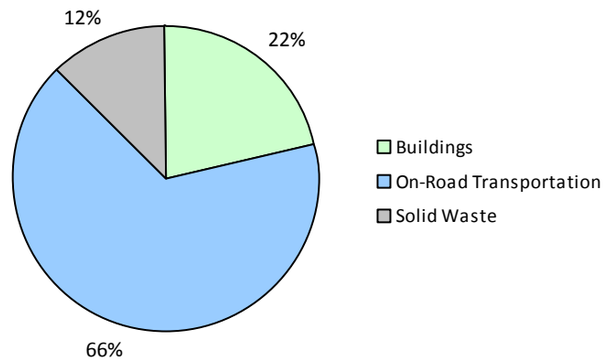
Central Saanich District Municipality

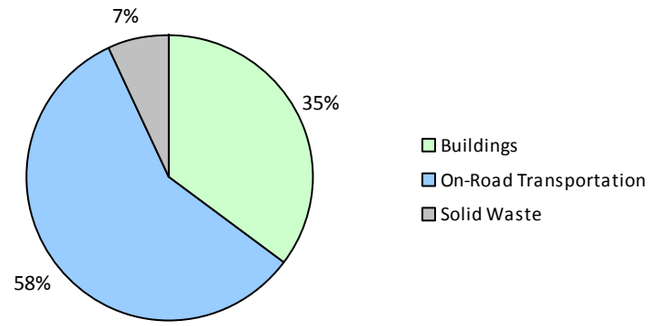
2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

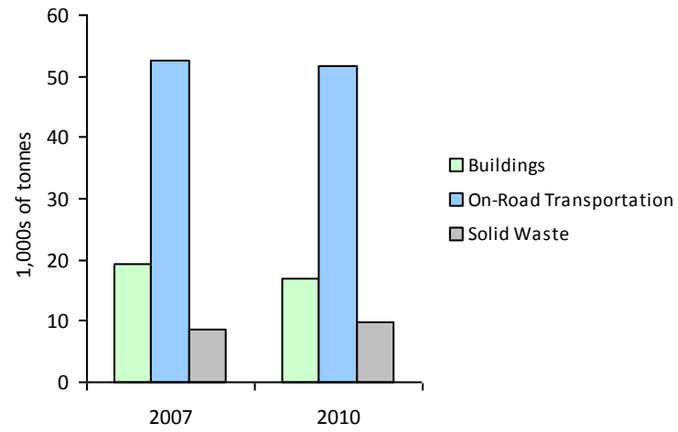
2010 GHG Emissions Sources (Total for this Community)



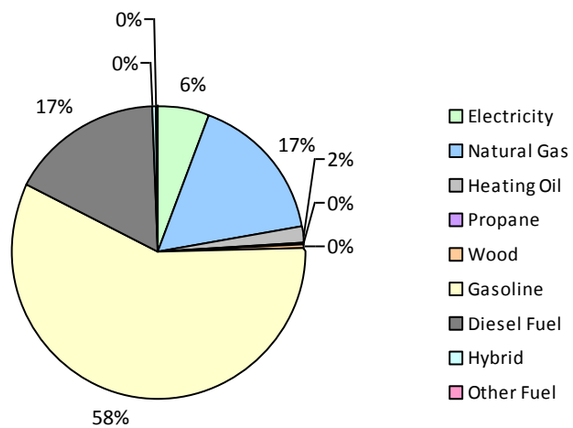
2010 GHG Emissions Sources (Total for BC)



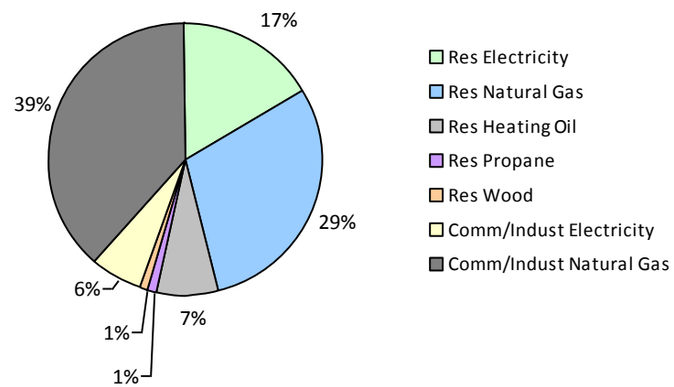
GHG Emissions Comparisons for this Community



