SUSTAINABLE SCHOOLS
saving our energy for education

MAY 2020

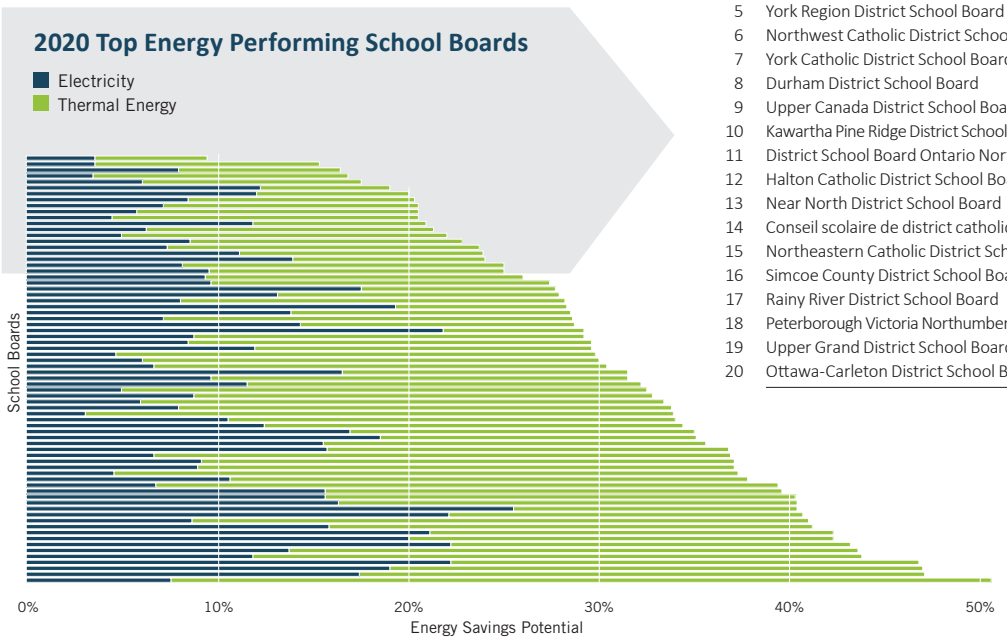
CLIMATE CHALLENGE NETWORK

2020 TOP ENERGY PERFORMING SCHOOL BOARDS REPORT

SUSTAINABLE SCHOOLS is pleased to recognize the most energy efficient school boards in Ontario, based on reported data for the September 2017 – August 2018 school year. Every board has some opportunity for reducing energy use and greenhouse gas emissions, with achievable savings potential ranging from 9.5% for the most efficient to more than 50%. The top twenty boards (those with the least savings potential) are reported below, along with their rankings from the previous year's report.

The total achievable potential across all boards is 33%, worth an estimated $123 million annually and accounting for 230,000 tonnes/year of avoidable greenhouse gas emissions (CO2e). Natural gas (35.4%) has a bigger percentage savings potential than electricity (28.9%) and offers the lion's share of emissions reductions. The Ontario school sector as a whole increased electricity use by 0.7%, with a majority of boards recording increases. Overall weather-normalized thermal energy use was lowered by 4.8% in 2017-18 compared against the prior year, with 90% of boards showing savings.

2020 Ranking	School Board	Number of facilities	2019 Ranking
1	Superior-Greenstone District School Board	14	NA
2	Sudbury Catholic District School Board	18	6
3	Ottawa Catholic School Board	85	4
4	Conseil scolaire de district catholique du Nouvel-Ontario	34	1
5	York Region District School Board	224	2
6	Northwest Catholic District School Board	8	8
7	York Catholic District School Board	101	9
8	Durham District School Board	130	5
9	Upper Canada District School Board	84	3
10	Kawartha Pine Ridge District School Board	89	7
11	District School Board Ontario North East	32	12
12	Halton Catholic District School Board	58	14
13	Near North District School Board	39	11
14	Conseil scolaire de district catholique Franco-Nord	13	13
15	Northeastern Catholic District School Board	23	21
16	Simcoe County District School Board	116	17
17	Rainy River District School Board	14	35
18	Peterborough Victoria Northumberland and Clarington Catholic District School Board	37	10
19	Upper Grand District School Board	84	19
20	Ottawa-Carleton District School Board	149	18
		1352	
		Total	



The Size of the Prize

The province-wide achievable conservation potential through meeting good practice (top quartile) energy use targets for each building type is summarized below. This level of energy savings can generally be reached through operational and controls improvements and cost-effective building system retrofits.

