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By Electronic Mail & RESS Filing

August 4, 2015

Ontario Energy Board
P.O. Box. 2319
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Attention: Kristen Walli, Board Secretary

Dear Ms. Walli:

Re: Ontario Sustainable Energy Association's ("OSEA") Interrogatories on Evidence Filed By Board Staff
Board File No. EB-2015-0029/EB-2015-0049

Please find enclosed OSEA's Interrogatories on Evidence filed by Board Staff.

Yours truly,

Joanna Vince

Encl.

cc. Nicole Risse, Executive Director, OSEA
Intervenors

Document #: 877711

ONTARIO ENERGY BOARD

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15 (Schedule B).

IN THE MATTER OF an Application by Enbridge Gas Distribution and Union Gas Inc. pursuant to Section 36(1) of the *Ontario Energy Board Act, 1998*, for an Order or Orders approving their Demand Side Management Plan for 2015-2020

INTERROGATORIES OF ONTARIO SUSTAINABLE ENERGY ASSOCIATION ("OSEA") ON EVIDENCE FILED BY BOARD STAFF

August 4, 2015

Reference: L.OEBStaff.1, Section 3.1.2, Page 8-9

1 From your review on best practices in leading jurisdictions, how do combination (natural gas and electricity) utilities treat cost-effectiveness, such as avoided cost calculations and benefit cost ratios, for applications which affect both gas and electric consumption? For example, how is the cost-effectiveness of implementing ground source heat pumps which replace natural gas heating and electric air conditioning treated?

Reference: L.OEBStaff.1, Section 7.3, Page 108

2 Are there jurisdictions where single fuel utilities promote fuel switching? Please describe these programs.

3 In jurisdictions where natural gas is on the margin for electricity generation, are more efficient generation modes, such as combined heat and power, credited with both fuel savings and considered DSM/CDM?

4 Are there any utilities, gas or electric, using renewable energy (solar, solar thermal, solar voltaic, wind, bio gas, storage) for fuel switching away from natural gas or electricity use as part of their DSM/CDM program mix? Please provide the names of the utilities and a description of the DSM/CDM program.

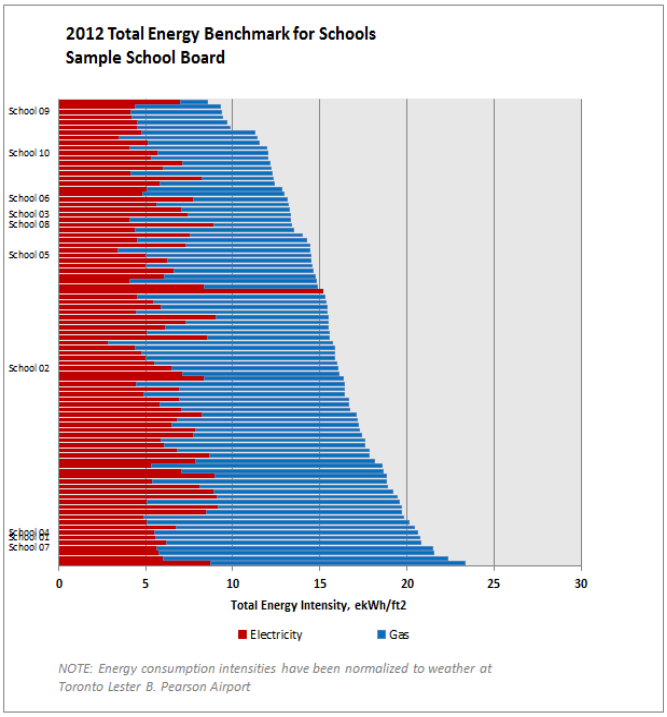
5 Are there any utilities pursuing performance based conservation such as Toronto and Region Conservation Authority's Sustainable Schools Program (see attached Sample Report)? If so, please provide information about the utilities and the programs.

Document #: 877562

SUSTAINABLE SCHOOLS
saving our energy for education

Energy Assessment Service
Sample School Board Report

SAMPLE REPORT
January 2013



# of schools	Total savings potential			
	Electricity, kWh	Demand, kW	Gas, m3	$/year
10	961,949	212	209,324	$ 158,145
65	6,252,671	1,378	1,360,603	$ 1,027,945

This report presents findings for 10 of your total of 65 schools which were selected as representative of your total stock. The report also estimates the total potential for your board, extrapolating the savings for the representative schools to all your schools (see summary table above).

Benchmark results are compared with our national database of over 400 school buildings. Your schools are identified on the chart based on 2012 billed utility data shown in equivalent kilowatt-hours per square foot (ekWh/ft2).

