

**CNAR**

**Title:** “2019 Carbon Neutral Action Report”

**Organization:** College of New Caledonia (CNC)

**Declaration statement:** This Carbon Neutral Action Report for the period January 1, 2019 to December 31, 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.

**Overview:**

CNC has invested in HVAC upgrades to increase our overall heating season efficiencies to reduce the demand on our power plant boilers. Additional initiatives include ensuring our boilers and building automation systems are at peak efficiency to reduce our carbon footprint. CNC is also moving towards live metering monitoring to provide a better performance management.

Beyond 2020, CNC is embarking on a fleet renewal process to replace internal combustion engine (ICE) vehicles with electric vehicles wherever practical. In 2019, CNC will continue to replace ICE with electric as opportunities arise.

CNC is also investigating carbon-capturing technologies with the intention of capturing CO<sub>2</sub> from our power plants flue gases. CNC’s target is to eliminate or reduce our CO<sub>2</sub> flue gases by 90%.

**Emissions and Offset Summary Table:**

<b>[College of New Caledonia] GHG Emissions and Offsets for 2019</b>	
<b>As per the <a href="#">Directive</a> issued March 31, 2020, each PSO will use their 2018 GHG Emissions as a placeholder for the purposes of their 2019 CNAR.</b>	
Total Emissions (tCO <sub>2</sub> e)	<b>2932.03</b>
Total BioCO <sub>2</sub>	<b>2.03</b>
Total Offsets (tCO <sub>2</sub> e)	<b>2930</b>
Offset Investment (\$25 per tCO <sub>2</sub> e)	<b>\$73,250.00</b>



**Retirement of Offsets:**

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, College of New Caledonia is responsible for arranging for the retirement of the offsets obligation reported above for the 2019 calendar year, together with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy (**the Ministry**) 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:**

*Tara Szerencsi*

Signature

*June 25, 2020*

Date

*Tara Szerencsi*

Name (please print)

*Vice President, Finance & Corporate Services*

Title

Please scan and email the completed form to [Carbon.Neutral@gov.bc.ca](mailto:Carbon.Neutral@gov.bc.ca)

**Confirmation number:** 00C6F264

**Submitted date:** 2020-08-05 14:57:13 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](mailto: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"><li>The final, signed version of the <b>CNAR</b> (or Small Emitters Form) must be submitted by email to: <a href="mailto:Carbon.Neutral@gov.bc.ca">Carbon.Neutral@gov.bc.ca</a></li></ul>
June 30, 2020*	<ul style="list-style-type: none"><li>Ministry of Environment and Climate Change Strategy must post a final CNAR for each organization on the BC Government's CNG <a href="#">website</a> and each PSO is encouraged to post the report on their website.</li><li>The <b>CNAR Survey</b> (optional for Small Emitters) must be completed and submitted online. *Deadline extended from May 29, 2020.</li><li><u>All offset invoice payments must be submitted to CAS.</u></li></ul>
Sept 30, 2020*	<ul style="list-style-type: none"><li><b>Clean Government Reporting Tool (CGRT) Data Entry</b> must be completed for the 2019 reporting year.</li></ul>

	*Deadline extended from April 30, 2020.
Oct 15, 2020*	<ul style="list-style-type: none"> <li>• <b>Self-Certification checklist</b> must be completed, signed and submitted by email to: <a href="mailto:Carbon.Neutral@gov.bc.ca">Carbon.Neutral@gov.bc.ca</a>.</li> </ul> *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](#).

