

2008 DSM Input Assumptions - Updated Table to OEB

Resource Savings Assumptions											
Efficient Equipment & Technologies	Base Equipment & Technologies	Load Type	Natural Gas	Electricity	Water	Equipment Life Years	Incremental Cost		Free Ridership %		Reference
			m3	kWh	L		Customer Installed	Contractor Installed			
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)		(k)
RESIDENTIAL NEW CONSTRUCTION											
1. Tankless Water Heater	Storage Tank Water Heater	base	237	-	-	20	-	\$694	2%		Enbridge
2. Energy Star Home	Home built to OBC 2006	weather	1,018	1,450	-	25	-	\$4,701	5%		Union and Enbridge - Values to be used for recording completions under current OBC.
RESIDENTIAL EXISTING HOMES											
1a. Enhanced Furnace (ECM only)	Mid-Efficiency Furnace	weather	(65)	730	-	18	-	\$550	15%		Union and Enbridge
1b. Enhanced Furnace (Furnace only) & High Efficiency Furnace*	Mid-Efficiency Furnace	weather	385	-	-	18	-	\$650	82%		Union and Enbridge - 65% is the 2007 FR rate. 2008 is 82% and 2009 is 90%.
2. Faucet Aerator (kitchen, distributed, 1.5 GPM)*	Average existing stock	base	22	-	7,800	10	\$2	-	33% / 31%		Union & Enbridge - Savings per aerator
3. Faucet Aerator (bathroom, distributed, 1.5 GPM)*	Average existing stock	base	6	-	2,000	10	\$1	-	33% / 31%		Union & Enbridge - Savings per aerator
4. Low-Flow Showerhead (Per unit, distributed, 1.5 GPM)*	Average existing stock	base	22	-	6,400	10	\$4	-	10%		Union
5. Low-Flow Showerhead (Per unit, distributed, 1.25 GPM)*	Average existing stock	base	40	-	10,700	10	\$4	-	10%		Union
6a. Low-Flow Showerhead (Per household, installed, 1.25 GPM replacing 2.0 GPM)*	2.0 GPM showerhead	base	33	-	8,900	10	-	\$15	10%		Union & Enbridge
6b. Low-Flow Showerhead (Per household, installed, 1.25 GPM replacing 2.1-2.5 GPM)*	2.1 -2.5 GPM showerhead	base	47	-	12,400	10	-	\$15	10%		Union & Enbridge
6c. Low-Flow Showerhead (Per household, installed, 1.25 GPM replacing 2.6 + GPM)*	2.6 + GPM showerhead	base	68	-	17,500	10	-	\$15	10%		Union & Enbridge
7. Pipe Insulation	Water Heater w/o pipe insulation	base	17	-	-	15	\$1	\$4	4%		Union & Enbridge
8. Programmable Thermostat*	Standard Thermostat	weather	152	26	-	15	\$50		43%		Union & Enbridge
9. Tankless Water Heater	Storage Tank Water Heater	base	237	-	-	20	-	\$694	2%		Enbridge
10. Reflector Panels	Radiant heat w/o reflector panels	weather	143	-	-	18	-	\$213	0%		Enbridge
LOW INCOME											
1. Faucet Aerator (kitchen, distributed, 1.5 GPM)	Average existing stock	base	22	-	7,800	10	\$2	-	1%		Union & Enbridge - Savings per aerator
2. Faucet Aerator (bathroom, distributed, 1.5 GPM)	Average existing stock	base	6	-	2,000	10	\$1	-	1%		Union & Enbridge - Savings per aerator
3a. Low-Flow Showerhead (Per household, Installed, 1.25 GPM)	2.0 GPM showerhead	base	33	-	8,900	10	-	\$15	1% / 5%		Union & Enbridge
3b. Low-Flow Showerhead (Per household, Installed, 1.25 GPM)	2.1 -2.5 GPM showerhead	base	47	-	12,400	10	-	\$15	1% / 5%		Union & Enbridge
3c. Low-Flow Showerhead (Per household, Installed, 1.25 GPM)	2.6 + GPM showerhead	base	68	-	17,500	10	-	\$15	1% / 5%		Union & Enbridge
4. Pipe Insulation	Water Heater w/o pipe insulation	base	17	-	-	15	-	\$4	1%		Union & Enbridge
5. Programmable Thermostat	Standard Thermostat	weather	152	26	-	15	-	\$50	1%		Union & Enbridge
6. Weatherization	Existing home sample	weather	1,143	165	-	23	-	\$2,600	0%		Union & Enbridge

