

Sunshine Coast Regional District

Regional Greenhouse Gas Emissions Inventories

June 2026



Table of Contents

Introduction.....	3
<i>Report Overview.....</i>	<i>3</i>
SCRD Energy and Emissions Inventory	5
<i>Sunshine Coast Regional District Community Inventory</i>	<i>6</i>
<i>Gibsons Community Inventory.....</i>	<i>12</i>
<i>Sechelt Community Inventory.....</i>	<i>15</i>
<i>shíshálh Nation Community Inventory.....</i>	<i>18</i>
<i>Sunshine Coast Regional District Unincorporated Area Community Inventory</i>	<i>21</i>
List of Acronyms	24
Appendices	25
<i>Appendix A: Detailed Inventory.....</i>	<i>26</i>
<i>Appendix B: Methods and Assumptions.....</i>	<i>32</i>

Introduction

As a signatory to the Climate Action Charter, the Sunshine Coast Regional District (SCRD) is committed to measuring and reducing greenhouse gas (GHG) emissions to address climate change. A critical first step in this effort is the development of a comprehensive GHG inventory, using best available information, to quantify total emissions generated within the region as well as a breakdown of emissions by sector (e.g., vehicles, buildings, waste, etc.) and by geographic area (i.e., by each member municipality and the SCRD Unincorporated Areas). The goal of the inventory is to help the Regional District and its jurisdictions understand their current energy and emissions profile, and to inform future community climate planning and implementation efforts.

Report Overview

This report describes SCRD's community GHG inventory for 2007 to 2022. The community inventory refers to the energy use, emissions, and expenditures from transportation, buildings, and waste sectors, as detailed in Table 1.

Table 1. Community Inventory Sectors and Subsectors

Sector	Community Subsector
Transportation: Gasoline, diesel, electricity, natural gas, and propane consumed for mobility purposes.	Passenger Vehicles Commercial Vehicles
Buildings: Electricity, natural gas, propane, heating oil, and wood consumed within buildings.	Residential Buildings Commercial Buildings
Waste: GHG emissions resulting from waste decomposition in landfills.	Waste

In addition to the community inventory sectors, other inventory sectors including ferry, marine, and large industry are included in SCRD's regional inventory; throughout the report, these other sectors are referred as "other emissions". All figures reference community emissions (Table 1), unless specified that other emissions are included. The other emissions include the following sectors:

- **Ferry:** GHG emissions from vessel operations from BC Ferries Route 3 (Horseshoe Bay to Langdale).
- **Marine:** GHG emissions from personal boats, water taxis, and fishing crews (large commercial and industrial marine are excluded).
- **Large Industry:** GHG emissions from large industrial facilities, emitting over 10,000 tCO₂e annually; the only such facility on the Sunshine Coast is the Howe Sound Pulp and Paper Mill.

Emissions from Agriculture, Forestry and Other Land Use (AFOLU) and consumptive emissions (e.g., food, services, and consumer goods) are also excluded from the inventory. Moreover, emissions from uncontrolled events, such as wildfires, oil spills, and industrial accidents, are excluded, as they are outside the scope of typical community activities.

The report presents the community inventory and other emissions for SCRD as a whole, followed by each of the jurisdictions. See the SCRD Regional GHG Inventory Excel file for additional charts and data tables for each community.

Energy and Emissions Units

The measurements of gigajoules (GJ) and tonnes of carbon dioxide equivalent (tCO₂e) are used throughout this report. GJ is used to measure energy, such as the energy that buildings and transportation rely on. These forms of energy produce GHG emissions, typically displayed as tCO₂e. The "e" in tCO₂e stands for equivalent, which is used because different GHGs have different global warming potentials and converting all GHGs to the equivalent global warming potential of CO₂ allows for one standard unit to be used.

SCRD Energy and Emissions Inventory

The most recent complete dataset available from the Community Energy and Emissions Inventory (CEEI) is for the year 2022. This section presents a summary of energy consumption, GHG emissions, and energy expenditures for the SCRD and its member jurisdictions in 2022. See Appendix A, or the SCRD Regional GHG Inventory Excel file, for a detailed breakdown of the inventory and Appendix B for the methodology and assumptions.

Table 2 summarises the total energy use, GHG emissions, and energy expenditures across the SCRD in 2022.

Table 2. Total Community Energy Consumption, GHG Emissions, and Energy Expenditures in 2022 by Jurisdiction

	Energy Consumption (GJ)	GHG Emissions (tCO ₂ e)	Energy Expenditures
SCRD	3,805,425	168,449	\$160,920,913
Gibsons	603,306	27,508	\$23,994,759
Sechelt	1,295,143	60,903	\$52,561,758
shíshálh Nation	98,064	4,459	\$4,323,027
SCRD Unincorporated Area (SCRDUA)	1,808,912	75,578	\$80,041,368

Sunshine Coast Regional District Community Inventory

The community energy and emissions profile for SCRD in 2022 is summarized in Table 3.

Table 3. Summary of 2022 SCRD Energy Consumption, Emissions, and Expenditures

	Total	Per Capita
Energy Consumption	3,805,425 GJ	113 GJ
GHG Emissions	168,449 tCO ₂ e	4.99 tCO ₂ e
Energy Expenditures	\$160,920,913	\$4,767

Figure 1 compares the distribution of energy use, emissions, and expenditures across the five sectors. Residential buildings account for the largest share of energy use (40%) but contribute a smaller share of emissions (19%) and expenditures (27%). In contrast, passenger and commercial vehicles are the largest source of emissions (65% combined) and expenditures (62% combined), while representing about 46% of energy use combined. Commercial buildings account for a modest share of energy use (15%) and expenditures (11%), with relatively low emissions (5%). Waste contributes around 10% of emissions.

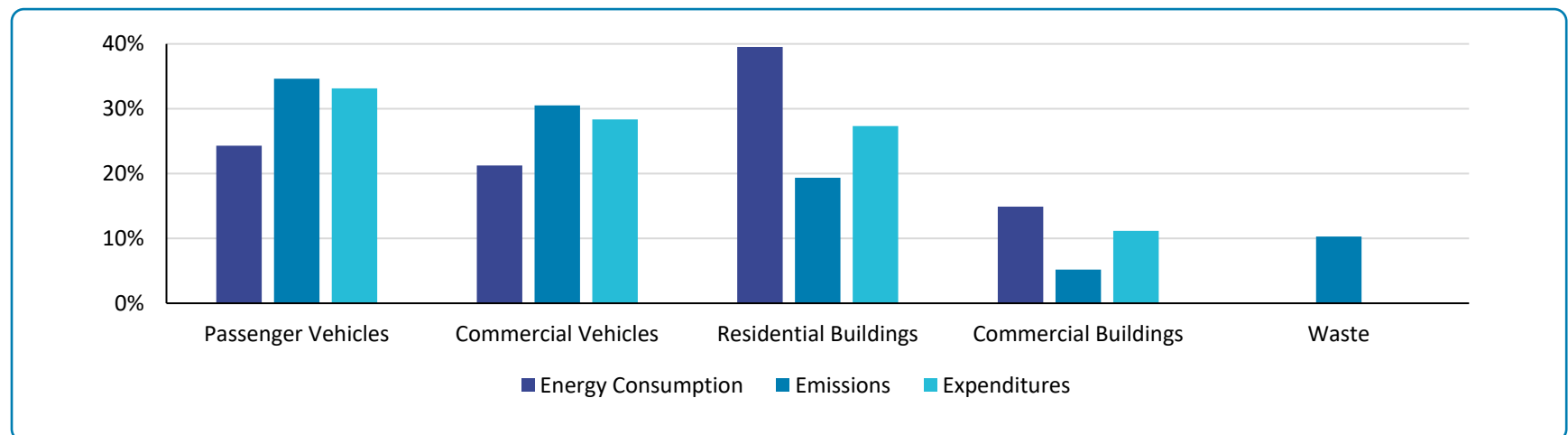


Figure 1. 2022 SCRD Community Energy Consumption, Emissions, and Expenditures Proportion by Sector

GHG emissions, in tCO₂e, are shown by source in Figure 2. In 2022, total GHG emissions were over 168,000 tCO₂e, equivalent to 4.99 tCO₂e per capita. In addition to community emissions (i.e. transportation, buildings, and waste emissions), SCR D had other sources of emissions, including ferry, marine, and industrial operations. As shown in Figure 3, the total emissions in SCR D were 302,245 tCO₂e, in which other emissions contributed 44% (133,796 tCO₂e).

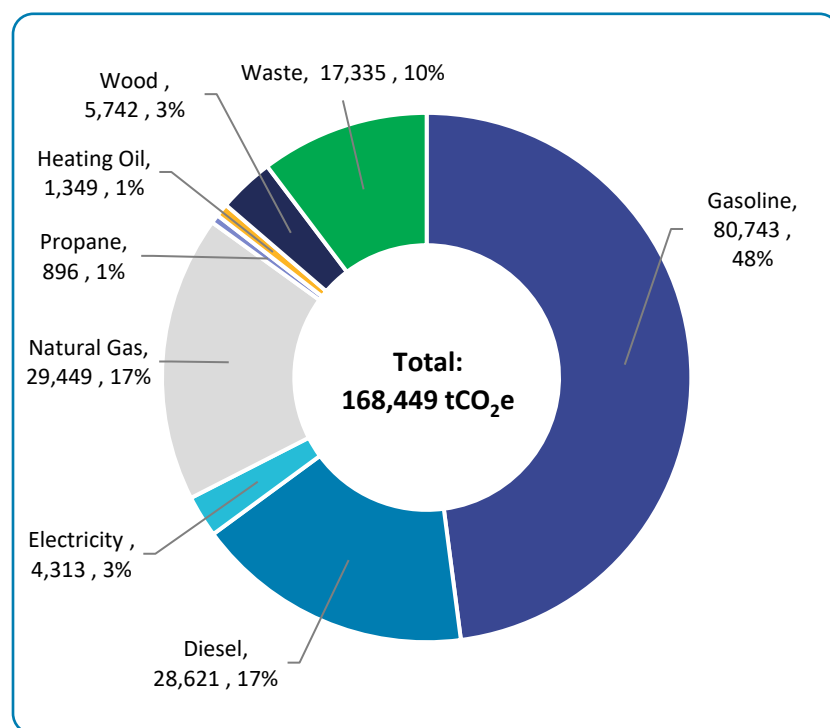


Figure 2. 2022 SCR D Community Emissions (tCO₂e) by Source

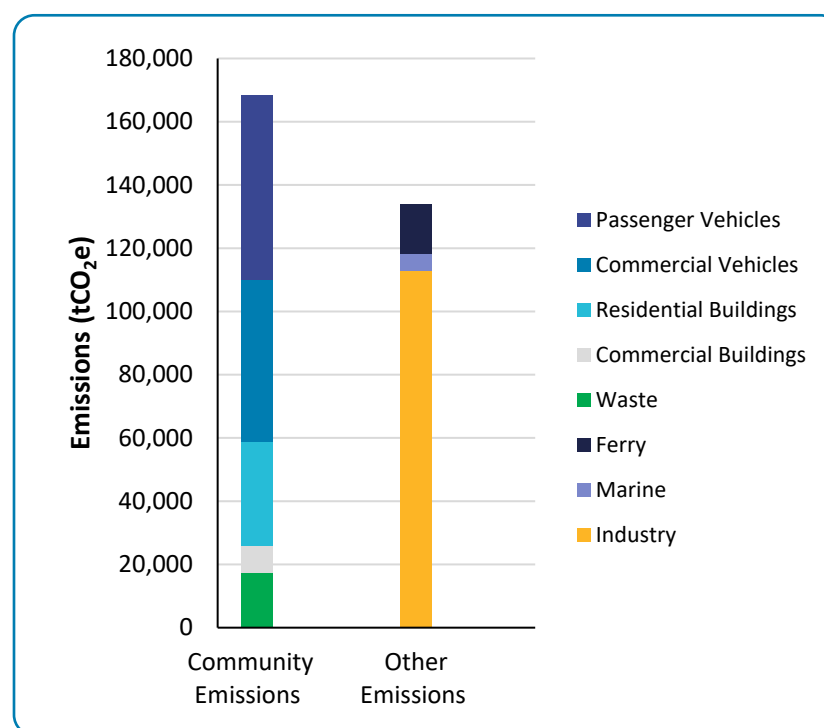


Figure 3. 2022 SCR D Total Emissions (tCO₂e) by Sector

Two thirds of total emissions originate from transportation; 74% of these emissions are from gasoline, 26% from diesel, and less than 1% from electricity, natural gas, and propane. 35% of emissions are from passenger vehicles and 31% are from commercial vehicles. In terms of buildings, residential buildings account for a significantly higher portion of emissions (19%) compared to commercial

buildings (5%). 71% of building emissions originate from natural gas, 14% from wood, 10% from electricity, and the remaining 5% are from propane and heating oil. Waste contributes to a moderate proportion of emissions at 10%.

