



# Public Sector Climate Leadership 2022 Year in Review

## Introduction

Under the legislated, **award-winning Carbon Neutral Government program**, B.C.'s public sector must maintain a net impact of zero greenhouse gas (GHG) emissions. Public sector organizations (PSOs) include health authorities, school districts, universities, colleges, institutes, Crown corporations and government offices. **2022 marked the 13th consecutive year of public sector carbon neutrality in B.C.**

This Year in Review highlights actions taken by PSOs in 2022 to reduce emissions in line with public sector CleanBC targets. This report also summarizes the emissions reported by PSOs over the 2022 calendar year with a breakdown by sector and source, including weather normalized building emissions. Further details of emissions by PSO and the offsets portfolio for Carbon Neutral Government 2022 are included in the Appendix.

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## Background

The B.C. public sector plays an important role as a climate action leader by adopting innovative policies, setting ambitious targets, and testing novel approaches. The 2018 CleanBC Plan commits government to two key emission targets for the public sector to reach by 2030, compared to the 2010 baseline:



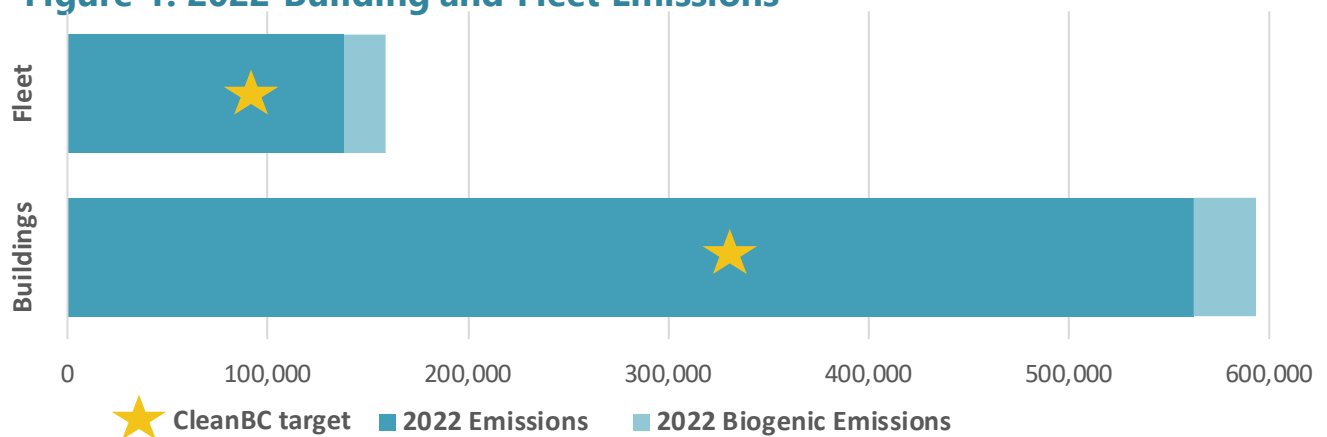
For the 2022 reporting year, the B.C. Provincial Government and 129 public sector organizations (PSOs) reported 768,908 tonnes of emissions of carbon dioxide equivalents (tCO<sub>2</sub>e) from their operations.

## Progress to Targets

While the B.C. public sector is making some progress in reducing emissions, significant action is still needed to achieve CleanBC targets. **In 2022, building emissions were 11 percent less and fleet emissions were three percent more than 2010 levels.** Although some biogenic fuels<sup>1</sup> have been adopted, it has not been sufficient to bring the public sector markedly closer to the 2030 CleanBC targets.

While paper and travel do not have specific CleanBC targets, emissions from paper have decreased by 33 percent and travel by 70 percent compared to 2010 levels.






**Figure 1. 2022 Building and Fleet Emissions**



<sup>1</sup> Biogenic fuels are derived from biologically based materials other than fossil fuels, peat, and minerals ([US EPA, 2011](#)). Examples include wood waste for heating and renewable diesel or ethanol for vehicles.

