

2020 Carbon Neutral Government Year in Review: Summary

EACH YEAR SINCE 2010, B.C. has achieved carbon neutral operations, maintaining a net impact of zero greenhouse gas (GHG) emissions across provincial public sector organizations (PSOs), including health authorities, school districts, post-secondary institutions, Crown corporations and provincial government.

B.C.'s legislated Carbon Neutral Government (CNG) accomplishment over the past eleven years is a unique achievement in North America – one that's reducing emissions, conserving energy, and spurring the development of clean technology and clean jobs. Under the CNG program, PSOs measure and reduce emissions as much as possible, then report annually on results. To become carbon neutral, remaining emissions are then offset by investing in high-quality B.C.-based carbon offset projects.

The total emissions reported in this summary meet the reporting requirements set by the Carbon Neutral Government Regulation (the Regulation) under the *Climate Change Accountability Act*.

Key Facts for 2020:

- For the 2020 reporting year¹, B.C.'s 131 PSOs generated 716,745 tonnes of GHG emissions from their operations. (Refer to Tables 1 and 2 below).
- This represents a reduction of 48,003 tonnes compared to 2019, equivalent to taking approximately 17,144 cars off the road for a year.²
- Over the past eleven years, public sector emissions decreased by 98,788 tonnes or 12% compared to the baseline year of 2010.
 - Emissions from **buildings** decreased by 11% compared to 2010 levels. Normalized for weather conditions in 2020 compared to 2010, building emissions decreased 15%. See **Figure 1** for annual emission trends from public sector buildings since 2010.
 - Emissions from **fleet** decreased by 7% compared to 2010 levels. See **Figure 2** for annual emission trends from fleet vehicles since 2010. The 13% reduction between 2019 and 2020 may be due, in part, to decreased use of fleet vehicles during the pandemic.

¹ The 2020 reporting year is equivalent to the 2020 calendar year.

² Based on 2.8 tonnes per car per year.

- While the B.C. public sector is making progress in reducing emissions, further action is needed to achieve the CleanBC 2030 public sector emission reduction targets of 50% reduction from public buildings and 40% reduction from fleet compared to 2010 levels.
- Recent success stories across the B.C. public sector include:
 - In 2020/21 and 2021/22, a combined total of 22 school districts ordered a total of 52 electric school buses.
 - Three school districts partnered with the Canada Infrastructure Bank to help finance the acquisition of eight of the buses for the 2021/22 school year.
 - The CleanBC Government Buildings program implemented 28 energy retrofits in provincial government buildings, including a net-zero energy showcase building, installed 121 electric vehicle charging spaces at 47 buildings, and assessed climate risk impacts at 50 buildings.
 - 2020 emissions from provincial government buildings were 40% less than 2010 levels, putting provincial government on the path to achieving the targets established for the CleanBC Government Buildings program.
 - In 2020, 34% of applicable provincial government light duty vehicle purchases were zero emission vehicles (ZEVs), exceeding the 10% ZEV purchase target in CleanBC.
- For the 2020 reporting year, carbon offsets were sourced from projects involving sequestration, fuel switching, GHG destruction, and energy efficiency (refer to Table 3 below).
- B.C.'s emission offset portfolio has resulted in total offset retirements of approximately 7.5 million tonnes of carbon dioxide equivalent between 2010 and 2020.

Carbon Neutral Capital Program

The Carbon Neutral Capital Program (CNCP) funds energy saving activities and technologies for B.C.'s public sector organizations. First introduced in 2012/13 for school districts throughout B.C., the CNCP was expanded in 2014/15, to include funding for B.C.'s health authorities and post-secondary institutions.

After first increasing the CNCP base budget in 2020 from \$14.5 million to \$50 million per year, B.C. further increased CNCP funding in 2021 by \$6 million to \$56 million per year for two years. This increase will support more projects in K-12 schools. The CNCP funds projects such as improved HVAC systems, solar panels and electric vehicle charging stations that save energy and reduce emissions in health care facilities, post-secondary institutions and K-12 schools.

