

2018 Carbon Neutral Government Year in Review 2018: Summary

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

B.C.'s legislated carbon neutral government commitment is a significant *first* in North America – one that's reducing emissions, saving energy costs, and spurring the development of clean technology and new jobs.

Facts for 2018:

- For the 2018 reporting year¹, B.C.'s 127 PSOs generated 749,544 tonnes of GHG emissions from their operations. (Refer to Tables 2 and 3 below).
- This represents a reduction of 63,619 tonnes compared to the baseline year of 2010, equivalent to taking nearly 22,700 cars off the road for a year.²
- To achieve carbon neutrality, government purchases offsets that include emission reductions from project investments in nearly every region and sector of the province.
- For the 2018 reporting year, offsets were sourced from projects involving energy efficiency, fuel switching and sequestration (refer to Table 4 below).
- B.C.'s emission offset portfolio has resulted in total emissions reductions of approximately 6.2 million tonnes of carbon dioxide equivalent between 2010 and 2018, equivalent to the emissions from 2.2 million cars in one year.

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

¹ The 2018 reporting year is equivalent to the 2018 calendar year.

² The provincial government changed the way it calculates the car equivalent for government's GHG emissions. Previously, the factor used was 4.7 tonnes per car per year, from the U.S. Environmental Protection Agency. The Province now calculates the equivalent using 2.8 tonnes per car per year, which better reflects B.C.-based data.

Carbon Neutral Capital Program

The Carbon Neutral Capital Program (CNC) was introduced in 2012/13 to help school districts throughout B.C. implement energy-saving activities and technologies. In 2014/15, the CNC was expanded to include funding for B.C.'s health authorities and post-secondary institutions. In 2018, a total of \$14.5 million was distributed to the public health, education and post secondary sectors. Since its inception, the CNC has distributed \$82.5 million to finance energy efficiency projects that will continue to reduce emissions and save money into the future.

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 generate approximately 75 percent of B.C.'s total provincial public sector emissions. The year-to-year weather changes affects 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. Facilitating greater emissions reductions means understanding how buildings perform outside of weather-related impacts.

2018's Weather Impact

Climate change is being felt across B.C. as average temperatures are increasingly variable, and extreme weather is becoming more frequent. In 2018, temperature records were surpassed across the province as B.C. experienced record-breaking heat waves and cold snaps. Despite the record-setting events, B.C. generally had a warmer winter and cooler summer in 2018 compared to 2017. On this note, it is important to gauge energy use trends in buildings using weather normalized data. Since 2008, 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, demand for cooling was 40 percent greater in 2018 than the weather normalized baseline (1981-2010).

Table 1. Building Emissions (tCO₂e) Across the Public Sector 2010-2018

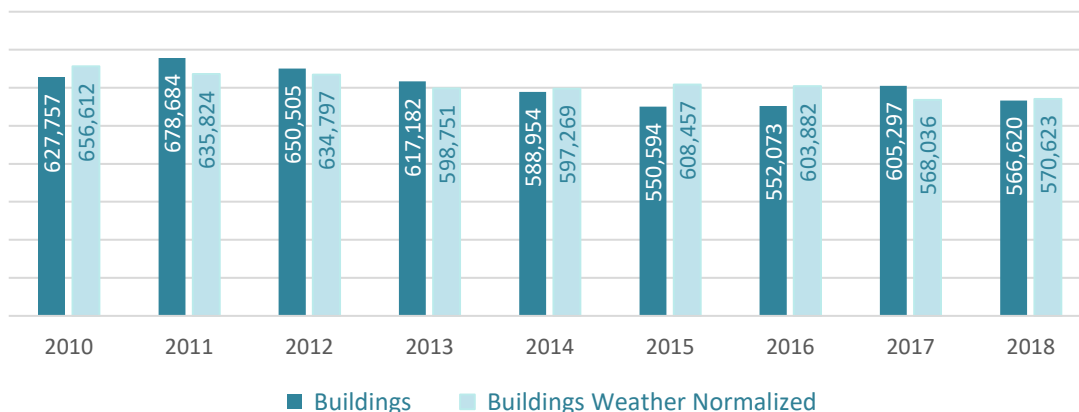


Table 2 below reports the B.C. public sector’s emissions by GHG and by source as well as the total offsets purchased and retired to become carbon neutral for the 2018 reporting year. Under the Regulation, some reported emissions do not require the purchase of offsets in order to reach carbon neutrality. A total of 109,657 emissions were offset exempt, including 31,455 tonnes of bio-CO₂e from the combustion of biogenic fuels (e.g., biomass) and 78,202 tonnes of CO₂e from transit and school buses.

For more information on how the B.C. public sector measures emissions, please refer to the [2018 B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions](#).

