



City of Rosland Corporate GHG Reduction Plan 2016



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Executive Summary

The City of Rossland signed the Climate Action Charter, committing the City to work towards being carbon-neutral in its own operations. Rossland participated in the 2009-2014 Carbon Neutral Kootenays (CNK) project and mission statement: Measure, Act, Lead. In 2015, the City of Rossland developed a Strategic Community Energy and Emissions Plan (SCEEP), which identified the development of a Corporate GHG Reduction Plan a priority. This Rossland Plan has been developed using background information from “Carbon Neutral Action Plans” prepared during the CNK project era.

The first step in becoming carbon neutral (or to “work towards”) is to **Measure** all corporate emission. A Dashboard Summary of the City of Rossland energy and emissions was prepared by the Carbon Neutral Kootenays Project (CNK) in 2008. This outlines the corporate facilities, fleet and energy consumption. Since 2010, the City of Rossland has used SMARTTool, a Province of BC web based GHG emissions inventory and reporting tool. The figures and background information found in this Rossland Corporate GHG Reduction Plan, come from the CNK project and its resulting City of Rossland *2008 Operations Energy Consumption Greenhouse Gas Emissions Inventory*. Updated information and data is derived from the 2015 City of Rossland SMARTTool report.

In September, 2016 a workshop was held with City of Rossland staff facilitated by the Community Energy Association and FortisBC, to determine ways for the City to **Act** on energy and emissions reductions. The workshop group looked at the energy and emissions data for the Corporate Operations, discussed potential anomalies, and decided on an action plan for the City of Rossland. Key actions that the workshop team identified as priority for addressing energy and emissions are found in the highest energy consumption buildings of the arena/curling rink and public works shop. Improved and efficient fleet operations will reduce gasoline and diesel consumption, as well as GHG emissions and costs.

The City of Rossland is interested in pursuing detailed building audits, with the purpose of developing a full business case for upgrades and retrofits. These actions, and the discussions held during the workshop demonstrate the willingness of the City of Rossland to **Lead** in emission reduction, and work towards carbon neutrality.



City Hall



Rossland Library

Rossland Dashboard Summary: 2015

Operations Profile

General Buildings	6
Community and Recreational Facilities	2
Fire Halls	0
Vehicle Fleet & Equipment	46
Electricity Accounts	29
Natural Gas, Propane Accounts	8, 0

Energy and GHG Emissions by Fuel Type

Fuel Type	Energy Consumption	Energy Units	GHG Emissions (tonnes (CO ₂ e))	Estimated Cost (\$ / year)
Electricity	916,111	kWh	2	\$64,128
Natural Gas	4,704	GJ	227	\$56,450
Propane (facilities)	0	L	0	\$0
Heating Oil	0	L	0	\$0
Gasoline	16,588	L	39	\$21,564
Diesel	60,995	L	160	\$79,294
Propane (fleet)	0	L	0	\$0
Biodiesel	0	L	0	\$0
Total			428	\$221,436

Top 5 Energy & GHG Contributors (ranked by by energy use)

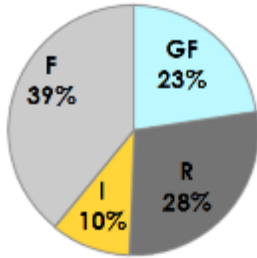
Facility	Total Energy (GJ)	GHG Emissions (tonnes (CO ₂ e))
Recreation Centre (Arena) / Curling Rink	3460	97
Public Works Shop	1226	46
Miner's Hall	760	32
Water Treatment Plant	758	26
City Hall	667	26
Total of These Facilities	6,871	227
Total Inventory	8,003	428

2015 Inventory Data Source: SMARTTool 2015 and Rossland CNK Corporate Inventory 2008.

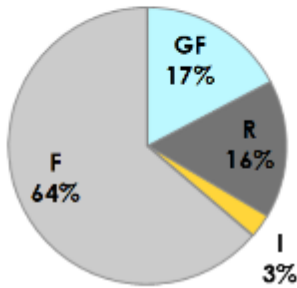
Rosland Dashboard Summary: 2008 Year



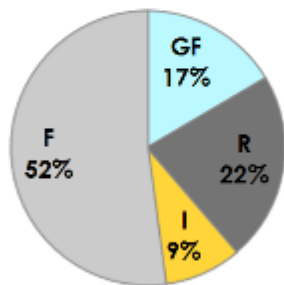
Energy = 9,574 GJ



GHG = 422 tonnes CO₂e



Energy Spending (Approx) = \$191,450



F = Fleets, GF = General Facilities,
R = Recreation Centres, I = Infrastructure

Operations Profile	
General Buildings	6
Community and Recreational Facilities	2
Fire Halls	0
Vehicle Fleet & Equipment	35
Electricity Accounts	23
Natural Gas, Propane Accounts	9, 0

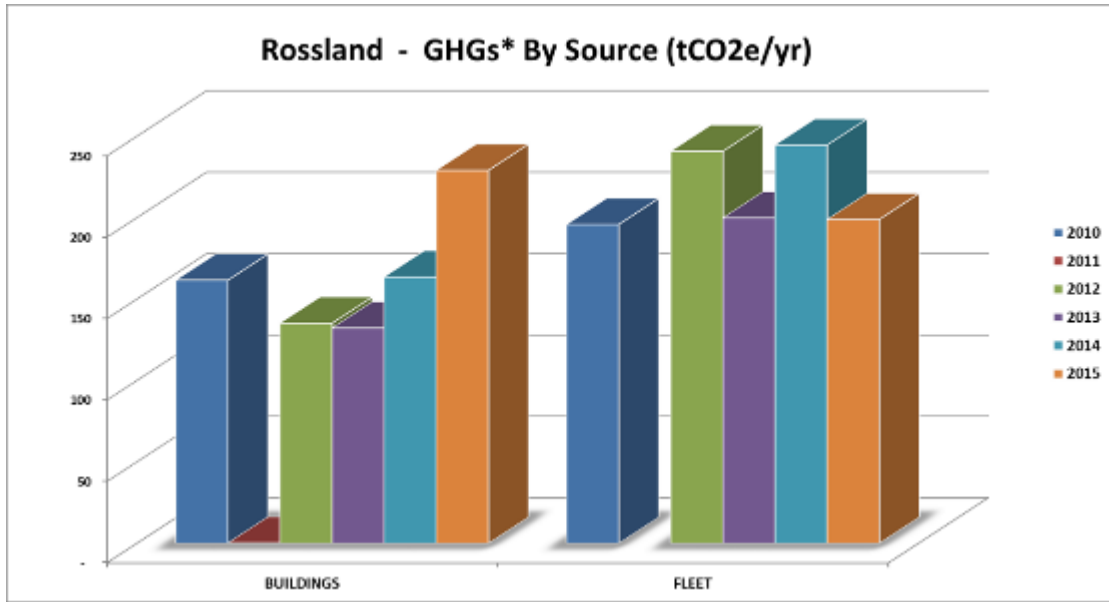
Carbon Costs and Rebates	
Estimated cost of offsets in 2012 based on 2008 emissions:	\$10,600
Approximate Carbon Tax Rebate (CARIP Grant) for 2008:	\$2,100
Estimated CARIP Grant in 2012 at current consumption:	\$11,500

Energy and GHG Emissions by Fuel Type				
Fuel Type	Energy Consumption	Energy Units	GHG Emissions (Tonnes)	Estimated Cost (\$ / year)
Electricity	811,985	kWh	5	\$56,840
Natural Gas	2,905	GJ	148	\$34,860
Propane (facilities)	0	L	0	\$0
Heating Oil	0	L	0	\$0
Gasoline	22,045	L	52	\$22,050
Diesel	77,697	L	217	\$77,700
Propane (fleet)	0	L	0	\$0
Biodiesel	0	L	0	\$0
Total			422	\$191,450