With the 2020 and 2021 increases, B.C. has more than tripled support for PSOs through the CNCP (\$56 million per year).

To weather normalize building emissions, the average temperature profile for a 30-year period is used to calculate the number of days buildings use energy to heat or cool (based on temperatures above or below 15°C).

Weather Normalization

Buildings have been the source of approximately 75 percent of B.C.'s total provincial public sector emissions every year since the beginning of the Carbon Neutral Government Program. Year-to-year differences in weather affect the heating and cooling requirements in buildings. To enable year-to-year comparison of building-related emissions, figures are adjusted to remove weather effects. This is known as weather normalization. An improved understanding of how buildings perform outside of weather-related impacts helps PSOs determine the level of progress being made towards reducing GHG emissions.

2020's Weather Impact

Climate change is being felt across B.C. as average temperatures are trending upwards, and extreme weather is becoming more frequent and variable year-over-year. B.C. had a milder winter and summer in 2020 compared to 2019, reducing heating and cooling demand from the previous year's results.

Since 2010, B.C.'s public sector has seen energy demand for heating drop slightly due to warmer winters. While energy demands for cooling are still much smaller than for heating, cooling degree days were greater in 2020 than the weather normalized baseline (1981-2010).

The Education, Health, and Core Government sectors saw increases in weather normalized emissions in 2020, while Crown Corporations and particularly the Advanced Education sectors saw decreases in weather normalized GHG emissions in buildings. For example, heating energy consumption in K-12 schools likely increased because of windows being kept open to keep students safe from COVID-19, while energy usage in colleges and universities decreased because many classes were delivered remotely and students were not on campus.

Figure 1 shows that under average climate conditions in the baseline period used (1981 to 2010), emissions would have been lower in 2019 and higher in 2020 than actual emissions.