			Resource Savings Assumptions								
Efficient Equipment & Technologies	Base Equipment & Technologies	Load Type	Natural Gas	Electricity	Water	Equipment Life Years	Incremental Cost		Free Ridership %		Reference
			m3	kWh	L		Customer Installed	Contractor Installed			
COMMERCIAL NEW BUILDING CONSTRUCTION											
1. Condensing Gas Water Heater	Storage Tank Water Heater	base	1,412	-	-	15	-	\$4,200	5%	Food services application	EB-2006-0021 Phase II
2. Rooftop Unit	Standard Rooftop Unit	weather	1,275	-	-	20	-	\$1,250	5%	Union	EB-2006-0021 Phase II
3. Tankless Water Heater	Storage Tank Water Heater	base	825	-	-	20	-	\$2,200	2%	Food services application	EB-2006-0021 Phase II
4a. Infrared Heaters (0 - 49,999 BTUH)	Unit Heater	weather	0.0102 m3/BTUH	312	-	20	-	\$15.40/10 ³ BTUH	33%	Union - For use with Union Gas Quasi Tool, Updated for new OBC	Union 2007-2009 DSM Plan
4b. Infrared Heaters (49,9099 - 164,999 BTUH)	Unit Heater	weather	0.0102 m3/BTUH	624	-	20	-	\$15.40/10 ³ BTUH	33%	Union - For use with Union Gas Quasi Tool, Updated for new OBC	Union 2007-2009 DSM Plan
4c. Infrared Heaters (>165,000 BTUH)	Unit Heater	weather	0.0102 m3/BTUH	936	-	20	-	\$15.40/10 ³ BTUH	33%	Union - For use with Union Gas Quasi Tool, Updated for new OBC	Union 2007-2009 DSM Plan
5a. Demand Control Kitchen Ventilation (0 - 4999 CFM)	Ventilation without DCKV	weather	3,660	7,229	-	20	-	\$5,000	5%	Union & Enbridge - Updated for new OBC	updated
5b. Demand Control Kitchen Ventilation (5000 - 9999 CFM)	Ventilation without DCKV	weather	5,960	22,855	-	20	-	\$10,000	5%	Union & Enbridge - Updated for new OBC	updated
5c. Demand Control Kitchen Ventilation (10000 - 15000 CFM)	Ventilation without DCKV	weather	10,910	40,334	-	20	-	\$15,000	5%	Union & Enbridge - Updated for new OBC	updated
6. Energy Recovery Ventilators (ERV)	Ventilation without ERV	weather	3.14 m3/CFM	-	-	15	-	\$2.50/CFM	5%	Union - For use with Union Gas Quasi Tool, Updated for new OBC	Union 2007-2009 DSM Plan
7. Heat Recovery Ventilators (HRV)	Ventilation without HRV	weather	2.92 m3/CFM	-	-	15	-	\$3.40/CFM	5%	Union - For use with Union Gas Quasi Tool, Updated for new OBC	Union 2007-2009 DSM Plan
8. Condensing Boilers	Non-condensing Boiler (76% estimated seasonal efficiency)	base	0.0119 m3/BTUH	-	-	25	-	\$15.40/10 ³ BTUH	5%	Union For use with Union Gas Quasi Tool, Updated for new OBC	Union 2007-2009 DSM Plan
9. Destratification Fans	No destratification fans	weather	6,205	-511	-	15	-	\$7,021	10%	Union	Substantiation Documents provided
COMMERCIAL EXISTING BUILDINGS											
1. Condensing Gas Water Heater	Storage Tank Water Heater	base	1,412	-	-	15	-	\$4,200	5%	Food services application	EB-2006-0021 Phase II