Top 5 Energy & GHG Contributors (ranked by energy use)		
Facility	Total Energy (GJ)	GHG Emissions (Tonnes CO ₂ e)
Recreation Centre (Arena) / Curling Rink	2687	68
Public Works Shop	905	27
Water Treatment Plant	640	10
Miner's Hall	501	20
City Hall	436	13
Total of These Facilities	5,168	138
Total Inventory	9,574	422

Data Source: CNK Project 2008 Operations Energy Consumption Greenhouse Gas Emissions Inventory

2010 - 2015: City of Rosland Corporate GHG emissions



GHG* = Emissions requiring offset purchase (to be Carbon Neutral)

SOURCE	2010	2011	2012	2013	2014	2015
BUILDINGS	162	0	135	132	164	229
Electricity	8	0	8	5	2	2
Natural Gas	153		127	128	161	227
FLEET	196		241	200	245	199
Diesel	143		200	160	202	160
Gasoline	50		41	40	43	39
Propane	3		0			
Grand Total	358	0	376	332	408	428

Data Source: SMARTTool 2015

The *Carbon Neutral ACTION Guide*, prepared by the Carbon Neutral Kootenays Project, was used as a guide in developing the Action Plan.

The Action Plan decided upon by the workshop group is shown as follows:

ACTIONS	In place?	Year To Do			
		2017	2018	2019	2020
1 Building Operations					
Policy: Commit to building the most energy efficient facilities, optimize siting, require renewable energy evaluations	Y				
Conduct energy audits of existing facilities			Y		
Complete energy improvements already identified by previous audits or studies				Y	
Incorporate energy management into annual building maintenance procedures	Y				
2 Fleet Operations					
Help staff reduce the emissions associated with commuting to work		Y			
Develop a vehicle purchasing policy					M
Implement an efficient vehicle use initiative		Y			
Ensure Fleet Maintained	Y				
Develop monitoring program for fleet fuel consumption	Y				
Conduct a fleet routing review					M
Encourage efficient use of personal vehicle	Y				
Investigate future opportunities for carshare		Y			
3 Infrastructure					
Conduct energy focused operational review of infrastructure	Y				
Evaluate energy recovery options from facilities			Y		
4 Purchasing and Corporate Leadership					
Incorporate energy considerations into purchasing policies					M
Incorporate Life Cycle Costing into all major purchasing decisions		Y			
Incorporate GHG tracking requirements into service provider agreements		Y			
Encourage and recognize staff who develop new GHG reduction measures	Y				
5 Implementation					
Identify the Owner of the plan	Y				
Assign the CARIP grant into an energy conservation fund	Y				
Establish a GHG reduction target	Y				
Develop an administrative system for tracking corporate emissions	Y				
Develop an emissions reduction reporting process	Y				

Action categorized by workshop group as a "yes" **Y**
 Action categorized by workshop group as a "maybe" **M**

Introduction

Reducing Greenhouse Gas Emissions in BC

There is increasing evidence that global climate change resulting from emissions of carbon dioxide and other greenhouse gases (GHGs) are causing, or will soon cause, significant environmental impact on the ecology of the planet. Since 2007, the BC Government has embarked upon a number of initiatives to reduce GHG emissions in BC including:

- Setting a target of a 33% reduction in total province-wide emissions by 2020 from 2007 levels.
- Requiring all ministries and other public sector organizations (PSOs) to become carbon neutral beginning in 2010.
- Requiring local governments to incorporate GHG reduction targets, policies and actions to reach these targets into their official community plans (OCPs) and Regional Growth Strategies (RGSs) through the *Local Government (Green Communities) Statutes Amendment Act* (Bill 27 – 2008).
- Encouraging local governments to become proactive in achieving carbon neutrality in their corporate operations by becoming signatories to the **Climate Action Charter**. Signatories commit to working towards being carbon neutral in their local government operations through a combination of emission reductions and offsets.

Community and Corporate Emissions

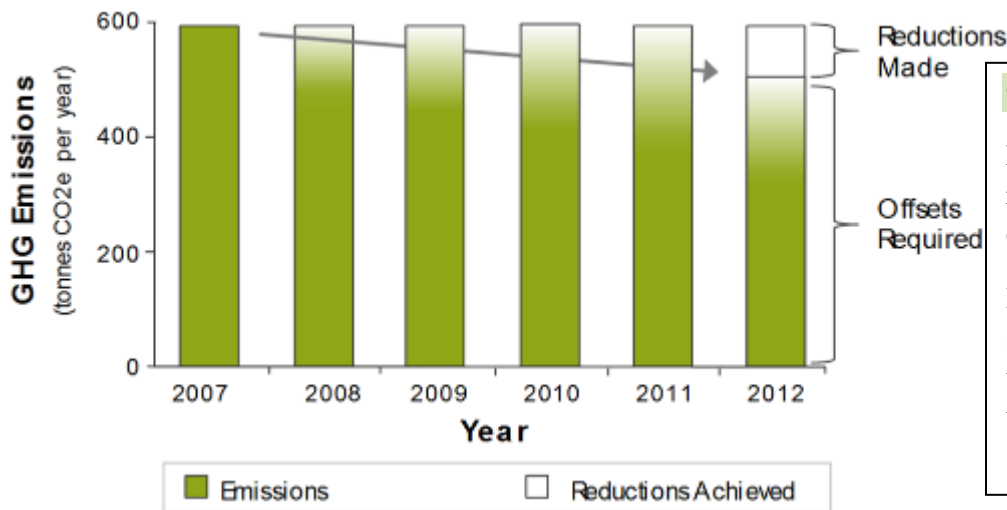
From 2009 to 2014, Kootenay Local Governments participated in the Carbon Neutral Kootenay's (CNK) project. The project provided each Local Government with an *Operations Energy Consumption Greenhouse Gas Emissions Inventory* which addresses the corporate operations consumption and emissions. Actions to reduce energy consumption and greenhouse gas emissions are frequently divided into the realm of:

- **Corporate emissions** – those that the local government creates through its activities (and which it has control over) such as local government building operations, recreation centres, vehicle fleets, and utility services; and
- **Community emissions** – those that the residents and businesses in the community create through their activities. The local government cannot directly control these emissions, but may be able to influence them through planning and program activities.

Carbon Neutrality

Carbon neutrality means that the operations of the local government will result in no net greenhouse gas emissions to the atmosphere. Carbon neutrality results from a combination of:

- Reduction measures to reduce the GHG emissions from operations. This is accomplished through retrofits, efficiency initiatives, and behavioural change of staff; and
- Carbon Offsets – which are reductions made by others – elsewhere in the community or province – through registered and reviewed projects that reduce GHG emissions. Owners of these offset projects may sell these ‘reduction credits’ to other parties that are working to neutralize their carbon footprint.



Getting to Carbon Neutral:

Efficiency improvements will reduce the emissions from operated facilities.

However, there will always be some emissions remaining, and these will be ‘neutralized’ through the purchase of offsets.

About the Carbon Neutral Kootenays Project

The Carbon Neutral Kootenays (“CNK”) Project (2009-2014) was an initiative to assist local governments in the Kootenay region in meeting their commitments under the Climate Action Charter, including working towards being carbon neutral in their operations. It was jointly funded by the Regional Districts of **Central Kootenay**, **East Kootenay** and **Kootenay Boundary** and the **Columbia Basin Trust**, with the participation of member municipalities and First Nations. The project was delivered by several locally based consultants, including the Community Energy Association.