Figure 1. Building Emissions (tonnes CO₂e) Across the Public Sector 2010-2020

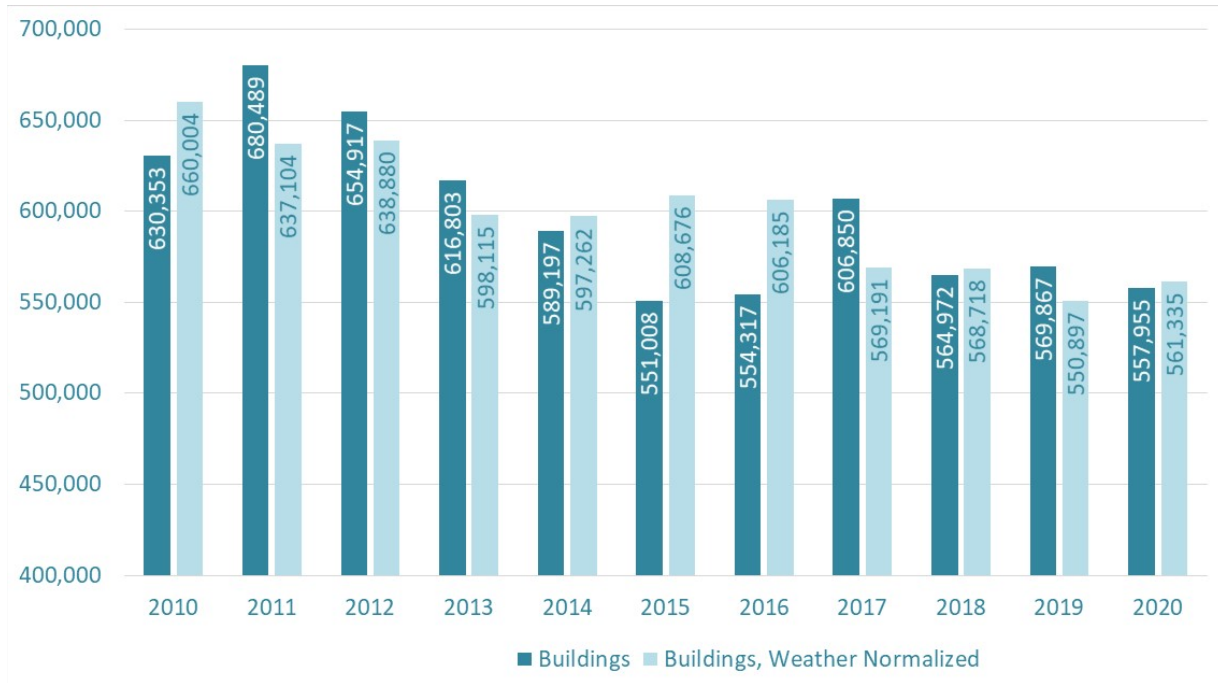


Figure 2. Fleet Emissions (tonnes CO₂e) Across the Public Sector 2010-2020

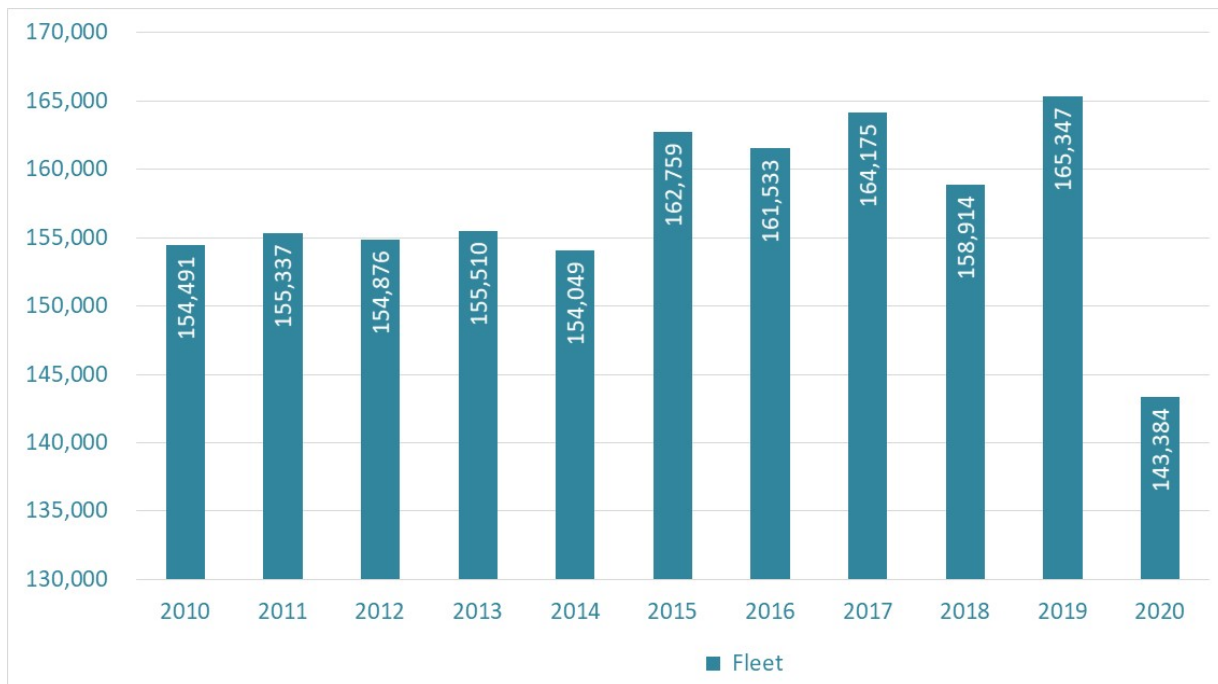


Table 1 below reports the B.C. public sector’s total 2020 emissions by source. For more information on how the B.C. public sector measures emissions, please refer to the [2020 Methodology for Quantifying Greenhouse Gas Emissions](#).

