



CARBON NEUTRAL ACTION REPORT

School District #27 Cariboo Chilcotin

Declaration

This Carbon Neutral Action Report for the period January 1st, 2019 to December 31st, 2019 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2019 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2020 and beyond. At the time of writing this report SD27 does not have the 2019 emissions data available due to the current Covid-19 crisis .

By June 30, 2020 "School District #27's 2020 Carbon Neutral Action Report will be posted to our website at <http://www.sd27.bc.ca/energy-conservation-program/>.

2019 Actions

In 2019, School District #27 took action to reduce GHG emissions through the following initiatives:

Location	Action
Naghtaneqed Elementary/Jr. Secondary	<p>New hybrid solar energy system – In July of 2019, the School District invested in a hybrid energy system that integrated solar energy production, advanced energy storage and an expandable inverter platform. Falcon Engineering provided technical assistance in creating the RFP, contract documents and contract supervision. Hakai Energy Solutions had the successful proposal utilizing 140 high-output solar panels with a total capacity of 50kW, plus a 118 kWh of Lithium based energy storage and 86 kW of combined inverter technologies, this system was designed to offset diesel consumption by reducing generator operation by 6900 hours each year (an 80% reduction). It is anticipated that Naghtaneqed Elem-Jr Secondary School will recoup its investment in 7.5 years through a reduction of fuel consumption of approximately 38,400 L every year, plus generator maintenance and replacement cost avoidance. Emissions reductions are estimated to be 2,534,000 kg of CO₂ over the 25-year lifespan of the system, equivalent to 19,500,000 kms driven by a car.</p> <p>School District #27 received the 2019 Clean Energy BC Community Improvement Award in November 2019 for this project.</p>
Various Sites	<p>Lighting Upgrades – Hallway lighting was upgraded at 15 sites to LED technology by tube and ballast replacement. Further savings were achieved by installing occupancy sensors. This project is expected to offset 200,000 kWh in Electricity or 5 tCO₂e.</p>
Various Sites	<p>Roofing Upgrades- 6 facilities received major roofing replacement projects this year, part of each upgraded included adding additional insulation to help provide lower carbon emissions and energy savings.</p>
150 Mile Elementary –	<p>AHU Upgrade – This project will replace the primary two air handling units. This retrofit will enable a more demand-based hot water temperature improving the facility's heat plant efficiency.</p>



2019 Planning

School District #27 has an ongoing contract for energy management services with Rede Energy Solutions. Rede is an integral part of the school district's facilities and operations team. Responsible for establishing and implementing the overall energy management strategy for the school district, Rede works with facilities leadership and staff to set energy and GHG emissions reduction targets, identify improvement opportunities, conduct building energy studies, secure grants and incentive funding, and oversee the implementation of improvement projects. Energy savings and GHG emissions reductions are evaluated annually and new targets are set annually.

The following projects are approved/ being considered for 2019 and beyond:

Location	Project
Lake City – Columneetza Campus and Nesika Elementary	<p>District Energy Biomass – It is proposed to install a further biomass fueled boiler and supply hot water to the two sites. Proximity of the facilities enable a single unit to service both sites. The local production of biomass pellets in Williams Lake makes this a perfect candidate for fuel switching. This project should reduce natural gas consumption by 5,110 GJ or 225 tCO₂e annually.</p> <p>AHU Upgrade – This project will replace the primary two air handling units. This retrofit will enable a more demand-based hot water temperature improving the facility's heat plant efficiency.</p>
Lake City – Williams Lake Lake City – Columneetza Campus Alexis Creek Elem./Jr Horsefly Elem./Jr. APPROVED	<p>Full Building Automation System Upgrade – The DDC upgrades will provide School District #27 with added scheduling capabilities and HVAC control. This should equate to further energy saving and carbon reductions.</p>

Emissions and Offset Summary

SD27 is reporting our 2018 Emissions as per instructions from The Climate Action Secretariat