Figure 4 displays the distribution of other emissions by jurisdiction for the 2022 inventory year. The industrial sector is by far the largest source of other emissions, generating over 110,000 tCO₂e, with all emissions coming from the Howe Sound Pulp and Paper Mill in Port Mellon, which is within the SCRDU boundary.¹ Emissions from the ferry sector are much lower, totalling around 16,000 tCO₂e, while marine sector contributes the least, at approximately 5,000 tCO₂e.

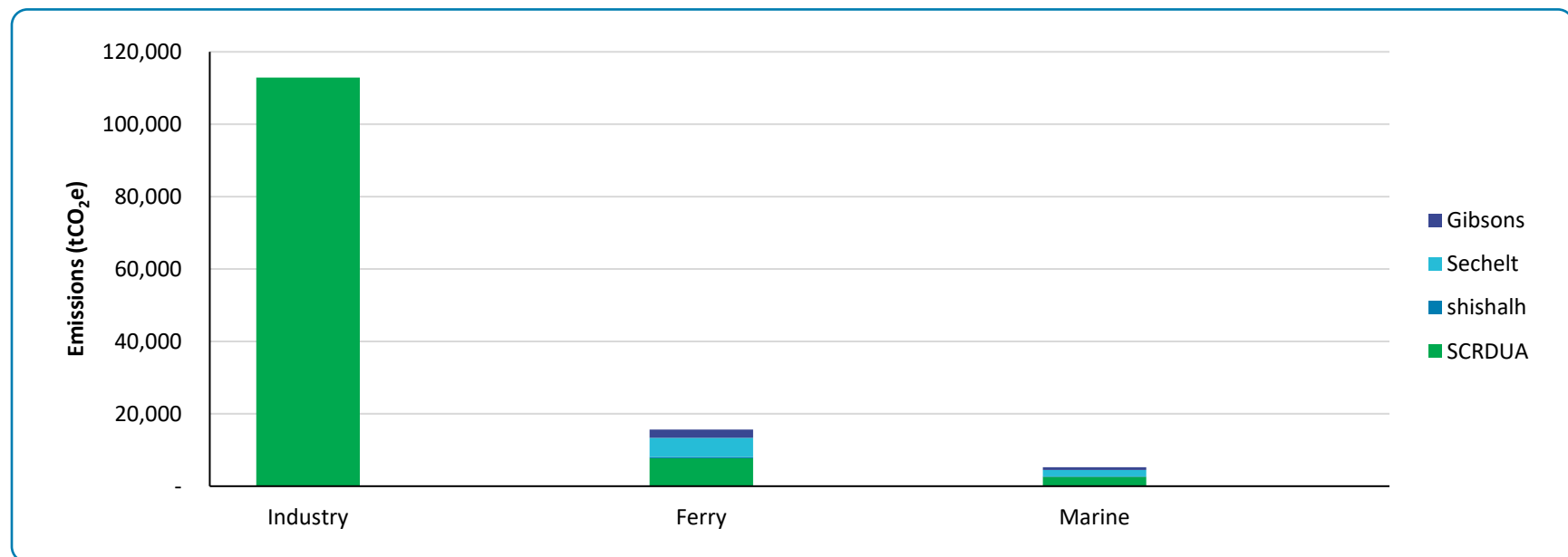


Figure 4. 2022 SCRDU Other Emissions (tCO₂e) by Jurisdiction

¹ The pulp mill also produced approximately 1.3 million tCO₂e in biogenic emissions, which are excluded from the inventory.

As shown in Figure 5, community emissions in the SCRD declined by 4% between 2007 to 2022, a reduction of over 6,600 tCO₂e. The residential buildings sector had the largest reduction of 5,354 tCO₂e emissions or a 14% emissions reduction, followed by commercial buildings (-2,039 tCO₂e, 19% reduction). On the other hand, emissions from commercial vehicles increased by 2,497 tCO₂e or a 5% growth. Overall, SCRD's per capita emissions declined by 19% between 2007 and 2022.

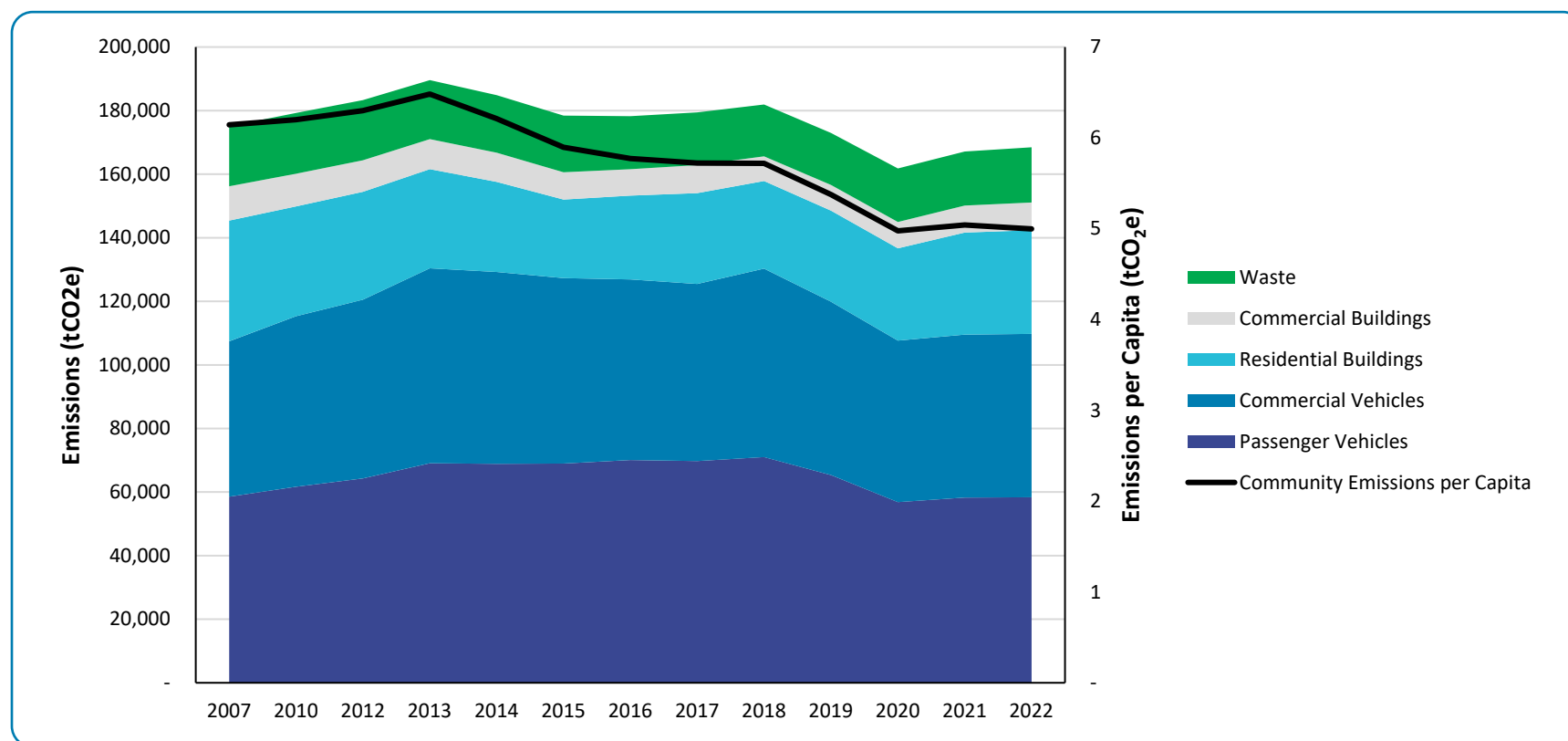


Figure 5. 2007-2022 SCRD Annual Community Emissions (tCO₂e) by Sector

2022 community energy consumption by fuel type is shown in Figure 6 and expenditure by fuel type is shown in Figure 7. The total energy consumption was approximately 3.8 million GJ, equivalent to average energy use of 113 GJ per capita. In terms of energy costs, the total energy expenditures were nearly \$161 million, equivalent to annual energy costs of \$4,767 per resident. Passenger vehicle fuel costs were over \$53 million, equivalent to approximately \$1,580 per resident. Residential building energy costs were nearly \$44 million, equating to \$1,303 per resident.

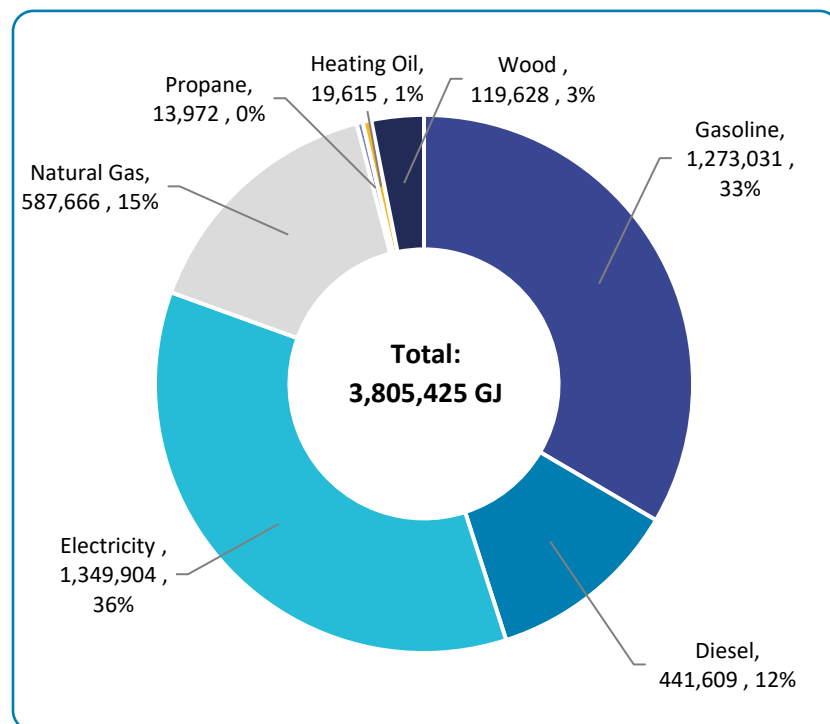


Figure 6. 2022 SCRD Community Energy Consumption (GJ) by Source

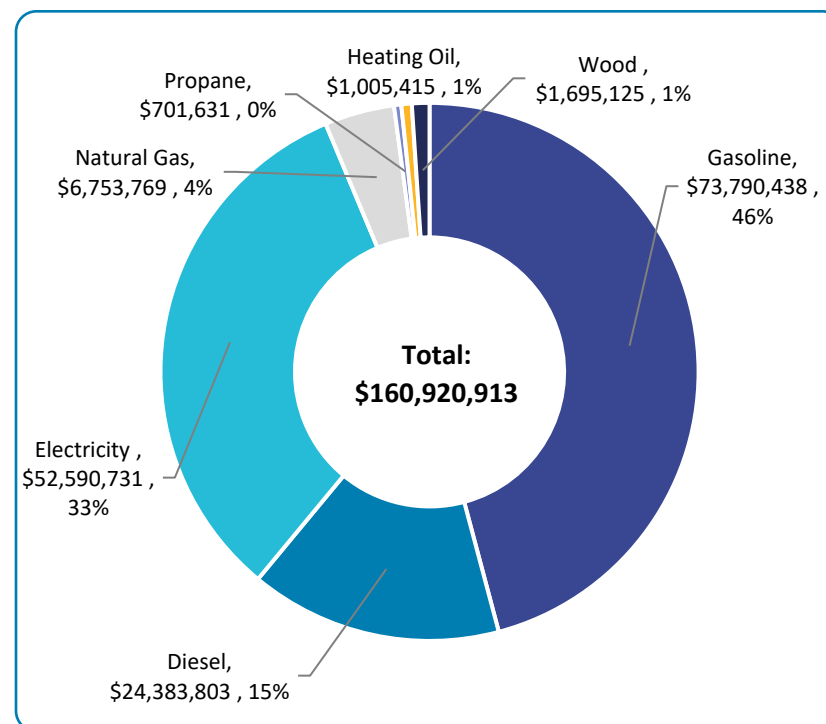


Figure 7. SCRD Community Energy Expenditures by Source

More than half of all energy consumption in the SCRD is from energy use in buildings (54%), which is primarily electricity (36%) and natural gas (15%). Mobility fuels are dominated by gasoline (33%), followed by diesel (12%). Propane, heating oil, and wood contribute to just 4% of the total community energy use.

