

2018 Carbon Neutral Action Report

School District No. 63 (Saanich)

Overview

The Board of Education for School District No. 63 (Saanich) agreed to take action on climate change in 2010 by committing to measure Greenhouse Gas (GHG) emissions resulting from SD63 operations, reduce emissions where possible, adopt a target to reduce GHG emissions by 33% by 2020 and offset remaining emissions, as an integral part of preparing our students to participate in an environmentally sustainable society. While SD63 will fall short of the initial reduction target meaningful progress on reducing GHG emissions has been accomplished and a 14% reduction to the end of 2018 has been achieved, a better performance than broader public sector results. New targets have been established for School Districts under the CleanBC plan of a 50% reduction in building-related GHG emissions and a 40% reduction in fleet emissions by 2030. Additional energy conservation measures must be identified to reach these targets.



The primary energy conservation activity in 2018 was significant conversion of lighting from fluorescent to LED. While the project was pursued as an energy conservation initiative, recent advances in LED technology have made LED lighting significantly higher quality than the fluorescent lighting being replaced. Numerous staff and students experience negative effects with fluorescent lighting, including headaches and eyestrain. LED lighting eliminates these negative effects. The improvement in light quality of LED relative to fluorescent was leveraged to reduce overall light levels while simultaneously improving comfort levels for staff and students. A review of lighting in retrofitted spaces was also performed to disconnect unnecessary lighting, improve control of lighting, or reduce excessive lighting at the same time as the conversion to LED was implemented. This additional effort to match light levels to the requirements of the space improved the financial savings of the LED lighting to a 3 year payback. The conversion of all remaining fluorescent lighting to LED is expected to be complete in 2019.

A breakthrough in behavioural energy conservation occurred in 2018 as energy conservation and the Energy Manager are now linked to curriculum learning. Energy and climate change are introduced to students in Grades 6 and 7 Science and the Energy Manager is available as a resource to teachers who wish to supplement their instruction with a workshop delivered by the Energy Manager. The initial feedback has been very positive with teachers, students, and the Energy Manager all perceiving value from the interaction. Climate change may be studied at other Grades in the curriculum and additional points of connection with students will be sought.

Energy Management activity in 2019 and beyond will involve identifying additional energy conservation measures to achieve the reductions assigned by the province by 2030. While technology is available to meet the reductions, it is not the same cost-effective projects that have been implemented to date and additional capital funding would need to be identified to meet the increased targets. Technology to better control ventilation during periods of low occupancy is emerging as a potential means for schools to reduce GHG emissions and initial investigations will occur in 2019. Longer term reductions in GHG emissions could be achieved with electric buses and converting building heating systems from natural gas to geoechange, but these technologies are very capital-intensive.

Declaration Statement:

This Carbon Neutral Action Report for the period January 1st, 2018 to December 31st, 2018 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2018 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2019 and beyond.

By June 30, 2019 School District No. 63's final Carbon Neutral Action Report will be posted to our website at www.sd63.bc.ca.

Emissions and Offsets Summary Table:

School District No. 63 GHG Emissions and Offset for 2018 (tC02e)	
GHG Emissions created in Calendar Year 2018	
Total Emissions (tC02e)	1892 tonnes
Total Offsets (tC02e)	1487 tonnes
Adjustments to GHG Emissions Reported in Prior Years	
Total Emissions (tC02e)	0 tonnes
Total Offsets (tC02e)	0 tonnes
Grand Total Offsets for the 2018 Reporting Year	
Grand Total Offsets (tC02e)	1487 tonnes

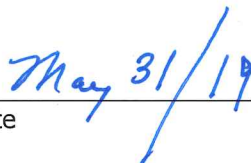
Retirement of Offsets:

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, School District 63 (the Organization) is responsible for arranging for the retirement of the offsets obligation reported above for the 2018 calendar year, together with any adjustments reported for past calendar years. The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy ensuring that these offsets are retired on the Organization's behalf, the Organization will pay within 30 days, the associated invoice to be issued by the Ministry in an amount equal to \$25 per tonne of offsets retired on its behalf plus GST.



Paul McKenzie
Assistant Superintendent

Date



Part 1: CNAR Survey

1. General Information

Name: Trevor Billy

Contact Email: tbilly@saanichschools.ca

Organization Name: School District 63 (Saanich)

Sector: School District

Role - Please select your role(s) below.

