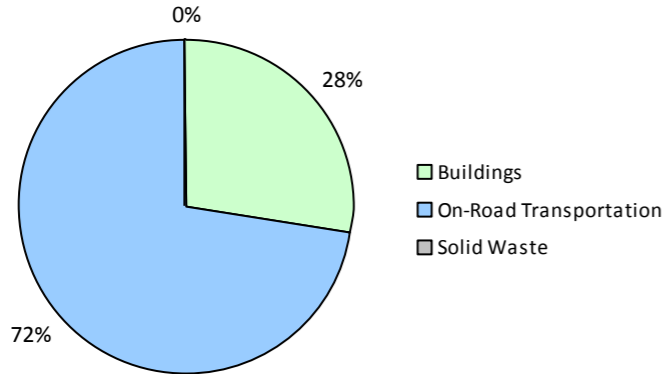
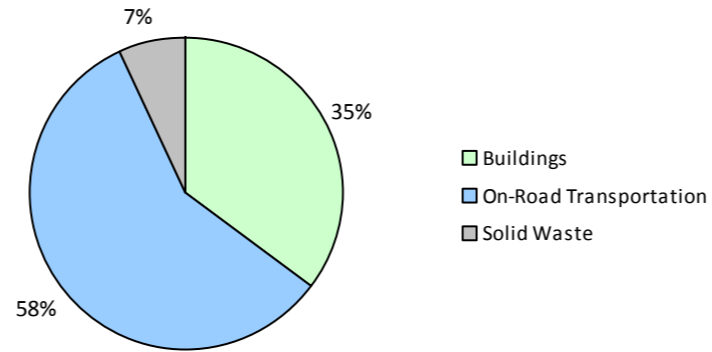


Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

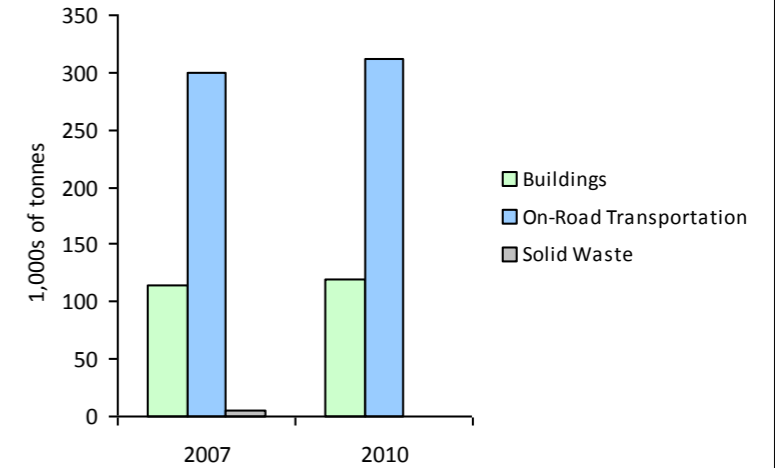
2010 GHG Emissions Sources (Total for this Community)



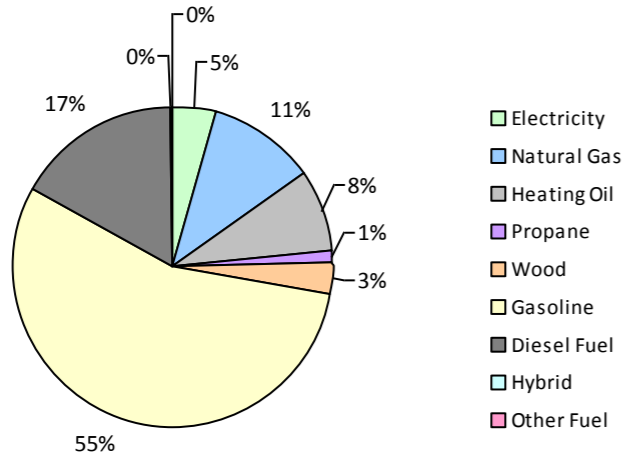
2010 GHG Emissions Sources (Total for BC)