Nearly two thirds of the total costs originate from mobility fuels, at approximately \$99 million (62%), followed by electricity at nearly \$53 million (33%) and natural gas at around \$7 million (4%). Propane, heating oil, and wood contributes to only 2% of the total community energy costs.

Community Emissions Per Capita

Figure 8 illustrates community emissions per capita by jurisdiction. The entire Regional District has per capita emissions of 4.99 tCO₂e. shishálh Nation has the highest per capita emissions of 5.68 tCO₂e, followed by Gibsons (5.60 tCO₂e) and Sechelt (5.36 tCO₂e). SCRDU has the lowest per capita emissions of 4.53 tCO₂e.

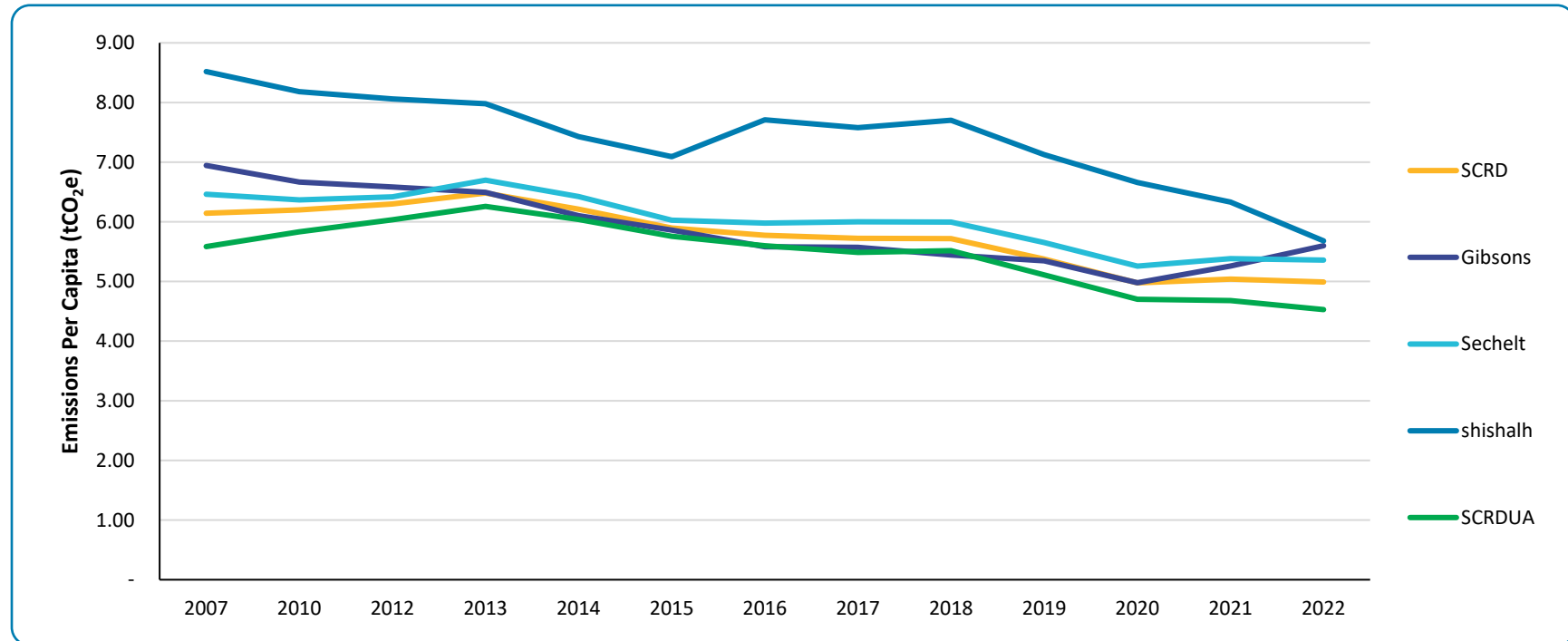


Figure 8. 2007-2022 SCRDU Annual Community Emissions per Capita (tCO₂e) by Jurisdiction

Gibsons Community Inventory

The community energy and emissions profile for the Town of Gibsons in 2022 is summarized in Table 4.

Table 4. Summary of 2022 Gibsons Energy Consumption, Emissions, and Expenditures

	Total	Per Capita
Energy Consumption	603,306 GJ	123 GJ
GHG Emissions	27,508 tCO ₂ e	5.60 tCO ₂ e
Energy Expenditures	\$23,994,759	\$4,886

Figure 9 compares the distribution of energy use, emissions, and expenditures across the five sectors. Residential buildings account for the largest share of energy use (30%) but contribute a smaller share of emissions (17%) and expenditure (20%). In contrast, passenger and commercial vehicles are the largest source of emissions (65% combined) and expenditures (65% combined), while representing about 47% of energy use combined. Commercial buildings account for a modest share of energy use (23%) and expenditures (15%), with relatively low emissions (12%). Waste contributes around 7% of emissions.

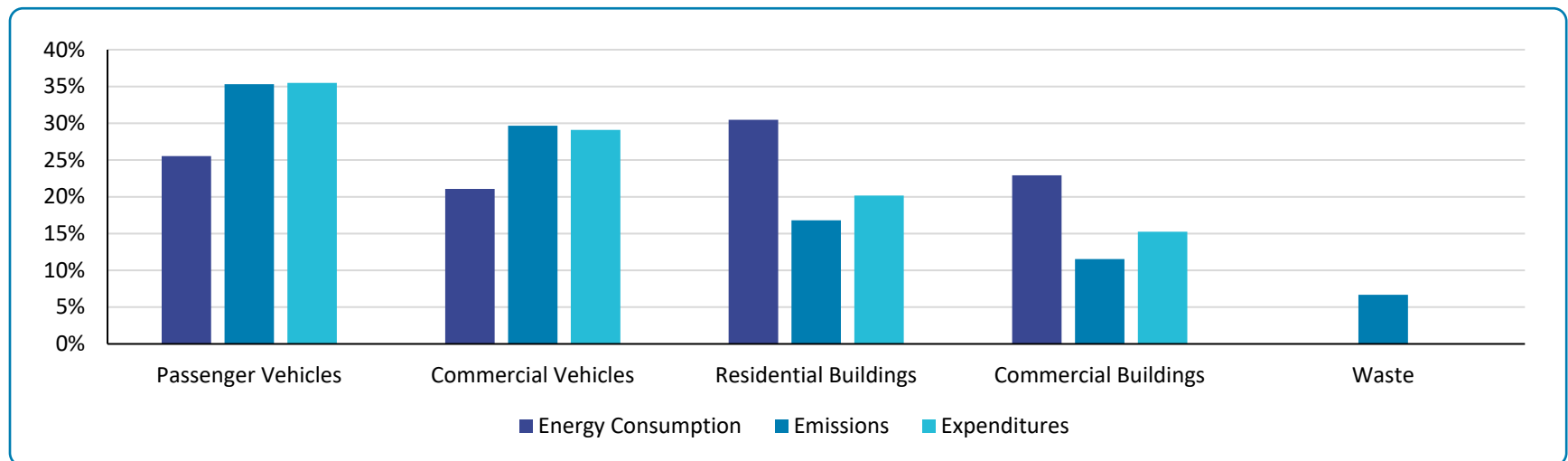


Figure 9. 2022 Gibsons Community Energy Consumption, Emissions, and Expenditures Proportion by Sector

In addition to community emissions (i.e. transportation, buildings, and waste emissions), Gibsons has other sources of emissions, including ferry and marine operations. As shown in Figure 10, the total emissions in Gibsons were 30,549 tCO₂e, in which other emissions contributed 10% (3,041 tCO₂e).

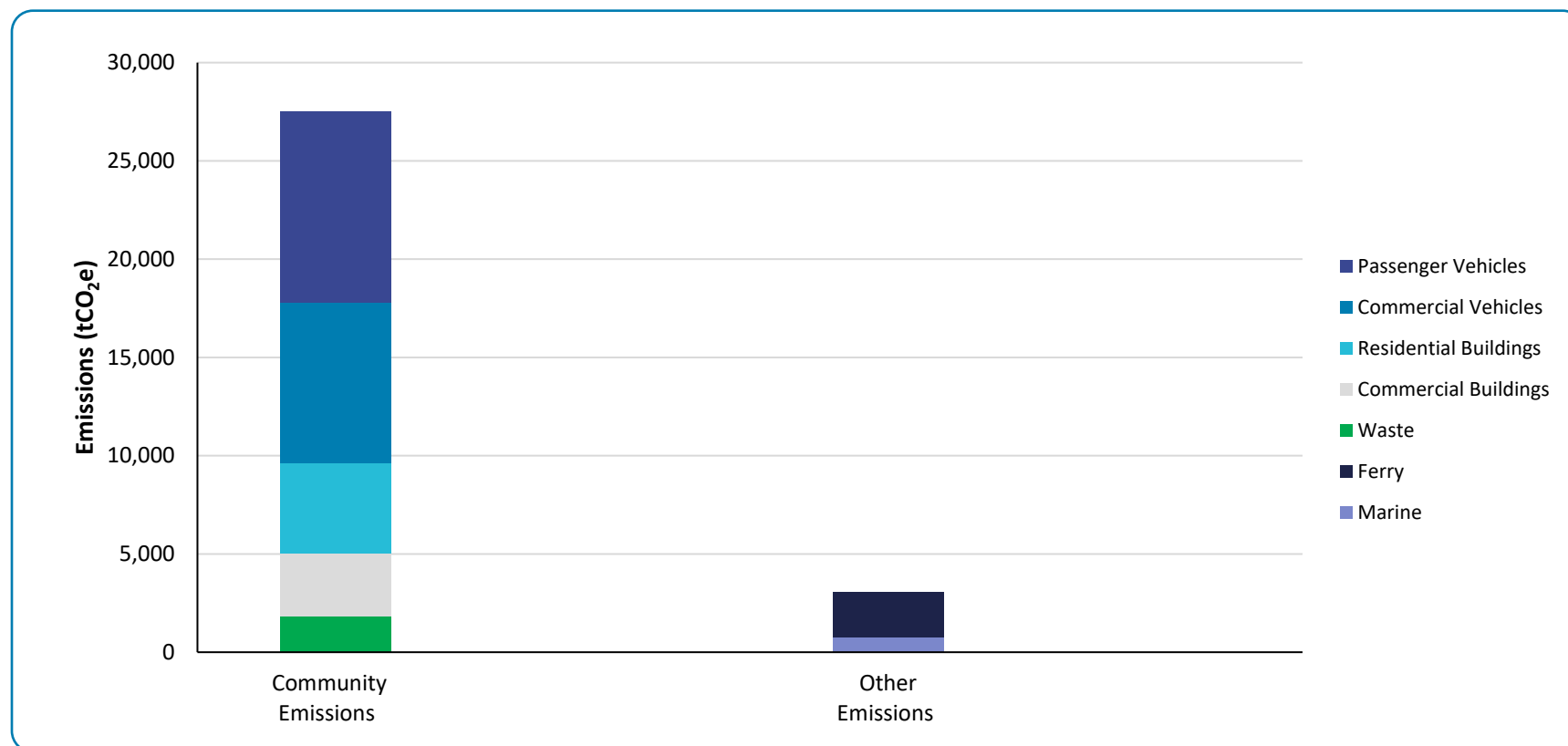


Figure 10. 2022 Gibsons Total Emissions (tCO₂e) by Sector

As shown in Figure 11, community emissions in Gibsons declined by 6% between 2007 to 2022, a reduction of over 1,800 tCO₂e. The residential buildings sector had the largest reduction of 751 tCO₂e emissions or a 14% emissions reduction, followed by commercial buildings (-496 tCO₂e, 14% reduction). Furthermore, between 2007 and 2022, Gibsons' per capita emissions declined by 19%.