GHG Emissions and Offsets for 2018 (tCO ₂ e)		
GHG Emissions created in Calendar Year 2018:		
Total Emissions (tCO ₂ e)		3,678
Total Offsets (tCO ₂ e)		2,302
Adjustments to GHG Emissions Reported in Prior Year (2017):		
Total Emissions (tCO ₂ e)		33
Total Offsets (tCO ₂ e)		33



Grand Total Offsets for the 2018 Reporting Year:	
Total Offsets (tCO2e)	2,335

Retirement of Offsets

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, *School District #27 (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 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

Handwritten signature of Norine Durban in blue ink.

Signature

Handwritten date 'JUNE 4, 2020' in blue ink.

Date

NORINE DURBAN

Name (Please print)

INTERIM SECRETARY - TREASURER

Title

Confirmation number: 00B77B5B

Submitted date: 2020-03-10 11:37:21 Pacific Daylight Time

Carbon Neutral Action Report Survey - 2019

Public sector organizations (PSOs) are required to complete this survey, in addition to a Carbon Neutral Action Report (CNAR) as mandated by BC's [Climate Change Accountability Act](#) and the [Carbon Neutral Government Regulation](#).

Due to the COVID-19 pandemic, the following [Directive](#) was issued on March 31, 2020. Certain deadlines were also extended for the 2019 reporting year (see below).

March 31, 2020 Directive:

Under my authority as the Director for the purposes of the Act, and under the authority delegated to me in Section 6 of the Carbon Neutral Government Regulation, I hereby direct that all ministries and Public Sector Organizations covered by the Carbon Neutral Government requirement shall use their 2018 GHG emissions as a temporary estimate for their actual 2019 GHG emissions, for the purposes of the 2019 Carbon Neutral Action Reports and 2019 Carbon Neutral Government reporting required under the Climate Change Accountability Act.

Neil Dobson, Executive Director, Clean BC Implementation
Climate Action Secretariat

Although 2018 emissions data will be used as a placeholder for 2019, **all other (qualitative) components of the CNAR and CNAR Survey are to be completed with information from 2019 (e.g., actions taken or planned to reduce emissions)**. The only change to the survey is that the deadline was extended by one month to June 30, 2020.

This survey is divided into two parts:

Part 1 - Will be made public on the Climate Action Secretariat (CAS) [website](#) after June 30, 2020; however, it will not be appended directly to each individual PSO CNAR as was done in previous years. This section collects details about actions taken or planned to reduce emissions and is intended to supplement the legislative requirements in your CNAR.

Part 2 - Will NOT be made public. Information you provide in this section is important and will be used internally to help CAS staff with planning for emissions reduction and climate change adaptation initiatives. Although not required, PSOs are highly encouraged to complete Part 2.

Note: Survey progress can be saved at any time by clicking the "Save and continue later" button at the bottom of each page. A new window will open and you will be asked to provide your name and email. An email will be sent to you from Carbon.Neutral@gov.bc.ca with the subject line: "Questionnaire Link", which will include a hyperlink for the "Project: Carbon Neutral Action Report Survey – Broader Public Sector 2019". You can then continue responding at another time or email the hyperlink to a colleague to complete remaining section(s).

May 29, 2020	<ul style="list-style-type: none">The final, signed version of the CNAR (or Small Emitters Form) must be submitted by email to: Carbon.Neutral@gov.bc.ca
June 30, 2020*	<ul style="list-style-type: none">Ministry of Environment and Climate Change Strategy must post a final CNAR for each organization on the BC Government's CNG website and each PSO is encouraged to post the report on their website.The CNAR Survey (optional for Small Emitters) must be completed and submitted online. <p>*Deadline extended from May 29, 2020.</p> <ul style="list-style-type: none"><u>All offset invoice payments must be submitted to CAS.</u>
Sept 30, 2020*	<ul style="list-style-type: none">Clean Government Reporting Tool (CGRT) Data Entry must be completed for the 2019 reporting year.