2a. Faucet Aerator	Average Existing Stock	base	14	-	6,520	10	\$2	-	10%	Enbridge program - Savings per aerator	EB-2006-0021 Phase II
2b. Faucet Aerator (kitchen, distributed, 1.5 GPM)*	Average existing stock	base	22	-	7,800	10	\$2	-	10%	Union program - Savings per aerator	updated
2c. Faucet Aerator (bathroom, distributed, 1.5 GPM)*	Average existing stock	base	6	-	2,000	10	\$1	-	10%	Union program - Savings per aerator	updated
3. High Efficiency Furnace	Mid-Efficiency Furnace	weather	5.1 per 1000 BTUH furnace capacity	-	-	18	-	\$650	17.50%	Union - Based on 75,000 BTUH residential application. Scalable m3 from residential base	EB-2006-0021 Phase II
4. Low-Flow Showerhead (Contractor installed per multi-res. Household).	Average Existing Stock	base	115	-	30,966	10	-	15	10%	Enbridge - Recommended Evaluation Priority	EB-2006-0021 Phase II
4. Low-Flow Showerhead (Per unit, distributed, 1.5 GPM)*	Average existing stock	base	22	-	6,400	10	\$4	-	10%	Union	updated
5. Low-Flow Showerhead (Per unit, distributed, 1.25 GPM)*	Average existing stock	base	40	-	10,700	10	\$4	-	10%	Union	updated
6 a. Pre-Rinse Spray Nozzle (1.6 GPM)	Average Existing Stock	base	2,434	-	432,800	5	-	\$100	5%	Enbridge - Food services application, re	EB-2006-0021 Phase II
6b. Pre-Rinse Spray Nozzle (1.24 GPM)	Average Existing Stock	base	3,059	-	544,145	5	-	\$100	5%	Union & Enbridge - Based on same approved inputs as 1.6 GPM unit to determine appropriate savings	Union 2007 Evaluation Report
7. Programmable Thermostats	Standard Thermostat	weather	519	921	0	15	-	\$50	20%	Union & Enbridge - Per building.	updated
8. Rooftop Unit	Standard Rooftop Unit	weather	1,275	-	-	20	-	\$1,250	5%	Union & Enbridge	EB-2006-0021 Phase II
9. Tankless Water Heater	Storage Tank Water Heater	base	825	-	-	20	-	\$2,200	2%	Enbridge - Food services application	EB-2006-0021 Phase II
10a. Enhanced Furnace - up to 299 mbtu/h (ECM only)	Mid-Efficiency Furnace	weather	-0.87 per 1000 BTUH	9.7 per 1000 BTUH	-	18	-	\$550	10%	Union & Enbridge - Based on 75,000 BTUH residential application	EB-2006-0021 Phase II
10b. Enhanced Furnace - up to 299 mbtu/h (furnace only)	Mid-Efficiency Furnace	weather	5.1 per 1000 BTUH	-	-	18	-	\$650	30%	Union & Enbridge - Based on 75,000 BTUH residential application	EB-2006-0021 Phase II
11. Heat Recovery Ventilator (HRV)	Ventilation without HRV	weather	2.92 m3/CFM	-	-	15	-	\$3.40/CFM	5%	Union - For use with Union Gas Quasi Tool, Updated for new OBC	Union 2007-2009 DSM Plan
12. Energy Recovery Ventilator (ERV)	Ventilation without ERV	weather	3.14 m3/CFM	-	-	15	-	\$2.50/CFM	5%	Union - For use with Union Gas Quasi Tool, Updated for new OBC	Union 2007-2009 DSM Plan