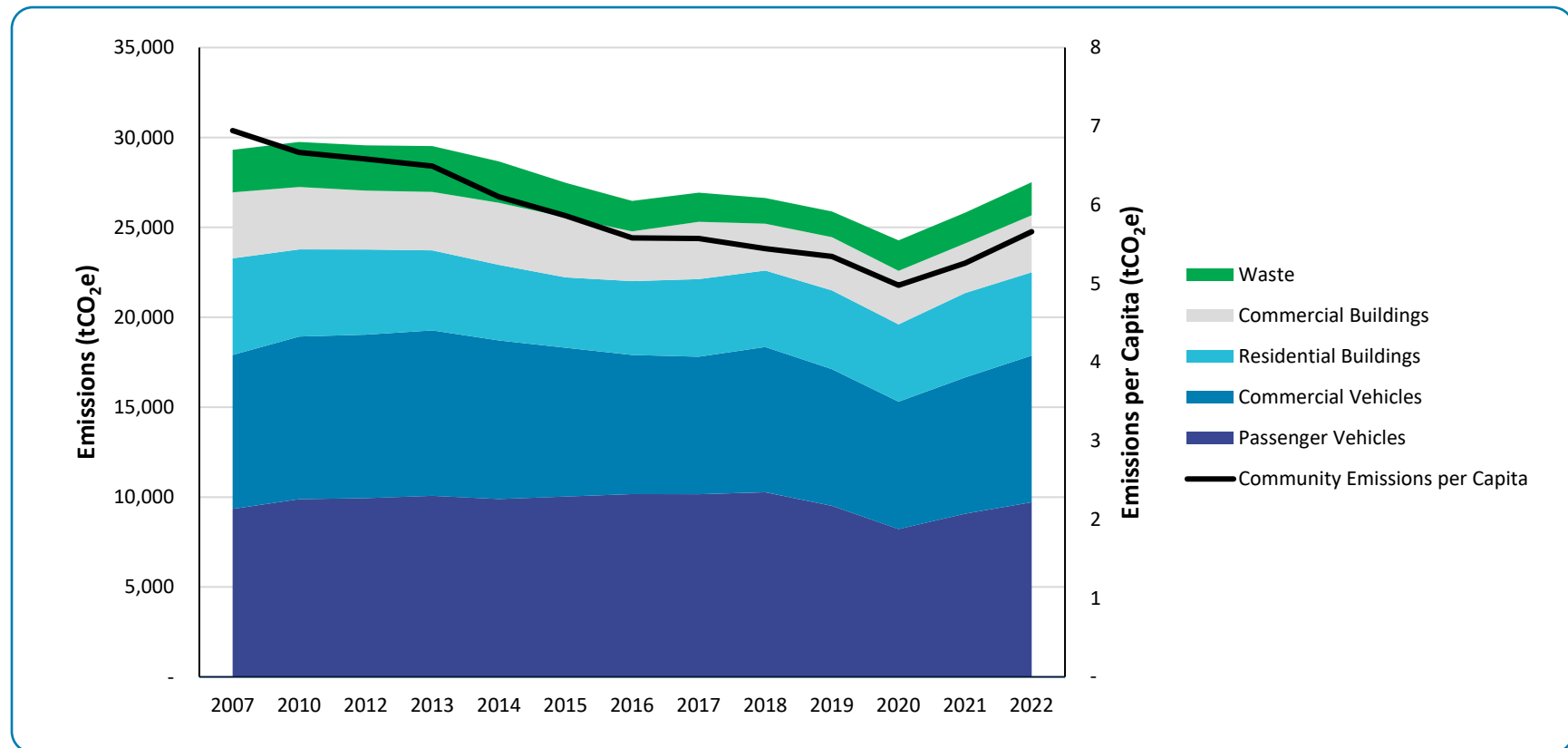


Figure 11. 2007-2022 Gibsons Annual Community Emissions (tCO₂e) by Sector

Sechelt Community Inventory

The community energy and emissions profile for District of Sechelt in 2022 is summarized in Table 5.

Table 5. Summary of 2022 Sechelt Energy Consumption, Emissions, and Expenditures

	Total	Per Capita
Energy Consumption	1,295,143 GJ	114 GJ
GHG Emissions	60,903 tCO ₂ e	5.36 tCO ₂ e
Energy Expenditures	\$52,561,758	\$4,623

Figure 12 compares the distribution of energy use, emissions, and expenditures across the five sectors. Residential buildings account for the largest share of energy use (40%) but contribute a smaller share of emissions (22%) and expenditure (26%). In contrast, passenger and commercial vehicles are the largest source of emissions (60% combined) and expenditures (64% combined), while representing about 45% of energy use combined. Commercial buildings account for a modest share of energy use (15%) and expenditures (10%), with relatively low emissions (8%). Waste contributes around 10% of emissions.

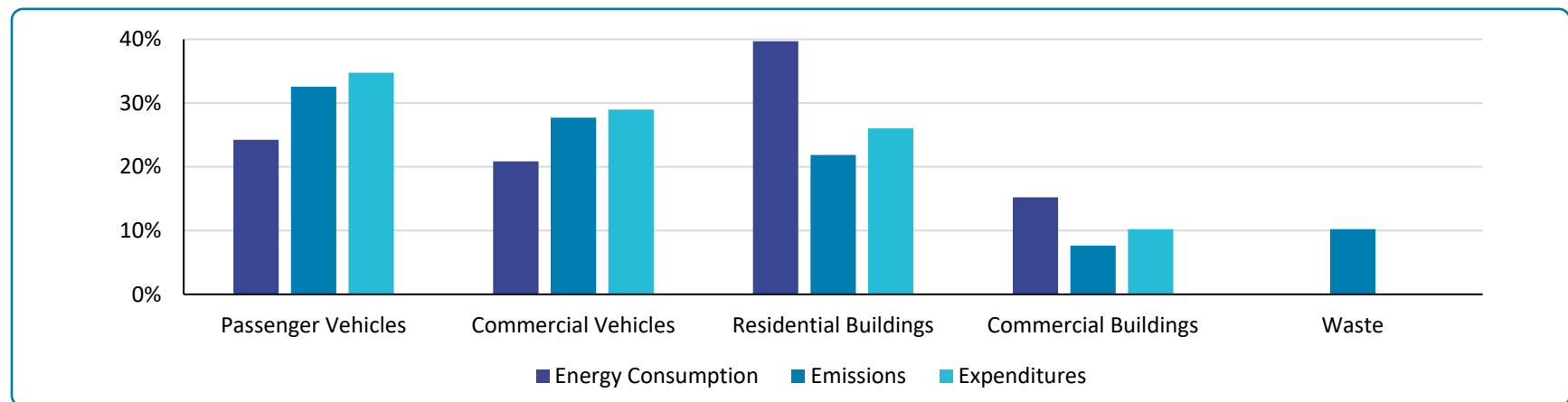


Figure 12. 2022 Sechelt Community Energy Consumption, Emissions, and Expenditures Proportion by Sector

In addition to community emissions (i.e. transportation, buildings, and waste emissions), Sechelt has other sources of emissions, including ferry and marine operations. As shown in Figure 13, the total emissions in Sechelt were 67,943 tCO₂e, in which other emissions contributed 10% (7,040 tCO₂e).

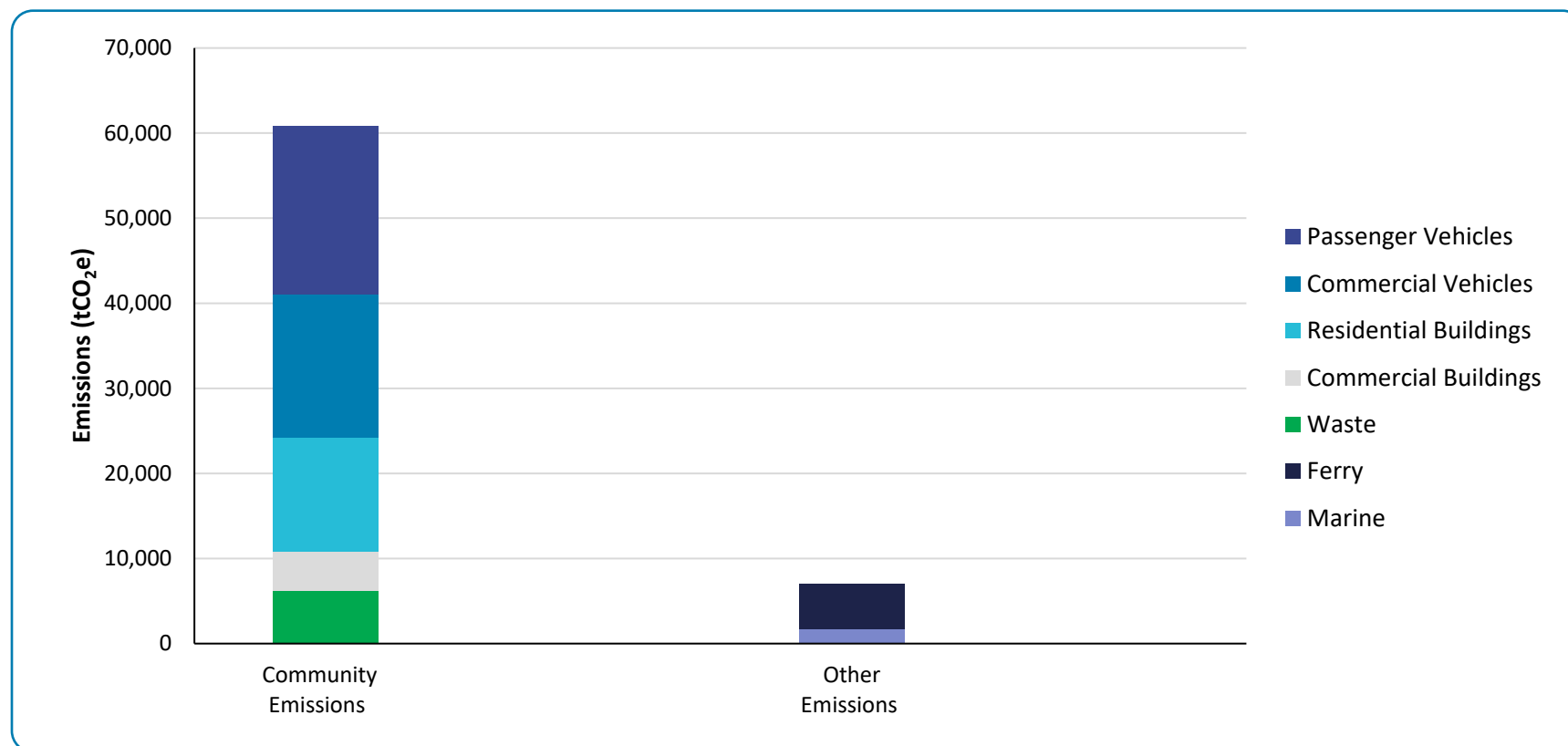


Figure 13. 2022 Sechelt Total Emissions (tCO₂e) by Sector

As shown in Figure 14, community emissions in Sechelt increased by 7% between 2007 to 2022, an addition of around 4,200 tCO₂e. The largest growth was observed in the commercial vehicles sector, which increased by 2,859 tCO₂e between 2007 and 2022, a 20% increase. Residential building emissions also increased (1,026 tCO₂e, 8%). Conversely, between 2007 and 2022, Sechelt's per capita emissions declined by 17%.

