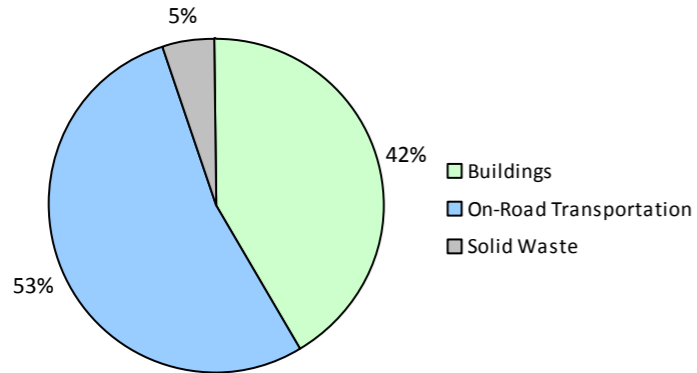


Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

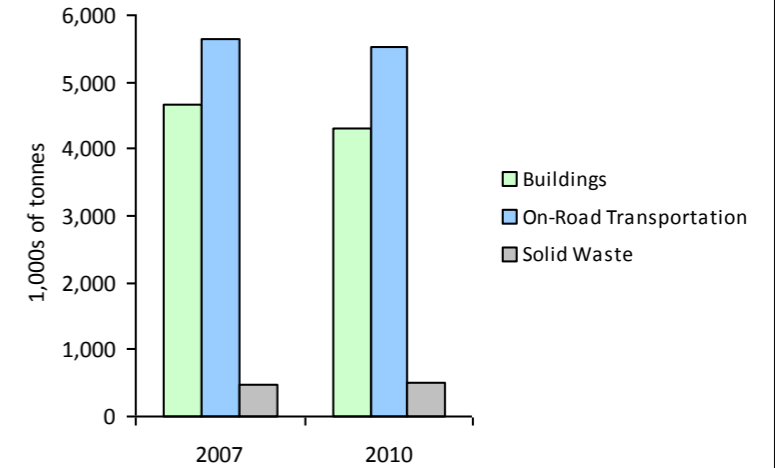
2010 GHG Emissions Sources (Total for this Community)



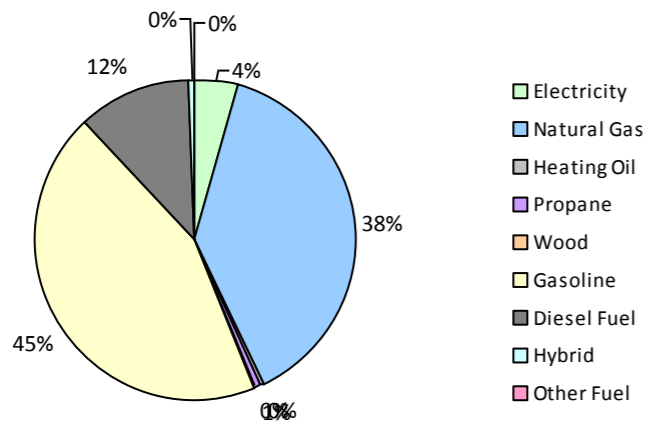
2010 GHG Emissions Sources (Total for BC)



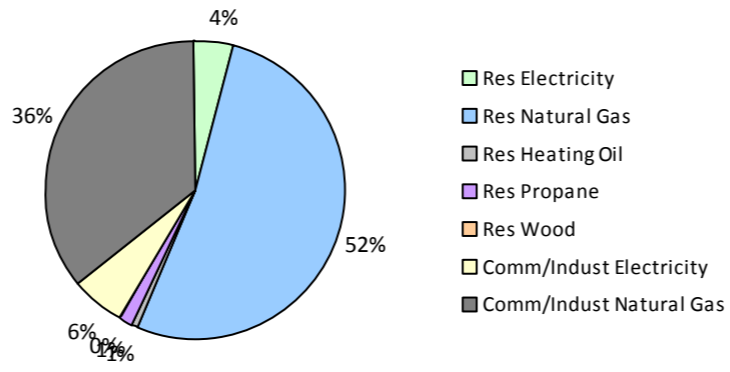
GHG Emissions Comparisons for this Community