In CNK Phase 1 (2009-2010), the initiative included compiling inventories of energy and greenhouse gas emissions for local government operations, developing action strategies for reducing emissions from Regional District operations, and conducting outreach and capacity building activities for staff and elected officials in the Kootenay region. In Phase 2 (2010-2011), the project included supporting and updating the inventories; implementing carbon neutral actions for the regional districts; initiating the development carbon neutral action plans for municipalities and First Nations; coordinating carbon neutral actions on a regional scale; and identifying regional offset investment opportunities. Phases 3 and 4 (2011-2014) focussed on delivering remaining carbon neutral action plans (i.e., corporate GHG reduction plans); facilitating regional, collaborative actions; assisting with the transition for many municipalities to SMARTTool and further research on regional offset investment opportunities.

About the Inventory

An inventory is a compiled list of all the **energy** consumed, the **money spent** on energy, and the associated **greenhouse gas emissions** created by the local government in their operations for one year. Energy use and emissions are also broken down by end use to identify high energy use activities and major emissions sources that may provide the best opportunities for cost and emissions reductions.

The *Operations Energy Consumption Greenhouse Gas Emissions Inventory* provided by the CNK project is completely based within an Excel spreadsheet with several tabs. The tabs store raw data, process and synthesize the information, and then create a report. The spreadsheet contains four types of Tabs – Data Tabs, processing or Synthesis Tabs, Reporting Tabs, and Spreadsheet Activation Tabs.

Since 2012, many Kootenay Local Governments transitioned to SMARTTool, a web based GHG emissions inventory and reporting tool developed and maintained by Shared Services BC, providing a standardized approach to calculating and reporting corporate greenhouse gas emissions.

Strategic Community Energy and Emissions Planning (SCEEP)

In 2015 and 2016, the Community Energy Association (CEA) delivered complete Strategic Community Energy & Emissions Planning plans (SCEEPs) to 10 communities situated in the FortisBC Electrical service area, with funding from **Columbia Basin Trust**, **FortisBC** and **Natural Resources Canada**. All Local Governments in the project area have signed the provincial Climate Action Charter. The SCEEP project is seen as a tool to take action towards charter commitments.

Each SCEEP:

- Reviewed community OCP GHG reduction targets, looking at buildings, transportation, and waste – with a primary focus on increasing efficiency;
- Helped FortisBC integrate Demand Side Management promotion into everyday operations of the community and also ensured communities working to reduce electricity consumption through planning & policy;
- Helped the Trust with GHG emission reductions and ensuing local economic benefit;
- Leveraged implementation and policy support for the community through a related project, “Advancing innovative local government energy efficiency policies” funded by Natural Resources Canada
- Invited communities to participate in the BC Hydro Community of Practice webinars, policy development and educational events, to share successes and practices;
- Fostered natural community partners to participate in the overall objective of reducing community energy and emissions and providing support for education/building Healthy and Active Communities. These external partners included: Interior Health, Ministry of Transportation and Infrastructure, the three Kootenay Regional Districts, Nelson Hydro, BC Hydro, the 4 local School Districts, Economic Development agencies and major local employers.

SCEEP workshops and draft plans were completed by March 31, 2016. As per funding agreements with FortisBC, 35 hours of follow-up strategic planning & policy /action implementation support continued through 2016. Implementation support includes the investigation and development of regional community energy planning activities like a Regional Electric Vehicle Network Strategy, Regional Community Energy Management and development of a universal regional sustainability checklist. Individually some communities requested support to develop a Corporate Greenhouse Gas Reduction Strategy.

Corporate GHG Reduction Action Plan Process

In the September 2016, a workshop was held with staff from the City of Rosland, facilitated by Community Energy Association staff, Patricia Dehnel and FortisBC Conservation & Energy Management Technical Advisor, Doug Lamminen. A PowerPoint presentation outlined both Community and Corporate Actions undertaken by the City of Rosland to reduce energy consumption and greenhouse gas emissions. The *Operations Energy Consumption Greenhouse Gas Emissions Inventory* for the Year 2008 Inventory and the *Carbon Neutral ACTION Guide*, prepared during the Carbon Neutral Kootenays Project were used as reference documents.

At the workshop, the group looked at the energy and emissions data for the Operations and discussed any potential anomalies. The workshop group was provided with a collection of action cards, and each action was discussed within the group and placed in one of four categories: “yes”, “no”, “maybe”, and “already done”. Potential additional actions that were not on the cards were also discussed.

The action cards were placed on a chart to create a plan for the next 4 years. The workshop group provided input as to the timing and sequencing of the actions. In this way a consensus on an action plan was arrived at by staff of the City of Rosland.

Following this some of the key actions were “unpacked”, meaning that they were discussed in detail, with appropriate steps highlighted, likely impacts, and other considerations. Appendix 1 documents the discussion and implementation steps. Additional materials that have been provided to the City of Rosland include:

- Suite of template policies developed for the Carbon Neutral Kootenays Project
- Sample Colwood Staff Electric Bicycle Purchase Policy

Corporate Energy and GHG Inventory

Current Kootenay Action

Carbon neutral is a clear destination. It is not a new direction in the Kootenays. In 2016, energy reducing projects are now common place for Kootenay local governments. The 2009 CNK survey of participating local governments found that significant action is already underway across the region in communities of all sizes. Some of the survey highlights from 2009 include:

- 100% of communities taking actions to save energy and money in their operations;
- 75% of communities already taking action on facilities;
- Nearly ½ taking action on fleet;
- 1/3 taking action on recreation centres, rinks and pools.

Energy and GHG Tabulation: 2008 Year

The Inventory Summary of the operations energy consumption is shown from the City of Rosland 2008 Inventory. The energy consumption and GHG emissions are broken down by the type of fuel and end use.

Corporate Energy and Greenhouse Gas Summary 2008

End-Use	Energy	Units of Purchase	Energy (in units purchased)	Energy (as GJ)	GHG Emissions (as CO ₂ e)	Approximate Retail Value (\$)
Buildings	Electricity	kWh	207,031	745	1	\$14,492
	Natural Gas	GJ	1,277	1,277	65	\$15,323
	Propane	L	0	0	0	\$0
	Heating Oil	L	0	0	0	\$0
Community / Recreation Centres	Electricity	kWh	386,969	1,393	2	\$27,088
	Natural Gas	GJ	1,294	1,294	66	\$15,524
	Propane	L	0	0	0	\$0
	Heating Oil	L	0	0	0	\$0
Fire Halls	Electricity	kWh	0	0	0	\$0
	Natural Gas	GJ	0	0	0	\$0
	Propane	L	0	0	0	\$0
	Heating Oil	L	0	0	0	\$0
Solid Waste Management	Electricity	kWh	0	0	0	\$0
	Natural Gas	GJ	0	0	0	\$0
	Propane	L	0	0	0	\$0
	Heating Oil	L	0	0	0	\$0
Parks	Electricity	kWh	4,056	15	0	\$284
	Natural Gas	GJ	0	0	0	\$0
	Propane	L	0	0	0	\$0
	Heating Oil	L	0	0	0	\$0
Water / Sewer	Electricity	kWh	185,155	667	1	\$12,961
	Natural Gas	GJ	202	202	10	\$2,424
	Propane	L	0	0	0	\$0
	Heating Oil	L	0	0	0	\$0
Lighting	Electricity	kWh	26,420	95	0	\$1,849
Fleet	Gasoline	L	22,045	794	52	\$22,045
	Diesel	L	77,697	2,952	217	\$77,697
	Propane	L	0	0	0	\$0
	Biodiesel	L	0	0	0	\$0
Supported Facilities	Electricity	kWh	0	0	0	\$0
	Natural Gas	GJ	132	132	7	\$1,588
	Propane	L	0	0	0	\$0
	Heating Oil	L	0	0	0	\$0
Unclassified Accounts	Electricity	kWh	2,354	8	0	\$165
	Natural Gas	GJ	0	0	0	\$0
	Propane	L	0	0	0	\$0
	Heating Oil	L	0	0	0	\$0
Total				9,574	422	\$191,440

NB Values may not sum precisely due to rounding

Data Source: CNK Project 2008 Operations Energy Consumption Greenhouse Gas Emissions Inventory

Energy and GHG Charts: 2008 Year

What is a GJ?

