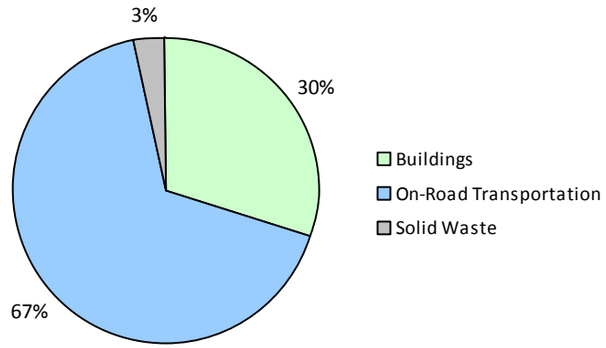
Bulkley-Nechako Regional District

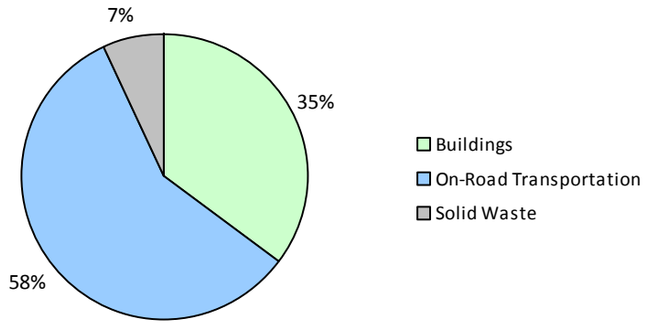
2010 Community Energy and Emissions Inventory

Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

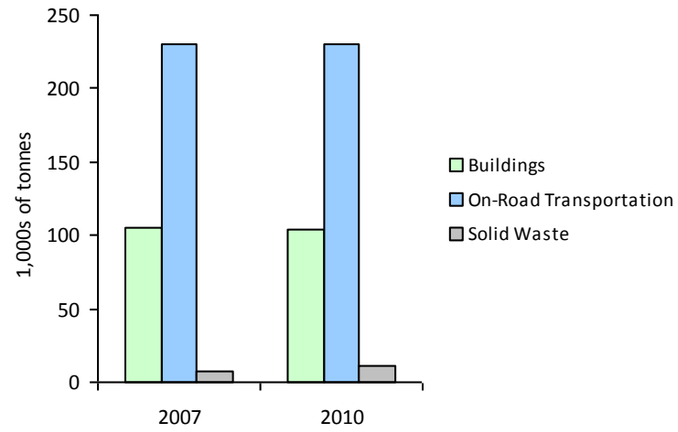
2010 GHG Emissions Sources (Total for this Community)



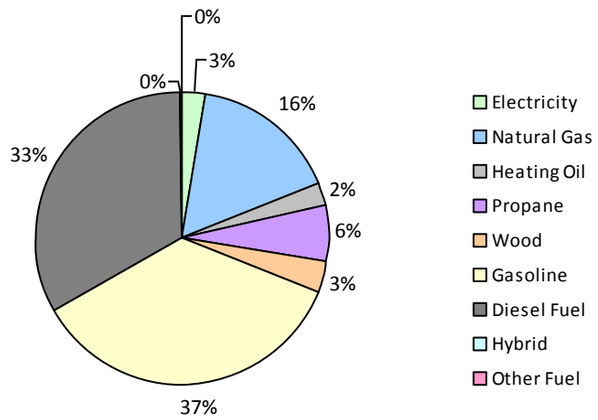
2010 GHG Emissions Sources (Total for BC)



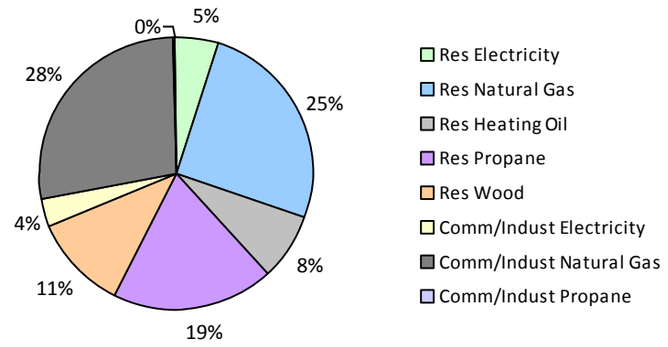
GHG Emissions Comparisons for this Community