	Electricity savings potential	Natural gas savings potential	Utility cost savings potential	GHG emissions reduction potential
Percent	28.9%	35.4%	33.0%	35.0%
Quantity	554,392,383 kWh/year	113,893,155 m3/year	$123,038,220 /year	229,193 tonnes CO2e/year

ABOUT THIS REPORT

This 2020 report uses energy data and building information for Ontario's 5,000 schools and education centres as publicly reported by the 72 school boards. After screening for apparent data gaps and errors, 4,734 buildings (95%) were ultimately included. Site-specific energy targets are set for every building based on top quartile (good practice) benchmarks for elementary and secondary schools and administration buildings, adjusted for weather differences, presence of air-conditioning, heating system type and other material variables including numbers of portables.

The energy savings potential is determined for each building as the difference between its actual and target energy use, and the energy efficiency of the school board is determined by rolling up results for all of its buildings. For the White Paper outlining the methodology, visit the Sustainable Schools website.

Sustainable Schools acknowledges the support of Enbridge Gas Distribution and the Independent Electricity System Operator (IESO).

Recognizing Low-Carbon Stars

In response to growing concern about climate change, analysis for the 2020 Top Energy Performing Boards report identified 304 Ontario schools (6% of the total) which emit less than 1.0 kg CO2e per square foot. The individual schools from each board which meet this threshold will be recognized through the Sustainable Schools program.

- Year opened: 1980
- Perimeter electric baseboard with programmable thermostats
- 4 gas fired RTUs with air conditioning
- Makeup air constant volume with electric duct heaters
- LED Exit lights, 25W fluorescent hallways and classrooms

Convent Glen Catholic School, Orléans, Ontario (Ottawa Catholic School Board)

Province-wide energy savings trends

2017-18 was a challenging year for electricity conservation for Ontario school boards, but a positive year for natural gas savings with most boards recording weather-normalized reduction. Overall province-wide gas use was reduced by 4.8%, accounting for 12.6% of the thermal energy savings potential that was identified for Ontario's school boards in the 2019 Top Energy Performing Boards report.

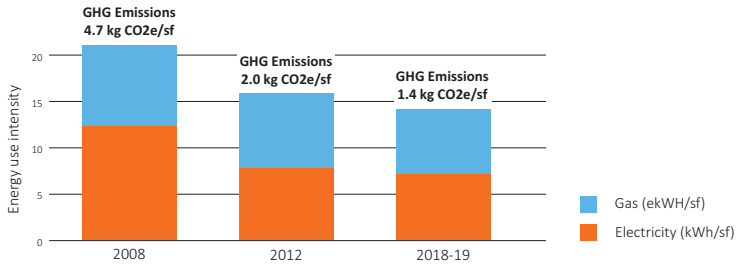
Actual Energy Savings Achieved	2016-17 vs 2014-15	2017-18 vs 2016-17
Recorded electricity savings	4.7%	-0.7%
Number of boards with net electricity savings	54	23
Recorded gas savings	1.7%	4.8%
Number of boards with net gas savings	23	54
% total energy savings	2.8%	2.8%
Number of boards with total energy savings > 1%	44	44

Energy savings are estimated by comparing the magnitude of savings potential for each building, between the two years (weather-normalized).

Working Towards Energy Targets: Bear Creek Secondary School, Barrie, ON

Meeting energy targets begins with getting building systems working properly. Testing is essential for uncovering opportunities and addressing long-standing issues. Simcoe County District School Board wanted to address energy costs as well as ventilation concerns at its Bear Creek Secondary School, built in 2001 on a fast-track schedule. The board undertook two phases of comprehensive HVAC and lighting testing, remediation, and retrofits. These measures, designed to meet the board's energy efficiency standard for secondary schools, improved comfort and system performance at the school and have resulted in utility cost savings of over $40,000 per year.

Bear Creek Secondary School: Energy Intensity and GHG Emissions



Bear Creek Secondary School, Barrie, Ontario (Simcoe County District School Board)

- Grades 9-12
- 190,663 sf
- Year built: 2001
- Students: 1,514
- Portables: 8 (2018-2019)
- Fully air-conditioned

Delivering the Economic Potential

With targeted funding and technical support, Ontario's school boards can help lead the province's economic recovery. This report provides a high-level case for action and a framework for province-wide energy conservation program design. The analysis shows that that a large share of savings is found in a relatively small number of high-potential buildings. A targeted capital investment can deliver most of the $123 million in annual utility cost savings, with a high return on investment and creation of thousands of person-years of direct employment across the province while cutting annual greenhouse gas emissions by up to 230,000 tonnes of CO2e. The building system testing and remediation which are central to energy efficiency improvements can lead to improved health, safety and comfort for students and staff. Coordinated action can demonstrate world-class leadership while providing a replicable model for other building sectors in Ontario.

For more information, please visit www.sustainableschools.ca
or contact KatiaOsokine, Program Manager, at kosokine@climatechallengenetwork.org.

Sustainable Schools is a program of the Climate Challenge Network.

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