## Closing the Gap

To advance towards the CleanBC Roadmap to 2030's public sector climate goals, the CleanBC roadmap outlines specific climate action policies and public sector commitments:

-  Transform the existing building portfolio to a low-carbon and climate resilient standard.
-  Zero-carbon new buildings after 2027.
-  Zero-emission vehicles (ZEVs) accounting for 100% of light-duty vehicle acquisitions by 2027.
-  Convert light-duty fleet to ZEVs by 2035 and medium, heavy-duty fleet to ZEVs by 2040.
-  Factor climate considerations into government decision-making, focusing on climate-resilient, low or zero-carbon projects.

## 2022 Key Highlights

- New standards require all new public sector buildings and reconstruction projects to be designed to be resilient to climate impacts, meet a green building standard, and include electric vehicle charging infrastructure. After 2027, the standard requires projects to also be designed to use 100 percent clean energy for primary space and water heating.
- There were 57 new public sector buildings, building additions or major alterations to existing buildings completed in 2022 that achieved a certification or standard related to energy and carbon performance: 43 projects met the BC Housing Design standard, 13 projects attained LEED Gold certification, and one project achieved both LEED Gold and Passive House certification.
- The Carbon Neutral Capital Program funded \$56 million in energy saving activities and technologies at PSO buildings, such as improved heating, ventilation and air-conditioning systems, solar panels, and electric vehicle charging stations.
- ZEVs accounted for 26 percent of Provincial government light-duty vehicle acquisitions in 2022 but only eight percent of total public sector light-duty vehicle purchases.
- School Districts ordered an additional 19 electric school buses in the 2022/23 fiscal year, bringing the province-wide total to 71.

## Carbon Neutral Government

**B.C.’s Carbon Neutral Government (CNG) program, the first in North America**, is the essential mechanism that allows the public sector to track progress on emission reductions. Under the CNG program, each PSO:

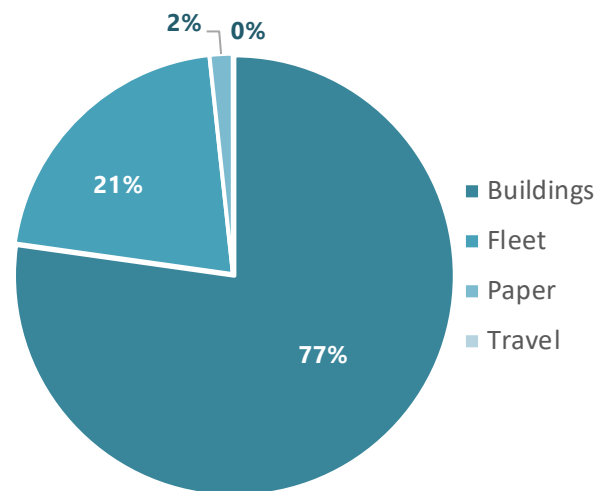
- Measures GHG emissions from their operations,
- Plans and takes action to reduce those emissions,
- Purchases offsets to achieve net zero emissions, and
- Reports publicly through an individual PSO-specific Climate Change Accountability Report.

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

### Public Sector Emissions

Buildings have been the source of over 75 percent of total public sector emissions every year since the beginning of the CNG Program. The figure to the right breaks down 2022 public sector emissions by source.

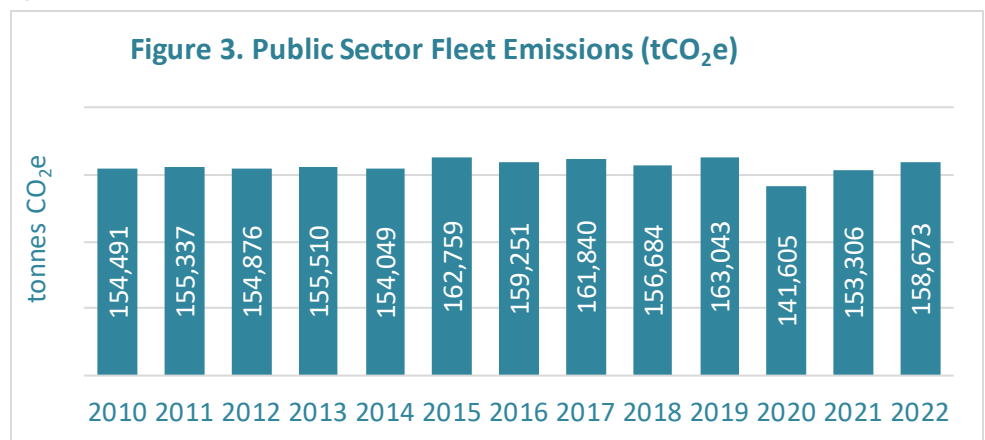
**Figure 2. 2022 Emissions by Source**



Fleets comprised 21 percent of public sector emissions in 2022. Heavy-duty vehicles make up 79 percent of fleet emissions, while light-duty trucks account for 16 percent, light-duty vehicles four percent, and off-road vehicles one percent.