	*Deadline extended from April 30, 2020.
Oct 15, 2020*	<ul style="list-style-type: none"> • Self-Certification checklist must be completed, signed and submitted by email to: Carbon.Neutral@gov.bc.ca. *Deadline extended from May 15, 2020.

*See the [Carbon Neutral Government – Program Requirements website](#) for more information on program requirements, timelines and templates.

PART 1 - Included as part of your public CNAR report.

Reminder that Part 1 will be made public on the CAS [website](#).

Contact Name:
Alex Telford
Contact Email:
alex.telford@sd27.bc.ca
Organization Name:
School District 27
Role – Please select the best category for your current role with your organization. If more than one individual completed the survey, multiple categories may be selected:
Energy Manager Facilities/Operations Manager/Coordinator
Please select your sector:
School District (SD)

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

Actions taken by your organization in 2019 to support emissions reductions from buildings

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

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

Over the medium-term term (1-5 years)
planning a major Boi-mass boiler sytem, currently studying air infiltration and building envelope improvements
Over the long term (6-10 years)
continue to replace heating systems as required with more efficiant boilers/furnaces. Look into Geo and solar any cost change on these systems
Please describe your strategy's goals (if any) related to energy audits.
our district has conducted energy audits on all sites in the past 10 years

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

10%

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

this coming year we will focus on sealing up excessive air movement through wall, windows, doors etc.

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

5%

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

10%

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.)

10%

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

the past 5 years we have been conducting site by site recommissioning of our HVAC systems starting with the larger ones. DDC system upgrades has been ongoing with 4 new systems going in complete with full end to end checks

What % on average of your building portfolio do you recommission each year?

10%

Do you keep records of Refrigerant gases¹ category and refilling volumes?

[1] Fugitive emissions from stationary cooling equipment are attributed to the leakage and loss of HFC and PFC based coolants from air conditioning and commercial type refrigeration systems. Coolant loss can occur during the manufacturing, operation, and disposal of such equipment. Gases that may be reported via CGRT include HFC R-134, HFC R-134a, HFC R-404a, HFC R-407c, HFC R-410a.

No

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

none, relatively few of our facilities have AC

How many newly constructed buildings received at least LEED Gold certification in 2019?

no new construction

How many newly constructed buildings did not receive LEED Gold certification?

no new construction

Please explain why LEED Gold certification was not obtained for those new buildings.

n/a

Other actions? Please describe briefly:

n/a

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

Actions taken by your organization in 2019 to support emissions reductions from mobile sources?

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

No

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

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

looking into alternate fuel source vehicles and how we can incorporate them into our fleet

Over the long term (6-10 years)

waiting for new technology to overcome our fuel source issues

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

7

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

no infrastructure or fuel sources available in our area, our vehicles travel up to 500km in a day in rural areas

Actions taken by your organization in 2019 to support emissions reductions from mobile sources? (Continued)

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?

As defined as Level 2 stations only your organization's fleet vehicles may use

0

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

As defined as Level 3 stations only your organization's fleet vehicles may use

0

How many EV charging station(s) did you install in 2019 in each category:

Level 2?

0

Level 3?

0

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

As defined in the previous section

0

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

As defined in the previous section

0

Please briefly describe any other related actions, (e.g. charging station feasibility studies, electrical panel upgrades, etc.)

n/a

Please indicate the total number of the vehicles in the following vehicle classes that are in your current fleet

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)

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

0

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

44

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
78

Actions taken by your organization in 2019 to support emissions reductions from paper supplies.

Briefly describe your organization's plans to continue reducing emissions from paper use:

Over the medium-term (1-5 years)
n/a

Over the long term (6-10 years)
n/a

Do you have an awareness campaign focused on reducing office paper use?
No

Purchased alternate source paper (bamboo, hemp, wheat, etc.)
No

Other 2019 actions, please specify
n/a