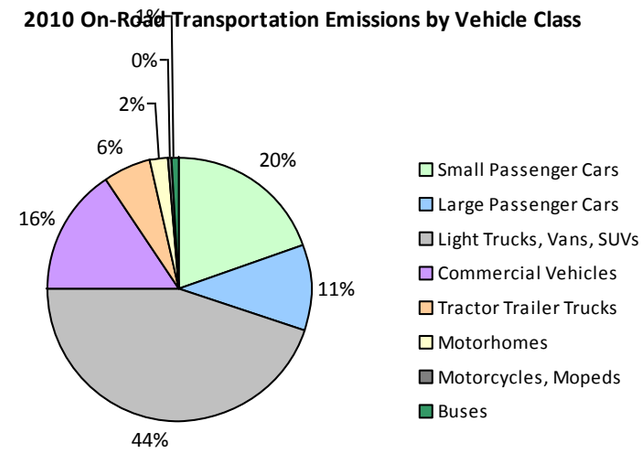
2010 Total Emissions by Fuel Type



2010 Building Emissions by Subsector



2010 On-Road Transportation Emissions by Vehicle Class



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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	11	7,174 L	14,000	250	18	17	11,593 L	13,500	406	27
	Gasoline	3,885	4,282,920 L	11,600	149,901	10,219	3,937	4,303,379 L	11,500	150,618	9,690
	Diesel Fuel	166	154,159 L	14,200	5,904	421	159	147,076 L	14,100	5,633	390
	Other Fuel			8,300	17	0					
Large Passenger Cars	Hybrid	17	19,224 L	20,700	672	44	52	92,309 L	30,500	3,231	206
	Gasoline	1,942	2,668,215 L	12,100	93,388	6,347	1,780	2,360,903 L	11,700	82,632	5,311
	Diesel Fuel	28	28,575 L	10,800	1,094	77	25	23,832 L	10,100	911	63
	Other Fuel			5,300	17	0			8,000	26	0
Light Trucks, Vans, SUVs	Hybrid	13	14,756 L	14,700	516	35	28	33,579 L	14,600	1,175	75
	Gasoline	4,711	9,008,778 L	13,700	315,307	21,568	5,098	9,547,763 L	13,500	334,171	21,668
	Diesel Fuel	206	443,398 L	12,500	16,983	1,206	168	399,546 L	14,400	15,303	1,057
	Other Fuel	36	61,996 L	10,300	1,568	96	21	33,425 L	9,400	845	50
Commercial Vehicles	Hybrid								13,300	110	7
	Gasoline	354	800,445 L	13,600	28,016	1,881	397	901,183 L	13,700	31,541	2,015
	Diesel Fuel	480	1,710,345 L	18,600	65,506	4,603	585	2,338,237 L	21,000	89,554	6,105
	Other Fuel	25	48,247 L	10,300	1,220	74	16	29,521 L	9,900	747	46
Tractor Trailer Trucks	Gasoline			12,300	371	25			10,200	209	14
	Diesel Fuel	175	1,634,499 L	22,800	62,600	4,399	136	1,197,230 L	21,500	45,854	3,127
Motorhomes	Gasoline	111	249,109 L	16,200	8,719	582	118	266,933 L	16,300	9,343	594
	Diesel Fuel	65	193,603 L	16,400	7,415	520	52	156,389 L	16,400	5,990	408
	Other Fuel								22,800	85	6
Motorcycles, Mopeds	Gasoline	336	77,539 L	5,400	2,714	181	406	108,244 L	6,300	3,789	239
Buses	Gasoline			16,600	282	19	15	29,986 L	12,500	1,049	67
	Diesel Fuel	31	137,503 L	16,300	5,266	370	35	156,600 L	17,400	5,998	409
	Other Fuel			12,300	67	3			8,100	86	5
Totals		**12,592**	**21,540,485 L**	**12,911**	**767,793**	**52,688**	**13,045**	**21,540,485 L**	**12,970**	**789,306**	**51,579**

