



School District No. 46 (Sunshine Coast) 2018 Carbon Neutral Action Report

Executive Summary

The Board of Education of School District No. 46 (Sunshine Coast) supports and encourages sustainable practices and actions towards carbon neutrality. The school district's values state that; "Environmental sustainability is key to both responsible citizenship and a healthy future, and we play a fundamental role in advancing it through education, from our schools on out to our local and global communities."

A key objective for School District No.46 (Sunshine Coast) with its stated value is educating employees and students to become socially responsible community leaders by promoting behavioural changes for environmental sustainability for today and into the future. By introducing environmental educational programs, we hope to enable all learners to use critical thinking to solve problems, make informed decisions, and understand the potential consequences of decisions and to take actions to ensure the sustainability of the environment. These programs should allow all students and employees to understand personal, local and global environmental issues, develop respect for self and all living species, and develop skills necessary for learning about and understanding the environment so they feel empowered to take personal actions, and continue learning throughout their lives.

Planning for reducing greenhouse gas (GHG) emissions from operations occurred at a number of levels and resulted in the following four key actions in preparation for carbon neutrality continuing in 2018 with ongoing continuation into the future:

1. Discussion of district-wide activities towards carbon neutrality and overall energy reduction strategies is a regular item on the agendas of Administrative meetings.
2. Requirement that all contracts and agreements that the district enters into must adhere to sustainable practices (bus contracts in particular).
3. Change to electronic communication to reduce paper for meeting agendas and presentations for both staff and the Board of Education.
4. Evaluations by trade persons to assess all options with respect to finding the most sustainable, green and cost effective systems to reduce energy consumption.

Overviews

2018 Greenhouse Gas Emissions

• Mobile Fuel Combustion (Fleet and other mobile equipment) =	93.32 tonnes CO ₂ e
• Stationary Fuel Combustion and Electricity (Building) =	547.23 tonnes CO ₂ e
• Supplies (Paper) =	32.79 tonnes CO ₂ e
• Fugitive Emissions =	29.48 tonnes CO ₂ e
<u>Total 2018 Greenhouse Gas Emission</u>	<u>702.83 tonnes CO₂e</u>

It was estimated that stationary fugitive emissions from cooling do not comprise more than 0.01% of School District No. 46 (Sunshine Coast) total emissions and an ongoing effort to collect or estimate emissions from this source would be disproportionately onerous. For this reason, emissions from this source have been deemed out-of-scope and have not been included in School District No. 46 (Sunshine Coast) total greenhouse gas emissions profile.

Offsets Applied to Become Carbon Neutral in 2018

• Total 2018 Greenhouse Gas Emissions =	703	tonnes CO2e
• Adjustments to Offsets Reported in Prior Years =	34	
• Emission Which Do Not Require Offsets =	-3	tonnes CO2e
<u>Total Offset Purchased</u>	<u>734</u>	<u>tonnes CO2e</u>
<u>Total Offset Investment (before taxes)</u>	<u>\$18,350.00</u>	<u>cdn</u>

As required by section 5 of the Carbon Neutral Government Regulation, 3 tonnes CO2e of emissions resulting from the operation of school buses were reported as part of our greenhouse gas emissions profile 2018. However, they were not offset as they are out-of-scope under section 4 (2) (c) of the Carbon Neutral Government Regulation.

Actions Taken to Reduce Greenhouse Gas Emissions in 2018

Some specific initiatives that School District No. 46 (Sunshine Coast) undertaken in 2018 with regard to reducing greenhouse gas (GHG) emissions towards carbon neutrality from operations.

- Boiler plant replacements at 2 facilities
- Monthly DDC fault detection reviews to flag and repair unusual energy usage