			Resource Savings Assumptions									
Efficient Equipment & Technologies	Base Equipment & Technologies	Load Type	Natural Gas	Electricity	Water	Equipment Life Years	Incremental Cost		Free Ridership %			Reference
			m3	kWh	L		Customer Installed	Contractor Installed			Notes	
13. Condensing Boilers	Non-condensing Boiler (76% estimated seasonal efficiency)	base	0.0119 m3/BTUH	-	-	25	-	\$15.40/10 ³ BTUH	5%		Union - For use with Union Gas Quasi Tool, Updated for new OBC	Union 2007-2009 DSM Plan
14a. Infrared Heaters (0 - 49,999 BTUH)	Unit Heater	weather	0.0102 m3/BTUH	312	-	20	-	\$15.40/10 ³ BTUH	33%		Union - For use with Union Gas Quasi Tool, Updated for new OBC	Union 2007-2009 DSM Plan
14b. Infrared Heaters (49,9099 - 164,999 BTUH)	Unit Heater	weather	0.0102 m3/BTUH	624	-	20	-	\$15.40/10 ³ BTUH	33%		Union - For use with Union Gas Quasi Tool, Updated for new OBC	Union 2007-2009 DSM Plan
14c. Infrared Heaters (>165,000 BTUH)	Unit Heater	weather	0.0102 m3/BTUH	936	-	20	-	\$15.40/10 ³ BTUH	33%		Union - For use with Union Gas Quasi Tool, Updated for new OBC	Union 2007-2009 DSM Plan
15a. Demand Control Kitchen Ventilation (0 - 4999 CFM)	Ventilation without DCKV	weather	3,660	7,319	-	20	-	\$5,000	5%		Union & Enbridge	Union 2007-2009 DSM Plan
15b. Demand Control Kitchen Ventilation (5000 - 9999 CFM)	Ventilation without DCKV	weather	9,535	23,180	-	20	-	\$10,000	5%		Union & Enbridge	Union 2007-2009 DSM Plan
15c. Demand Control Kitchen Ventilation (10000 - 15000 CFM)	Ventilation without DCKV	weather	17,455	40,929	-	20	-	\$15,000	5%		Union & Enbridge	Union 2007-2009 DSM Plan
16a. Air Curtains (Single Door)		weather	2,118	172	-	15	-	\$1,650	5%		Enbridge	Enbridge 2007-2009 DSM Plan - updated
16b. Air Curtains (Double Door)		weather	4,508	1,023	-	15		\$2,500	5%		Enbridge	Enbridge 2007-2009 DSM Plan - updated
17. Destratification Fans	No destratification fans	weather	6,205	-511	-	15	-	\$7,021	10%		Union - Minimum ceiling height 25'	Substantiation Documents provided
18. Energy Efficient Washers	Conventional top loading washers.	base	342	306	90,790	10		\$450	10%		Enbridge	Enbridge 2007-2009 DSM Plan
19a. Prescriptive Schools (Elementary)	Space Heating, Hydronic Boiler with Comb. Eff. Of 80%-82%.	base	10,830	-	-	25		\$8,646	100% (net to gross)		Enbridge: net to gross value is consistent with EGD Commercial sector	Substantiation Documents provided
19b. Prescriptive Schools (Secondary)	Space Heating, Hydronic Boiler with Comb. Eff. Of 80%-82%.	base	43,859	-	-	25		\$14,470	100% (net to gross)		Enbridge: net to gross value is consistent with EGD Commercial sector	Substantiation Documents provided
COMMERCIAL/INDUSTRIAL CUSTOM PROJECTS												
1. Custom Projects			Actual	Actual	Actual	Actual	-	Actual	By sector from S.B. Report (dated Oct., 2008)			
Union Gas									Free Ridership			
Agriculture*									0%		Union	updated: Summit Blue Custom Projects Attribution Study
Industrial*									Results from SB Dec'08 Study		Union	
Commercial*									59%		Union	updated: Summit Blue Custom Projects Attribution Study
Multi-Residential*									42%		Union	updated: Summit Blue Custom Projects Attribution Study
New construction*									33%		Union	updated: Summit Blue Custom Projects Attribution Study
Enbridge Gas									Free Ridership			
Agriculture									40%		Enbridge	updated: Summit Blue Custom Projects Attribution Study
Industrial									50%		Enbridge	updated: Summit Blue Custom Projects Attribution Study
Commercial									12%		Enbridge	updated: Summit Blue Custom Projects Attribution Study
Multi-Residential									20%		Enbridge	updated: Summit Blue Custom Projects Attribution Study
New construction									26%		Enbridge	updated: Summit Blue Custom Projects Attribution Study
OTHER MEASURES												
1. CFL (13W)	60W Incandescent	n/a	0	45	0	8	\$1.75		24%		Enbridge	Substantiation documents provided
2. CFL (23W)	75W Incandescent	n/a	0	49.7	0	8	\$2.00		24%		Enbridge	Substantiation documents provided

			Resource Savings Assumptions									
Efficient Equipment & Technologies	Base Equipment & Technologies	Load Type	Natural Gas	Electricity	Water	Equipment Life	Incremental Cost		Free Ridership			Reference
			m3	kWh	L	Years	Customer Installed	Contractor Installed	%		Notes	

Indicates no input assumption update.

New measure

asterisk*

Spillover values have been developed for these measures and may be applied to 2008 results pending a policy discussion with Union's Consultative..

asterisk**

Net-to-Gross = 1-freeridership + spillover

See also attached Table of Measure Lives