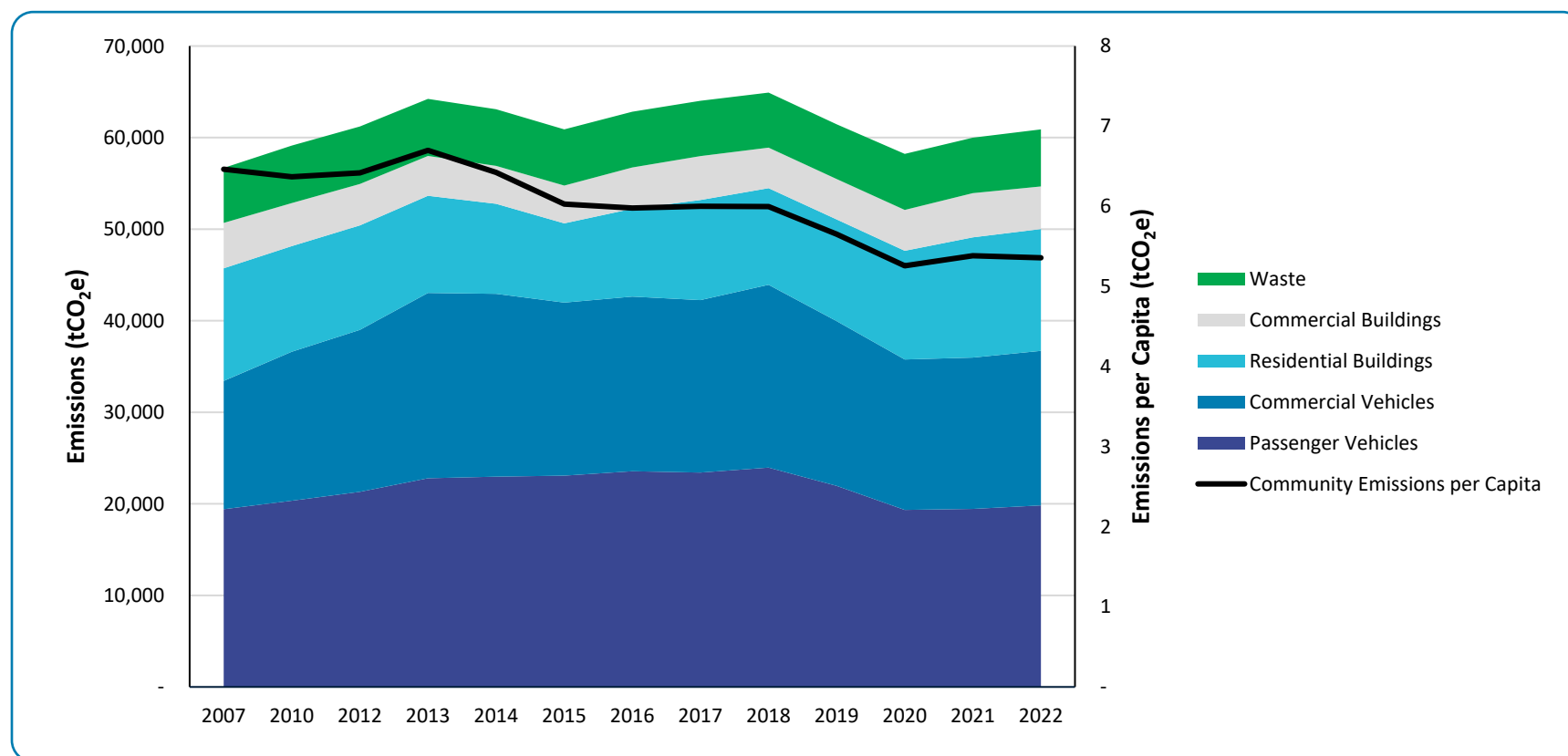


Figure 14. 2007-2022 Sechelt Annual Community Emissions (tCO₂e) by Sector

shíshálh Nation Community Inventory

The community energy and emissions profile for shíshálh Nation in 2022 is summarized in Table 6.

Table 6. Summary of 2022 shíshálh Nation Energy Consumption, Emissions, and Expenditures

	Total	Per Capita
Energy Consumption	98,064 GJ	125 GJ
GHG Emissions	4,459 tCO ₂ e	5.68 tCO ₂ e
Energy Expenditures	\$4,323,027	\$5,507

Figure 15 compares the distribution of energy use, emissions, and expenditures across the five sectors. Residential buildings account for the largest share of energy use (39%) but contribute a smaller share of emissions (19%) and expenditure (26%). In contrast, passenger and commercial vehicles are the largest source of emissions (71% combined) and expenditure (66% combined), while representing about 51% of energy use combined. Commercial buildings account for a modest share of energy use (10%) and expenditure (9%), with low emissions (1%) as the sector mostly consumes electricity. Waste contributes around 9% of emissions.

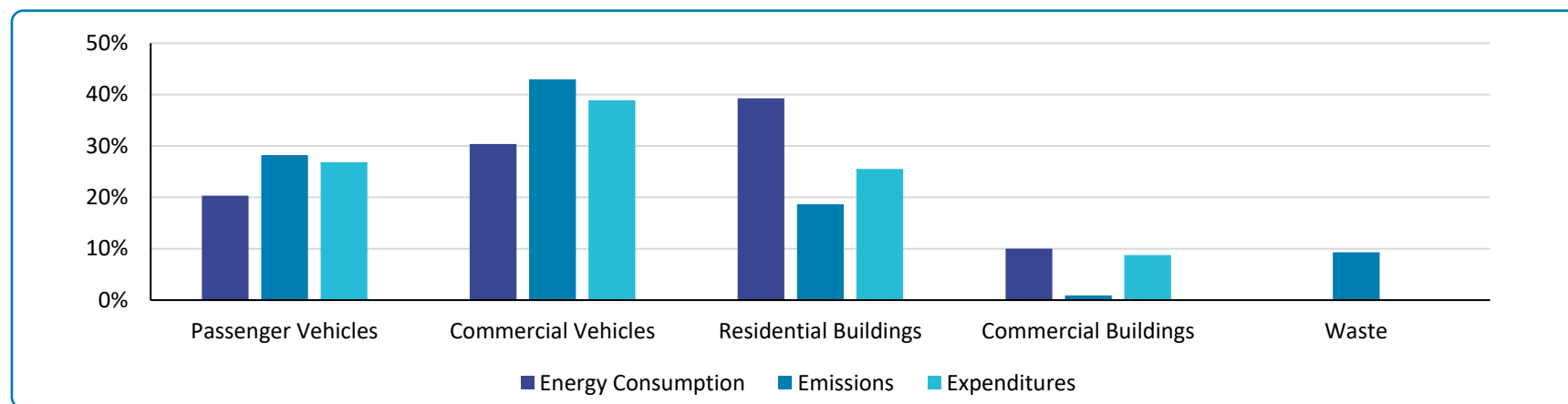


Figure 15. 2022 shíshálh Nation Community Energy Consumption, Emissions, and Expenditures Proportion by Sector

In addition to community emissions (i.e. transportation, buildings, and waste emissions), shíshálh Nation has other sources of emissions, including ferry and marine operations. As shown in Figure 16, the total emissions in shíshálh Nation were 4,945 tCO₂e, in which other emissions contributed 10% (486 tCO₂e).

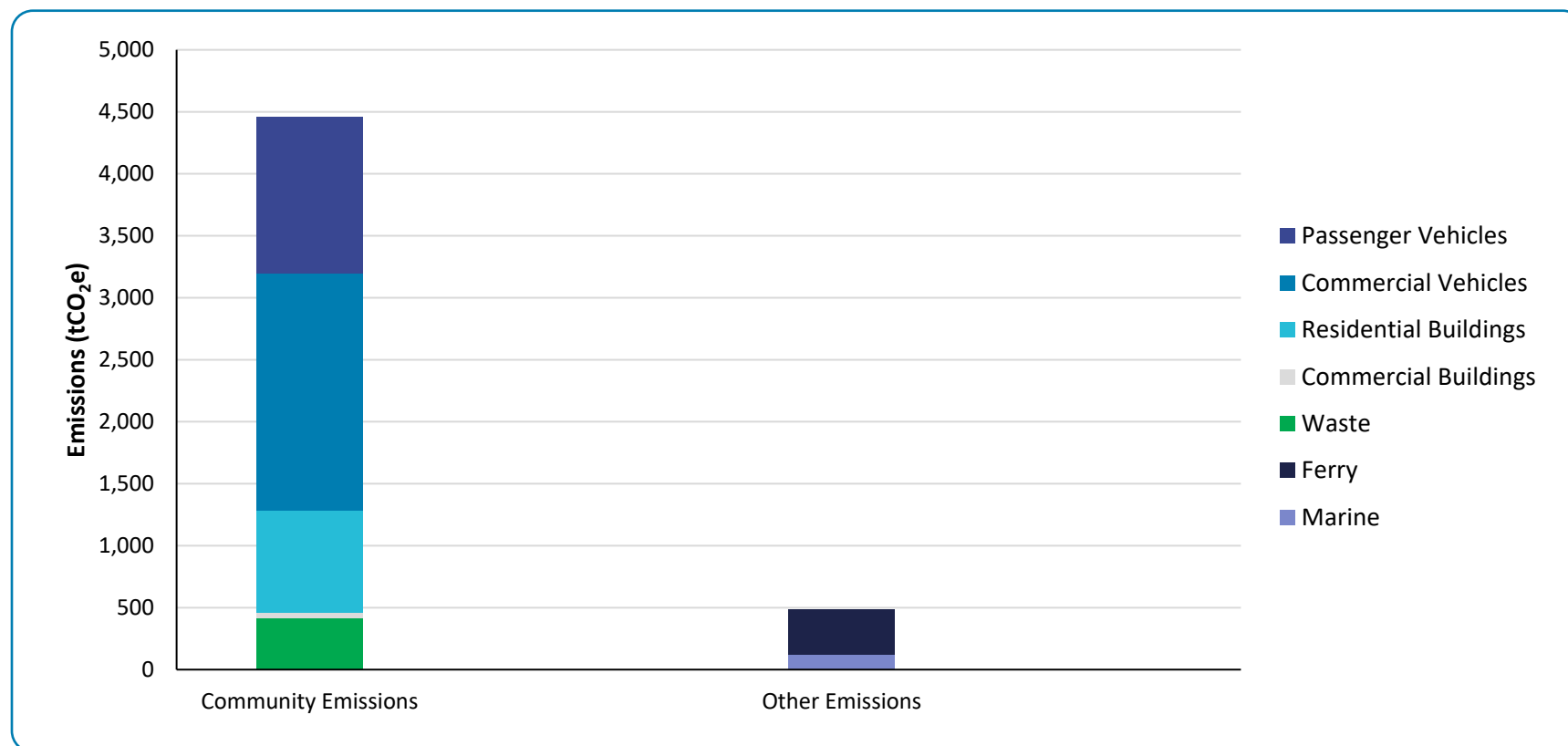


Figure 16. 2022 shíshálh Nation Total Emissions (tCO₂e) by Sector

As shown in Figure 17, community emissions in shíshálh Nation declined by 39% between 2007 to 2022, a reduction of nearly 2,900 tCO₂e. Commercial and passenger vehicle sectors experienced the largest reductions of 1,274 tCO₂e and 1,133 tCO₂e (40% and 47%), respectively.² Furthermore, between 2007 and 2022, shíshálh Nation's per capita emissions declined by 33%.