Ongoing Initiatives Prior Years Continued in 2018

- Replacing single pane glazing with double pane glazing.
- Replacing exterior doors and improving weather stripping.
- DDC fault detection system in place to flag unusual conditions that can be addressed and repaired immediately.
- Upgrade of multifunction devices (fax, copier, scan) in all worksites and schools to latest energy efficiency and technology.
- Purchasing Energy Star rated model computer and appliance renewals.
- Use of 30% post consumer recycled paper for printers and photocopiers.
- Reducing vehicle emissions through carpooling and downsizing vehicles.
- Use of electronic document library for filing documents.
- Regular maintenance of fleet vehicles.
- Anti idling/efficient driving program.
- Evaluating mechanical systems and prioritizing systems to upgrade.
- Raising the level of awareness for carbon reduction through staff and student education to encourage sustainable practices and support behaviour change.
- Encourage the use of electronic documents rather than printed-paper documents.
- Encourage the utilization of web conferencing.
- Improved maintenance of existing mechanical systems.
- Installed occupancy sensors to control HVAC systems.
- Replaced an inefficient hot water generation plant with high efficiency condensing boilers for generating hot

water for heating

- Continued replacing school exterior lighting with LED fixtures across district.

Plans to Continue Reducing Greenhouse Gas Emissions 2019 – 2020

Going forward, over the next three years, School District No. 46 (Sunshine Coast) will develop protocols, policy and regulations to support key areas of greenhouse gas reduction. Examples include:

- Further explore solar and heat pump feasibilities.
- Continuous optimization of HVAC controls and systems in partnership with Fortis BC and BC Hydro.
- Continue with district Sustainability Committee and Student Energy Ambassadors to support district activities and to support sustainable practices.
- Continue to replace district vehicles with more fuel-efficient vehicles.
- Replace single-glazed with windows with low emissivity double-glazing.
- Addition of HVAC controls and re-commissioning of existing HVAC systems.
- Roof replacements for better insulation.
- Boiler replacement projects.

Becoming carbon neutral is an important goal towards School District No. 46 (Sunshine Coast) sustainability plans in the following ways:


- It encourages all members of the organization to work on this together to be more successful and unified in our efforts towards carbon neutrality.
- Carbon sustainability practices provide good modeling for students and the wider community.
- Carbon sustainability demonstrates fiscal responsibility by using recycled materials, monitoring and reducing consumables and analyzing and reducing utilization of vehicles.

Some anticipated financial, environmental, and social benefits related to reducing GHG emissions include:

- Social - bringing together various employees and employee groups with students for a common purpose.
- Financial – working toward energy efficiency will result in savings.
- Environmental – expanding school recycling programs, reducing fuel and gas consumption, and monitoring travel will support the initiatives of the activities Sunshine Coast local governments.



Patrick Bocking
Superintendent of Schools



Nicholas Weswick
Secretary-Treasurer

Part 1: CNAR Survey

1. General Information

Name: Rob

Contact Email: Collison

Organization Name: School District No. 46 (SunshineCoast)

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: Yes

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?: 5% annual reduction.

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)

We plan to continue with our energy reduction student engagement campaign (Energy Matters). We are also using fault detection analysis with our BMS systems to find ways to continue reducing our emissions. Our 5 year capital plan submission to the Ministry of Education includes the installation of photovoltaic solar panels and air to water heat pumps as our primary heating source, and using natural gas boilers as back up. We also plan to do large scale LED retrofits. Replacements of windows, doors, and adding insulation.

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

Over the long term we plan to continue to install large PV solar arrays and heat pumps as our primary heating source. We also plan to do large scale LED retrofits. Replacements of windows, doors, and adding insulation.

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.) (%): 2

Major retrofits (e.g., replacing windows and doors, equipment replacement such as boilers, etc.) (%): 2

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)?

We completed an entire portfolio recommissioning a few years ago which included a fault detection system. There are no further plans at this time to recommission again.

I. What % on average of your building portfolio do you recommission each year?: 1

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

No

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

No

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

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?

Annual replacement of aging vehicles. Purchasing EV's where possible.

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)

Annual replacement of aging vehicles. Purchasing EV's where possible.

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

Annual replacement of aging vehicles. Purchasing EV's where possible.

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

Electric Vehicle – EV - (e.g., Nissan Leaf, Chevy Bolt): 1

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

level 2: 2

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

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

level 2: 2

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): 1

Gas/diesel: 3

b) Light duty trucks (LDTs)

Gas/diesel: 9

c) Heavy duty vehicles (HDV)

Gas/diesel: 16

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

How much do you budget per LDV?: 35000

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

How much do you budget per LDT?: 35000

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

How much do you plan to spend per HDV?: 40000

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)**

More use of electronic communication. Use recycled paper.

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

More use of electronic communication. Use recycled paper.

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

No

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

Yes