A gigajoule (one billion joules) is a measure of energy. One GJ is about the same energy as:

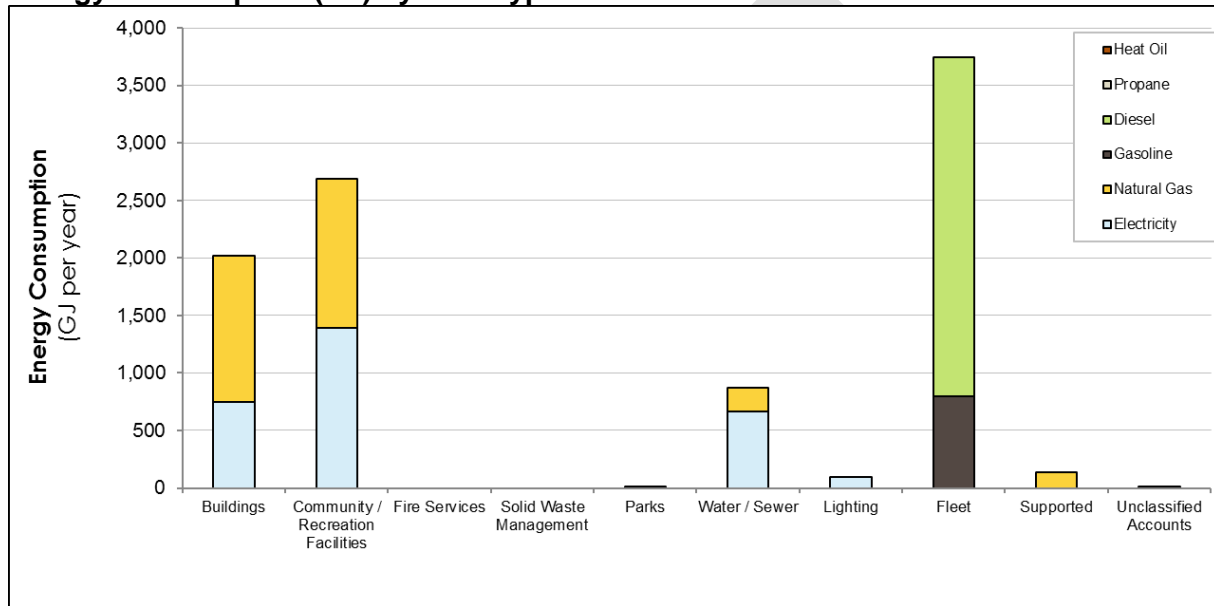
- Natural gas for 3-4 days of household use
- 25-30 litres of diesel or gasoline
- Two 20 lb propane tanks
- The electricity used by a typical house in 10 days

What is a tonne of GHG?

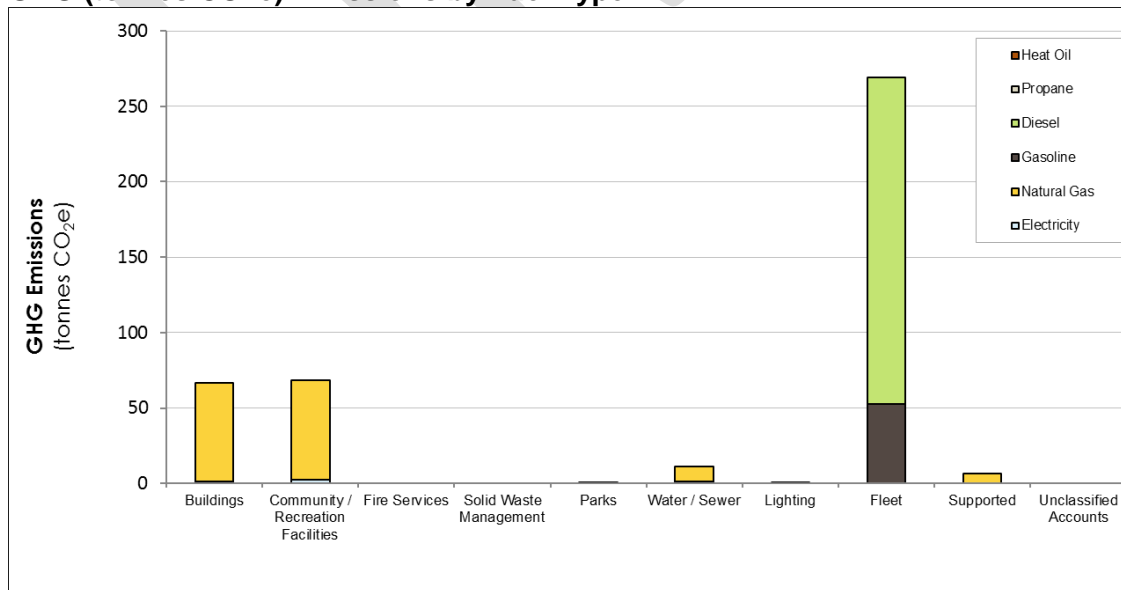
A tonne of greenhouse gases (GHG's) is the amount created when we consume:

- 385 litres of gasoline (about 10 fill-ups)
- \$200 of natural gas (a month of winter heating)
- Enough electricity for 3 homes for a year (38,000 kWh)

Energy Consumption (GJ) by Fuel Type



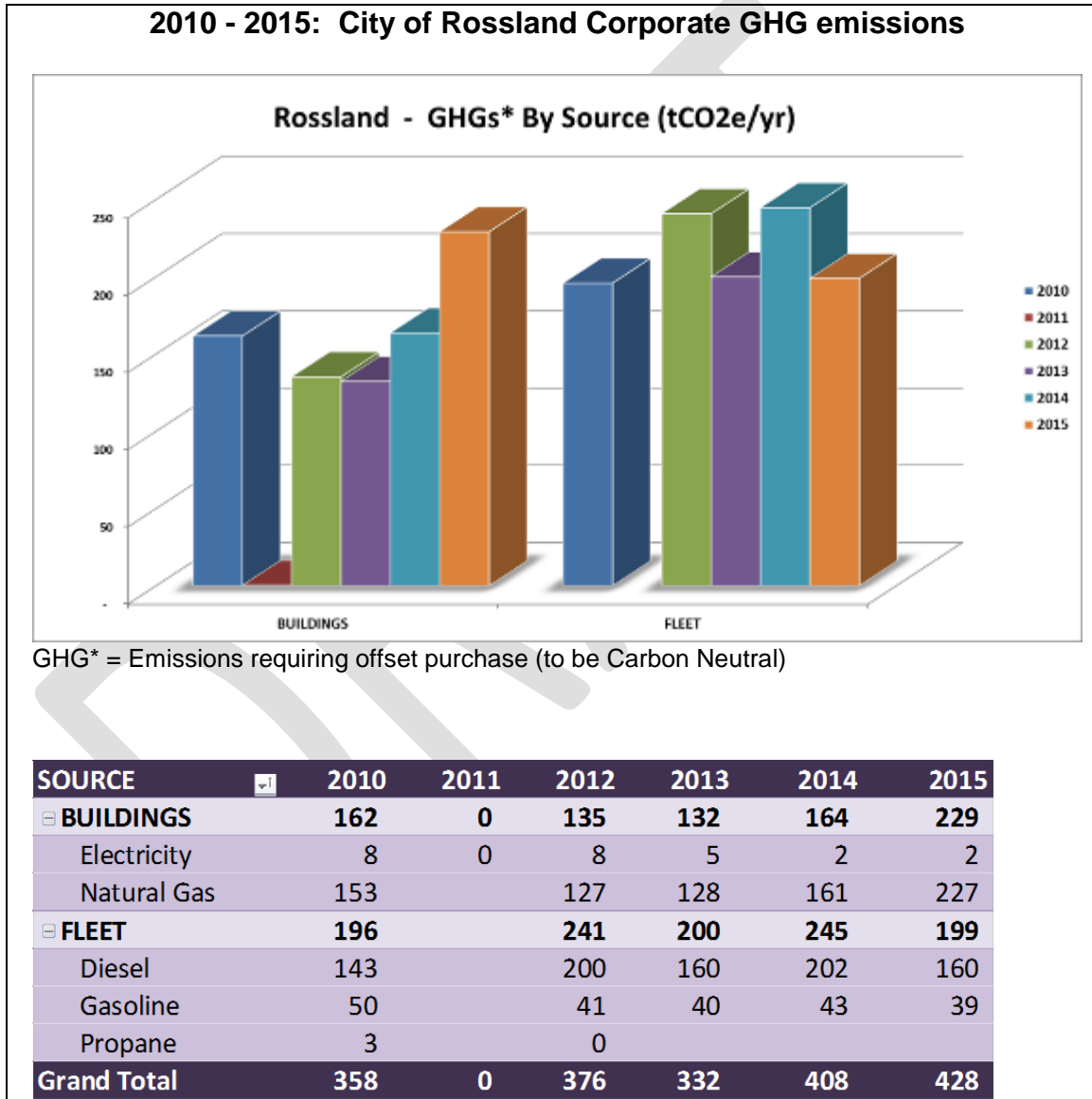
GHG (tonnes CO₂e) Emissions by Fuel Type