Based on the benchmarking results, energy targets and potential savings are tabulated below. Targets are set using top-quartile standards for elementary and secondary schools, and are attained through good practice design/retrofit and operations for lighting, equipment, HVAC and other building systems. The results indicate substantial savings potential in all schools ranging from 11% to almost 60% of 2012 energy use.

Building	Area (ft2)	Electricity						Gas		Targeted Energy Savings								
		Consumption (kWh/ft2)		Demand (W/ft2)		Load factor (hrs/day)		Consumption (ekWh/ft2)		Electricity				Gas			Total	
		Actual	Target	Actual	Target	Actual	Target	Actual	Target	kWh/yr	kW/yr	$/yr	%	m3/yr	$/yr	%	$/yr	%
School 01	205,549	5.6	5.2	2.0	2.0	7.6	7.2	15.2	7.1	66,096	0	$7,271	6%	160,218	$40,054	53%	$47,325	24%
School 02	49,331	6.5	4.5	2.3	1.9	7.7	6.6	9.6	8.5	99,365	21	$10,930	31%	5,228	$1,307	11%	$12,237	26%
School 03	190,663	7.5	5.4	2.5	2.0	8.1	7.2	5.9	5.9	401,027	92	$44,113	28%	0	$0	0%	$44,113	24%
School 04	27,954	5.5	4.2	2.5	1.9	6.2	6.2	15.1	8.5	37,818	17	$4,160	24%	17,821	$4,455	44%	$8,615	32%
School 05	36,275	5.0	4.5	1.9	1.9	7.2	6.6	9.5	8.5	20,253	2	$2,228	11%	3,421	$855	10%	$3,083	11%
School 06	32,087	7.7	4.5	2.7	1.9	7.9	6.6	5.4	5.4	104,337	26	$11,477	42%	0	$0	0%	$11,477	37%
School 07	31,926	5.6	4.5	2.2	1.9	7.1	6.6	15.8	8.5	37,787	10	$4,157	21%	22,635	$5,659	46%	$9,815	31%
School 08	52,313	8.9	6.5	3.4	2.7	7.2	6.6	4.5	4.5	126,126	37	$13,874	27%	0	$0	0%	$13,874	24%
School 09	61,893	4.1	4.1	1.8	1.8	6.2	6.2	5.2	5.2	0	0	$0	0%	0	$0	0%	$0	0%
School 10	56,974	5.7	4.5	2.0	1.9	7.8	6.6	6.3	6.3	69,141	7	$7,605	21%	0	$0	0%	$7,605	17%
TOTAL for all buildings	744,966									961,949	212	$ 105,814	21%	209,324	$ 52,331	31%	$ 158,145	22%

Note: energy intensities have been weather-normalized to Toronto, ON

% of targeted energy savings
Less than 10%
Between 10% and 25%
Greater than 25%

Toronto and Region Conservation for The Living City
Enerlife consulting

Based on these results for your ten schools the board would rank below the median among Canadian school boards. The biggest percentage savings are indicated in gas consumption with three schools showing potential greater than 40%. Seven schools indicate electricity savings potential over 20%, with significant opportunity for operational improvements as well as retrofits.

The energy conservation actions that should be the focus for savings are shown below.

Energy Benchmark	Savings Potential %	Savings Potential $/yr	Typical Actions Indicated
Electricity Demand	12%	$417,594	• Lighting retrofits to reduce installed power density • Ventilation retrofits to reduce fan power • Heating/cooling system retrofits to reduce pumping power • Advanced air conditioning controls to limit power draw
Electricity Load Factor	9%	$303,312	• Lighting controls to reduce operating periods • Advanced BAS sequences to optimize HVAC operation • IT network controls to shut equipment off when not in use • Occupant engagement
Gas Consumption	31%	$52,331	• Advanced BAS sequences to optimize HVAC operation • Testing and correcting leaking control valves and dampers • Testing and optimizing boiler efficiencies and control • Weatherproofing doors, windows and roof hatches

Electrical demand reductions typically require retrofits and capital expenditure, while load factor savings can be achieved simply by reducing operating hours of lighting, equipment and motors. First place to look for gas savings of this magnitude is in malfunctioning devices and controls.

The Sustainable Schools program is available across Canada, helping school boards evaluate their energy performance, monitor progress, and find the resources they need to make improvements. The Building Performance Audit is available as a next step in the improvement process to define the specific measures, costs and savings required to meet the targets.

For more information, go to www.trca.on.ca/sus or contact Brian Dundas at bdundas@trca.on.ca.