Transit and school bus emissions make up 44 percent of total public sector fleet emissions. Figure 3 illustrates the year over year fleet emissions trend.

**Figure 3. Public Sector Fleet Emissions (tCO<sub>2</sub>e)**



Carbon offsets were sourced from projects involving sequestration, fuel switching, and energy efficiency. The CNG carbon offset portfolio has offset emissions of over 8.7 million tCO<sub>2</sub>e from the provincial public sector between 2010 and 2022.

To weather normalize building emissions, the average temperature profile for a 30-year period is used to normalize the energy needed to heat or cool buildings, based on temperature differences above or below 15°C.

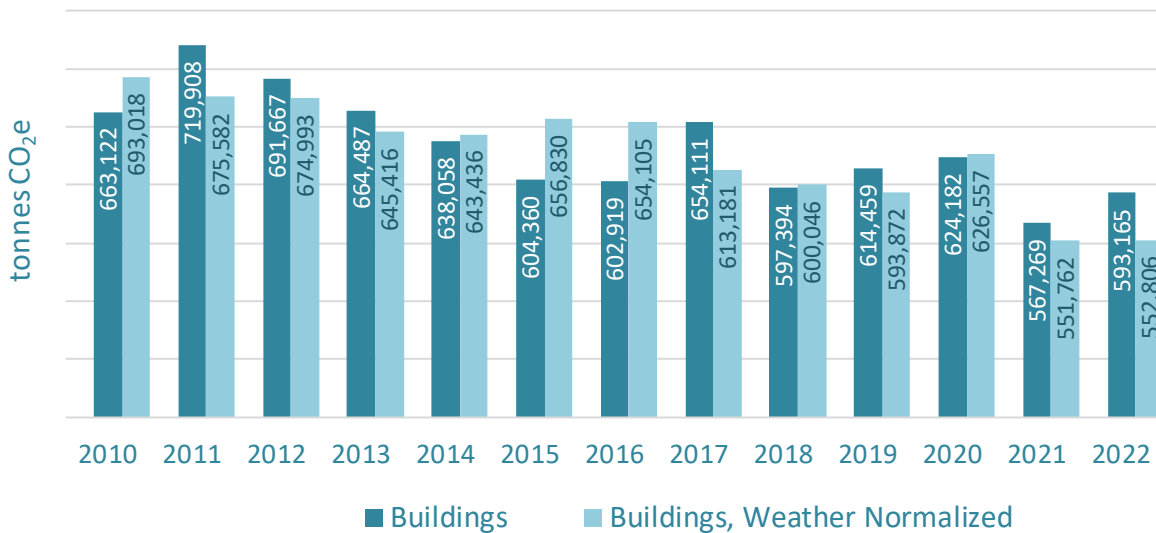
## Weather Normalization

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 – a practice known as weather normalization. An improved understanding of building emissions trends and net of weather-related impacts helps PSOs determine the level of progress being made towards reducing GHG emissions.

### 2022 Weather Impact

Climate change is being felt across B.C., as average temperatures are trending upwards and extreme weather is becoming more frequent. 2022 saw record-breaking temperatures in the summer and winter. Compared to the previous 12 years of the CNG program, 2022 tied 2011 for the year with the greatest heating demand and placed third after 2021 and 2015 for the year with the greatest cooling demand.<sup>2</sup> Figure 4 shows that, had 2022’s climate been similar to the average climate conditions in the baseline period used (1981 to 2010), emissions would have been 40,000 tCO<sub>2</sub>e lower in 2022 than actual emissions reported.

