

NEEDS FOR AND ALTERNATIVES TO (NFAT)**Manitoba Hydro Undertaking #18**

Manitoba Hydro to provide the projected savings per program aggregate over 15 years as represented in the 2013 Power Smart Plan as well as Levels 1, 2 and 3 of the scenario analysis. Also provide the levelized utility cost (LUC) for each program for each scenario in the benchmark year.

Response:

The following tables provide:

- the incremental energy savings (GWh) for the 2013 Power Smart Plan and Levels 1, 2 and 3 of the scenario analysis; and
- the levelized utility cost for the 2013 Power Smart Plan, DSM Level 1 (an update of the 2013 Power Smart Plan), DSM Level 2 (incremental to DSM Level 1) and DSM Level 3 (incremental to DSM Level 1).

		Incremental GW.h @ Generation 2027/28			
		2013	LEVEL 1	LEVEL 2	LEVEL 3
RESIDENTIAL					
	New Home Program	-	36	-	12
	Home Insulation Program	12	27	-	2
	Water and Energy Saver Program	7	7	-	12
	Lower Income Energy Efficiency Program	6	4	-	-
	Refrigerator Retirement Program	1	4	-	-
	Residential Geothermal Utility Model	-	15	-	-
	Solar DWH and Pool	-	-	-	1
	Residential LED Lighting Program	-	8	-	10
	Community Geothermal Program	-	72	-	-
	Power Smart Residential Loan	6	-	-	-
	Power Smart PAYS Financing	4	-	-	-
	Residential Earth Power Loan	25	-	-	-
	Behavioural Program	-	11	-	-
COMMERCIAL					
	Commercial Lighting Program	201	95	-	144
	Commercial Building Envelope - Windows Program	14	21	-	7
	Commercial Building Envelope - Insulation Program	12	18	-	8
	Commercial Earth Power Program	29	79	-	-
	Commercial HVAC Program - Chillers	7	4	-	12
	Commercial HVAC Program - CO2 Sensors	1	1	-	3
	Commercial Custom Measures Program	16	49	-	-
	Commercial Building Optimization Program	16	3	-	7
	New Buildings Program	93	201	-	-
	Commercial Refrigeration Program	28	41	-	-
	Commercial Kitchen Appliance Program	0	3	-	-
	Network Energy Management Program	-	5	-	9
	Internal Retrofit Program	9	-	-	5
	Power Smart Shops	-	4	-	-
	Roadway Lighting Program	-	40	-	-
	Power Smart for Business PAYS Financing	3	-	-	-
INDUSTRIAL					
	Performance Optimization Program	213	185	-	353
ENERGY EFFICIENCY SUBTOTAL		703	931	-	584
LOAD DISPLACEMENT & ALTERNATIVE ENERGY					
	Bioenergy Optimization Program	70	-	-	-
	Customer Sited Load Displacement	-	-	582	-
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL		70	-	582	-
CONSERVATION RATES					
	Conservation Rates - Residential	-	-	160	-
	Conservation Rates - Commercial	-	-	230	-
CONSERVATION RATES SUBTOTAL		-	-	390	-
FUEL CHOICE					
	Fuel Choice	-	-	286	-
FUEL CHOICE SUBTOTAL		-	-	286	-
Incremental Impacts (at generation)		773	931	1,258	584
Total Impacts (at generation)		773	1,704	2,961	3,546

	Levelized Utility Cost (¢/kW.h)			
	2013	LEVEL 1	LEVEL 2	LEVEL 3
RESIDENTIAL				
New Home Program	-	0.5	-	6.2
Home Insulation Program	2.2	3.1	-	90.5
Water and Energy Saver Program	2.3	2.3	-	6.6
Lower Income Energy Efficiency Program	3.5	3.5	-	-
Refrigerator Retirement Program	1.5	2.3	-	-
Residential Geothermal Utility Model	-	3.8	-	-
Solar DWH and Pool	-	-	-	12.0
Residential LED Lighting Program	-	3.1	-	16.4
Community Geothermal Program	-	3.2	-	-
Behavioural Program	-	3.8	-	-
COMMERCIAL				
Commercial Lighting Program	2.5	2.4	-	7.7
Commercial Building Envelope - Windows Program	2.4	2.9	-	11.3
Commercial Building Envelope - Insulation Program	2.5	2.8	-	10.6
Commercial Earth Power Program	1.5	3.4	-	-
Commercial HVAC Program - Chillers	1.2	1.5	-	8.3
Commercial HVAC Program - CO2 Sensors	0.2	2.3	-	9.0
Commercial Custom Measures Program	1.9	4.3	-	-
Commercial Building Optimization Program	1.2	2.6	-	9.4
New Buildings Program	0.5	0.6	-	-
Commercial Refrigeration Program	1.4	1.1	-	-
Commercial Kitchen Appliance Program	1.2	0.8	-	-
Network Energy Management Program	1.6	1.1	-	10.7
Internal Retrofit Program	4.4	3.7	-	9.1
Power Smart Shops	-	2.5	-	-
Roadway Lighting Program	-	5.4	-	-
INDUSTRIAL				
Performance Optimization Program	1.5	2.6	-	8.8
LOAD DISPLACEMENT & ALTERNATIVE ENERGY				
Bioenergy Optimization Program	1.5	1.5	-	-
Customer Sited Load Displacement	-	-	1.2	-
CONSERVATION RATES				
Conservation Rates - Residential	-	-	0.8	-
Conservation Rates - Commercial	-	-	0.6	-
FUEL CHOICE				
Fuel Choice	-	-	1.3	-
Levelized Utility Cost	2.4	2.5	1.1	8.9