Table 2. 2020 Public Sector Emissions by GHG and by Source (tonnes CO₂e)

	Bio CO ₂ e Emissions	Non-Bio CO ₂ e Emissions	Total CO ₂ e Emissions
Scope 1			
Buildings (Direct Fuel Combustion)	11,324	508,296	519,620
Fleet (Mobile Energy Use)	7,520	135,865	143,384
Fugitive Emissions		1,071	1,071
Scope 2			
Buildings (Purchased Energy)		38,335	38,335
Scope 3			
Paper		12,116	12,116
Travel	27	2,193	2,220
TOTAL	18,869	697,876	716,745

Table 1 Notes:

- (1) Table 1 reports Scope 1, 2, and 3 emissions in accordance with international protocols.
 - a. Scope 1 emissions represent those produced from the combustion of fossil fuels (e.g., natural gas for heating, gasoline for vehicle fuels) and fugitive emissions (e.g., hydrofluorocarbons from air conditioning equipment).
 - b. Scope 2 emissions represent those produced by third parties in the production of energy purchased by B.C.’s PSOs (e.g., electricity).
 - c. Scope 3 emissions represent those produced by third parties in the production of goods and services purchased by B.C.’s PSOs (e.g., office paper, business travel³).
- (2) International protocols call for the separate reporting of biogenic emissions (Bio CO₂e) produced from the combustion of biogenic fuels (e.g., wood waste for heating, renewable vehicle fuels).
- (3) Non-bio CO₂e emissions in Table 1 include 68,394 emissions from public transit and school buses, which are offset exempt.
- (4) Due to rounding, numbers presented above may not add up precisely to the totals reported.

³ Only core government is required to measure, report and offset emissions from business travel.

Table 3. 2020 Emissions by Public Sector Organization (t CO₂e)

Public Sector Organization	Emissions	Offsettable Emissions	Bio CO ₂ e Emissions
BC PUBLIC SECTOR TOTAL	716,745	629,482	18,869
Provincial Government Total	51,506	50,902	604
Crown Corporations Total	149,375	88,421	5,323
BC Family Maintenance Agency	102	102	0
BC Financial Services Authority	72	72	0
BC Infrastructure Benefits	8	8	0
BC Assessment Authority	284	281	2
BC Council for International Education	5	5	0
BC Games Society	1	1	0
BC Housing Management Commission	28,290	28,274	16
BC Hydro	32,795	32,032	763
BC Liquor Distribution Branch	3,974	3,941	22
BC Lottery Corporation	817	816	1
BC Pavilion Corporation	3,030	2,991	39
BC Transit	61,391	1,374	4,465
British Columbia Securities Commission	312	312	0
Columbia Basin Trust	234	233	1
Columbia Power Corporation	5	5	0
Community Living British Columbia	309	247	0
Destination BC	49	49	0
First Peoples' Cultural Council	1	1	0
Forest Enhancement Society of BC	5	5	0
Forestry Innovation Investment	162	162	0
Industry Training Authority	54	54	0
Innovate BC	2	2	0
Insurance Corporation of BC	16,706	16,699	7
Knowledge Network Corporation	99	99	0
Legal Services Society	112	107	0
Oil and Gas Commission	346	339	7
Partnerships BC-Infrastructure BC Inc.	16	16	0
Real Estate Council of BC	47	47	0
Real Estate Foundation	85	85	0
Royal BC Museum	60	60	0
Transportation Investment Corporation	2	2	0
Health Authorities Total	221,681	221,063	615
BC Emergency Health Services	15,175	14,739	435
Fraser Health Authority	39,876	39,861	15
Interior Health Authority	40,362	40,320	42
Louis Brier Home & Hospital	773	773	0
Menno Hospital	503	503	0
Mount St. Mary Hospital	440	440	0
Nisga'a Valley Health Authority	184	181	3
Northern Health Authority	22,902	22,872	30
Providence Health Care	10,571	10,564	6
Provincial Health Services Authority	18,679	18,671	8
St. Joseph's General Hospital	895	895	0
St. Michael's Centre	364	364	0
Vancouver Coastal Health Authority	40,674	40,649	24
Vancouver Island Health Authority	30,283	30,231	52
School Districts Total	168,068	154,062	1,249
School District 05 - Southeast Kootenay	2,853	2,581	12
School District 06 - Rocky Mountain	1,344	1,332	1
School District 08 - Kootenay Lake	2,953	2,313	32
School District 10 - Arrow Lakes (Nakusp)	483	395	4
School District 19 - Revelstoke	339	304	2
School District 20 - Kootenay-Columbia	1,870	1,618	12
School District 22 - Vernon	2,665	2,417	16
School District 23 - Central Okanagan (Kelowna)	5,686	4,772	32
School District 27 - Cariboo-Chilcotin	3,147	2,139	49
School District 28 - Quesnel	1,583	1,165	19
School District 33 - Chilliwack	3,941	3,305	31
School District 34 - Abbotsford	3,854	3,310	36
School District 35 - Langley	5,325	5,090	18
School District 36 - Surrey	17,611	17,404	37
School District 37 - Delta	2,981	2,971	10
School District 38 - Richmond	6,109	5,953	15
School District 39 - Vancouver	14,449	14,245	204
School District 40 - New Westminster	1,888	1,843	3
School District 41 - Burnaby	5,258	5,251	7
School District 42 - Maple Ridge	3,617	3,612	5
School District 43 - Coquitlam	7,441	7,429	12