**Figure 4. Weather-Normalized Building Emissions**



<sup>2</sup> Energy requirements for heating and cooling buildings are measured in Heating Degree Days (HDD) and Cooling Degree Days (CDD), the difference between the average daily outdoor temperature and 15°C, the outdoor temperature at which the building would neither need heating or cooling. A day with an average outdoor temperature of 10°C contributes 5 HDD while a 20°C average day contributes 5 CDD.

## Appendix A - Summary of Emissions and Offsets

**Table 1. 2022 Public Sector Emissions by GHG and by Source (tCO<sub>2</sub>e)**

	Bio Emissions	Non-Bio Emissions	Total Emissions
<b>Scope 1</b>			
Buildings (Direct Fuel Combustion)	31,476	515,021	546,497
Fleet (Mobile Energy Use)	20,596	138,077	158,673
Fugitive Emissions		443	443
<b>Scope 2</b>			
Buildings (Purchased Energy)		46,668	46,668
<b>Scope 3</b>			
Paper		13,498	13,498
Travel	27	3,102	3,129
<b>TOTAL</b>	<b>52,097</b>	<b>716,811</b>	<b>768,908</b>

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 travel<sup>3</sup>).
- (2) International protocols call for the separate reporting of biogenic emissions (Bio CO<sub>2</sub>e) produced from the combustion of biogenic fuels (e.g., wood waste for heating, renewable vehicle fuels).
- (3) For more information on how the B.C. public sector measures emissions, please refer to the [2022 Methodology for Quantifying Greenhouse Gas Emissions](#).
- (4) Non-bio CO<sub>2</sub>e emissions in Table 1 include 68,738 tCO<sub>2</sub>e emissions from public transit and school buses, which are offset exempt.
- (5) Due to rounding, numbers presented above may not add up precisely to the totals reported.

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

**Table 2. 2022 Emissions by Public Sector Organization (tCO<sub>2</sub>e)**

Public Sector Organization	Emissions	Offsetable Emissions	Bio-CO <sub>2</sub> e Emissions
<b>BC PUBLIC SECTOR TOTAL</b>	<b>768,908</b>	<b>648,073</b>	<b>52,097</b>
<b>Provincial Government Total</b>	<b>52,416</b>	<b>51,343</b>	<b>1,073</b>
<b>Crown Corporations Total</b>	<b>153,765</b>	<b>88,147</b>	<b>18,012</b>
BC Family Maintenance Agency	23	23	0
BC Financial Services Authority	71	71	0
BC Infrastructure Benefits	37	36	1
BC Assessment Authority	299	297	2
BC Council for International Education	5	5	0
BC Games Society	2	2	0
BC Housing Management Commission	30,970	30,953	17
BC Hydro	32,639	31,871	768
BC Liquor Distribution Branch	3,781	3,734	17
BC Lottery Corporation	887	881	6
BC Pavilion Corporation	4,328	4,282	46
BC Transit	66,346	1,641	17,138
British Columbia Securities Commission	223	223	0
Columbia Basin Trust	338	338	0
Columbia Power Corporation	2	2	0
Community Living British Columbia	185	184	2
Destination BC	53	53	0
First People's Cultural Council	1	1	0
Forest Enhancement Society of BC	3	3	0
Forestry Innovation Investment	132	132	0
SkilledTradesBC	50	50	0
Innovate BC	19	19	0
Insurance Corporation of BC	12,686	12,677	9
Knowledge Network Corporation	98	98	0
Legal Services Society	113	108	0
BC Energy Regulator	349	343	6
Infrastructure BC Inc.	16	16	0
InBC Investment Corp	1	1	0
Real Estate Foundation	1	1	0
Royal BC Museum	91	90	0
Transportation Investment Corporation	16	12	0
<b>Health Authorities Total</b>	<b>232,776</b>	<b>230,690</b>	<b>2,087</b>
BC Emergency Health Services	16,578	16,109	469
Fraser Health Authority	42,299	42,260	39
Interior Health Authority	45,003	43,843	1,160
Louis Brier Home & Hospital	938	938	0
Menno Hospital	516	515	0
Mount St. Mary Hospital	405	405	0
Nisga'a Valley Health Authority	386	205	182
Northern Health Authority	22,470	22,435	35
Providence Health Care	10,512	10,459	53
Provincial Health Services Authority	19,230	19,202	27
St. Michael's Centre	375	375	0
Vancouver Coastal Health Authority	44,563	44,507	57
Vancouver Island Health Authority	29,501	29,437	65
<b>School Districts Total</b>	<b>193,072</b>	<b>170,572</b>	<b>1,386</b>
School District 05 - Southeast Kootenay	3,384	2,864	21
School District 06 - Rocky Mountain	2,031	1,529	22
School District 08 - Kootenay Lake	3,973	3,285	40
School District 10 - Arrow Lakes	382	201	7
School District 19 - Revelstoke	487	418	3
School District 20 - Kootenay-Columbia	1,541	1,306	11
School District 22 - Vernon	2,802	2,244	34
School District 23 - Central Okanagan	7,003	5,566	46
School District 27 - Cariboo-Chilcotin	3,561	2,273	58
School District 28 - Quesnel School	2,204	1,034	47
School District 33 - Chilliwack	4,737	3,819	42
School District 34 - Abbotsford	4,867	4,057	51
School District 35 - Langley	5,911	5,471	21
School District 36 - Surrey	19,679	19,399	38
School District 37 - Delta	3,082	3,073	9
School District 38 - Richmond	6,494	6,333	14
School District 39 - Vancouver	17,664	17,484	180
School District 40 - New Westminster	1,316	1,042	2
School District 41 - Burnaby	6,721	6,715	6
School District 42 - Maple Ridge	4,198	4,193	5
School District 43 - Coquitlam	8,267	8,236	11
School District 44 - North Vancouver	4,612	4,558	5
School District 45 - West Vancouver	1,822	1,818	4
School District 46 - Sunshine Coast	838	833	4
School District 47 - Powell River	1,110	884	13
School District 48 - Sea to Sky	1,905	1,564	21
School District 49 - Central Coast	356	293	12