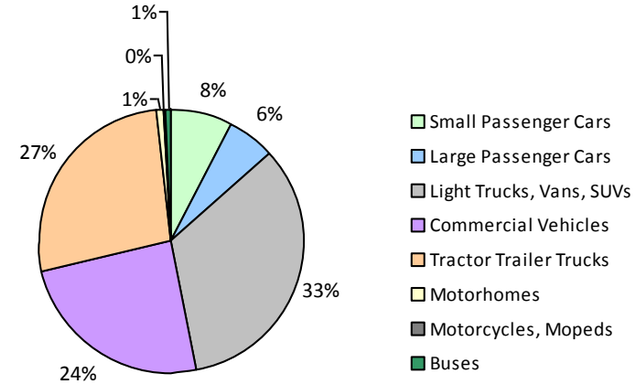
2010 Total Emissions by Fuel Type



2010 Building Emissions by Subsector



2010 On-Road Transportation Emissions by Vehicle Class



Bulkley-Nechako Regional District

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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			23,800	38	3			24,400	208	14
	Gasoline	4,561	7,559,702 L	17,700	264,589	17,910	4,580	7,543,744 L	17,600	264,030	16,913
	Diesel Fuel	229	388,446 L	24,800	14,878	1,061	250	389,024 L	22,700	14,900	1,031
Large Passenger Cars	Hybrid	16	22,557 L	27,400	789	53	64	117,716 L	31,100	4,121	262
	Gasoline	2,818	6,098,928 L	19,200	213,463	14,446	2,753	5,889,943 L	19,000	206,148	13,206
	Diesel Fuel	32	33,131 L	10,800	1,269	90	26	27,832 L	11,500	1,067	74
	Other Fuel			12,200	43	3			9,200	30	1
Light Trucks, Vans, SUVs	Hybrid			26,400	652	44	15	34,358 L	23,500	1,203	78
	Gasoline	11,336	30,339,182 L	17,800	1,061,871	72,555	11,931	32,245,254 L	18,200	1,128,583	73,118
	Diesel Fuel	706	1,671,675 L	13,400	64,025	4,554	528	1,315,749 L	14,400	50,393	3,480
	Other Fuel	76	149,530 L	11,700	3,783	229	35	61,047 L	10,400	1,545	94
Commercial Vehicles	Hybrid								29,600	244	16
	Gasoline	1,777	5,476,489 L	18,000	191,677	12,874	2,051	6,267,207 L	18,000	219,353	14,021
	Diesel Fuel	3,221	12,939,142 L	22,400	495,570	34,817	3,598	15,973,141 L	25,000	611,772	41,704
	Other Fuel	42	97,877 L	12,100	2,476	150	31	58,677 L	10,400	1,484	90
Tractor Trailer Trucks	Gasoline	10	33,007 L	12,000	1,156	76			19,400	1,891	121
	Diesel Fuel	995	24,934,825 L	57,900	955,004	67,100	947	23,918,329 L	58,000	916,072	62,450
	Other Fuel								0	24	2
Motorhomes	Gasoline	150	427,124 L	19,900	14,949	996	167	487,061 L	20,200	17,047	1,082
	Diesel Fuel	106	409,185 L	20,000	15,671	1,100	122	474,949 L	19,800	18,191	1,239
	Other Fuel			20,600	472	28			20,400	392	24
Motorcycles, Mopeds	Gasoline	253	58,038 L	4,900	2,031	136	366	97,250 L	5,700	3,405	217
Buses	Gasoline	43	149,122 L	21,100	5,219	350	43	118,512 L	16,600	4,147	265
	Diesel Fuel	85	450,677 L	19,900	17,262	1,213	86	470,503 L	20,000	18,021	1,228
	Other Fuel	11	30,359 L	14,000	768	47			13,300	604	36
Totals		**26,467**	**91,268,996 L**	**19,832**	**3,327,655**	**229,835**	**27,593**	**91,268,996 L**	**20,250**	**3,484,875**	**230,766**

