	392	410	918	702	529	519	545	251	315	116	5,029
Power Smart for Business	0	0	0	0	0	103	141	132	131	158	126	140	103	145	113	1,292
DSM Administration	0	0	0	0	138	139	106	202	168	146	190	145	120	87	80	1,522
Integrated Plan/Targets	0	0	0	0	72	62	60	141	208	111	140	104	87	104	68	1,155
Process Evaluations	0	0	0	0	0	0	0	0	0	0	0	0	0	93	66	159
Sustainability & Standards	0	0	0	0	82	153	89	102	155	111	88	136	106	103	62	1,186
External Evaluations	0	0	0	0	0	0	0	0	0	0	0	0	6	110	57	173
Energy Efficient Screening Studies	0	0	0	0	0	0	0	0	8	34	33	37	43	54	33	242
Earth Energy & Emerging Technologies - Residential	0	0	0	0	0	0	0	0	0	0	0	0	26	20	22	68
Commercial Audits	0	0	0	0	16	19	10		1	1	4	14	3	17	13	99
DSM Benchmarking Study	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
DSM Tracking System	0	0	0	0	0	2	4	1	16	53	53	71	5	2	3	209
DSM Subsidiary Transition	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Community Energy Plan Initiative	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Retrofit Demonstrations	0	0	0	0	75	0	5	0	0	0	0	0	0	0	0	80
DSM Market Potential Study	0	0	0	0	0	0	0	0	0	0	147	79	40	(1)	0	266
Discontinued/Completed Support Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	715	871	824	1,496	1,431	1,223	1,398	1,533	1,211	1,363	1,020	13,085
TOTAL SUPPORT COSTS	853	595	553	825	1,236	2,441	1,970	1,927	1,978	1,366	1,806	1,419	967	1,070	562	19,569

Note: Subtotals may not be exact due to rounding.