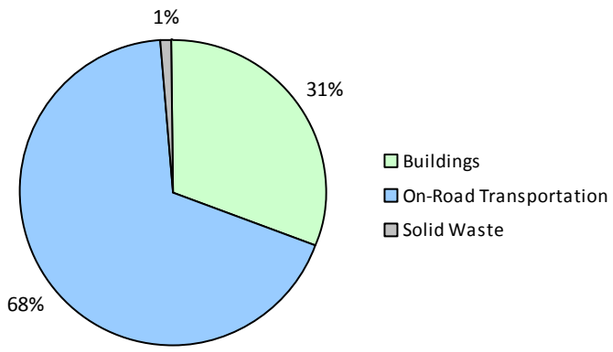
Powell River Regional District

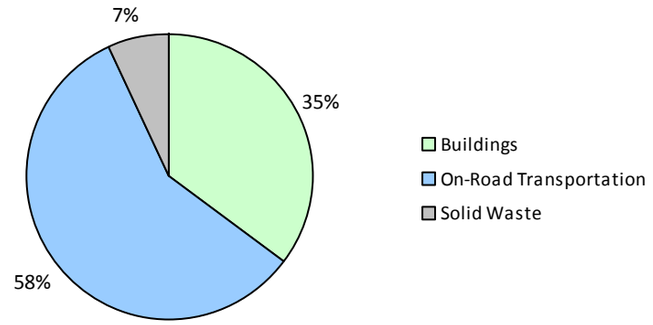
2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