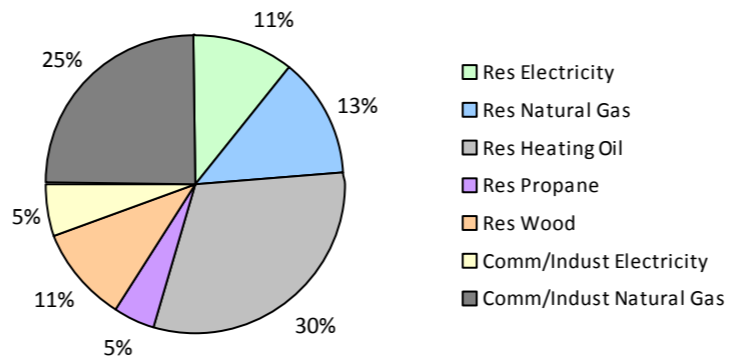
GHG Emissions Comparisons for this Community



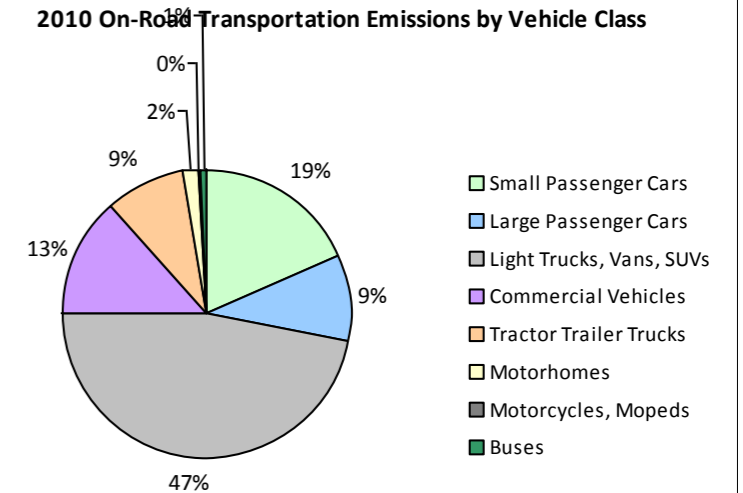
2010 Total Emissions by Fuel Type



2010 Building Emissions by Subsector



2010 On-Road Transportation Emissions by Vehicle Class



Cowichan Valley Regional District 2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Core Items