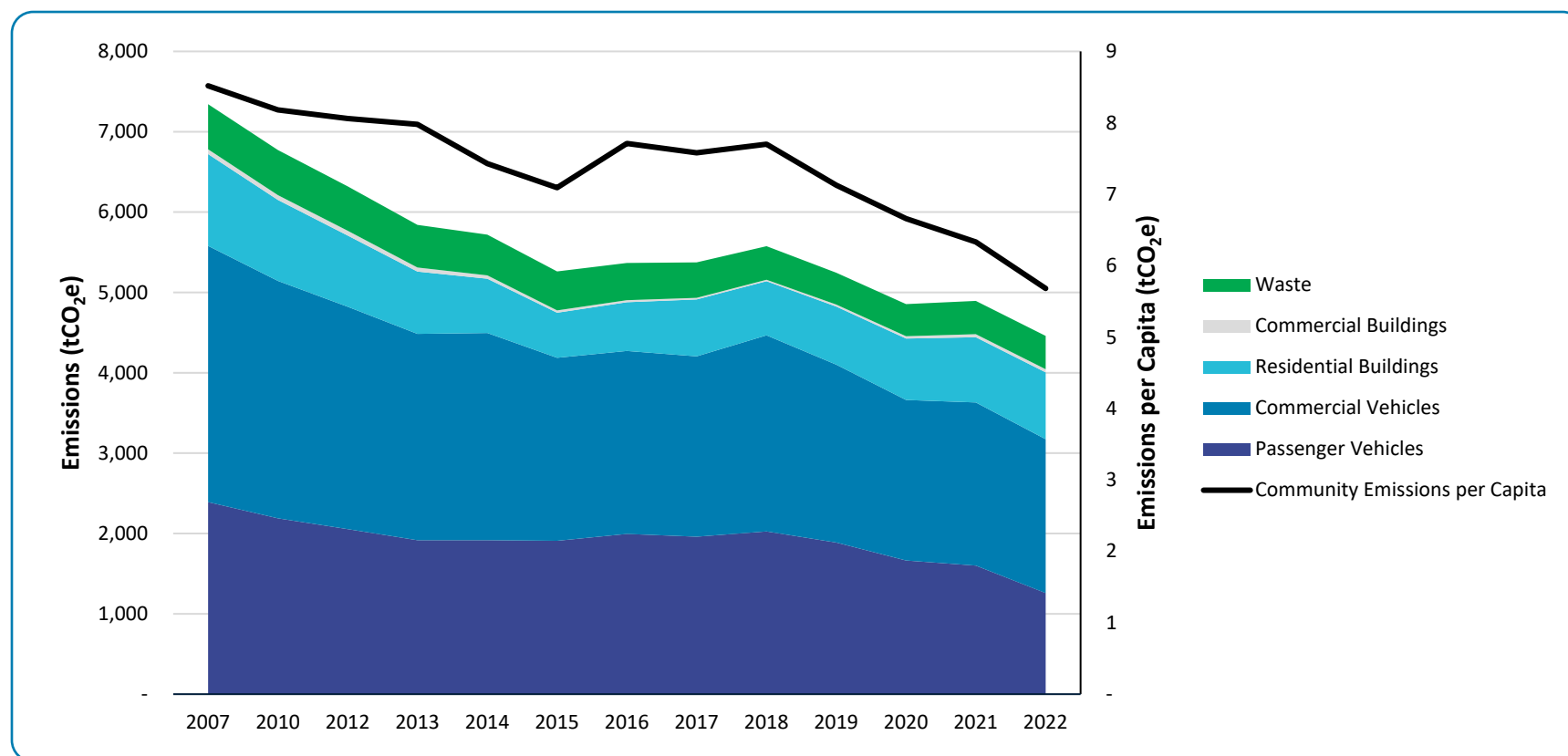


Figure 17. 2007-2022 shíshálh Nation Annual Community Emissions (tCO₂e) by Sector

² The decrease in transportation emissions may be overestimated due to changes in the vehicle registration allocations by community in the raw data. For example, the drop from 2021-2022 may be explained by the 2021 Canada Post adjustment to postal codes in the area.

Sunshine Coast Regional District Unincorporated Area Community Inventory

The community energy and emissions profile for the SCRDU in 2022 is summarized in Table 7.

Table 7. Summary of 2022 SCRDU Energy Consumption, Emissions, and Expenditures

	Total	Per Capita
Energy Consumption	1,808,912 GJ	108 GJ
GHG Emissions	75,578 tCO ₂ e	4.53 tCO ₂ e
Energy Expenditures	\$80,041,368	\$4,796

Figure 18 compares the distribution of energy use, emissions, and expenditures across the five sectors. Residential buildings account for the largest share of energy use (42%), while passenger and commercial vehicles generate the highest proportions of emissions (36% and 32%, respectively). Passenger vehicles also represent a significant share of expenditure (32%). Commercial buildings contribute relatively little emissions because the sector mostly consumes electricity. Waste accounts for 12% of emissions.

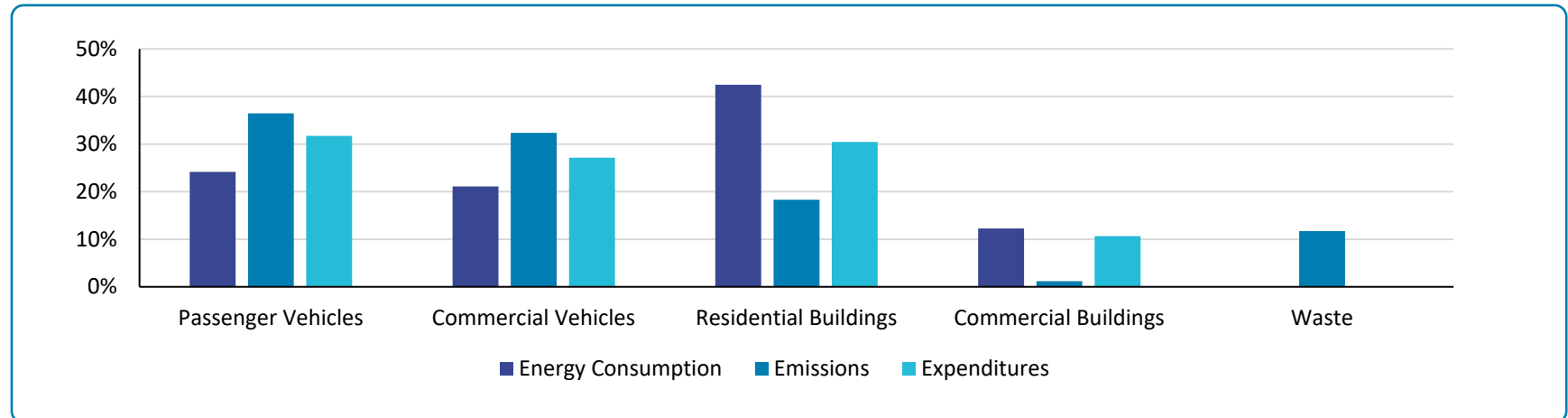


Figure 18. 2022 SCRDU Community Energy Consumption, Emissions, and Expenditures Proportion by Sector

In addition to community emissions (i.e. transportation, buildings, and waste emissions), SCRDU has other sources of emissions, including ferry, marine, and industry. As shown in Figure 19, the total emissions in SCRDU were 198,807 tCO₂e, in which other emissions contributed 62% (123,229 tCO₂e).³

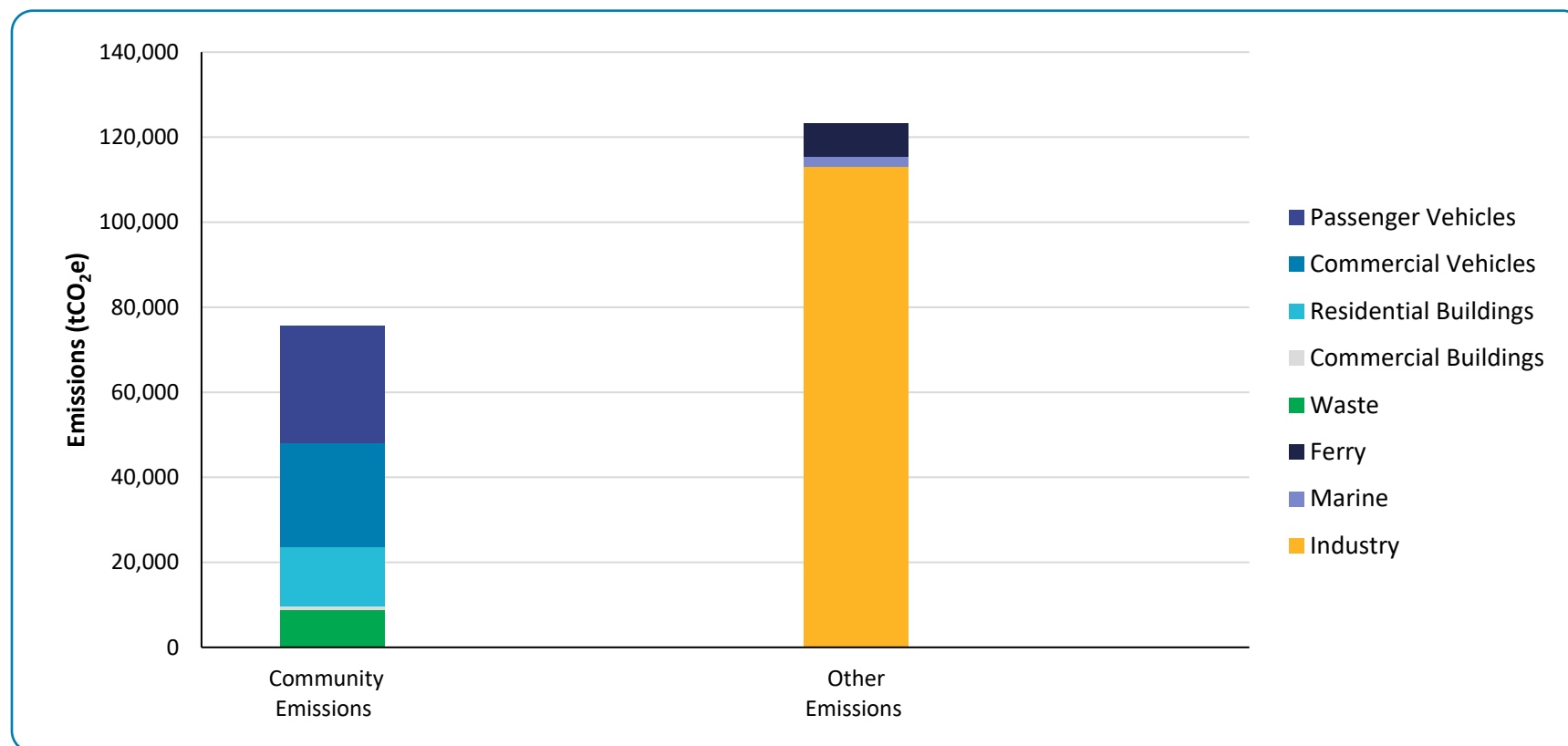


Figure 19. 2022 SCRDU Total Emissions (tCO₂e) by Sector

³ The pulp mill also produced approximately 1.3 million tCO₂e in biogenic emissions, which are excluded from the inventory.

As shown in Figure 20, community emissions in SCRDU declined by 8% between 2007 to 2022, a reduction of nearly 6,200 tCO₂e. The residential building sector had the largest reduction of 5,318 tCO₂e, a 28% emissions reduction. Commercial buildings and waste sectors also experienced emissions reduction of 1,217 tCO₂e and 1,108 tCO₂e, respectively. On the other hand, commercial vehicles emissions increased by 1,308 tCO₂e, a 6% growth. Furthermore, between 2007 and 2022, SCRDU's per capita emissions declined by 19%.