Diagrams: CNK Project 2008 Operations Energy Consumption Greenhouse Gas Emissions Inventory

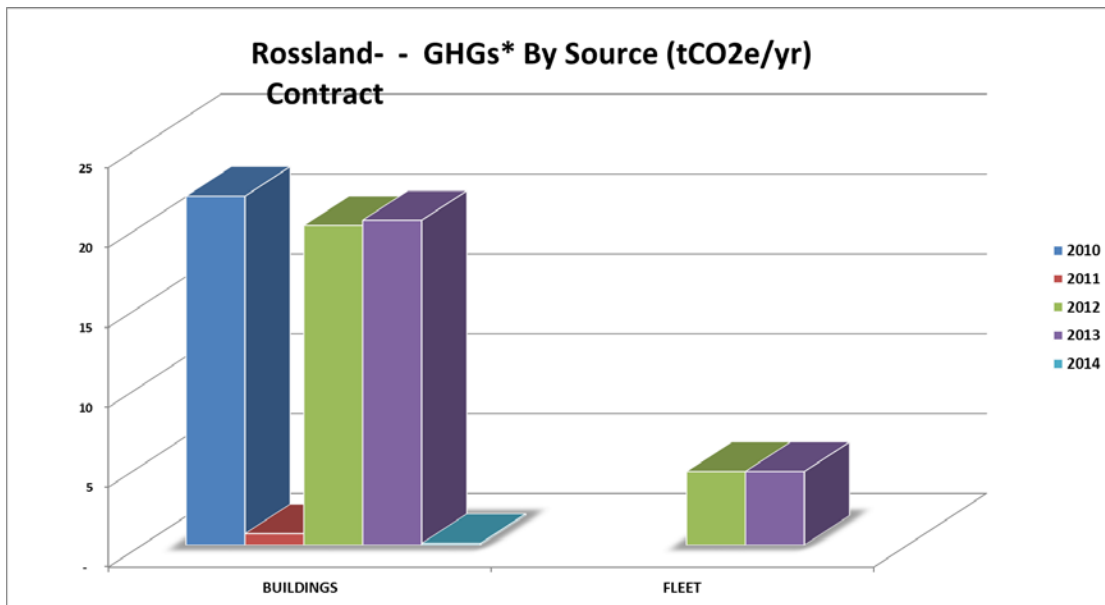
SMARTTool and Historical Profile

The City of Rosland has used SMARTTool, a Province of BC web based GHG emissions inventory and reporting tool, to track energy and emissions since 2010. By tracking consumption over several years, the inventory can become a mechanism for tracking changes in energy use and GHG emissions. The diagrams in this section show the summarized SMARTTool data for City of Rosland, Years 2010 to 2015, for internal operations and contracted services.



Data Source: SMARTTool 2015

2010 - 2015: City of Rosland Contracted Services GHG emissions

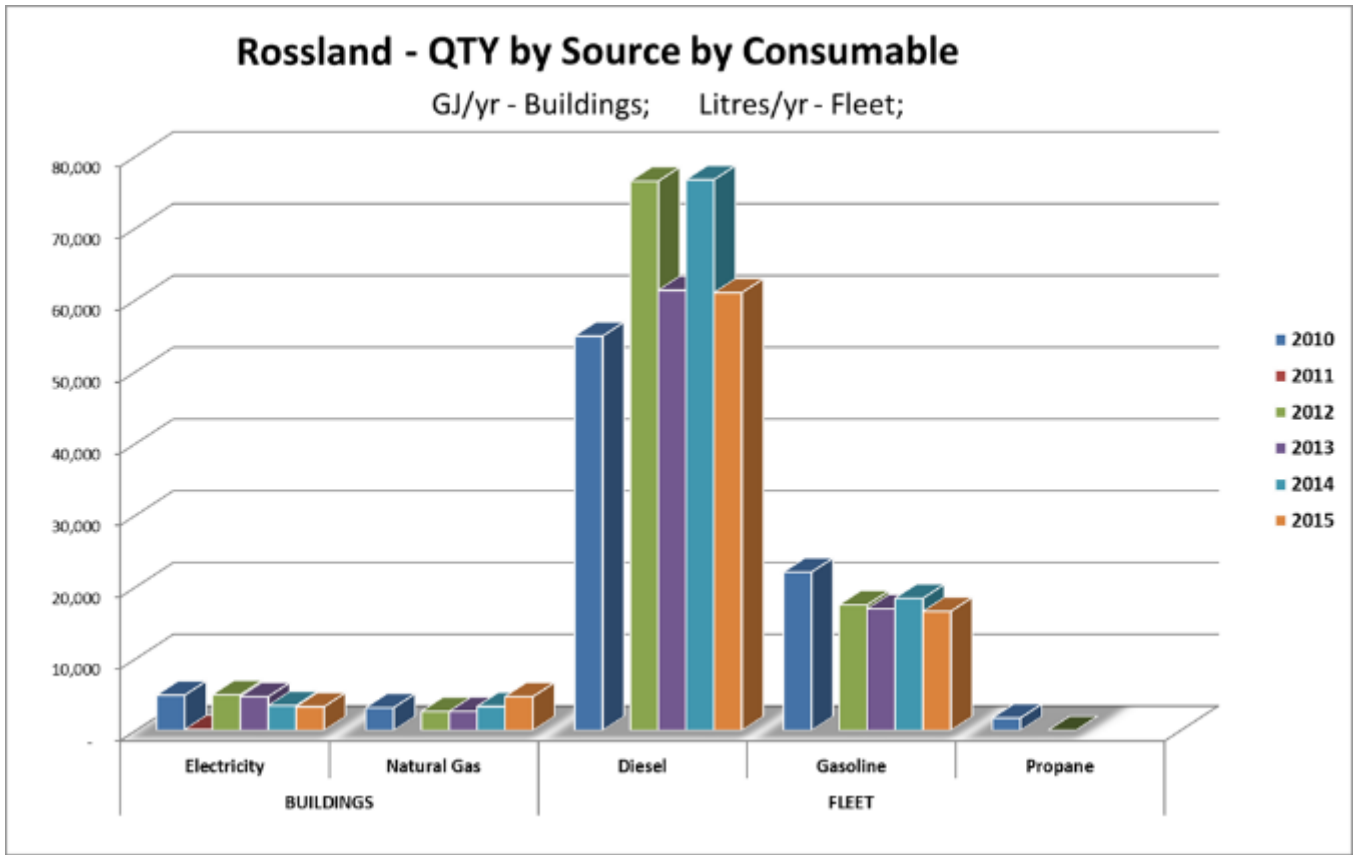


GHG* = Emissions requiring offset purchase (to be Carbon Neutral)