On-Road Transportation		2007					2010				
		Connections	Consumption	Avg VKT (km)	Energy (GJ)	CO2e (t)	Connections	Consumption	Avg VKT (km)	Energy (GJ)	CO2e (t)
Small Passenger Cars	Hybrid	19	17,014 L	19,200	596	40	53	54,109 L	19,900	1,894	121
	Gasoline	15,779	22,792,776 L	15,400	797,747	54,282	16,309	24,309,004 L	16,000	850,816	54,670
	Diesel Fuel	717	1,210,176 L	25,300	46,350	3,304	708	1,169,078 L	24,600	44,775	3,100
Large Passenger Cars	Hybrid	53	61,476 L	21,200	2,151	144	164	219,816 L	23,600	7,693	489
	Gasoline	7,721	13,084,737 L	14,900	457,965	31,154	7,314	12,606,911 L	15,200	441,242	28,356
	Diesel Fuel	120	153,524 L	13,400	5,880	418	153	179,671 L	12,400	6,882	475
	Other Fuel			10,600	307	19			12,400	67	4
Light Trucks, Vans, SUVs	Hybrid			17,600	444	30	42	89,020 L	23,300	3,115	200
	Gasoline	21,767	52,441,027 L	16,900	1,835,435	125,696	24,413	61,207,485 L	17,700	2,142,262	138,946
	Diesel Fuel	1,316	2,720,699 L	11,800	104,203	7,408	1,011	2,436,622 L	14,500	93,323	6,447
	Other Fuel	157	308,796 L	11,500	7,811	473	80	147,362 L	11,000	3,728	226
Commercial Vehicles	Gasoline	1,793	5,184,986 L	17,100	181,475	12,184	1,957	5,521,971 L	16,800	193,269	12,351
	Diesel Fuel	2,361	8,110,196 L	18,900	310,620	21,825	2,957	11,295,949 L	21,300	432,634	29,494
	Other Fuel	62	135,275 L	11,700	3,423	208	45	90,436 L	11,000	2,288	137
Tractor Trailer Trucks	Gasoline			29,600	2,295	154	10	74,210 L	27,300	2,598	165
	Diesel Fuel	649	12,989,290 L	44,400	497,489	34,954	576	10,990,315 L	42,600	420,929	28,696
	Other Fuel			9,400	113	7			10,200	61	4
Motorhomes	Gasoline	511	1,180,115 L	16,400	41,304	2,755	510	1,204,646 L	16,500	42,163	2,679
	Diesel Fuel	317	973,695 L	16,500	37,292	2,620	287	896,123 L	16,500	34,321	2,339
	Other Fuel			18,400	396	25			16,100	377	23
Motorcycles, Mopeds	Gasoline	1,074	247,227 L	5,100	8,653	576	1,293	348,663 L	6,000	12,203	774
Buses	Hybrid								27,300	46	4
	Gasoline	69	205,579 L	17,700	7,195	483	49	136,882 L	17,700	4,792	306
	Diesel Fuel	82	485,177 L	24,900	18,583	1,307	87	526,599 L	25,400	20,168	1,375
	Other Fuel			11,900	208	13			10,600	227	13
Totals		54,567	122,301,765 L	16,340	4,367,935	300,079	58,018	122,301,765 L	17,066	4,761,873	311,394

Cowichan Valley Regional District 2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Residential	Wood	N/A	648,804 GJ	648,804	13,145	N/A	628,066 GJ	628,066	12,725
	Heating Oil	N/A	541,385 GJ	541,385	38,162	N/A	524,081 GJ	524,081	35,842
	Propane	N/A	93,345 GJ	93,345	5,695	N/A	90,362 GJ	90,362	5,513
	Natural Gas	5,823	307,207 GJ	307,207	15,410	6,792	310,128 GJ	310,128	15,554
	Electricity	33,690	528,140,280 kWh	1,901,303	13,204	35,262	534,394,359 kWh	1,923,818	13,360
Commercial/Small-Medium Industrial	Natural Gas	936	459,762 GJ	459,762	23,062	759	605,868 GJ	605,868	30,390
	Electricity	4,252	248,783,669 kWh	895,620	6,220	4,481	255,389,275 kWh	919,401	6,385
Totals		44,701		4,847,426	114,898	47,294		5,001,724	119,769

Solid Waste		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	27,948 t	N/A	5,923	0	27,139 t	N/A	0
Totals		0			5,923	0			0

Memo Items

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Large Industrial	Natural Gas	1		0	0				
	Electricity	6		0	0	5		0	0
Totals		7			0	5			0

Agriculture		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Enteric Fermentation	Methane	15,297	878 t	0	18,438				
Totals		15,297			18,438	0			

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Land-use Change - Deforestation	2007				2010			
	Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Agriculture Deforestation	14	0 ha	0	9,337				
Settlement Deforestation	29	0 ha	0	26,128				
Totals	43			35,465	0			

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 79,558)			2010 (Population: 82,871)		
	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)
Hybrid	78,490 L	3,191	214	362,945 L	12,748	814
Gasoline	95,136,447 L	3,332,069	227,284	105,409,772 L	3,689,345	238,247
Diesel Fuel	26,642,757 L	1,020,417	71,836	27,494,357 L	1,053,032	71,926
Other Fuel	444,071 L	12,258	745	237,798 L	6,748	407
Wood	648,804 GJ	648,804	13,145	628,066 GJ	628,066	12,725
Heating Oil	541,385 GJ	541,385	38,162	524,081 GJ	524,081	35,842
Propane	93,345 GJ	93,345	5,695	90,362 GJ	90,362	5,513
Natural Gas	766,969 GJ	766,969	38,472	915,996 GJ	915,996	45,944
Electricity	776,923,949 kWh	2,796,923	19,424	789,783,634 kWh	2,843,219	19,745
Solid Waste	27,948 t	0	5,923	27,139 t	0	0
Grand Totals		9,215,361	420,900		9,763,597	431,163

