JUSTICE INSTITUTE of BRITISH COLUMBIA

2018 Carbon Neutral Action Report

May 13, 2019

Table of Contents

Declaration Statement

This Carbon Neutral Action Report for the period January 1st, 2018 to December 31st, 2018 summarizes Justice Institute of British Columbia's emissions profile, total offsets to reach net-zero emissions, actions undertaken in 2018 to reduce greenhouse gas (GHG) emissions and plans to continue reducing emissions in 2019 and beyond.

By June 30, 2019, JIBC's final 2018 Carbon Neutral Action Report will be posted to the Institute's website at www.jibc.ca

Overview

Justice Institute of British Columbia (JIBC) is Canada's leading public safety educator, a dynamic post-secondary institution recognized nationally and internationally for innovative education in the areas of justice and public safety. JIBC offers a range of applied and academic programs (certificates, diplomas, and degrees) that span the spectrum of safety, from prevention to response and recovery. JIBC has six campuses located in New Westminster, Maple Ridge, Pitt Meadows, Chilliwack, Victoria and Kelowna.

JIBC is committed to reducing its carbon footprint and improve sustainability through environmentally responsible practices. Since 2008 the Institute has implemented operational changes resulting in significant reductions in energy consumption. Energy consumption is monitored at all campuses to identify trends in usage and to ensure buildings operate at optimal conditions for the season. Tracking energy usage allows JIBC to gauge the effectiveness of implemented energy-efficiency strategies designed to achieve carbon neutrality through the reduction of greenhouse gas emissions.

Greenhouse Gas Emission Reduction Activities undertaken in 2018

In 2018 the following projects were undertaken to reduce greenhouse gas emissions:

- Retrofitted exterior HID lights to LED lights at Maple Ridge
- Retrofitted fluorescent tubes to LED tubes at New Westminster
- Retrofitted CFL pot lights to LED lights at New Westminster
- Installed air curtains in the atrium at New Westminster
- Conducted an energy audit and implemented recommended energy savings strategies at New Westminster

- Conducted retro-commissioning study and implemented recommended energy savings adjustments to building system components at New Westminster

Plans to Further Reduce Greenhouse Gas Emissions in 2019 and Beyond

Potential projects to further reduce greenhouse gas emissions in 2019 and beyond include:

- Install new direct digital controls for heating/cooling plants and lighting systems at Chilliwack
- Install new direct digital controls for heating/cooling plants and lighting systems at Pitt Meadows
- Conduct an energy audit and implement recommended energy savings strategies at Maple Ridge
- Conduct retro-commissioning study and implement recommended energy savings adjustments to building system components at Maple Ridge
- Conduct an assessment of solar panel operation and implement recommended efficiency strategies at Chilliwack
- Conduct energy assessments and implement recommended energy savings strategies and upgrades at Chilliwack
- Retrofit lighting to LED, including fixture replacement, and addition of motion sensors
- Replace older fleet vehicles with more fuel efficient and/or electric vehicles
- Install charging stations for fleet electric vehicle charging
- Upgrade web-based video-conferencing systems to reduce travel needs
- Implement additional virtual servers to replace physical servers
- Upgrade network switches to energy efficient types
- Refresh desktops to remove older less energy efficient computers
- Engage with travel booking agency to receive GHG emission reporting for flight bookings
- Review administrative processes using Lean methodology to reduce unnecessary paper-based filing and forms

- Implement personal printing account program to raise individual staff awareness of printing and copying habits
- Participate in BC Hydro's Energy Manager Associate Program
- Participate in the STARS program – Sustainability Tracking and Assessment Rating System administered by the Association for the Advancement of Sustainability in Higher Education

Greenhouse Gas Emissions in 2018

In accordance with the Carbon Neutral Government Regulation, JIBC activities generating direct and indirect greenhouse gas emissions were recorded throughout the calendar year. In 2018, JIBC realized direct and indirect greenhouse gas emissions measured in tonnes per carbon dioxide equivalent (tCO2e) in the following categories:

GHG Emission Category	**GHG Emissions tCO_2e**
Mobile Fuel Combustion	102.44
Stationary Fuel Combustion	456.65
Purchased Energy	23.58
Office Paper	45.34
Total Emissions (rounded)	**628**

Retirement of Offsets for 2018

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, Justice Institute of British Columbia (JIBC) 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. JIBC hereby agrees that, in exchange for the Ministry of Environment ensuring that these offsets are retired on JIBC's behalf, JIBC will pay 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.