SOURCE	2010	2011	2012	2013	2014
Contracted Solid Waste Collection					
FLEET			5	5	
Diesel			5	5	
Rosland Library					
BUILDINGS	4	1	5	5	0
Electricity	0	0	0	0	0
Natural Gas	4	1	5	5	0
Rosland Pool					
BUILDINGS	18		15	15	
Electricity	0		0	0	
Natural Gas	17		14	15	
Grand Total	22	1	25	25	0

Data Source: SMARTTool 2015

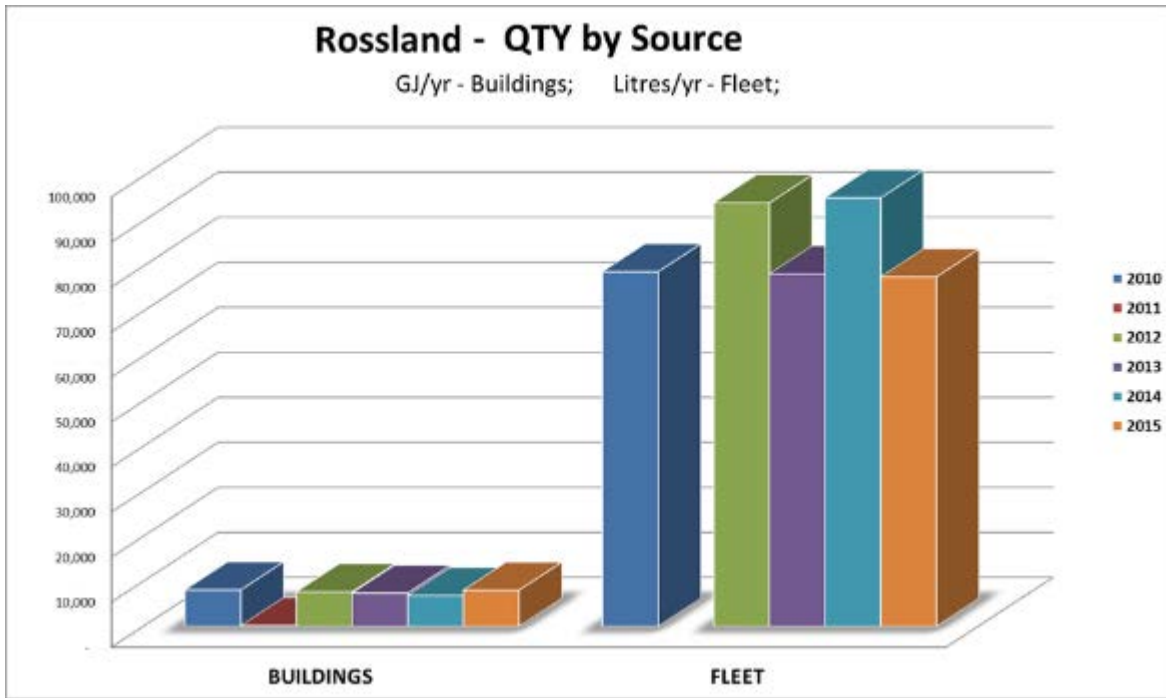
2010 - 2015: City of Rosland Corporate Annual Energy Consumption (by fuel)



Sum of Quantity	Column Labels	2010	2011	2012	2013	2014	2015
Row Labels							
BUILDINGS		8,080	128	7,624	7,359	6,807	8,003
FLEET		78,738		94,025	78,275	95,152	77,583
Grand Total		86,818	128	101,649	85,634	101,959	85,586

Data Source: SMARTTool 2015

2010 - 2015: City of Rosland Corporate Annual Energy Consumption



Sum of Quantity	Column Labels	2010	2011	2012	2013	2014	2015
BUILDINGS		8,080	128	7,624	7,359	6,807	8,003
Electricity		4,916	128	4,982	4,705	3,466	3,298
Natural Gas		3,163		2,642	2,654	3,341	4,704
FLEET		78,738		94,025	78,275	95,152	77,583
Diesel		54,945		76,532	61,334	76,741	60,995
Gasoline		22,057		17,490	16,941	18,411	16,588
Propane		1,736		3			
Grand Total		86,818	128	101,649	85,634	101,959	85,586

Data Source: SMARTTool 2015

Action Plan

Action Sequence

It may not be immediately obvious as to where to begin with energy and emissions actions. The following sequence is generally recommended to optimize value:

Reduce “Behaviour” Losses: Consider if energy is currently being wasted through certain behaviours such as idling vehicles or heating / cooling / lighting buildings when they are unoccupied. These measures can save energy and emissions for low or no cost.

Consider Energy in Operations and Maintenance: Operating buildings, vehicles, and infrastructure optimally can save significant energy and emissions. Well-maintained vehicles use less fuel than poorly maintained ones. Building equipment should be serviced and cleaned regularly to optimize energy use and occupant comfort.

Efficient Equipment: Considering the most efficient equipment to meet the need. This can include heating, ventilating, and air conditioning equipment for buildings and vehicle size for fleet.

Renewable Energy: The final step is considering the energy source used to meet the energy needs now that waste has been reduced, equipment is optimized, and the most efficient equipment is being considered. Renewable energy can include bio-fuels for vehicles or hybrid / electric vehicles. For buildings it can include heat pumps (air, water, and ground source), solar hot water, or other renewable energy technologies.

Actions in Place

The City of Rosland reports the following established community and corporate actions in the publically available 2013 CARIP (Climate Action Revenue Incentive Program) report.

Corporate Actions in Place, 2013

Corporate Actions		
Action Type – Supportive Action Area	Action Category	Action
Corporate wide - Direct	Fleet	Purchased a new pickup truck to replace an older one
Corporate wide - Direct	Fleet	Purchased an excavator(more efficient) to replace a backhoe
Corporate wide - Direct	Waste	Reduced paper use by encouraging double sided copying
Corporate wide - Direct	Waste	Council continued to use laptops instead of printing Council Agendas
Community wide - Direct	Water and Sewer	Participated in Liquid Waste Management Plan-Stage 2 for a new regional sewer service
Community wide – Supportive/Feasibility Exploration	Building and Lighting	Conducted Energy Audits on 2 City buildings - City Hall and Arena

Community Actions in Place

Community Actions		
Supportive Action Area	Action Category	Action
Community wide - Direct	Transportation	Completed two trails-one connecting downtown to the Museum and the other connecting upper and lower Rossland
Community wide - Direct	Transportation	Shuttle to Red Mountain began in December 2013 with excellent ridership
Community wide - Direct	Transportation	Installed 4 Electric vehicle charging stations
Community wide - Direct	Waste	Offered Spring and Fall cleanup program for organic waste to reduce individual vehicle traffic to the landfill in Trail and to reduce illegal dumping of waste
Community wide - Direct	Water/Sewer	Reached 100% compliance in water meter installation with the Water Meter Incentive program
Community wide - Direct	Green Space	Required parkland dedication from major subdivisions particularly focused on riparian areas
Community wide - Direct	Transportation	Continued to implement Active Transportation Plan
Community wide - Direct	Transportation	Rossland is now part of the Kootenay car-share program and has a car available in Rossland
Community wide - Supportive	Water/Sewer	Participated in the Water Smart Ambassador Program, and continued to implement the Water Smart Action Plan