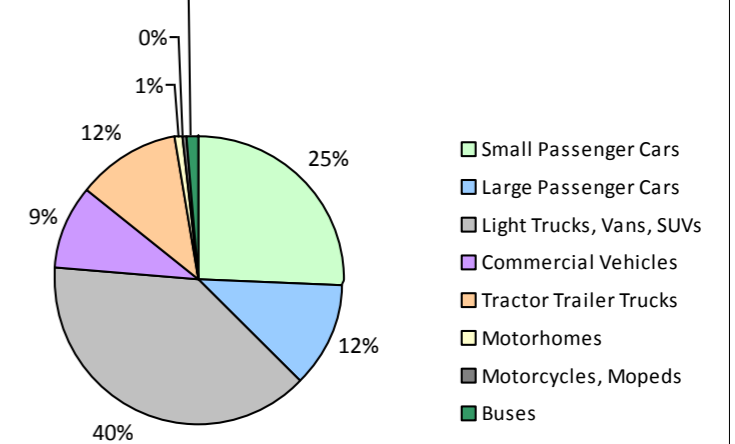
2010 Total Emissions by Fuel Type



2010 Building Emissions by Subsector



2010 On-Road Transportation Emissions by Vehicle Class



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	682	493,861 L	15,600	17,286	1,156	1,497	1,211,101 L	15,600	42,388	2,698
	Gasoline	476,025	621,330,849 L	13,700	21,746,580	1,472,004	478,860	614,623,892 L	13,500	21,511,836	1,377,575
	Diesel Fuel	8,144	9,061,039 L	16,600	347,038	24,742	8,274	9,202,241 L	16,400	352,446	24,398
	Other Fuel	59	78,931 L	14,400	1,997	121	144	215,790 L	15,300	5,459	331
Large Passenger Cars	Hybrid	1,968	2,565,912 L	25,000	89,807	6,007	5,964	9,257,874 L	27,100	324,026	20,619
	Gasoline	204,365	312,166,331 L	13,400	10,925,821	738,512	194,129	287,332,276 L	13,000	10,056,630	643,771
	Diesel Fuel	1,992	2,486,241 L	13,100	95,223	6,770	2,016	2,505,153 L	13,300	95,947	6,632
	Other Fuel	218	1,299,302 L	36,400	32,873	1,991	118	638,508 L	32,100	16,153	979
Light Trucks, Vans, SUVs	Hybrid	988	1,313,015 L	16,800	45,956	3,110	3,025	4,358,353 L	16,800	152,542	9,829
	Gasoline	406,441	859,415,668 L	15,200	30,079,548	2,048,513	448,483	919,145,379 L	14,900	32,170,088	2,079,238
	Diesel Fuel	6,503	15,809,735 L	14,500	605,512	43,090	7,335	19,705,471 L	18,100	754,720	52,214
	Other Fuel	1,986	4,042,826 L	12,200	102,284	6,194	1,196	2,282,740 L	11,500	57,753	3,497
Commercial Vehicles	Hybrid						120	302,514 L	21,300	10,588	678
	Gasoline	28,639	77,789,764 L	16,300	2,722,642	182,794	30,513	82,616,531 L	16,300	2,891,578	184,826
	Diesel Fuel	29,416	109,981,985 L	18,800	4,212,310	295,954	34,283	126,067,638 L	18,900	4,828,391	329,155
	Other Fuel	2,014	4,384,508 L	11,900	110,928	6,719	1,317	2,669,747 L	11,200	67,545	4,089
Tractor Trailer Trucks	Gasoline	105	690,278 L	22,500	24,159	1,620	110	733,280 L	23,300	25,664	1,640
	Diesel Fuel	14,760	252,203,883 L	43,100	9,659,409	678,672	14,607	249,816,738 L	43,400	9,567,981	652,261
	Other Fuel	13	65,987 L	19,600	1,670	101	11	56,158 L	19,200	1,421	85
Motorhomes	Gasoline	5,353	12,672,879 L	17,000	443,551	29,640	5,241	12,447,041 L	17,000	435,647	27,729
	Diesel Fuel	2,376	7,334,342 L	16,800	280,905	19,732	2,198	7,046,784 L	16,800	269,891	18,396
	Other Fuel	101	253,199 L	16,800	6,405	387	79	199,984 L	16,700	5,058	307
Motorcycles, Mopeds	Gasoline	17,600	4,284,498 L	5,400	149,958	10,003	20,368	5,688,143 L	6,300	199,085	12,624
Buses	Hybrid								33,300	824	52
	Gasoline	1,569	7,050,767 L	28,500	246,777	16,575	1,999	7,817,701 L	38,400	273,619	17,495
	Diesel Fuel	2,616	22,512,966 L	34,800	862,246	60,583	2,921	20,678,889 L	44,600	792,001	53,993
	Other Fuel	395	1,335,215 L	36,600	33,781	2,045	179	471,509 L	55,300	11,929	723
Totals		1,214,328	2,330,623,981 L	14,711	82,844,666	5,657,035	1,264,987	2,330,623,981 L	14,619	84,921,210	5,525,834