JIBC GHG Emissions and Offset for 2018 (tCO_2e)	
GHG Emissions created in Calendar Year 2018 :	
Total Emissions (tCO_2e)	628
Total Offsets (tCO_2e)	625
Adjustments to GHG Emissions Reported in Prior Years *:*	
Total Emissions (tCO_2e)	0
Total Offsets (tCO_2e)	0
Grand Total Offsets for the 2018 Reporting Year *:*	
Grand Total Offsets (tCO_2e)	625

Executive Sign-off

Signature	Date May 17/2019
Kayoko Takeuchi	Vice President – Finance and Operations
Name (please print)	Title

Part 1: CNAR Survey

1. General Information

Name: Julie Brown

Contact Email: jbrown@jbc.ca

Organization Name: Justice Institute of BC

Sector: Post Secondary

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: No

CEO/President/Exec Director: No

Treasurer/Accounting: No

Superintendent: No

Other - Please Specify: Director, Campus Planning & Facilities Operations

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?: Use energy efficiency work and reductions in energy consumption to cut emissions from stationary sources.

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)

Conduct an energy management assessment to identify/focus areas in policy development, target identification and reporting, planning and actioning, working group formation and, employee awareness and training development. Develop a strategic energy management plan (SEMP)informed by the energy management assessment and initial energy audits, to further develop goals and plans to achieve reductions in emissions and promote sustainable practices.

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

Focus on continuous improvement in the areas of operational performance of building systems (e.g. Rcx), employee awareness/training, and use of innovative technologies for retrofits.

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

Complete initial energy audits at all campuses to inform the development of a strategic energy management plan.

I. What % on average of your building portfolio has an energy audit completed each year (if any)?: 16

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

Complete retrofits at all campuses to continue to reduce GHG emissions from stationary sources.

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.) (%): 33

Major retrofits (e.g., replacing windows and doors, equipment replacement such as boilers, etc.) (%): 16

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.) (%): 16

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

Complete initial retro-commissioning (Rcx) at all campuses and establish an on-going schedule through a strategic energy management plan.

I. What % on average of your building portfolio do you recommission each year?: 16

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

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

Our service providers maintain records.

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?

No

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)

Promote video conferencing to reduce need for travel.

Install direct digital controls (DDC) at remaining campuses to remotely manage HVAC and lighting to reduce need for travel.

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

Replace existing fleet vehicles with EVs.

c) 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: 0

d) 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: 0

How many level 3 stations (if any) are specifically for your fleet vehicles: 0

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

level 2: 0

level 3: 0

How many level 2 stations (if any) were installed specifically for your fleet vehicles: 0

How many level 3 stations (if any) were installed specifically for your fleet vehicles: 0

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): 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: 9

b) 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: 6

c) 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: 5

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

How much do you budget per LDV?: 30000
How many LDVs do you plan to procure annually over the next 5 years?: 5
How much do you budget per LDT?: 60000
How many LDTs do you plan to replace annually over the next 5 years?: 5
How much do you plan to spend per HDV?: 60000
How many HDVs do you plan to replace annually over the next 5 years?: 0

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)

Continue to track printing use by division and individual to promote awareness of usage.

Upgrade print fleet with new tracking software to raise further awareness of printing usage.

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

Place limitations on printing and promote paperless office strategies.

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.

Support establishment of Sustainability Group to address behaviours to improve sustainable practices.