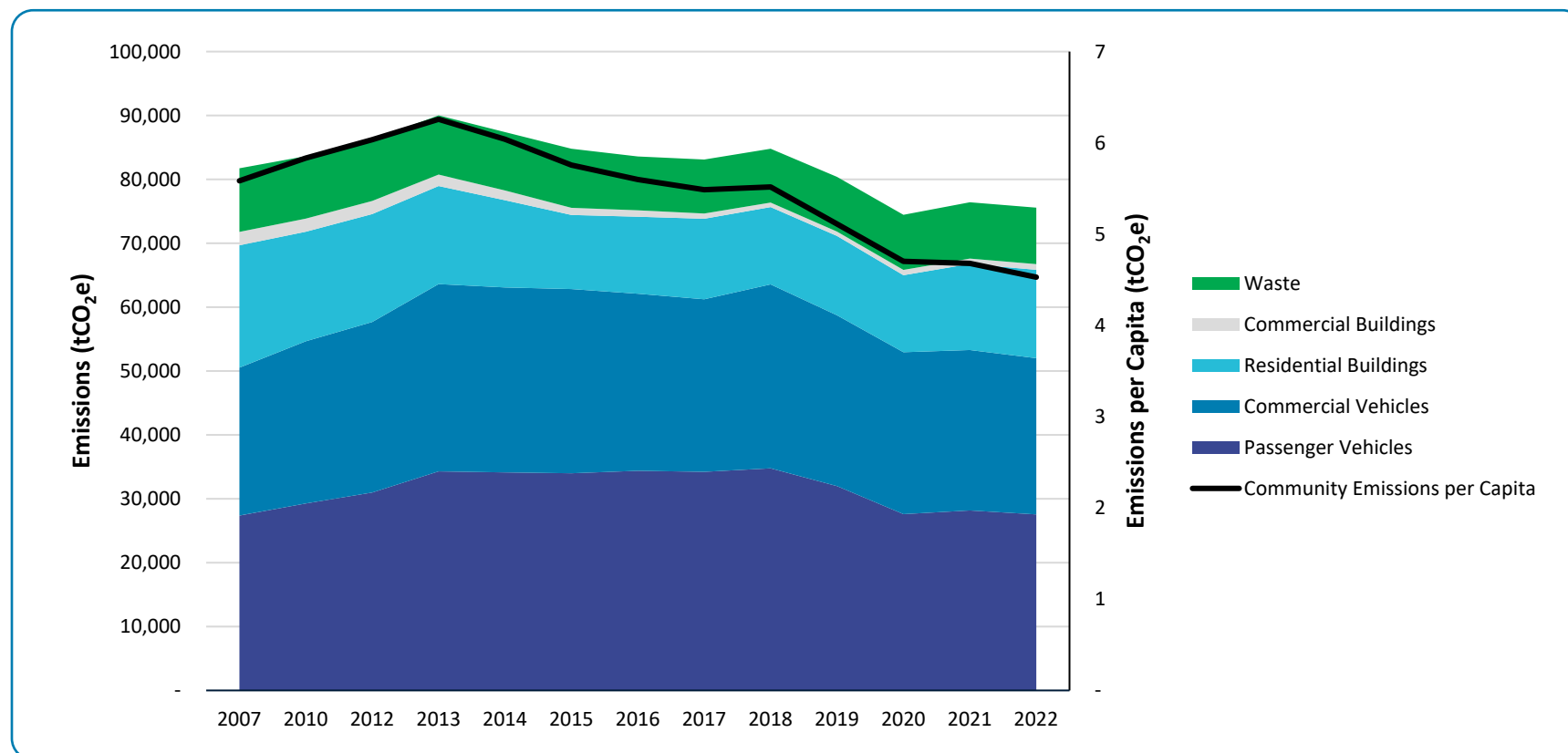


Figure 20. 2007-2022 SCRDU Annual Community Emissions (tCO₂e) by Sector

List of Acronyms

AFOLU	Agriculture Forestry and Other Land Use
CEA	Community Energy Association
CEEI	Community Energy and Emissions Inventory
GHG	Greenhouse Gas
GJ	Gigajoules
ICBC	Insurance Corporation of British Columbia
L	Litre
RNG	renewable natural gas
SCRD	Sunshine Coast Regional District
SCRDUA	Sunshine Coast Regional District Unincorporated Area
tCO₂e	Carbon dioxide equivalent
WIP	Waste in Place
ZEV	Zero Emission Vehicles

Appendices

Appendix A: Detailed Inventory

This appendix provides detailed inventories for each jurisdiction for 2007 and 2022. The contents of this appendix are as follows:

- See Table A1 for 2007 and 2022 SCRД inventories
- See Table A2 for 2007 and 2022 Gibsons inventories
- See Table A3 for 2007 and 2022 Sechelt inventories
- See Table A4 for 2007 and 2022 shíshálh Nation inventories
- See Table A5 for 2007 and 2022 SCRДUA inventories

Additional charts and inventory results for all years between 2007 and 2022 can be found in the SCRД Regional GHG Inventory Excel file.

Table A1. 2007 and 2022 SCRD Inventories

	2007			2022		
	Energy Use (GJ)	Emissions (tCO ₂ e)	Expenditure	Energy Use (GJ)	Emissions (tCO ₂ e)	Expenditure
Passenger Vehicles	868,573	58,528	\$26,725,949	925,056	58,344	\$53,347,037
Gasoline	840,001	56,510	\$25,950,020	881,093	55,885	\$51,054,152
Diesel	27,261	1,921	\$727,613	32,553	2,117	\$1,797,592
Electricity	143	1	\$2,142	6,775	22	\$263,923
Natural Gas	0	1	\$0.16	7	1	\$84
Propane	1,169	95	\$46,173	4,629	320	\$231,286
Commercial Vehicles	717,174	48,909	\$20,946,728	808,641	51,406	\$45,622,818
Gasoline	434,683	29,233	\$13,428,601	391,937	24,858	\$22,736,286
Diesel	279,985	19,583	\$7,472,979	409,056	26,504	\$22,586,211
Electricity	1,504	12	\$22,556	7,439	25	\$289,894
Natural Gas	544	27	\$4,511	6	0.3	\$71
Propane	458	52	\$18,081	203	18	\$10,356
Residential Buildings	1,462,232	37,960	\$20,303,873	1,504,697	32,606	\$43,995,672
Electricity	892,958	7,317	\$13,394,377	916,696	2,928	\$35,715,343
Natural Gas	301,113	14,959	\$2,495,924	439,616	22,028	\$5,119,800
Propane	8,632	526	\$341,062	9,141	558	\$459,988
Heating Oil	104,949	7,176	\$2,529,726	19,615	1,349	\$1,005,415
Wood	154,579	7,980	\$1,542,785	119,628	5,742	\$1,695,125
Commercial Buildings	576,314	10,797	\$7,662,008	567,031	8,758	\$17,955,386
Electricity	429,883	3,523	\$6,448,241	418,994	1,338	\$16,321,571
Natural Gas	146,431	7,275	\$1,213,767	148,037	7,420	\$1,633,814
Waste		18,899			17,335	
Other Emissions		129,082			133,796	
Ferry		13,112			15,647	
Marine		4,953			5,256	
Industry		111,017			112,894	

Table A2. 2007 and 2022 Gibsons Inventories

	2007			2022		
	Energy Use (GJ)	Emissions (tCO ₂ e)	Expenditure	Energy Use (GJ)	Emissions (tCO ₂ e)	Expenditure
Passenger Vehicles	145,430	9,346	\$4,476,444	154,049	9,714	\$8,513,056
Gasoline	140,661	9,023	\$4,345,414	146,862	9,308	\$8,147,189
Diesel	4,408	298	\$117,652	5,414	352	\$294,802
Electricity	37	0.3	\$555	1,084	3	\$42,154
Natural Gas	0.02	1	\$0.16	0.01	1	\$0.10
Propane	325	24	\$12,823	689	50	\$28,911
Commercial Vehicles	129,713	8,555	\$3,701,023	127,184	8,159	\$6,982,155
Gasoline	57,058	3,654	\$1,762,679	56,610	3,592	\$3,140,433
Diesel	72,582	4,891	\$1,937,248	70,484	4,566	\$3,838,210
Electricity	73	1	\$1,096	85	0.3	\$3,293
Natural Gas	0.01	0.3	\$0.04	-	-	-
Propane	-	-	-	5	0.5	\$219
Residential Buildings	185,240	5,376	\$2,460,803	183,797	4,625	\$4,837,792
Electricity	99,018	811	\$1,485,273	98,105	313	\$3,815,205
Natural Gas	54,294	2,697	\$450,043	69,230	3,463	\$655,944
Propane	1,028	63	\$40,607	1,014	62	\$42,576
Heating Oil	12,495	854	\$301,193	2,176	150	\$115,037
Wood	18,404	950	\$183,687	13,272	637	\$209,030
Commercial Buildings	140,801	3,669	\$1,705,073	138,276	3,173	\$3,661,757
Electricity	80,162	657	\$1,202,437	79,949	255	\$3,109,120
Natural Gas	60,639	3,013	\$502,636	58,327	2,918	\$552,637
Waste		2,367			1,837	
Other Emissions		2,676			3,041	
Ferry		1,942			2,276	
Marine		734			765	
Industry		-			-	

Table A3. 2007 and 2022 Sechelt Inventories

	2007			2022		
	Energy Use (GJ)	Emissions (tCO ₂ e)	Expenditure	Energy Use (GJ)	Emissions (tCO ₂ e)	Expenditure
Passenger Vehicles	285,350	19,412	\$8,778,672	313,786	19,823	\$18,269,392
Gasoline	275,719	18,726	\$8,517,735	303,193	19,233	\$17,717,962
Diesel	9,289	659	\$247,917	7,130	464	\$394,792
Electricity	21	0.2	\$311	1,718	5	\$66,959
Natural Gas	-	-	-	-	-	-
Propane	322	27	\$12,708	1,746	121	\$89,679
Commercial Vehicles	203,948	14,017	\$6,013,704	270,122	16,876	\$15,231,770
Gasoline	137,110	9,289	\$4,235,705	128,818	8,172	\$7,527,872
Diesel	66,309	4,697	\$1,769,819	133,908	8,676	\$7,415,012
Electricity	27	0.2	\$400	7,341	23	\$286,088
Natural Gas	387	19	\$3,207	-	-	-
Propane	116	11	\$4,573	54	5	\$2,798
Residential Buildings	428,430	12,290	\$5,662,797	514,116	13,316	\$13,684,833
Electricity	231,332	1,896	\$3,469,981	266,355	851	\$10,379,744
Natural Gas	128,666	6,392	\$1,066,512	212,796	10,662	\$2,564,592
Propane	2,203	134	\$87,036	2,154	131	\$110,632
Heating Oil	26,782	1,831	\$645,563	4,622	318	\$235,988
Wood	39,447	2,037	\$393,705	28,189	1,353	\$393,878
Commercial Buildings	194,037	4,964	\$2,364,805	197,119	4,657	\$5,375,763
Electricity	112,715	924	\$1,690,731	111,455	356	\$4,343,349
Natural Gas	81,321	4,040	\$674,074	85,664	4,301	\$1,032,414
Waste		6,011			6,232	
Other Emissions		5,562			7,040	
Ferry		4,037			5,270	
Marine		1,525			1,770	
Industry		-			-	

Table A4. 2007 and 2022 shíshálh Nation Inventories

	2007			2022		
	Energy Use (GJ)	Emissions (tCO ₂ e)	Expenditure	Energy Use (GJ)	Emissions (tCO ₂ e)	Expenditure
Passenger Vehicles	35,142	2,390	\$1,081,917	19,933	1,258	\$1,160,044
Gasoline	34,012	2,310	\$1,050,713	19,131	1,213	\$1,117,966
Diesel	1,034	73	\$27,586	605	39	\$33,516
Electricity	9	0.1	\$141	126	0.4	\$4,913
Natural Gas	-	-	-	-	-	-
Propane	88	7	\$3,477	71	5	\$3,648
Commercial Vehicles	45,807	3,189	\$1,298,769	29,785	1,915	\$1,680,976
Gasoline	18,086	1,225	\$558,742	10,464	664	\$611,516
Diesel	27,708	1,963	\$739,532	19,300	1,250	\$1,068,707
Electricity	-	-	-	13	0.04	\$513
Natural Gas	-	-	-	4	0.2	\$53
Propane	13	1	\$495	4	0.3	\$186
Residential Buildings	33,861	1,142	\$449,347	38,512	832	\$1,103,494
Electricity	14,813	121	\$222,195	23,437	75	\$913,319
Natural Gas	10,571	525	\$87,621	14,144	709	\$170,465
Propane	273	17	\$10,782	57	3	\$2,945
Heating Oil	3,318	227	\$79,975	123	8	\$6,281
Wood	4,887	252	\$48,773	750	36	\$10,484
Commercial Buildings	7,218	59	\$108,263	9,834	40	\$378,513
Electricity	7,218	59	\$108,263	9,659	31	\$376,402
Natural Gas	-	-	-	175	9	\$2,110
Waste		562			415	
Other Emissions		546			486	
Ferry		397			364	
Marine		150			122	
Industry		-			-	