Bulkley-Nechako 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	600,304 GJ	600,304	12,162	N/A	559,619 GJ	559,619	11,338
	Heating Oil	N/A	125,949 GJ	125,949	8,878	N/A	117,413 GJ	117,413	8,030
	Propane	148	349,812 GJ	349,812	21,342	148	324,080 GJ	324,080	19,772
	Natural Gas	7,372	590,437 GJ	590,437	29,616	7,372	519,069 GJ	519,069	26,037
	Electricity	18,144	225,144,494 kWh	810,520	5,629	18,417	223,810,333 kWh	805,717	5,595
Commercial/Small-Medium Industrial	Propane	11	6,214 GJ	6,214	379	11	3,976 GJ	3,976	243
	Natural Gas	1,330	456,496 GJ	456,496	22,898	1,330	580,364 GJ	580,364	29,111
	Electricity	3,211	156,724,564 kWh	564,208	3,918	3,307	145,770,981 kWh	524,775	3,644
Totals		**30,216**		**3,503,940**	**104,822**	**30,585**		**3,435,013**	**103,770**

Solid Waste		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Community Solid Waste	Solid Waste	0	19,293 t	N/A	7,592	0	21,286 t	N/A	10,679
Totals		**0**			**7,592**	**0**			**10,679**

Memo Items

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Large Industrial	Natural Gas	15	875,781 GJ	875,781	43,929	14	654,096 GJ	654,096	32,809
	Electricity	13	752,522,749 kWh	2,709,080	18,814	12	739,731,889 kWh	2,663,033	18,494
Totals		**28**		**3,584,861**	**62,743**	**26**		**3,317,129**	**51,303**

Agriculture		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Enteric Fermentation	Methane	85,069	5,224 t	0	109,704				
Totals		**85,069**			**109,704**	**0**			

Land-use Change - Deforestation		2007				2010			
		Connections	Consumption	Energy (GJ)	C02e (t)	Connections	Consumption	Energy (GJ)	C02e (t)
Agriculture	Deforestation	251	0 ha	0	114,594				
Settlement	Deforestation	86	0 ha	0	41,588				
Totals		**337**			**156,182**	**0**			

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 38,471)			2010 (Population: 39,183)		
	Consumption	Energy (GJ)	C02e (t)	Consumption	Energy (GJ)	C02e (t)
Hybrid	22,557 L	1,479	100	152,074 L	5,776	370
Gasoline	50,141,592 L	1,754,955	119,343	52,648,971 L	1,844,604	118,943
Diesel Fuel	40,827,081 L	1,563,679	109,935	42,569,527 L	1,630,416	111,206
Other Fuel	277,766 L	7,542	457	119,724 L	4,079	247
Wood	600,304 GJ	600,304	12,162	559,619 GJ	559,619	11,338
Heating Oil	125,949 GJ	125,949	8,878	117,413 GJ	117,413	8,030
Propane	356,026 GJ	356,026	21,721	328,056 GJ	328,056	20,015
Natural Gas	1,046,933 GJ	1,046,933	52,514	1,099,433 GJ	1,099,433	55,148
Electricity	381,869,058 kWh	1,374,728	9,547	369,581,314 kWh	1,330,492	9,239
Solid Waste	19,293 t	0	7,592	21,286 t	0	10,679
Grand Totals		**6,831,595**	**342,249**		**6,919,888**	**345,215**

Bulkley-Nechako 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	10,665	43	11,680	79	11,625	80
Semi-Detached House	185	1	235	2	285	2
Row House	625	3	530	4	420	3
Apartment, Duplex	110	0	145	1	135	1
Apartment, 5 storeys or higher	0	0	15	0	5	0
Apartment, under 5 storeys	1,175	5	890	6	940	6
Other Single Attached House	40	0	35	0	90	1
Movable Dwelling	1,430	6	1,300	9	1,055	7

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	13,000	77	13,160	79	12,960	78
Car, Truck,Van as Passenger	1,525	9	1,390	8	1,415	9
Public Transit	40	0	55	0	55	0
Walked	1,830	11	1,670	10	1,560	9
Bicycle	300	2	195	1	185	1
Motorcycle	0	0	35	0	10	0
Taxicab	10	0	30	0	10	0
Other Method	200	1	205	1	340	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	1,081,127	14
Local Parks	213	0
Agricultural Land Reserve	473,477	6
Other land use	6,256,335	80
Total Parks and Protected Area	1,081,340	14
Total Land Area	7,811,153	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	1,081,127	14
Local Parks	213	0
Agricultural Land Reserve	473,477	6
Other land use	6,256,335	80
Total Parks and Protected Area	1,081,340	14
Total Land Area	7,811,153	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,