Public Sector Organization	Emissions	Offsettable Emissions	Bio CO ₂ e Emissions
School Districts (Cont'd)			
School District 44 - North Vancouver	4,105	4,071	5
School District 45 - West Vancouver	1,717	1,715	3
School District 46 - Sunshine Coast	818	815	3
School District 47 - Powell River	2,222	2,067	11
School District 48 - Sea to Sky	1,796	1,514	45
School District 49 - Central Coast	315	273	12
School District 50 - Haida Gwaii	554	516	6
School District 51 - Boundary	863	697	8
School District 52 - Prince Rupert	718	717	1
School District 53 - Okanagan Similkameen	989	785	11
School District 54 - Bulkley Valley	1,118	1,035	13
School District 57 - Prince George	5,505	5,492	13
School District 58 - Nicola-Similkameen	1,045	867	8
School District 59 - Peace River South (Dawson Creek)	2,660	2,298	21
School District 60 - Peace River North (Fort St. John)	4,051	3,487	29
School District 61 - Greater Victoria	5,191	5,178	12
School District 62 - Sooke	2,098	1,722	24
School District 63 - Saanich	1,829	1,561	17
School District 64 - Gulf Islands	327	208	20
School District 67 - Okanagan Skaha (Penticton)	1,470	1,330	11
School District 68 - Nanaimo-Ladysmith	3,453	3,138	25
School District 69 - Qualicum	1,628	1,304	15
School District 70 - Alberni	948	884	9
School District 71 - Comox Valley	1,934	1,928	6
School District 72 - Campbell River	2,075	1,821	16
School District 73 - Kamloops / Thompson	5,943	4,898	58
School District 74 - Gold Trail	904	600	14
School District 75 - Mission	2,034	1,792	12
School District 78 - Fraser - Cascade	732	585	9
School District 79 - Cowichan Valley	2,191	1,670	110
School District 81 - Fort Nelson	699	695	4
School District 82 - Coast Mountain	2,367	2,358	7
School District 83 - North Okanagan-Shuswap	2,847	1,986	34
School District 84 - Vancouver Island West	175	142	7
School District 85 - Vancouver Island North	705	616	6
School District 87 - Stikine	340	339	1
School District 91 - Nechako Lakes	2,980	2,338	28
School District 92 - Nisga'a	128	81	3
School District 93 - Conseil Francophone	1,197	1,090	55
Universities & Colleges Total	126,117	115,034	11,074
British Columbia Institute of Technology	7,368	7,365	4
Camosun College	2,009	2,009	1
Capilano University	1,250	1,249	2
Coast Mountain College	1,085	1,082	2
College of New Caledonia	2,013	2,012	1
College of the Rockies	804	797	1
Douglas College	1,641	1,641	0
Emily Carr University of Art and Design	91	91	0
Justice Institute of BC	546	544	2
Kwantlen Polytechnic University	2,470	2,466	3
Langara College	1,305	1,305	0
Nicola Valley Institute of Technology	237	236	1
Northern Lights College	2,151	2,148	2
North Island College	864	864	0
Okanagan College	906	905	1
Royal Roads University	889	888	1
Selkirk College	1,056	1,055	1
Simon Fraser University	12,520	12,512	8
Thompson Rivers University	3,379	3,375	4
University of British Columbia	60,316	52,134	8,182
University of Northern British Columbia	6,351	3,512	2,839
University of the Fraser Valley	2,164	2,163	1
University of Victoria	10,855	10,846	9
Vancouver Community College	1,226	1,226	0
Vancouver Island University	2,621	2,609	9