<b>Contact Name:</b>
<i>Todd Macdonald</i>
<b>Contact Email:</b>
<i>macdonaldt7@cnc.bc.ca</i>
<b>Organization Name:</b>
<i>College of New Caledonia</i>
<b>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:</b>
CEO/President/Exec Director
<b>Please select your sector:</b>
Post Secondary (PS)

## 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

<b>Do you have a strategy to reduce emissions from stationary sources?</b>
Yes

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

<b>Over the medium-term term (1-5 years)</b>
<ol style="list-style-type: none"> <li>1. College of New Caledonia (CNC) is embarking on a fleet conversion from internal combustion engines (ICE) to electric vehicles and grounds equipment as opportunities arise.</li> <li>2. CNC is also upgrading HVAC systems to increase our energy efficiencies and reduce natural gas consumption.</li> <li>3. CNC is developing an urban forest project to increase our natural foliage footprint and create research opportunities. For example, an average tree removes around 20 pounds of carbon per year.</li> </ol>

**Over the long term (6-10 years)**

1. CNC is investigating capturing CO2 from our power plants flue gases. For example, The University of Kentucky has developed a methodology in partnership with Duke Energy of capturing CO2 by using algae to sequester the CO2. Algae is 400 times for efficient at removing CO2 than trees. The expectation is to scale up to 100% CO2 capturing and making CNC carbon neutral.
2. CNC is also investigating using where feasible Ferrock, an alternative to Portland cement. Ferrock absorbs and binds up to 10% of its weight in CO2 during its curing process. Portland Cement emits CO2 at 93% CO2 to its weight when curing (Portland Cement Association).
3. Building materials such as CO2 free Bio-concrete blocks produced by BioMason provide CNC with robust alternative building materials for renovations and capital projects.

**Please describe your strategy's goals (if any) related to energy audits.**

CNC is working towards establishing real time energy performance monitoring, rolling up to a public dashboard with key performance indicators. Additional data will be captured for performance trending to target infrastructure improvement areas.

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

Currently CNC has not established a consistent building portfolio energy audit process.

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

CNC is actively engaged in a process of continued energy performance improvements. Encompassing HVAC, insulation, higher performing windows and doors, etc. The goal is to ensure a comprehensive and balanced approached with an understanding that each facilities must be viewed as a whole system.

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

% of all campuses/square meter of floor space = est. 8%

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

CNC has a strong history of a continued approach towards upgrading obsolete and inefficient lighting to LED lights. Roof insulation is upgraded when roofing surfaces are replaced.

CNC has invested in a quality thermo imaging camera for mechanical and building audits. Increasing our ability to find and seal building leaks that could otherwise be missed during an audit or facility review.

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

% of all campuses/square meter of floor space = est. 11%

**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.)**

none

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

CNC's strategy is to re-balance a facility when the facility is demonstrating unbalanced air exchanges. CNC's current strategy is not to "retro-commission" any facility due to the multiple reconfiguration, HVAC improvements and changes how the facility behaves from the original intent. CNC will re-commission a facility when a significant change/improvement has been made that justifies and provides a return on the investment.

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

% of all campuses/square meter of floor space = est. 0.05%

Do you keep records of Refrigerant gases<sup>1</sup> 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

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

One

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

none

## 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?

Yes

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)

*College of New Caledonia (CNC) is embarking on a fleet conversion from internal combustion engines (ICE) to electric vehicles and grounds equipment as opportunities arise.*

Over the long term (6-10 years)

*As technology and range increases with electric vehicles CNC will be increasing changing out ICE with electric.*

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

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

2

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

2

Hybrid vehicle – HEV – non “Plug In”- (e.g., Toyota Highlander Hybrid)

0

Hydrogen fuel cell vehicle

0

Natural gas/propane

0

Gas/diesel vehicle

1

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

*3500 Dodge service van. An electric was not available with the range required.*

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?

3

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.)

0

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)
2
“Plug In” Electric Vehicle – PHEV -- (e.g., plug-in Prius, Chevy Volt)
2
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
0

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

1

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)

*Increased focus on using shared drives and reducing printing. Increase use of renewable sources of paper (i.e. bamboo)*

Over the long term (6-10 years)

*Increase utilization of bamboo, hemp, etc.  
Replace posters and other messaging mediums with electronic methods.*

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

*limited*