



# School District No. 46 (Sunshine Coast)

## 2016 Carbon Neutral Action Report

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### 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.

**Declaration statement:** This Carbon Neutral Action Report for the period January 1<sup>st</sup>, 2016 to December 31<sup>st</sup>, 2016 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2016 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2017 and beyond

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 2017 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

#### 2016 Greenhouse Gas Emissions

• Mobile Fuel Combustion (Fleet and other mobile equipment) =	83.84 tonnes CO2e
• Stationary Fuel Combustion and Electricity (Building) =	540.93 tonnes CO2e
• Supplies (Paper) =	34.14 tonnes CO2e
• Fugitive Emissions =	28.92 tonnes CO2e
<u>Total 2016 Greenhouse Gas Emission</u>	<u>688 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 2016

• Total 2016 Greenhouse Gas Emissions =	688	tonnes CO <sub>2</sub> e
• Adjustments to Offsets Reported in Prior Years =	27	tonnes CO <sub>2</sub> e
• Emission Which Do Not Require Offsets =	3	tonnes CO <sub>2</sub> e
<u>Total Offset Purchased</u>	<u>712</u>	<u>tonnes CO<sub>2</sub>e</u>
<u>Total Offset Investment (before taxes)</u>	<u>\$17,800</u>	<u>cdn</u>

As required by section 5 of the Carbon Neutral Government Regulation, 4 tonnes CO<sub>2</sub>e of emissions resulting from the operation of school buses were reported as part of our greenhouse gas emissions profile 2016. 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 2016

Some specific initiatives that School District No. 46 (Sunshine Coast) undertaken in 2016 with regard to reducing greenhouse gas (GHG) emissions towards carbon neutrality from operations.

### Ongoing Initiatives Prior Years Continued in 2016

- Replacing single pane glazing with double pane glazing.
- Replacing exterior doors and Improving weather stripping.
- Began upgrading DDC controls in all facilities and installed live energy and water metering that is accessible to all staff for teaching and learning.
- 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.
- 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.
- Tightened HVAC schedules to reflect actual school usage hours.

## **Plans to Continue Reducing Greenhouse Gas Emissions 2016 – 2017**

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 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

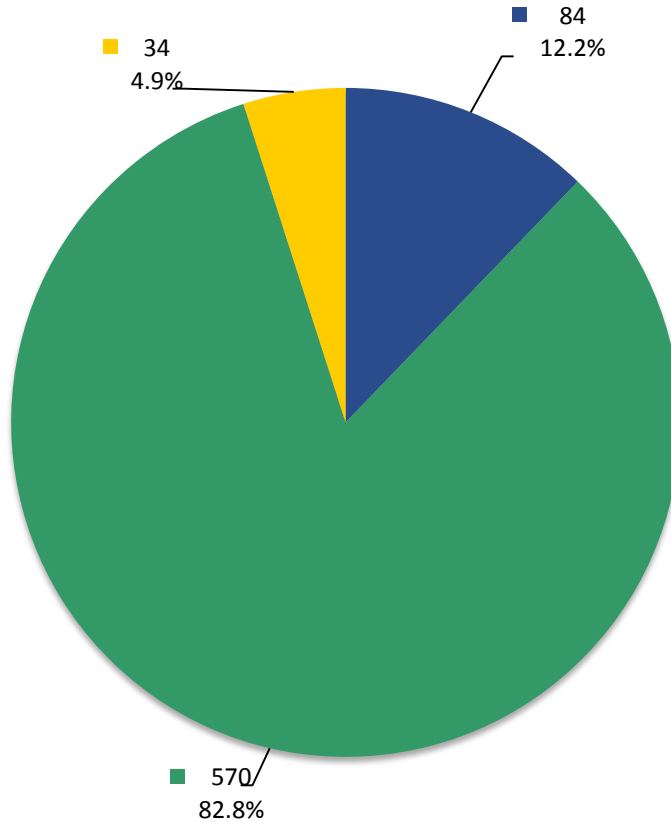
**School District No. 46 (Sunshine Coast)**

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**School District 46 - Sunshine Coast  
Greenhouse Gas Emissions by Source  
for the 2016 Calendar Year (tCO<sub>2</sub>e\*)**



**Total Emissions: 688**

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion (Building Heating and Generators) and Electricity
- Supplies (Paper)

**Offsets Applied to Become Carbon Neutral in 2016 (Generated May 15, 2017 4:05 PM)**

Total offsets required: **685**. Total offset investment: **\$17,125**. Emissions which do not require offsets: **3** \*\*

\*Tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) is a standard unit of measure in which all types of greenhouse gases are expressed based on their global warming potential relative to carbon dioxide.

\*\* Under the *Carbon Neutral Government Regulation of the Greenhouse Gas Reduction Targets Act*, all emissions from the sources listed above must be reported. As outlined in the regulation, some emissions do not require offsets.

# 2016 Carbon Neutral Action Report Survey

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Part One (external)

Contact Name(s):

*Rob Collison*

Organization Name:

*School District No. 46 (Sunshine Coast)*

Please select your sector:

- School District

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

During 2016, did your organization take any of the following actions to support emissions reductions from buildings?

Select all that apply

- Conducted an energy audit/study of building(s) in the organization's portfolio
- Performed energy retrofits of the organization's buildings.: 19
- Other actions? Please describe briefly.: Boiler plant retrofit at one school. Student engagement project to designed to educate students on climate change and energy reduction methods.

Briefly describe your organization's plans to continue reducing emissions from its stationary sources in future years.

*Re-commissioned entire district building automation systems, installed sub metering, HVAC occupancy sensors, and reprogrammed all facilities to run the latest energy efficiency strategies.*

*Replaced a boiler system at one facility with new condensing boiler and variable speed pumping.*

*Replaced all single glazing at one school with low e double glazing.*

During 2016, did your organization participate in utility-sponsored energy demand management program(s) (e.g. BC Hydro's Energy Management (Manager))?

*No*

If yes, please describe briefly:

*(No response)*

## 2) Mobile Sources (Vehicles, Off-road/Portable Equipment): Fuel Combustion.

During 2016, did your organization take any of the following actions to support emission reductions from its mobile sources?

Select all that apply

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- Took steps to drive less than previous years.
- 

Briefly describe your organization's plans to continue reducing emissions from its mobile sources in future years.

*Replacing 2 old fleet vehicles in current year and continuing to do so on an annual basis.*



3) Supplies (Paper):

During 2016, did your organization take any of the following actions to support emissions reductions from paper supplies?

Select all that apply

*(No response)*

Briefly describe your organization's plans to continue reducing emissions associated with its office paper use in future years.

*Moving to a digital file storage system to replace the need for paper invoicing etc.*

4) Other Sustainability Actions:

Business Travel:

During 2016, did your organization take any of the following actions to support emissions reductions from business travel?

Select all that apply

- 
- Encouraged alternative travel for business (e.g. bicycles, public transit, walking)
- 

Education Awareness:

During 2016, did your organization have any of the following programs or initiatives to support sustainability education and awareness?

Select all that apply

- 
- Green, Sustainability or Climate Action Team
  - Support for professional development on sustainability (e.g. workshops, conferences, training)
  - Supported or provided education to staff about the science of climate change, conservation of water, energy and/or raw materials
- 

Other Sustainability Actions:

During 2016, did your organization have any of the following programs or initiatives to support sustainability?

Select all that apply

- 
- A water conservation strategy which may include a plan or policy for replacing water fixtures with efficient models
  - An operations policy or program to facilitate the reduction and diversion of building occupant waste (e.g., composting, collection of plastics, batteries) from landfills or incineration facilities
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