2010 GHG Emissions Sources (Total for this Community)

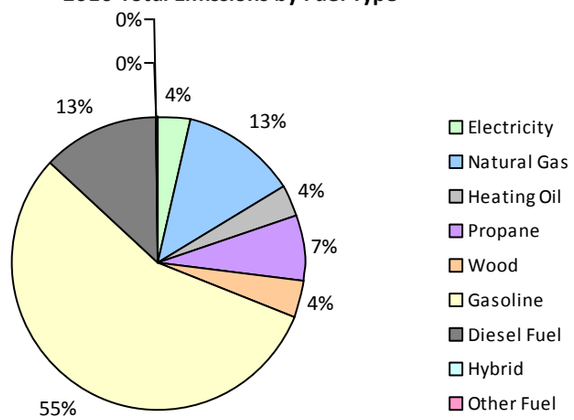


2010 GHG Emissions Sources (Total for BC)

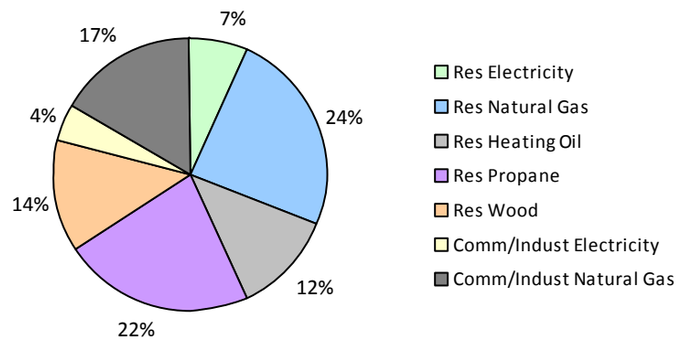


GHG Emissions Comparisons for this Community

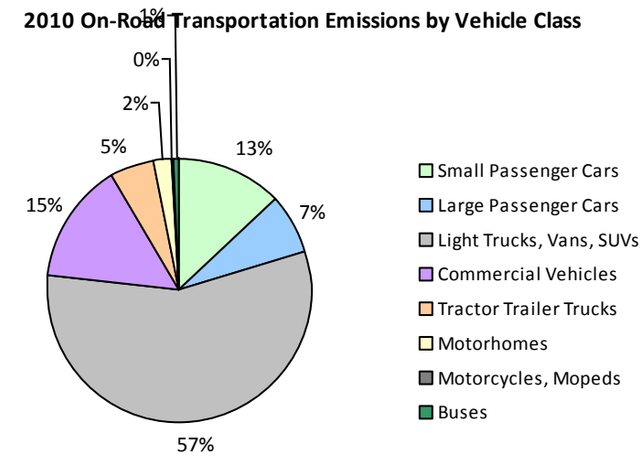
2010 Total Emissions by Fuel Type



2010 Building Emissions by Subsector



2010 On-Road Transportation Emissions by Vehicle Class



Core Items

On-Road Transportation		2007					2010				
		Connections	Consumption	Avg VKT (km)	Energy (GJ)	C02e (t)	Connections	Consumption	Avg VKT (km)	Energy (GJ)	C02e (t)
Small Passenger Cars	Hybrid			14,700	56	4			18,500	258	16
	Gasoline	3,519	4,713,544 L	14,200	164,975	11,265	3,472	4,642,489 L	14,300	162,487	10,468
	Diesel Fuel	105	139,946 L	19,800	5,361	382	103	131,432 L	19,400	5,035	348
Large Passenger Cars	Hybrid			19,300	262	19	22	28,845 L	23,500	1,010	65
	Gasoline	1,944	3,006,379 L	13,600	105,223	7,186	1,753	2,619,511 L	13,200	91,683	5,915
	Diesel Fuel	30	36,022 L	12,300	1,380	98	36	37,727 L	11,000	1,445	101
	Other Fuel			9,700	66	4					
Light Trucks, Vans, SUVs	Hybrid			15,500	212	14	10	15,427 L	17,900	540	34
	Gasoline	7,192	18,305,278 L	17,500	640,685	43,989	7,576	19,409,788 L	17,700	679,342	44,177
	Diesel Fuel	503	1,080,555 L	12,000	41,386	2,940	320	741,942 L	13,200	28,417	1,960
	Other Fuel	36	75,946 L	12,500	1,922	117	25	50,107 L	12,100	1,268	77
Commercial Vehicles	Gasoline	632	1,936,830 L	18,100	67,790	4,549	701	2,126,681 L	18,200	74,433	4,755
	Diesel Fuel	629	2,292,192 L	20,200	87,791	6,168	729	2,893,038 L	22,100	110,804	7,553
	Other Fuel	33	75,781 L	12,400	1,917	117	29	65,491 L	12,300	1,656	101
Tractor Trailer Trucks	Gasoline			23,000	1,545	102			20,900	1,409	88
	Diesel Fuel	165	2,323,078 L	31,900	88,975	6,251	149	1,628,415 L	24,700	62,368	4,251
Motorhomes	Gasoline	154	432,427 L	20,100	15,134	1,009	172	488,022 L	20,100	17,081	1,085
	Diesel Fuel	91	293,896 L	18,400	11,256	791	82	284,113 L	18,500	10,882	742
	Other Fuel			21,100	347	21			21,800	419	25
Motorcycles, Mopeds	Gasoline	311	66,074 L	4,800	2,313	155	354	89,717 L	5,700	3,140	199
Buses	Gasoline	28	77,873 L	18,000	2,726	183	32	78,205 L	16,500	2,738	174
	Diesel Fuel	25	120,303 L	19,200	4,608	324	32	144,515 L	39,700	5,534	378
	Other Fuel			12,400	20	2			11,700	28	2
Totals		**15,397**	**34,976,124 L**	**16,124**	**1,245,950**	**85,690**	**15,597**	**34,976,124 L**	**16,426**	**1,261,977**	**82,514**

Powell River Regional District

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Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Residential	Wood	N/A	259,774 GJ	259,774	5,263	N/A	251,471 GJ	251,471	5,095
	Heating Oil	N/A	66,816 GJ	66,816	4,710	N/A	64,681 GJ	64,681	4,424
	Propane	N/A	140,985 GJ	140,985	8,601	N/A	136,479 GJ	136,479	8,327
	Natural Gas	3,071	200,544 GJ	200,544	10,059	3,123	178,280 GJ	178,280	8,943
	Electricity	8,991	110,143,425 kWh	396,516	2,754	9,226	108,157,894 kWh	389,368	2,704
Commercial/Small-Medium Industrial	Natural Gas	305	135,005 GJ	135,005	6,771	278	123,903 GJ	123,903	6,215
	Electricity	1,277	72,178,684 kWh	259,843	1,805	1,355	67,126,494 kWh	241,655	1,678
Totals		**13,644**		**1,459,483**	**39,963**	**13,982**		**1,385,837**	**37,386**

Solid Waste		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	4,453 t	N/A	944	0	4,601 t	N/A	1,355
Totals		**0**			**944**	**0**			**1,355**

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	1		0	0	1		0	0
Totals		**2**			**0**	**1**			**0**

Agriculture		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Enteric Fermentation	Methane	916	25 t	0	525				
Totals		**916**			**525**	**0**			

Land-use Change - Deforestation		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Settlement	Deforestation	32	0 ha	0	28,541				
Totals		**32**			**28,541**	**0**			

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 19,791)			2010 (Population: 20,455)		
	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)
Hybrid	0 L	530	37	44,272 L	1,808	115
Gasoline	28,538,405 L	1,000,391	68,438	29,454,413 L	1,032,313	66,861
Diesel Fuel	6,285,992 L	240,757	16,954	5,861,182 L	224,485	15,333
Other Fuel	151,727 L	4,272	261	115,598 L	3,371	205
Wood	259,774 GJ	259,774	5,263	251,471 GJ	251,471	5,095
Heating Oil	66,816 GJ	66,816	4,710	64,681 GJ	64,681	4,424
Propane	140,985 GJ	140,985	8,601	136,479 GJ	136,479	8,327
Natural Gas	335,549 GJ	335,549	16,830	302,183 GJ	302,183	15,158
Electricity	182,322,109 kWh	656,359	4,559	175,284,388 kWh	631,023	4,382
Solid Waste	4,453 t	0	944	4,601 t	0	1,355
Grand Totals		**2,705,433**	**126,597**		**2,647,814**	**121,255**

Powell River Regional District

2010 Community Energy and Emissions Inventory

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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	6,840	46	6,680	79	7,025	80
Semi-Detached House	140	1	180	2	220	3
Row House	100	1	75	1	100	1
Apartment, Duplex	170	1	250	3	255	3
Apartment, 5 storeys or higher	0	0	0	0	20	0
Apartment, under 5 storeys	685	5	700	8	820	9
Other Single Attached House	20	0	40	0	20	0
Movable Dwelling	210	1	555	7	310	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	6,230	80	6,175	81	6,005	78
Car, Truck,Van as Passenger	525	7	445	6	585	8
Public Transit	70	1	80	1	125	2
Walked	590	8	635	8	515	7
Bicycle	255	3	175	2	230	3
Motorcycle	25	0	30	0	40	1
Taxicab	0	0	0	0	10	0
Other Method	115	1	125	2	175	2

Parks and Protected Greenspace

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

	2009	
	Units	%
National Parks	0	0
Provincial Parks / Protected Areas	12,733	2
Local Parks	85	0
Agricultural Land Reserve	9,687	2
Other land use	504,590	96
Total Parks and Protected Area	12,818	2
Total Land Area	527,095	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	0	0
Provincial Parks / Protected Areas	12,733	2
Local Parks	85	0
Agricultural Land Reserve	9,687	2
Other land use	504,590	96
Total Parks and Protected Area	12,818	2
Total Land Area	527,095	100

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

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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,