	Emissions by GHG (tonnes CO ₂ e)					Total Emissions (tonnes CO ₂ e)	
	Fossil CO ₂	Bio-CO ₂	CH ₄	N ₂ O	HFCs	Emissions	Offsets
Scope 1	643,648	31,455	1,571	7,802	93	684,564	574,907
Buildings	496,283	26,049	306	3,379	93	526,055	500,006
Fleet	147,272	5,406	1,265	4,422	0	158,416	74,808
Scope 2							
Buildings	40,503	0	5	57	0	40,565	40,565
Scope 3							
Paper	16,772	0	0	0	0	16,772	16,772
Travel	7,644	0	0	0	0	7,644	7,644
Total	708,566	31,455	1,576	7,858	93	749,544	639,887

- (1) Public sector emissions of methane (CH₄), nitrous oxide (N₂O), and hydrofluorocarbons (HFCs) are expressed in terms of their tonnes of carbon dioxide equivalent (tonnes CO₂e, or tCO₂e), a standard unit of measure for quantifying the global warming impact of the different GHGs.
- (2) Table 2 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).
- (3) International protocols call for the separate reporting of Bio-CO₂ emissions produced from the combustion of biogenic fuels (e.g., wood waste for heating, renewable vehicle fuels).

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

Table 3. 2018 Emissions by Public Sector Organization (tonnes CO₂e)

	<i>Emissions</i>	<i>Offsettable Emissions</i>
BC PUBLIC SECTOR TOTAL	749,544	639,887
Provincial Government Total	64,868	64,188
Crown Corporations Total	153,594	93,198
BC Assessment Authority	398	393
BC Council for International Education	6	6
BC Games Society	1	1
BC Housing Management Commission	22,488	22,475
BC Hydro	33,615	32,820
BC Innovation Council	2	2
BC Liquor Distribution Branch	3,817	3,797
BC Lottery Corporation	907	905
BC Pavilion Corporation	3,752	3,751
BC Transit	60,650	1,118
British Columbia Securities Commission	240	240
Columbia Basin Trust	111	111
Columbia Power Corporation	25	25
Community Living British Columbia	468	465
Destination BC	58	58
First People's Heritage, Language & Culture Council	2	2
Forest Enhancement Society of British Columbia	14	14
Forestry Innovation Investment	165	165
Industry Training Authority	63	63
Innovate BC	2	2
Insurance Corporation of BC	26,034	26,019
Knowledge Network Corporation	100	100
Legal Services Society	70	70
Oil and Gas Commission	447	437
Partnerships BC	19	19
Real Estate Council of BC	58	58
Real Estate Foundation	1	1
Royal BC Museum	80	80
Transportation Investment Corporation	6	6
Health Authority Total	221,859	220,375
BC Emergency Health Services	15,700	15,253
Fraser Health Authority	37,384	37,348
Interior Health Authority	41,822	41,772
Louis Brier Home & Hospital	650	650

Public Sector Organization	<i>Emissions</i>	<i>Offsettable Emissions</i>
Menno Hospital	538	538
Mount St. Mary Hospital	440	440
Nisga'a Valley Health Authority	116	116
Northern Health Authority	22,542	22,512
Providence Health Care	11,638	11,634
Provincial Health Services Authority	19,355	19,341
St. Joseph's General Hospital	814	813
St. Michael's Centre	345	345
Vancouver Coastal Health Authority	40,775	40,731
Vancouver Island Health Authority	29,738	28,880
School Districts Total	170,232	148,336
School District 05 - Southeast Kootenay	3,055	2,436
School District 06 - Rocky Mountain	2,047	1,506
School District 08 - Kootenay Lake	3,261	2,348
School District 10 - Arrow Lakes (Nakusp)	361	243
School District 19 - Revelstoke	284	210
School District 20 - Kootenay-Columbia	2,099	1,556
School District 22 - Vernon	2,550	1,826
School District 23 - Central Okanagan (Kelowna)	5,557	4,309
School District 27 - Cariboo-Chilcoltin	3,678	2,302
School District 28 - Quesnel School	1,762	1,156
School District 33 - Chilliwack	3,717	2,802
School District 34 - Abbotsford	3,993	3,290
School District 35 - Langley	6,026	5,525
School District 36 - Surrey	16,708	16,488
School District 37 - Delta	2,594	2,587
School District 38 - Richmond	4,926	4,692
School District 39 - Vancouver	14,924	14,903
School District 40 - New Westminster	1,796	1,793
School District 41 - Burnaby	5,266	5,259
School District 42 - Maple Ridge	3,380	3,374
School District 43 - Coquitlam	7,083	7,073
School District 44 - North Vancouver	3,569	3,496
School District 45 - West Vancouver	1,490	1,488
School District 46 - Sunshine Coast	703	700
School District 47 - Powell River	1,019	785
School District 48 - Sea to Sky	1,908	1,493