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Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Residential	Wood	N/A	7,150 GJ	7,150	145	N/A	6,922 GJ	6,922	140
	Heating Oil	N/A	18,644 GJ	18,644	1,314	N/A	18,048 GJ	18,048	1,234
	Propane	N/A	3,220 GJ	3,220	196	N/A	3,117 GJ	3,117	190
	Natural Gas	1,785	99,066 GJ	99,066	4,969	1,910	96,856 GJ	96,856	4,858
	Electricity	6,801	119,352,397 kWh	429,668	2,984	6,915	115,576,471 kWh	416,075	2,890
Commercial/Small-Medium Industrial	Natural Gas	223	161,377 GJ	161,377	8,095	204	131,325 GJ	131,325	6,587
	Electricity	868	65,210,719 kWh	234,758	1,630	883	41,806,196 kWh	150,502	1,045
Totals		**9,677**		**953,883**	**19,333**	**9,912**		**822,845**	**16,944**

Solid Waste		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	13,033 t	N/A	8,719	0	10,992 t	N/A	9,731
Totals		**0**			**8,719**	**0**			**9,731**

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 16,023)			2010 (Population: 16,201)		
	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)
Hybrid	41,154 L	1,438	97	137,481 L	4,922	315
Gasoline	17,087,006 L	598,698	40,822	17,518,391 L	613,352	39,598
Diesel Fuel	4,302,082 L	164,768	11,596	4,418,910 L	169,243	11,559
Other Fuel	110,243 L	2,889	173	62,946 L	1,789	107
Wood	7,150 GJ	7,150	145	6,922 GJ	6,922	140
Heating Oil	18,644 GJ	18,644	1,314	18,048 GJ	18,048	1,234
Propane	3,220 GJ	3,220	196	3,117 GJ	3,117	190
Natural Gas	260,443 GJ	260,443	13,064	228,181 GJ	228,181	11,445
Electricity	184,563,116 kWh	664,426	4,614	157,382,667 kWh	566,577	3,935
Solid Waste	13,033 t	0	8,719	10,992 t	0	9,731
Grand Totals		**1,721,676**	**80,740**		**1,612,151**	**78,254**

Central Saanich District Municipality

2010 Community Energy and Emissions Inventory

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	3,900	42	4,205	71	3,860	62
Semi-Detached House	120	1	160	3	260	4
Row House	480	5	610	10	550	9
Apartment, Duplex	320	3	400	7	810	13
Apartment, 5 storeys or higher	0	0	5	0	5	0
Apartment, under 5 storeys	580	6	510	9	710	11
Other Single Attached House	15	0	10	0	20	0
Movable Dwelling	20	0	20	0	25	0

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	5,370	80	5,760	82	5,940	81
Car, Truck,Van as Passenger	450	7	355	5	450	6
Public Transit	415	6	440	6	435	6
Walked	250	4	295	4	275	4
Bicycle	145	2	125	2	145	2
Motorcycle	10	0	20	0	65	1
Taxicab	0	0	0	0	0	0
Other Method	65	1	45	1	65	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	72	2
Local Parks	161	4
Agricultural Land Reserve	2,910	70
Other land use	1,027	25
Total Parks and Protected Area	230	6
Total Land Area	4,170	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	72	2
Local Parks	161	4
Agricultural Land Reserve	2,910	70
Other land use	1,027	25
Total Parks and Protected Area	230	6
Total Land Area	4,170	100

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

Commute Distance

Shorter commute distances generally reduce GHG emissions by increasing the likelihood of people walking, cycling or using transit. Commute distance is also indicative of the 'completeness' of a community from an employment perspective.

	2006	
	Units	%
Less than 5 km	1,585	25
5 to 9.9 km	1,190	19
25 km or more	150	2
15 to 24.9 km	2,045	32
10 to 14.9 km	1,405	22

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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,