

Carbon Neutral Action Report 2018



SOOKE62
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CNAR Overview

Title: 2018 Carbon Neutral Action Report

Organization name: School District No.62 (Sooke)

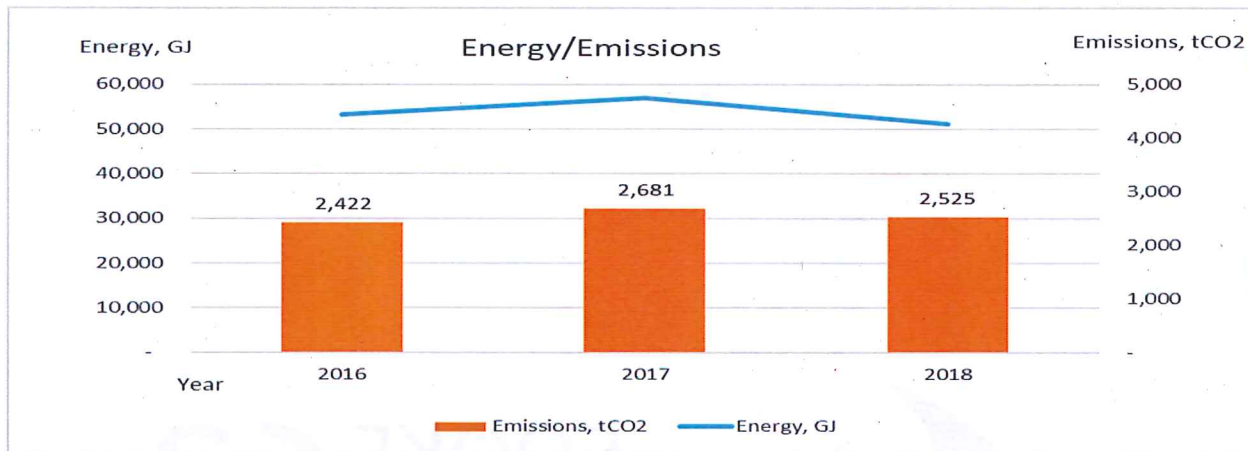
Declaration statement: This Carbon Neutral Action Report for the period January 1st, 2018 to December 31st, 2018 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2018 to reduce our greenhouse gas emissions and our plans to continue reducing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

By June 30, 2019 School District No. 62(Sooke)'s final *Carbon Neutral Action Report* will be posted to our website at www.sd62.bc.ca

Overview:

For becoming carbon neutral in 2018 calendar year, School District No.62 applied carbon offsets of 1,716 tonnes of carbon dioxide equivalent (tCO₂e) with offset exempt, 809 tCO₂e out of total emissions, 2,525 tCO₂e. School District No.62(Sooke)s' total offset investment is \$45,045 with GST included for the grand total offsets 1,716 tCO₂e for the 2018 reporting year.

The total energy consumption and greenhouse gas emissions have decreased compared to the previous year.



< Greenhous Gas Emissions and Energy Consumption >

- **Actions Taken to Reduce Greenhouse Gas Emissions in 2018**

Operational optimization for high EUI(GJ/sq.metre) schools

Operational optimization has been performed for the school showing higher EUI over 0.5 GJ/sq.meter in 2017. Major optimizations are modifying boiler operation for the demand control, optimization of supply air temperature on air handling units, and fixing dampers' actuators on air handling units.

School	GJ, 2017	GJ/sq. meter, 2017	GJ/sq. meter, 2018	diff.(2018- 2017)	GJ savings
Spencer Middle	4722	0.547	0.539	-0.008	(69)
Lakewood Elementary	2173	0.575	0.474	-0.101	(382)
Wishart Elementary	2140	0.585	0.474	-0.111	(406)
District Board Office	987	0.613	0.498	-0.115	(185)
Edward Milne Community	5931	0.641	0.557	-0.084	(777)
Willway Elementary	1785	0.645	0.569	-0.076	(210)
David Cameron Elementary	3187	0.775	0.573	-0.202	(831)
Total, GJ					(2,860)
HDD normalized savings, GJ					(2,575)

By performing operational optimization, weather normalized Giga joule savings is 2,575, about 5% reduction in total SD62's energy consumption in 2018. Also, it is equivalent to 126 tCO₂e emissions reduction.

Other actions taken in 2018

- ✓ Replacing boiler at Poirier Elementary School
- ✓ Upgrading lighting at Dunsmuir Middle school
- ✓ Maximizing utilization of lower emission heating systems
- ✓ Updating reset schedules for boiler and air handling units
- ✓ Reviewing and modifying sequence of operation for HVAC systems

• **Plans to Continue Greenhouse Gas Emissions 2019 – 2021**

School District No. 62(Sooke) has an emissions reduction plan, Strategic Energy Management Plan(SEMP), to reduce GHG emission by 33 % of the emissions in 2007. In cooperation with Senior Management, effective energy savings projects have been planned to reduce GHG, energy use and energy cost as well. Also, School District No.62 is expected to grow in size, being energy efficient is a high priority in the School District Strategic Plan.