Public Sector Organization	Emissions	Offsettable Emissions
School District 49 - Central Coast	382	313
School District 50 - Haida Gwaii	548	521
School District 51 - Boundary	894	659
School District 52 - Prince Rupert	683	682
School District 53 - Okanagan Similkameen	818	649
School District 54 - Bulkley Valley	1,259	883
School District 57 - Prince George	5,241	5,229
School District 58 - Nicola-Similkameen	1,125	887
School District 59 - Peace River South (Dawson Creek)	3,830	2,724
School District 60 - Peace River North (Fort St. John)	4,089	2,795
School District 61 - Greater Victoria	4,868	4,849
School District 62 - Sooke	2,525	1,7161
School District 63 - Saanich	1,893	1,487
School District 64 - Gulf Islands	352	184
School District 67 - Okanagan Skaha (Penticton)	1,691	1,594
School District 68 - Nanaimo-Ladysmith	3,312	3,245
School District 69 - Qualicum	1,945	1,442
School District 70 - Alberni	927	805
School District 71 - Comox Valley	1,962	1,956
School District 72 - Campbell River	2,409	2,025
School District 73 - Kamloops / Thompson	6,460	4,718
School District 74 - Gold Trail	1,085	617
School District 75 - Mission	2,019	1,614
School District 78 - Fraser - Cascade	960	736
School District 79 - Cowichan Valley	2,167	1,783
School District 81 - Fort Nelson	598	590
School District 82 - Coast Mountain	2,778	2,772
School District 83 - North Okanagan Shuswap	3,415	2,241
School District 84 - Vancouver Island West	198	154
School District 85 - Vancouver Island North	771	622
School District 87 - Stikine	349	348
School District 91 - Nechako Lakes	3,493	2,458
School District 92 - Nisga'a	87	59
School District 93 - Conseil Francophone	1,345	1,345

Public Sector Organization	Emissions	Offsettable Emissions
Universities & Colleges Total	138,990	113,790
British Columbia Institute of Technology	8,324	8,317
Camosun College	1,990	1,990
Capilano University	1,476	1,475
Coast Mount College	970	963
College of New Caledonia	2,932	2,930
College of the Rockies	799	781
Douglas College	1,519	1,519
Emily Carr University of Art and Design	280	280
Justice Institute of BC	628	625
Kwantlen Polytechnic University	2,423	2,422
Langara College	1,425	1,425
Nicola Valley Institute of Technology	431	429
North Island College	911	911
Northern Lights College	1,029	1,0267
Okanagan College	1,237	1,236
Royal Roads University	1,125	1,116
Selkirk College	1,162	1,161
Simon Fraser University	14,650	14,639
Thompson Rivers University	3,715	3,710
University of British Columbia	66,258	46,553
University of Northern British Columbia	7,199	1,815
University of The Fraser Valley	2,381	2,380
University of Victoria	11,603	11,587
Vancouver Community College	1,530	1,530
Vancouver Island University	2,995	2,974

- Due to rounding, numbers presented above may not add up precisely to the totals reported.
- B.C.'s PSOs purchase offsets from the Ministry of Environment & Climate Change Strategy at \$25 per tonne of CO₂e to become carbon neutral.
- In addition to the 639,887 offsets required for 2018, the Ministry retired an additional 4,746 offsets that reflect routine adjustments to previously reported years to ensure all regulated emissions were accounted for.

Table 4. Portfolio of Offset Projects for the 2018 Carbon Neutral Government Commitment

Project	Sector	Project Type	Price / Tonne	Tonnes CO₂e	Value
Low Emissions Facility ARC Resources, Dawson Creek	Oil and Gas	Fuel Switching	\$8.00	53,992	\$431,936.00
Electrification of Gas Production Plant (Noel) Blue Source, Dawson Creek	Oil and Gas	Fuel Switching	\$8.50	7,674	\$65,229.00
Electrification of Gas Processing Plant (Septimus) Blue Source, Taylor	Oil and Gas	Fuel Switching	\$8.50	20,000	\$170,000.00
Engine Fuel Gas Management (REMvue) Blue Source, Northeastern BC	Oil and Gas	Energy Efficiency	\$11.00	2,529	\$27,819.00
Natural Gas to Biomass Fuel Switch Canfor B.C. Sawmills – Elko, Prince George, Fort St. John, Chetwynd, Mackenzie	Forest – Industry	Fuel Switching	\$10.00	70,512	\$705,120.00
Forest Conservation/Improved Forest Management Great Bear Rainforest, Haida Gwaii	Forestry – Land Use	Sequestration	\$12.00	94,079	\$1,128,948.00
Forest Conservation/Improved Forest Management Great Bear Rainforest, North and Central Mid-Coast	Forestry – Land Use	Sequestration	\$12.00	313,036	\$3,756,432.00
Forest Conservation/Improved Forest Management Great Bear Rainforest, South Central Coast	Forestry – Land Use	Sequestration	\$12.00	50,450	\$605,400.00
Clean Tech Biomass Gasification Kruger Products, New Westminster	Forest – Industry	Fuel Switching	\$15.00	24,768	\$371,520.00
Forest Conservation Offsetters Clean Technology, Quadra Island	Forestry – Land Use	Sequestration	\$12.00	1,000	\$12,000.00
Switching to Biomass/Installing Energy Curtains Sun Select Delta, Delta	Agriculture	Fuel Switching	\$11.00	3,222	\$35,442.00
Bus Fuel Efficiency Project Translink, Metro Vancouver	Transportation	Energy Efficiency	\$13.00	3,371	\$43,823.00
Grand Total				644,633	\$7,353,669.00