Public Sector Organization	Emissions	Offsetable Emissions	Bio-CO <sub>2</sub> e Emissions
<b>School Districts (Cont'd)</b>			
School District 50 - Haida Gwaii	857	794	8
School District 51 - Boundary	1,354	1,163	11
School District 52 - Prince Rupert	764	761	3
School District 53 - Okanagan Similkameen	1,100	813	13
School District 54 - Bulkley Valley	1,159	1,141	18
School District 57 - Prince George	5,780	5,768	12
School District 58 - Nicola-Similkameen	1,332	1,079	11
School District 59 - Peace River South	2,879	1,987	37
School District 60 - Peace River North	6,185	3,559	99
School District 61 - Greater Victoria	5,654	5,642	13
School District 62 - Sooke	2,033	1,649	26
School District 63 - Saanich	2,343	1,941	20
School District 64 - Gulf Islands	339	202	7
School District 67 - Okanagan Skaha	1,561	1,391	10
School District 68 - Nanaimo-Ladysmith	4,188	3,741	39
School District 69 - Qualicum	2,140	1,644	21
School District 70 - Alberni	1,025	938	11
School District 71 - Comox Valley	2,147	2,140	6
School District 72 - Campbell River	2,282	1,917	22
School District 73 - Kamloops-Thompson	7,585	6,077	75
School District 74 - Gold Trail	915	561	16
School District 75 - Mission	2,222	1,867	17
School District 78 - Fraser-Cascade	762	580	10
School District 79 - Cowichan Valley	2,666	2,053	37
School District 81 - Fort Nelson	915	906	1
School District 82 - Coast Mountain	2,288	2,260	11
School District 83 - North Okanagan-Shuswap	3,989	2,839	44
School District 84 - Vancouver Island West	135	115	4
School District 85 - Vancouver Island North	863	720	8
School District 87 - Stikine	377	376	1
School District 91 - Nechako Lakes	2,805	1,989	35
School District 92 - Nisga'a	170	157	13
School District 93 - Conseil Francophone	1,311	1,310	0
<b>Universities &amp; Colleges Total</b>	<b>136,879</b>	<b>107,321</b>	<b>29,539</b>
British Columbia Institute of Technology	7,428	7,424	4
Camosun College	2,343	2,342	2
Capilano University	1,382	1,380	1
Coast Mountain College	935	932	3
College of New Caledonia	1,821	1,820	1
College of the Rockies	1,077	1,065	1
Douglas College	1,817	1,817	0
Emily Carr University of Art and Design	86	86	0
Justice Institute of BC	693	690	3
Kwantlen Polytechnic University	2,694	2,693	1
Langara College	1,477	1,477	0
Nicola Valley Institute of Technology	132	131	1
Northern Lights College	2,103	2,100	3
North Island College	945	944	0
Okanagan College	1,387	1,386	1
Royal Roads University	1,016	1,014	1
Selkirk College	1,194	1,193	1
Simon Fraser University	9,231	9,187	44
Thompson Rivers University	3,858	1,942	1,916
University of British Columbia	68,742	46,617	22,126
University of Northern British Columbia	7,524	2,115	5,409
University of The Fraser Valley	2,474	2,473	1
University of Victoria	11,943	11,932	11
Vancouver Community College	1,358	1,358	0
Vancouver Island University	3,219	3,203	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 and Climate Change Strategy at \$25 per tonne of CO<sub>2</sub>e to become carbon neutral.
- Emissions from public transit and school buses are offset exempt.
- Bio CO<sub>2</sub>e emissions are produced from the combustion of biogenic fuels (and are offset exempt).
- A total of 648,933 offsets were included in the Portfolio of Offset Projects for the 2022 Carbon Neutral Government Commitment (see Table 3). In addition to the 648,073 offsets required to address 2022 emissions, an additional 860 offsets were retired to reflect adjustments to prior year reported emissions years.