Metro-Vancouver 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)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Residential	Wood	N/A	362,885 GJ	362,885	7,352	N/A	338,031 GJ	338,031	6,849
	Heating Oil	N/A	610,045 GJ	610,045	43,002	N/A	568,263 GJ	568,263	38,864
	Propane	N/A	904,005 GJ	904,005	55,153	N/A	842,090 GJ	842,090	51,376
	Natural Gas	448,684	49,305,909 GJ	49,305,909	2,473,184	455,564	44,372,454 GJ	44,372,454	2,225,720
	Electricity	797,213	7,438,239,251 kWh	26,777,640	185,962	839,389	7,538,394,011 kWh	27,138,197	188,467
Commercial/Small-Medium Industrial	Natural Gas	49,586	32,668,417 GJ	32,668,417	1,638,648	48,012	31,156,549 GJ	31,156,549	1,562,814
	Electricity	94,128	10,105,968,870 kWh	36,381,459	252,658	98,655	9,815,232,840 kWh	35,334,810	245,390
Totals		1,389,611		147,010,360	4,655,959	1,441,620		139,750,394	4,319,480

Solid Waste		2007				2010			
		Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Community Solid Waste	Solid Waste	0	1,335,669 t	N/A	479,079	0	1,069,550 t	N/A	507,313
Totals		0			479,079	0			507,313

Memo Items

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Large Industrial	Natural Gas	847	22,733,639 GJ	22,733,639	1,140,319	731	18,381,040 GJ	18,381,040	921,992
	Electricity	77	3,135,786,822 kWh	11,288,824	78,397	78	3,203,132,159 kWh	11,531,267	80,081
Totals		924		34,022,463	1,218,716	809		29,912,307	1,002,073

Agriculture		2007				2010			
		Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Enteric Fermentation	Methane	45,326	2,430 t	0	51,030				
Totals		45,326			51,030	0			

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Land-use Change - Deforestation		2007				2010			
		Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Agriculture	Deforestation	22	0 ha	0	14,530				
Settlement	Deforestation	360	0 ha	0	313,997				
Totals		382			328,527	0			

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 2,237,220)			2010 (Population: 2,374,628)		
	Consumption	Energy (GJ)	CO2e (t)	Consumption	Energy (GJ)	CO2e (t)
Hybrid	4,372,788 L	153,049	10,273	15,129,842 L	530,368	33,876
Gasoline	1,895,401,034 L	66,339,036	4,499,661	1,930,404,243 L	67,564,147	4,344,898
Diesel Fuel	419,390,191 L	16,062,643	1,129,543	435,022,914 L	16,661,377	1,137,049
Other Fuel	11,459,968 L	289,938	17,558	6,534,436 L	165,318	10,011
Wood	362,885 GJ	362,885	7,352	338,031 GJ	338,031	6,849
Heating Oil	610,045 GJ	610,045	43,002	568,263 GJ	568,263	38,864
Propane	904,005 GJ	904,005	55,153	842,090 GJ	842,090	51,376
Natural Gas	81,974,326 GJ	81,974,326	4,111,832	75,529,003 GJ	75,529,003	3,788,534
Electricity	17,544,208,121 kWh	63,159,099	438,620	##### kWh	62,473,007	433,857
Solid Waste	1,335,669 t	0	479,079	1,069,550 t	0	507,313
Grand Totals		229,855,026	10,792,073		224,671,604	10,352,627

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	315,200	31	327,655	43	288,320	35
Semi-Detached House	15,705	2	18,920	2	19,000	2
Row House	49,045	5	55,470	7	67,025	8
Apartment, Duplex	56,970	6	68,790	9	114,235	14
Apartment, 5 storeys or higher	75,115	7	89,780	12	104,270	13
Apartment, under 5 storeys	175,875	17	191,670	25	217,700	27
Other Single Attached House	1,175	0	1,210	0	1,125	0
Movable Dwelling	3,870	0	5,230	1	5,365	1

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	587,190	71	654,055	72	675,080	67
Car, Truck, Van as Passenger	54,465	7	63,645	7	70,990	7
Public Transit	119,205	14	104,015	11	165,435	16
Walked	48,520	6	58,705	6	63,415	6
Bicycle	13,720	2	16,850	2	16,585	2
Motorcycle	1,435	0	1,480	0	2,745	0
Taxicab	1,105	0	1,450	0	1,275	0
Other Method	5,630	1	5,805	1	7,495	1

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	44,145	15
Local Parks	20,622	7
Agricultural Land Reserve	60,999	20
Other land use	175,458	58
Total Parks and Protected Area	64,514	21
Total Land Area	301,225	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	44,145	15
Local Parks	20,622	7
Agricultural Land Reserve	60,999	20
Other land use	175,458	58
Total Parks and Protected Area	64,514	21
Total Land Area	301,225	100

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

Metro-Vancouver 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,