Table A5. 2007 and 2022 SCRDU Inventories

	2007			2022		
	Energy Use (GJ)	Emissions (tCO ₂ e)	Expenditure	Energy Use (GJ)	Emissions (tCO ₂ e)	Expenditure
Passenger Vehicles	402,651	27,380	\$12,388,916	437,288	27,549	\$25,404,546
Gasoline	389,610	26,452	\$12,036,159	411,907	26,131	\$24,071,036
Diesel	12,531	890	\$334,458	19,404	1,262	\$1,074,481
Electricity	76	1	\$1,135	3,847	12	\$149,897
Natural Gas	-	-	-	7	0.3	\$84
Propane	434	37	\$17,165	2,123	144	\$109,048
Commercial Vehicles	337,707	23,148	\$9,933,232	381,549	24,456	\$21,727,917
Gasoline	222,429	15,065	\$6,871,476	196,045	12,430	\$11,456,465
Diesel	113,388	8,032	\$3,026,381	185,364	12,012	\$10,264,282
Electricity	1,404	12	\$21,059	-	-	-
Natural Gas	157	8	\$1,304	2	0.1	\$18
Propane	329	31	\$13,013	139	12	\$7,153
Residential Buildings	814,700	19,151	\$11,730,927	768,272	13,833	\$24,369,552
Electricity	547,795	4,489	\$8,216,928	528,799	1,689	\$20,607,075
Natural Gas	107,582	5,345	\$891,747	143,446	7,194	\$1,728,799
Propane	5,129	313	\$202,636	5,915	361	\$303,836
Heating Oil	62,354	4,264	\$1,502,995	12,694	873	\$648,109
Wood	91,841	4,741	\$916,620	77,417	3,716	\$1,081,734
Commercial Buildings	234,258	2,105	\$3,483,866	221,803	888	\$8,539,353
Electricity	229,787	1,883	\$3,446,809	217,932	696	\$8,492,700
Natural Gas	4,471	222	\$37,057	3,871	192	\$46,653
Waste		9,959			8,851	
Other Emissions		120,298			123,229	
Ferry		6,736			7,736	
Marine		2,545			2,599	
Industry		111,017			112,894	

Appendix B: Methods and Assumptions

To develop a comprehensive energy and emissions profile for SCRD and its jurisdictions from 2007 to 2022, CEA referenced various data sources and made necessary adjustments. This appendix outlines data sources, assumptions, and methodology used to develop the inventory.

Community Energy and Emissions Inventory

The primary data source for vehicles, buildings, and waste inventories was the [Community Energy and Emissions Inventory \(CEEI\)](#) from the Province of BC. The CEEI reports community-level energy use and GHG emissions for 2007, 2010, and 2012–2022. Additional information with respect to the CEEI is as follows:

- The Province of BC outlines a series of standard assumptions in creating the CEEI data on the [CEEI webpage](#).
- The Province of BC lists assumptions for buildings and vehicle emissions information in the community-level spreadsheets on the [Provincial Inventory webpage](#).
- The provincial electricity data includes emissions from electricity production imported from outside BC. It includes this on a net imports basis, and it accounts for fluctuations in hydroelectric capacity due to weather by calculating emissions on a 4-year rolling average.

Vehicles

The CEEI further disaggregates on-road transportation data by vehicle type, fuel type, and vehicle fuel category. CEA reclassified vehicle type to passenger and commercial vehicles (i.e., transportation sectors in the inventory) using [Insurance Corporation of British Columbia \(ICBC\) definitions](#). Although motorcycles are classified in their own category according to ICBC, they were included under passenger vehicles for this analysis. CEA also recategorized conventional hybrid vehicles as gasoline or propane vehicles, depending on its vehicle fuel category. Table A6 and Table A7 illustrate how SCRD inventories derive transportation sectors and fuel types from CEEI's vehicle classifications.

Table A6. Transportation Sector Reclassified From CEEI

Sector (Reclassified)	Vehicle Type (CEEI)
Passenger Vehicle	Passenger, Mini Van, Sports Car, SUV, Motorhome, Motorcycle
Commercial Vehicle	Other Vans, Light Duty Trucks, Medium Duty Trucks, Public Transit Bus, Heavy Duty Trucks, Bus, Taxi/Limo

Table A7. Transportation Fuel Type Reclassified From CEEI

Fuel type (Reclassified)	Vehicle Type (CEEI)	Vehicle Fuel Category (CEEI)
Gasoline	Gasoline	All vehicle fuel categories
	Conventional Hybrid	Heavy-Duty Gasoline Vehicles
	Conventional Hybrid	Light-Duty Gasoline Trucks
	Conventional Hybrid	Light-Duty Gasoline Vehicles
	Conventional Hybrid	Motorcycles
Diesel	Diesel	All vehicle fuel categories
Electricity	ZEV – Battery Electric Vehicle	All vehicle fuel categories
	ZEV – Plug-In Hybrid Electric Vehicle	All vehicle fuel categories
	ZEV – Other	All vehicle fuel categories
	Other	Zero Emissions
Propane	Conventional Hybrid	Propane and Natural Gas Vehicles
	Other	Propane and Natural Gas Vehicles
	Other	Motorcycles
Natural Gas	Natural Gas	All vehicle fuel categories

The CEEI reports fuel consumption in litres equivalent. To convert energy consumption to gigajoules, CEA referenced GJ/L conversion factors from the [2020 BC Best Practices Methodology for Quantifying Greenhouse Gas Emissions](#). For zero-emissions vehicles (ZEV), CEA divided GHG emissions by liters equivalent and then divided the result by the electricity emission factor obtained from the [Government of BC](#) to determine the energy consumption in GJs. Similarly, for natural gas vehicles, CEA divided GHG emissions by the average natural gas emission factor used in CEEI utilities dataset.

Additionally, CEA made several modifications to the CEEI data to better reflect communities' energy use from on-road transportation:

- Gibsons: The inventory uses the same methodology reported in the Town of Gibsons' [Low Carbon Resilience Climate Action Plan](#).
- Sechelt: Adjusted fuel consumption from passenger and commercial vehicles for 2021–2022 by population because the data seemed unreasonably low for those years.
- shíshálh Nation: Adjusted fuel consumption from passenger and commercial vehicles for 2007–2012 by population because the data seemed unreasonably high for those years.
- SCRD: Summed vehicle-related energy consumption, emissions, and expenditures from all communities, rather than referring to CEEI values, to account for adjustments described above.

Buildings

CEA made the following modifications to the building data:

- BC Hydro provided electricity consumption data for a mixed building sector in addition to residential and commercial building sectors. Energy consumption from the mixed building sector accounted for less than 1% of total consumption in SCRD in 2022 and was aggregated with residential building energy use.
- Fortis BC provided natural gas and renewable natural gas (RNG) consumption data. Since RNG accounted for less than 0.1% of total natural gas consumption in SCRD in 2022, RNG consumption was aggregated with natural gas usage.
- Gibsons:
 - Removed the Howe Sound Pulp and Paper Mill emissions, sourced from the [BC industrial facility greenhouse gas reporting database](#), from Gibsons' commercial natural gas emissions and allocated it to the SCRDUA's industrial emissions. For 2007 and 2010, an older version of the CEEI data was used for Gibsons' commercial natural gas emissions because it already excluded large industrial emissions for those years.
 - The inventory uses the same methodology reported in the Town of Gibsons' [Low Carbon Resilience Climate Action Plan](#).
- Sechelt:
 - Adjusted residential natural gas usage for 2022 by population because the data seemed unreasonably low.
- shíshálh Nation:

- Adjusted residential natural gas usage for 2007–2010 and 2022 by population because the data seemed unreasonably low.
- Adjusted commercial natural gas consumption and emissions for 2007–2010 using an updated CEEI dataset from the province because the original CEEI dataset was missing commercial natural gas data for this community.
- SCRD: Summed building-related energy consumption, emissions, and expenditures from all communities, rather than referring to CEEI values, to account for adjustments described above.

Waste

For waste emissions, CEA used the Waste in Place (WIP) method, which counts emissions occurring in the inventory year from waste disposed of in previous years. Several adjustments were made to the CEEI data to better reflect community waste emissions:

- Gibsons: The inventory uses the same methodology reported in the Town of Gibsons' [Low Carbon Resilience Climate Action Plan](#). The Town provided residential solid and organic waste tonnage. CEA estimated commercial solid waste tonnage by applying the residential-to-commercial waste ratio reported by [Metro Vancouver](#) in 2021. Solid waste emissions were calculated using the CEEI WIP emission factor, and organic waste emissions were calculated using the [GHG Protocol](#) method.
- Sechelt and shíshálh Nation: Switched 2012 emissions, which were likely reversed in error in the CEEI dataset. Linearly interpolated waste emissions for 2013–2018.

Additional Data

Fuel Prices

Gasoline, diesel, and heating oil prices for 2007 and 2022 were calculated using monthly average fuel prices for 2007 and 2022 in Vancouver, BC, reported by [Natural Resources Canada](#).

Electricity and natural gas costs for residential and commercial buildings were calculated using BC Hydro and FortisBC rates. Propane and wood prices were provided by SCRD.

Table A8 summarizes the fuel prices used in the analysis. Fuel prices were assumed to be consistent across all sectors (e.g. residential and commercial buildings).

Table A8. Summary of 2007 and 2022 Fuel Prices ⁴

Fuel Type	Fuel Price (\$/GJ)	
	2007	2022
Gasoline	\$30.89	\$58.44
Diesel	\$26.69	\$55.37
Electricity	\$15.00	\$38.97
Natural Gas	\$8.29	\$12.05
Propane	\$39.51	\$51.36
Heating Oil	\$24.10	\$51.06
Wood	\$9.98	\$13.97

⁴ The Town of Gibsons' fuel prices vary slightly; prices are as reported in the [Low Carbon Resilience Climate Action Plan](#).

Population

Population data for each community are from [BC Population Estimates](#). The inventory uses population growth derived from these estimates to support several adjustments.

Ferry Emissions

Ferry emissions were estimated based on the emissions per round trip, which were estimated based on emissions data in BC Ferries' [Clean Futures Plan 2022](#). The number of round trips from 2007-2014 were estimated based on the data provided in BC Ferries' annual reports in [2015-2022](#). Route 3 (Langdale) emissions were allocated to the SCRD and its jurisdictions relative to their population; even though the ferry only goes to Langdale, CEA assumed that people travel from all over the SCRD to use the ferry, not just those in the Langdale area.

Marine Emissions

Gasoline and diesel consumption from marine transportation were provided by the SCRD and CEA estimated emissions using marine gasoline and diesel emission factors reported by the [BC Ministry of Energy and Climate Solutions](#).

Large Industrial Emissions

Emissions data from the Howe Sound Pulp and Paper Mill, gathered from the [BC industrial facility greenhouse gas reporting database](#), was subtracted from the Gibsons community inventory and added to the SCRDUA other emissions inventory. CEEI data was used for 2007 and 2010, as it already excluded large industrial. Biogenic CO₂ emissions are excluded from the analysis. Other industrial facilities, such as the Heidelberg Materials Sechelt Mine, are not captured in this inventory.