**Table 3. Portfolio of Offset Projects for the 2022 Carbon Neutral Government Commitment**

Project	Sector	Project Type	Price / Tonne	Offset Units	Value
<b>Low Emissions Facility</b> ARC Resources, Dawson Creek	Oil and Gas	Fuel Switching	\$8.00	12,947	\$103,576
<b>Electrification of Gas Production Plant (Noel)</b> Blue Source, Dawson Creek	Oil and Gas	Fuel Switching	\$8.00	6,291	\$50,328
<b>Electrification of Gas Processing Plant (Septimus)</b> Blue Source, Taylor	Oil and Gas	Fuel Switching	\$8.00	17,638	\$141,104
<b>Engine Fuel Gas Management (REMVue)</b> Blue Source, Northeastern BC	Oil and Gas	Energy Efficiency	\$11.00	250	\$2,750
<b>Natural Gas to Biomass Fuel Switch</b> Canfor B.C. Sawmills – Elko, Prince George, Fort St. John, Chetwynd, Mackenzie	Forest – Industry	Fuel Switching	\$8.50	15,548	\$132,158
<b>Cheakamus Community Forest</b> Cheakamus Community Forest Society, Whistler	Forestry – Land Use	Sequestration	\$14.00	3,855	\$53,970
<b>Forest Conservation/Improved Forest Management</b> Great Bear Rainforest, Haida Gwaii	Forestry – Land Use	Sequestration	\$12.00	200,000	\$2,400,000
<b>Forest Conservation/Improved Forest Management</b> Great Bear Rainforest, North and Central Mid-Coast	Forestry – Land Use	Sequestration	\$12.00	303,715	\$3,644,580
<b>Forest Conservation/Improved Forest Management</b> Great Bear Rainforest, South Central Coast	Forestry – Land Use	Sequestration	\$10.71	82,120	\$879,702
<b>Clean Tech Biomass Gasification</b> Kruger Products, New Westminster	Forest – Industry	Fuel Switching	\$15.00	3,467	\$52,005
<b>Landfill Gas Collection</b> Columbia Shuswap Regional District, Salmon Arm	Waste – Landfill	GHG Destruction	\$13.00	2,102	\$27,326
<b>Switching to Biomass/Installing Energy Curtains</b> Sun Select Delta, Delta	Agriculture	Fuel Switching	\$11.00	250	\$2,750
<b>Bus Fuel Efficiency Project</b> Translink, Metro Vancouver	Transportation	Energy Efficiency	\$13.00	750	\$9,750
<b>GRAND TOTAL</b>				<b>648,933<sup>4</sup></b>	<b>\$7,499,999</b>

<sup>4</sup> A total of 648,933 offsets were included in the Portfolio of Offset Projects for the 2022 Carbon Neutral Government Commitment (see Table 3). In addition to the 648,073 offsets required to address 2022 emissions, an additional 860 offsets were retired to reflect adjustments to prior year reported emissions years.