Actions Reported in place at Rossland 2015 SCEEP and 2016 Corporate Workshops

Action	Year	Comments
LED Streetlights	2012	Action complete – replaced 44 streetlights downtown and ornamental Christmas lights with LED
Rossland Energy Diet	2011	<p>Rossland Energy Diet of 2011 was the pilot for other Energy Diets in the province. Year 2 of the Rossland Energy Diet, known as Kootenay Energy Diet was in 2013 for all communities in the Region. Rossland participation rate was very high in both diets.</p> <p>Received 2012 Climate & Energy Action Award Honourable Mention in the “Public Service Organization and Local Government Collaboration” category for Rossland’s Energy Diet.</p> <p>The City and Sustainability Commission continue to support and work on</p>
Anti-Idling Bylaw		Bylaw has been adopted and signage in place.
Green Fleet		The City joined the carshare and continues to support a green fleet

Discussion ensued at the Corporate GHG Reduction Plan staff workshop. Some points noted:

- This workshop is a result of a Year 1 Action Item from the Rosland SCEEP. The benefits to having Corporate GHG reduction plan is to provide a road map to reduce energy consumption and emissions, and save money. The City did not receive a “Carbon Neutral Action Plan” corporate plan from Carbon Neutral Kootenays (CNK) project, circa 2011.
- A corporate GHG reduction plan provides concrete steps and a plan to work towards.
- In 2015, the BC Building Code was updated with stronger energy efficiency requirements. Building in the City is becoming more energy efficient. Local builders report a challenge in finding a balance between energy efficiency and affordability. Information on rebates in other communities to encourage building to higher energuide ratings is needed.
- Discussion on building audits and the need for more detailed audits and payback information and investment information for energy generation.
- Discussion on potential solar locations and net metering information from Fortis BC: Register for net meter, FBC supplies meter, payback is same rate. Maximum size of project is 50kW; over that is considered a power producer so the rate decreases to the bulk purchase rate. (\$0.035/ kWhr)



Developing the Action Plan



The Action Plan

Appendix 1 - Action Descriptions and Implementation Plan

Action categorized by workshop group as a “yes” **Y**

Action categorized by workshop group as a “maybe” **M**

ACTIONS	In place?	Year To Do				IMPLEMENTATION NOTES
		2017	2018	2019	2020	
1 Building Operations						
Policy: Commit to building the most energy efficient facilities, optimize siting, require renewable energy evaluations		Y				<ul style="list-style-type: none"> <input type="checkbox"/> Use sample policy developed by CNK <input type="checkbox"/> Develop one policy that addresses building energy efficiency, optimised building siting and renewable energy evaluations <input type="checkbox"/> Policy must be cost effective and sensible <input type="checkbox"/> Add policy adoption to CARIP reporting <input type="checkbox"/> Renovations to Minors Hall would have benefited from policy <input type="checkbox"/> Ensure cost effective <input type="checkbox"/> Review PRV at City Hall for possible power production and consider solar
Conduct energy audits of existing facilities			Y			<ul style="list-style-type: none"> <input type="checkbox"/> Consider costs of audits – level 1 versus level 2,3 <input type="checkbox"/> Level 1 audits are in place (i.e. City Hall, Arena) <input type="checkbox"/> Budget for Level 2s <input type="checkbox"/> Want more detailed audits with payback information on all buildings <input type="checkbox"/> Audits have not been completed on shop, seniors centre, library, Minors hall, Museum <input type="checkbox"/> For Level 2, consider generation and ideas for long term; and provide information for investment for generation

ACTIONS	In place?	Year To Do				IMPLEMENTATION NOTES
		2017	2018	2019	2020	
						<ul style="list-style-type: none"> <input type="checkbox"/> Do site specific monitoring to consider solar and potential locations; i.e., does snow on arena roof impact solar potential? Perhaps shop with flat roof has more solar potential. Consider building's future. <input type="checkbox"/> Determine rate of investment. <input type="checkbox"/> Contact FortisBC for audit support. City facilities considered commercial. Commercial customers can bundle program measures. FortisBC uses energy efficiency per building square foot as benchmark for rebates.
Complete energy improvements already identified by previous audits or studies				Y		<ul style="list-style-type: none"> <input type="checkbox"/> Ensure money in budget <input type="checkbox"/> Notes from Rossland Energy Diet: sealing in homes decreased energy use. FortisBC rebates are based on the difference between the initial and final energy audits. <input type="checkbox"/> Notes on rebates: FortisBC has some in store rebates, especially for lighting. Rebates are applied directly to projects. FortisBC offers rebates when it is a good return, i.e., lighting rebates help with longer paybacks like insulation and windows <input type="checkbox"/> FortisBC has ECAP program for low income renters and homeowners. Reach out to community and seniors groups with this information. <input type="checkbox"/> Improvements in the building code, mean it becomes harder to build to beat the code

ACTIONS	In place?	Year To Do				IMPLEMENTATION NOTES
		2017	2018	2019	2020	
Incorporate energy management into annual building maintenance procedures		Y				<ul style="list-style-type: none"> <input type="checkbox"/> Improve City Hall <input type="checkbox"/> Increase awareness; i.e., turn off lights. <input type="checkbox"/> Add to building managers maintenance checklist <input type="checkbox"/> Lighting upgrades have been done <input type="checkbox"/> Add sensors to council chambers <input type="checkbox"/> Improve sensitivity of sensors in some building areas (i.e. washrooms). <input type="checkbox"/> Determine the energy efficiency of turning off fluorescent lights vs. leaving them on all day.
2 Fleet Operations						
Provide facilities to help staff reduce the emissions associated with commuting to work		Y				<ul style="list-style-type: none"> <input type="checkbox"/> Bike rack has been installed at City Hall <input type="checkbox"/> Review Colwood’s staff EV bike purchasing policy and consider introducing a similar policy <input type="checkbox"/> Provide education to staff
Develop a vehicle purchasing policy					M	<ul style="list-style-type: none"> <input type="checkbox"/> Review CNK sample policy. This action a Maybe <input type="checkbox"/> City already practices right sizing <input type="checkbox"/> Not sure if policy required <input type="checkbox"/> Discussion on adding an E-bike to fleet.
Implement an efficient vehicle use initiative		Y				<ul style="list-style-type: none"> <input type="checkbox"/> Provide driver training to staff, contractors and other interested parties <input type="checkbox"/> Partner with other communities to provide driver training, i.e., Castlegar, Nelson <input type="checkbox"/> Review grant options for driver training. <input type="checkbox"/> GPS is installed on sand truck to review efficiency and monitoring of route. This sends information electronically via telecom <input type="checkbox"/> Staff do routine trip checks.