Notes:

- Due to rounding, numbers presented in Table 2 for each organization may not add up precisely to the totals reported.
- B.C.'s Crown Corporations, schools, universities, colleges and health facilities purchase offsets from the Ministry of Environment & Climate Change Strategy at \$25 per tonne of CO₂e to become carbon neutral.
- Emissions from public transit and school buses are offset exempt.
- Bio CO₂e emissions are produced from the combustion of biogenic fuels (e.g., wood waste for heating, renewable vehicle fuels) and are also offset exempt.
- In addition to the 629,482 offsets required for 2020, an additional 2,722 offsets were retired to reflect adjustments to previously reported years to ensure all regulated emissions were accounted for.

Table 4. Portfolio of Offset Projects for the 2020 Carbon Neutral Government Commitment

Project	Portfolio of Offset Projects for the 2020 Carbon Neutral Government Commitment				
	Sector	Project Type	Price / Tonne	Tonnes CO ₂ e	\$ Value
Low Emissions Facility ARC Resources, Dawson Creek	Oil and Gas	Fuel Switching	\$8.00	50,000	\$400,000.00
Electrification of Gas Production Plant (Noel) Blue Source, Dawson Creek	Oil and Gas	Fuel Switching	\$8.00	13,843	\$110,744.00
Electrification of Gas Processing Plant (Septimus) Blue Source, Taylor	Oil and Gas	Fuel Switching	\$8.00	62,865	\$502,920.00
Engine Fuel Gas Management (REMVue) Blue Source, Northeastern BC	Oil and Gas	Energy Efficiency	\$11.00	1,000	\$11,000.00
Natural Gas to Biomass Fuel Switch Canfor B.C. Sawmills – Elko, Prince George, Fort St. John, Chetwynd, Mackenzie	Forest – Industry	Fuel Switching	\$8.50	20,007	\$170,059.50
Cheakamus Community Forest Cheakamus Community Forest Society, Whistler	Forestry – Land Use	Sequestration	\$14.00	7,712	\$107,968.00
Forest Conservation/Improved Forest Management Great Bear Rainforest, Haida Gwaii	Forestry – Land Use	Sequestration	\$12.00	200,000	\$2,400,000.00
Forest Conservation/Improved Forest Management Great Bear Rainforest, North and Central Mid-Coast	Forestry – Land Use	Sequestration	\$12.00	122,214	\$1,466,568.00
Forest Conservation/Improved Forest Management Great Bear Rainforest, North and Central Mid-Coast	Forestry – Land Use	Sequestration	\$9.00	11,104	\$99,936.00
Forest Conservation/Improved Forest Management Great Bear Rainforest, South Central Coast	Forestry – Land Use	Sequestration	\$12.00	136,079	\$1,632,948.00
Clean Tech Biomass Gasification Kruger Products, New Westminster	Forest – Industry	Fuel Switching	\$15.00	1,500	\$22,500.00
Landfill Gas Collection Columbia Shuswap Regional District, Salmon Arm	Waste – Landfill	GHG Destruction	\$13.00	3,000	\$39,000.00
Switching to Biomass/Installing Energy Curtains Sun Select, Delta	Agriculture	Fuel Switching	\$11.00	1,000	\$11,000.00
Bus Fuel Efficiency Project Translink, Metro Vancouver	Transportation	Energy Efficiency	\$13.00	1,880	\$24,440.00
GRAND TOTAL				632,204	\$6,999,083.50