In 2019-21, School District No.62(Sooke) will be continuing to upgrade old and inefficient heating systems and control system including upgrading lighting and building envelope.

Planned Projects

in 2019

- ✓ Upgrading unit ventilator at Dunsmuir Middle school
- ✓ Replacing single-glazed and aging windows at Dunsmuir Middle School
- ✓ Upgrading DDC Controllers for three schools

in 2020-21

- ✓ Replacing Roof Top HVAC equipment that is deteriorated and past it's useful life
- ✓ New Condensing boilers with VFD pumps at David Cameron Elementary School
- ✓ New DDC for the non-DDC schools

Emissions and Offset Summary Table:

School District NO. 62(Sooke) GHG Emissions and Offset for 2018 (tCO ₂ e)	
GHG Emissions created in Calendar Year 2018	
Total Emissions (tCO ₂ e)	2,525
Total BioCO ₂	43.23
Total Offsets (tCO ₂ e)	1,716
Adjustments to GHG Emissions Reported in Prior Years	
Total Emissions (tCO ₂ e)	0
Total Offsets (tCO ₂ e)	0
Grand Total Offsets for the 2018 Reporting Year	
Grand Total Offsets Required (tCO ₂ e)	1,716
Total Offset Investment	42,900

Retirement of Offsets:

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, School District No. 62(Sooke) 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.

Executive sign-off:

Signature

May 21, 2019

Date

Scott Stinson

Name (please print)

Superintendent

Title

Part 1: CNAR Survey

1. General Information

Name: James Lee

Contact Email: jalee@sd62.bc.ca

Organization Name: School District No 62 (Sooke)

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: No

Sustainability Coordinator: No

Administrative Assistant: No

Facilities/Operations Manager/Coordinator: Yes

CEO/President/Exec Director: No

Treasurer/Accounting: No

Superintendent: No

Other - Please Specify: Energy Specialist

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?: School District No.62 (Sooke) has Strategic Energy Management Plan for the reduction of energy and emissions. To achieve the reduction target, SD62 has established the long/short term action plan of implementing energy savings projects.

- 20% reduction in electricity consumption
- 33% reduction in fossil fuel consumption

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)

- upgrading conventional type boilers to condensing boiler
- maximizing utilization of air source heat pump for heating
- installing DDC system for operation control in the no-DDC installed schools
- operational optimization for heating and cooling
- installing operational monitoring and diagnosis system on DDC
- upgrading light control system with occupancy sensor controlled system

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

- upgrading conventional type boilers to condensing boiler
- maximizing utilization of air source heat pump for heating
- installing DDC system for operation control in the no-DDC installed schools
- operational optimization for heating and cooling
- installing operational monitoring and diagnosis system on DDC
- upgrading light control system with occupancy sensor controlled system

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

SD62 is creating a District Facilities Plan identifying goals to support the District Strategic Plan.

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

SD62 hasn't set strategy for building retrofit yet, but performed building retrofits based on EUI(Energy Utilization Index, GJ/sq.meter) and HVAC systems' efficiency. SD 62 is planning building retrofit strategy goals through building audits and VFA data as a part of it's Facilities Plan to support the District's Strategic Plan.

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.) (%): 10

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.) (%): 5

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

SD 62 is planning to have re/retro-commissioning goals along with District Strategic Plan. Continue to evaluate building utility usage and identify areas and equipment replacement that will reduce energy use. Set aside funds and create an annual building re-commissioning schedule.

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?

No

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

N.A

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

II. Please explain why LEED Gold certification was not obtained.

None.

h) Other actions? Please describe briefly.

None.

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?

No

I. If yes, what are its goals?

SD 62 is planning to have Carbon Neutral Strategy Plan including mobile source reduction along with District Strategy Plan.

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)

Maintaining same mileage for new bus routes and more students

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

Maintaining same mileage for new bus routes and more students

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

Gas/diesel vehicle: 7

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

Due to the industrial and service nature of our needs, gas vehicles are the only available units.

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

level 2: 8

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

level 2: 8

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)

Gas/diesel: 1

b) Light duty trucks (LDTs)

Gas/diesel: 38

c) Heavy duty vehicles (HDV)

Gas/diesel: 48

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

How much do you budget per LDT?: 40000

How many LDTs do you plan to replace annually over the next 5 years?: 3

How much do you plan to spend per HDV?: 220000

How many HDVs do you plan to replace annually over the next 5 years?: 3

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

I. If yes, what are its goals?

SD 62 is planning to have Carbon Neutral Strategy Plan including paper consumption reduction along with District Strategy Plan.

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)**

SD 62 has tried to purchase 30%/100% recycled content papers

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

None at this point

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

No

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

No

e) Other actions, please specify.

None at this point