ACTIONS	In place?	Year To Do				IMPLEMENTATION NOTES
		2017	2018	2019	2020	
Ensure Fleet Maintained	Y					<ul style="list-style-type: none"> <input type="checkbox"/> Rossland will not join an efficient fleet certification program as the fleet is too small <input type="checkbox"/> Noted that the City internally does fleet review, practices right sizing <input type="checkbox"/> City mechanic keeps fleet in top condition.
Develop monitoring program for fleet fuel consumption	Y					<ul style="list-style-type: none"> <input type="checkbox"/> Use SMARTTool <input type="checkbox"/> Compare history of vehicles <input type="checkbox"/> Note that new vehicles use more diesel than old vehicles; however provincial diesel emissions now have decreased particulate
Conduct a fleet routing review					M	<ul style="list-style-type: none"> <input type="checkbox"/> This action is a Maybe; could be a useful document for the future <input type="checkbox"/> There is a Council policy describing priority routes level 1,2,3; this is for snow ploughing as garbage contracted out. <input type="checkbox"/> Develop a knowledge transfer/mentorship from experienced and retiring operators to new operators (eliminates lost operators and to document the most efficient routes). i.e., all things being equal, here is the route that should be followed. <input type="checkbox"/> Common sense prevails – i.e. do some lesser roads in the vicinity of main roads (golf course); don't call out for resident complaints when operators are actively ploughing; operators may be busy during special events. <input type="checkbox"/> Garbage contracted out, but encourage efficient routing <input type="checkbox"/> Note that water meter reading now done remotely; this identified on CARIP report as driving reduced. <input type="checkbox"/> GPS identifies best routes for operators who learn quickly

ACTIONS	In place?	Year To Do				IMPLEMENTATION NOTES
		2017	2018	2019	2020	
Encourage efficient use of personal vehicle	Y					<ul style="list-style-type: none"> <input type="checkbox"/> City of Rossland has joined Kootenay Carshare <input type="checkbox"/> Carpooling/carshare vehicles to meetings encouraged
Investigate future opportunities for carshare		Y				<ul style="list-style-type: none"> <input type="checkbox"/> Carshare works for the City if it can eliminate vehicles. Future opportunity for City vehicle to be in carshare. Eg. Kelowna. <input type="checkbox"/> Staff are encouraged to use carshare if attending conferences <input type="checkbox"/> Carshare would like to add hybrid or EV vehicle <input type="checkbox"/> Disappointed that a non-profit organization bought their own truck rather than reviewing carshare opportunities. <input type="checkbox"/> Investigate right size, perception, alternate equipment like snow blower efficiency <input type="checkbox"/> Support contractor use of carshare (tender cost/hour)
3 Infrastructure						
Conduct energy focused operational review of infrastructure	Y					<ul style="list-style-type: none"> <input type="checkbox"/> In place for upgrade on Washington Street <input type="checkbox"/> Will be part of asset management <input type="checkbox"/> Sewer pump station <input type="checkbox"/> Street lighting <input type="checkbox"/> Water leak detection and fixing underway <input type="checkbox"/> FortisBC provided rebates for lighting at arena. LED added September 2016.

ACTIONS	In place?	Year To Do				IMPLEMENTATION NOTES
		2017	2018	2019	2020	
Evaluate energy recovery options from facilities			Y			<ul style="list-style-type: none"> <input type="checkbox"/> Focus on arena <input type="checkbox"/> Review PRV hydro generation opportunities as used in other jurisdictions; e.g., Nakusp, Kimberley and Nelson Hydro experience; FortisBC will provide incentives <input type="checkbox"/> Curling club heat is used to melt snow (Off shelf equipment installed to draw heat) <input type="checkbox"/> New recovery water from compressors do not capture heat <input type="checkbox"/> Technology is improving. PRV example and power could be created in principle for City Hall. <input type="checkbox"/> For investigation: Interceptor Line to Trail. Potential for sewer energy generation? <input type="checkbox"/> Review snow load parameters for solar panels
4 Purchasing and Corporate Leadership						
Incorporate energy considerations into purchasing policies					M	<ul style="list-style-type: none"> <input type="checkbox"/> This Action a Maybe <input type="checkbox"/> See CNK green purchasing policy <p>Ensure all purchases are energy star</p>

ACTIONS	In place?	Year To Do				IMPLEMENTATION NOTES
		2017	2018	2019	2020	
Incorporate Life Cycle Costing into all major purchasing decisions	Y					<ul style="list-style-type: none"> <input type="checkbox"/> See CNK sample policy <input type="checkbox"/> New clear policy needed for Asset Management Plan (AMP) <input type="checkbox"/> Discussion on heat pumps – consider cost to repair. If cost more upfront but cheaper in long run its AMP; 10 year pay off not being replaced; ground source heat pumps are better but are cooling ground around
Incorporate GHG tracking requirements into service provider agreements	Y					<ul style="list-style-type: none"> <input type="checkbox"/> Contractors are being tracked in SMARTTool <input type="checkbox"/> Contractors plough sidewalks <input type="checkbox"/> Record third party fuel consumption, though some data missed. <input type="checkbox"/> Find sample wording and add to contractor agreements (include in tender cost/hour)
Encourage and recognize staff who develop new GHG reduction measures	Y					<ul style="list-style-type: none"> <input type="checkbox"/> Have staff innovation policy but hard to evaluate; monetary value to a maximum is hard to qualify <input type="checkbox"/> Continue to remind staff on GHG reduction measures
5 Implementation						
Identify the Owner of the plan	Y					<input type="checkbox"/> CARIP reports by the Manager of Planning
Assign the CARIP grant into an energy conservation fund	Y					<input type="checkbox"/> In place, Climate Action Reserve Fund
Establish a GHG reduction target	Y					
Develop an administrative system for tracking corporate emissions	Y					<input type="checkbox"/> Use SMARTTool
Develop an emissions reduction reporting process	Y					<input type="checkbox"/> Use SMARTTool

Action categorized by workshop group as a “yes” **Y**
 Action categorized by workshop group as a “maybe” **M**

Appendix 2 - Corporate Energy Management Workshop

Funders and partners that have made this initiative possible:



Project delivered by:



City of Rossland Corporate Energy Management Workshop Tuesday September 13 1 pm to 4 pm Council Chambers

Corporate Energy Management – Support to Reduce Energy & Emissions

Who: Rossland Staff

Purpose: To develop a Corporate Energy and Emissions Reduction Plan to support actions of the City of Rossland Strategic Community Energy and Emissions Plan (SCEEP)

“The ABC’s of a CEM (Community Energy Manager), SCEEP and CNAP (Carbon Neutral Action Plan) - reduce long term energy consumption, greenhouse gas emissions and dollars spent.”

Facilitated by: Community Energy Association and Fortis BC

Agenda:

<p>1:00 Welcome and Introductions</p> <p>1:10 Background Presentation: Climate Action in BC</p> <ul style="list-style-type: none"> 2007 Climate Action Charter; Carbon Neutral Kootenays: Measure Act Lead OCP targets Community Energy and Emission Planning Energy Diets – (history and results i.e., Rossland examples) Profile examples from other communities (streetlighting, building incentives, small district energy systems) Community Energy Management Electric Vehicle Strategy <p>1:50 Setting the Stage: Rossland – where are we:</p> <ul style="list-style-type: none"> Review of potential CNAP actions Review of SCEEP actions Reducing GHGs, energy spending, CARIP grants 	<p>2:10 Break</p> <p>2:30 Round Table Discussion</p> <ul style="list-style-type: none"> Identify immediate priorities Opportunities to embed Climate Action in other initiatives (zoning, policy work) Barriers/Challenges to what could be done Who supportive/who opposed? Identify needs for support What are more specific timelines and activities. <p>3:15 Develop Corporate Action Plan for Rossland</p> <ul style="list-style-type: none"> Develop a Road Map for the Next 1-4 years: What’s done; what’s to do. Actions Completed: Highlight current actions Actions to Consider: identify opportunities and set priorities Support needed <p>3:50 Wrap up.</p>
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To guide your corporate operations to achieve goals such as **saving money, reducing energy and emissions and supporting the local economy**. “Carbon Neutral Kootenays” logo: Measure – Act – Lead.

Patricia (Trish) Dehnel, MCIP RPP
 Community Energy Association
 Direct/Cell 250.505.3246
pdehnel@communityenergy.bc.ca
www.communityenergy.bc.ca