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Supporting Indicators

No new supporting indicator data have been provided in the 2010 reports. Work is currently underway to produce a complete second round of data for the indicators below in the 2012 reports (available in 2014). In the interim, we are including the same supporting indicator data that was provided in the 2007 reports. Feedback is requested on all supporting indicators; please contact us directly at

Housing Type - Private dwellings by structural type

Housing type is important for reducing building-related GHG emissions and energy consumption. A trend toward fewer single family dwellings indicates an increase in residential density, which is known to reduce transportation-related GHG emissions.

	1996		2001		2006	
	Units	%	Units	%	Units	%
Single Detached House	20,760	43	21,940	76	23,200	74
Semi-Detached House	905	2	900	3	1,240	4
Row House	930	2	1,240	4	1,335	4
Apartment, Duplex	580	1	480	2	865	3
Apartment, 5 storeys or higher	10	0	15	0	10	0
Apartment, under 5 storeys	2,640	6	2,830	10	3,240	10
Other Single Attached House	55	0	140	0	130	0
Movable Dwelling	1,320	3	1,300	5	1,200	4

Commute to Work - Employed labour force - by mode of commute

An increase in the number of people choosing to walk, cycle and use transit reduces GHG emissions. More compact, complete, connected communities should see an increase in the use of these transportation modes.

	1996		2001		2006	
	Units	%	Units	%	Units	%
Car, Truck, Van as Driver	22,145	83	23,165	84	25,685	81
Car, Truck, Van as Passenger	2,005	7	1,990	7	2,825	9
Public Transit	215	1	170	1	340	1
Walked	1,705	6	1,705	6	2,050	6
Bicycle	310	1	265	1	300	1
Motorcycle	40	0	45	0	105	0
Taxicab	20	0	0	0	25	0
Other Method	395	1	320	1	425	1

Parks and Protected Greenspace

Parks and protected greenspaces are important for the protection and enhancement of community carbon sinks.

	2009	
	Units	%
National Parks	5,582	2
Provincial Parks / Protected Areas	18,882	5
Local Parks	1,217	0
Agricultural Land Reserve	18,999	5
Other land use	304,848	87
Total Parks and Protected Area	25,682	7
Total Land Area	349,529	100

* Total is net of Indian Reserves
 ** Quantity of parkland may be underestimated

Residential Density

Increasing residential densities is known to reduce vehicle use resulting in fewer transportation-related GHG emissions. There are many additional benefits from more compact development.

	2009	
	Units	%
National Parks	5,582	2
Provincial Parks / Protected Areas	18,882	5
Local Parks	1,217	0
Agricultural Land Reserve	18,999	5
Other land use	304,848	87
Total Parks and Protected Area	25,682	7
Total Land Area	349,529	100

* Net of Crown land, parks, Indian Reserves, water features, airports, ALR, waste disposal site

Cowichan Valley Regional District
2010 Community Energy and Emissions Inventory
Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

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Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Supporting Indicators Under Consideration

Work is currently underway to produce a complete second round of supporting indicators for the 2012 reports (available in 2014). These reports will new data for the five supporting indicators included in the 2007 and 2010 Reports:

- **Housing Type:** Private dwellings by structural type
- **Commute to Work:** Employed labour force - by mode of commute
- **Commute Distance**
- **Residential Density**
- **Parks and Protected Greenspace**

And in addition, the 2012 reports we are working to be able to include:

- **Proximity to Transit**
- **Building Energy Intensity**
- **Building Floor Space**
- **Waste Diversion**

We are continuing to work towards reporting on even more supporting indicators in the future including:

- **Proximity to Services** (e.g. destinations such as grocery store, school, other retail etc.)
- **Transit Ridership**
- **Water Use**
- **Impervious Surface Cover:** % change in impervious surface cover
- **Tree Canopy Cover:** % change in tree canopy cover
- **District Energy:** # and energy output (e.g. buildings connected, energy consumed in GJ or kWh) of district energy systems by energy type e.g. renewable or non-renewable)
- **On-Site Renewable Energy:** # and energy output (in GJ or kWh) from households producing and/or consuming on-site renewable heat (e.g. biomass, solar thermal, geo-exchange) and/or electrical (e.g. solar photovoltaic, small wind, small scale hydro) energy
- **Energy Recovery** from waste energy (GJ or kWh) recovered from waste (e.g. from landfill gas, sewage treatment, industrial operations, farm)

Please give us feedback by contacting us directly at CEEIRPT@gov.bc.ca

Many local governments have been undertaking a significant amount of climate action in both the corporate and community-wide spheres, as demonstrated in both the public reports from the Climate Action Revenue Incentive Program (CARIP) <http://www.cscd.gov.bc.ca/lgd/greencommunities/carip.htm>, and on the <http://toolkit.bc.ca> website. These two resources may be helpful to those who are interested in learning from other BC local governments. The toolkit also contains additional information and resources including decision-support/planning frameworks and tools for undertaking actions to reduce GHG emissions and energy consumption.

This is your local government's 2010 Community Energy and Emissions Inventory (CEEI) Report

What is a CEEI Report?

CEEI Reports are a result of a multi-agency effort to provide a province-wide solution to assist local governments in BC to track and report on community-wide energy consumption and greenhouse gas (GHG) emissions as well as supporting indicators every two years. CEEI Reports are one of the many resources available through the Climate Action Toolkit (<http://www.toolkit.bc.ca>), a web-based service provided through the ongoing collaboration between UBCM and the Province.

Why does my local government need a CEEI Report?

A community energy and GHG emissions inventory can be a valuable tool that helps local governments plan and implement GHG and energy management strategies, while at the same time strengthening broader sustainability planning at the local level. CEEI reports fulfill local governments' Climate Action Charter commitment to measure and report their community's GHG emissions profile, establish a base year inventory for local governments to consider as they develop targets, policies, and actions related to BC's Local Government Act requirements, fulfill Milestone One requirements for those local government members of the Federation of Canadian Municipalities' (FCM's) Partners in Climate Protection (PCP) program, as well as supporting local government efforts to monitor progress towards Regional Growth Strategy objectives.

A first in North America!

CEEI is a first in North America and a first step for BC communities. The 2010 CEEI Reports are based on best available province-wide data. The accuracy and detail of CEEI reports will continue to improve to meet increasing local and provincial government information needs. Improvements have been made from the original draft 2007 CEEI Reports posted in Spring 2009. These include estimates for residential heating oil, propane and wood use, breaking out small from large industrial buildings, including updated land-use change and new agricultural sectors as 'memo items'. Following the 2010 CEEI Reports, inventories will be generated every two years, and will continue to improve as government information needs, international protocols and new data sources emerge.

For More Information

The full list of all BC local government 2010 CEEI Reports, User Guide, Technical Methods and Guidance Document, and additional information on the Supporting Indicators are available at: <http://www.env.gov.bc.ca/cas/mitigation/ceei/index.html> For guidance on target setting and community actions, go to <http://www.toolkit.bc.ca> and <http://www.cd.gov.bc.ca/lgd/greencommunities/targets.htm>

We Need Your Feedback

To continue to guide us on CEEI, please take the time to contact us directly at CEEIRPT@gov.bc.ca

Notice to the Reader

This CEEI Report uses information from a variety of sources to estimate GHG emissions. While the methodologies, assumptions and data used are intended to provide reasonable estimates of greenhouse gas emissions, the information presented in this report may not be appropriate for all purposes. The Province of BC and the data providers do not provide any warranty to the user or guarantee the accuracy or reliability of the data contained in this report. The user accepts responsibility for the ultimate use of such data. We need your help to make these reports better,