If more than one individual completed the survey, multiple categories may be selected:

Energy Manager: Yes

Sustainability Coordinator: No

Administrative Assistant: No

Facilities/Operations Manager/Coordinator: No

CEO/President/Exec Director: No

Treasurer/Accounting: No

Superintendent: No

A. Stationary Sources (e.g. Buildings, Power Generators): Fuel Combustion, Electricity use, Fugitive Emissions.

1. Actions taken by your organization in 2018 to support emissions reductions from buildings.

a) Do you have a strategy to reduce emissions from stationary sources?

Yes

If yes above, what are the main goals?: Reduce GHG emissions from SD63 operations by implementing cost-effective projects that reduce long-term operational expenditures.

b) Whether you have a strategy or not (1.a), briefly describe your organization's plans to continue reducing emissions from stationary sources:

I. Over the medium-term term (1-5 years)

SD63 will continue to identify cost-effective projects, primarily related to LED lighting, ventilation control, high-efficiency boilers and improved control of heating systems and utilize a combination of AFG, CNCP, and utility funding for implementation.

II. Over the long term (6-10 years)

SD63 has identified that the current project path is unlikely to meet the new targets under CleanBC of a 50% reduction in building emissions and a 40% reduction in fleet emissions by 2030. Potential projects to meet these targets will be identified in 2019 and 2020 and an estimated capital cost assembled. The expected amount of capital is currently not available with current funding sources at this point.

c) Please describe your strategy's goals (if any) related to [energy audits](#).

SD63 performs periodic energy audits of buildings and has currently had all buildings audited over the past five years. However, scope exists to repeat audits as technology and operating conditions change.

I. What % on average of your building portfolio has an energy audit completed each year (if any)? : 15

d) Please describe your strategy's goals (if any) related to building retrofits.

Building retrofits are done independently as cost-effective system upgrades, though periodically upgrades to schools occur for seismic or expansion reasons and these opportunities are used to upgrade the efficiency of building systems (particularly replacing boilers with high-efficiency models or building envelop improvements).

I. What % on average of your building portfolio is retrofitted each year in the following categories (if any) - click [here](#) for further information:

Minor retrofits (e.g., low cost, easy to implement measures including caulking, lighting, adding roof insulation, etc.) (%): 20

Major retrofits (e.g., replacing windows and doors, equipment replacement such as boilers, etc.) (%): 5

Deep retrofits (e.g., replacing roof, replacing the heating, ventilation and air-conditioning system with a renewable technology like a ground-source heat pump, etc.) (%): 3

e) Please describe your strategy's [re/retro-commissioning](#) goals (if any)?

SD63 has performed recommissioning in the past and is currently considering the cost/benefit of revisiting the larger schools.

I. What % on average of your building portfolio do you recommission each year?: 0

f) Do you keep records of Refrigerant gases category and refilling volumes?

Yes

I. If yes, have you included the associated emissions in your reporting?

No

II. What, if any, mitigation approaches have been considered? Please describe.

All refrigerant work is subcontracted to licensed suppliers who comply with capture and reporting requirements.

g) How many newly constructed buildings received at least LEED Gold certification in 2018 : 0

I. How many newly constructed buildings did not receive LEED Gold certification?: 0

h) Other actions? Please describe briefly.

The district has performed lighting redesign in conjunction with LED retrofits to reduce unnecessary lighting and excessive lighting levels or operating hours.

B. Mobile Sources (Vehicles, Off-road/portable Equipment): Fuel Combustion:

3. Actions taken by your organization in 2018 to support emissions reductions from mobile sources.

a) Do you have a strategy to reduce emissions from mobile sources?

Yes

I. If yes, what are its goals?

The goal is to manage resources consumed by fleet effectively, both in terms of cost and GHG emissions.

b) Whether you have a strategy or not (3.a), briefly describe your organization's plans to continue reducing emissions from mobile sources:

I. Over the medium-term term (1-5 years)

SD63 has a no-idling policy, tracks all District vehicles with a GPS tracking system and performs bus fleet route optimization several times per year.

II. Over the long term (6-10 years)

SD63 would require conversion of bus fleet to CNG or electric to meet the reduction targets under CleanBC, though current capital costs for these categories of vehicles are typically twice as much as gas/diesel versions and the Ministry provides funding only for the lowest cost option.

c) How many fleet vehicles did you purchase from the following categories:

Electric Vehicle – EV - (e.g., Nissan Leaf, Chevy Bolt): 0

"Plug In" Electric Vehicle – PHEV (e.g., plug-in Prius, Chevy Volt): 0

Hybrid vehicle – HEV – non "Plug In"- (e.g., Toyota Highlander Hybrid): 0

Hydrogen fuel cell vehicle : 0

Natural gas/propane: 0

Gas/diesel vehicle: 2

I. If you purchased new gas/diesel vehicles, can you briefly explain why vehicles from the other categories were not chosen?

The vehicle categories did not have an appropriate electric choice and funding levels were only for lowest cost (gas) option.

d) How many existing EV charging stations does your organization have in each category:

level 2: 0

level 3: 0

How many level 2 stations (if any) are specifically for your fleet vehicles: 0

How many level 3 stations (if any) are specifically for your fleet vehicles: 0

e) How many EV charging station(s) did you install in 2018 in each category:

level 2: 0

level 3: 0

How many level 2 stations (if any) were installed specifically for your fleet vehicles: 0

How many level 3 stations (if any) were installed specifically for your fleet vehicles: 0

f) Other actions, please describe briefly (e.g. charging station feasibility studies, electrical panel upgrades, etc.)

Transportation department is aware of developments in electric bus and CNG bus in anticipation of future requirements to convert.

4. Please indicate the number of the vehicles in the following vehicle classes that are in your current fleet (including any purchased in 2018):

Definitions:

- Light duty vehicles (LDVs) are designated primarily for transport of passengers <13 and GVWR<3900kg
- Light duty trucks (LDTs) are designated primarily for transport of light-weight cargo or that are equipped with special features such as four-wheel drive for off-road operation (include SUVs, vans, trucks with a GVWR<3,900kg)
- Heavy duty vehicles (HDV) includes vehicles with a GVWR>3,900 kg (e.g. ¾ tonne pick-up truck, transport trucks)

a) Light duty vehicles (LDVs)

Electric Vehicles – EV - (e.g., Nissan Leaf, Chevy Bolt): 0

“Plug In” Electric Vehicle – PHEV -- (e.g., plug-in Prius, Chevy Volt) : 0

Hybrid vehicles – HEV – (e.g., non “Plug In”- older Toyota Prius, Toyota Camry hybrid): 0

Hydrogen fuel cell vehicles: 0

Natural gas/propane: 0

Gas/diesel: 1

b) Light duty trucks (LDTs)

Electric Vehicles – EV : 0

“Plug In” Electric Vehicle – PHEV: 0

Hybrid vehicles – HEV – (e.g., non “Plug In”- older Ford Escape Hybrid, older Chevrolet Silverado pickup hybrid etc): 0

Hydrogen fuel cell vehicles: 0

Natural Gas/propane: 0

Gas/diesel: 29

c) Heavy duty vehicles (HDV)

Electric Vehicles – EV : 0

“Plug In” Electric Vehicle – PHEV : 0

Hybrid vehicles – HEV – (e.g., non “Plug In”): 0

Hydrogen fuel cell vehicles: 0

Natural Gas/propane: 0

Gas/diesel: 24

5. Please indicate the number of the vehicles you plan to replace in your fleet:

How much do you budget per LDV?: 20000

How many LDVs do you plan to procure annually over the next 5 years?: 0.2

How much do you budget per LDT?: 30000

How many LDTs do you plan to replace annually over the next 5 years?: 1

How much do you plan to spend per HDV?: 130000

How many HDVs do you plan to replace annually over the next 5 years?: 1

C. Office Paper: Indicate which actions your PSO took in 2018:

6. Actions taken by your organization in 2018 to support emissions reductions from paper supplies.

a) Do you have an Office Paper strategy?

No

b) Whether you have a strategy or not (6.a), briefly describe your organization's plans to continue reducing emissions from paper use:

I. Over the medium-term (1-5 years)

Promote double-sided printing, electronic storage and high-recycled content purchasing

c) Have an awareness campaign focused on reducing office paper use

No

d) Purchased alternate source paper (bamboo, hemp, wheat, etc.)

No