

12.0 Energy

Goals

Encourage and promote innovation in energy use and demand management in City facilities and new development.

Achieve carbon neutrality in City facilities and operations.

Facilitate and promote energy conservation and carbon neutrality throughout the community.

Establish district and neighbourhood energy projects in appropriate areas.

Guiding Principles Met

- Foster prosperity for people, business and government
- Ensure housing meets the needs of the whole community
- Create a culture of sustainability
- Create strong, compact and complete neighbourhoods
- Provide alternative transportation
- Create a youth friendly city

Context

Accessing affordable energy is becoming a greater challenge for all members of the community. Energy costs and the efficiency of energy consumption impact all businesses, organizations and households as all aspects of daily life are tied to energy costs and efficiencies in demand including: food access and preparation; transportation of goods; service provision; vehicle costs, electricity; and heating and cooling costs in homes and businesses.

While issues of greenhouse gas emission reduction and mitigation, carbon footprints and climate change inform energy related decision making, these issues are also intrinsically tied to community economic sustainability, transportation, access to services, food and housing. Through inclusion of consideration of energy demand, access and impacts in all decision making processes, the Vernon community can participate in the creation of an energy efficient and carbon neutral city.



The implications of peak oil, climate change and the effects of greenhouse gas emissions, as well as rising energy costs, are being felt locally, nationally and globally. Changes to the economic structure of energy access have significant implications which require response from all levels of government. In BC over the last five years, the price of common energy products including fuel oil, gasoline, diesel and electricity have increased, with natural gas remaining largely stable. Local governments need to consider these trends, and consider and identify opportunities to mitigate their implications of increasing energy costs on the cost of food,

transportation, household and business heating and cooling, the related increase to the cost of travel and the corresponding number of summer visitors, as well as increased costs for recreation services and activities, which are an intrinsic part of the lifestyle of many Vernon residents.

The energy efficiency, greenhouse gas emission reduction and green building legislative context is changing and differs between provinces. Provincial legislation to require municipalities to become carbon neutral throughout their operations has been in place since 2008. Additional provincial policy addressing energy and energy related roles and responsibilities for municipalities include the ongoing development of and negotiation on the BC Green Building Code, the Carbon Tax and provisions for communities to improve their ability to be increasingly energy efficient.

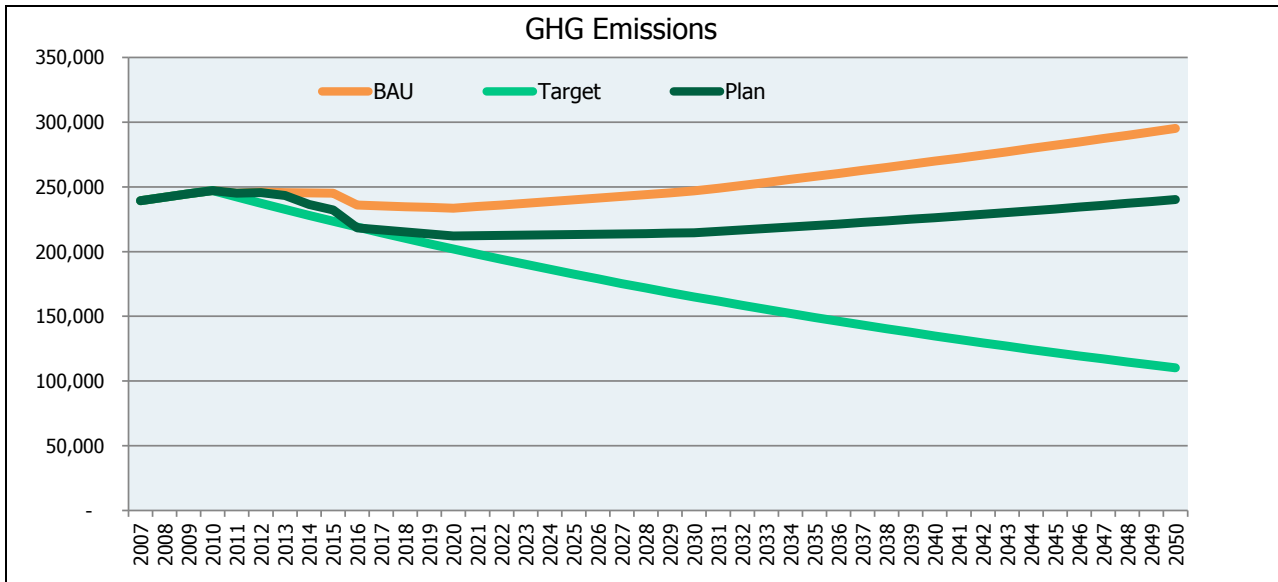
Vernon has established GHG reduction targets through two energy modeling processes undertaken, first as part of the Regional Growth Strategy and then as follow up during the development of the OCP. Local Government Act Section 473(3) establishes the requirement for inclusion of these targets in the Official Community Plan. To ensure that the targets set are those that can be met, the City developed an understanding of achievable emissions reduction targets in



partnership with the other jurisdictions of the North Okanagan and during the BC Hydro Quickstart Program. As a result of these partnerships, a draft 2013 Community Energy and Emissions Plan was developed in 2013.

"Business As Usual" Projections & Target Overview				
Community	Vernon City			
Annual % target change in ghg	-2.00%			
Population growth	1.00%			
Default population growth	1.20%			
2007 Population	37,550			
Start-year for actions	2012			
Emissions Summary				
2007 Emissions	239,433			
2010 Emissions (not from CEEI)	247,182			
2007 Total Energy Expenditure	\$ 113,592,681			
2007 Per-capita energy cost	\$ 2,920			
2007 Per-capita emissions	6.36			
Targets Summary				
	2016	2020	2030	2050
Total reduction	-8.5%	-16%	-31%	-54%
Per-capita reduction	-17%	-26%	-45%	-70%
Total GHG	218,965	201,966	165,021	110,169
Per-Capita GHG	5.3	4.7	3.5	1.9
Business as Usual (BAU) Summary				
	2016	2020	2030	2050
GHG's	235,970	233,539	246,822	295,126
GHG growth	-1%	-2%	3%	23%
Population	41,288	42,964	47,459	57,909
Pop growth	3,738	5,414	9,909	20,359
Pop Grow %	10%	14%	26%	54%
Per capita emissions	5.72	5.44	5.20	5.10

The table above and the following graph are taken from the draft Energy and Emissions Plan. The table outlines the baseline condition used in the development of the plan as well as potential target summaries as a result of the policy, program and opportunity analysis undertaken in the development of the plan. The graph shows the Business as Usual (BAU), Target and current GHG emissions levels discussed and used for the development of the draft plan.



At this time, the City is on track, through existing policies and programs, to meet a goal of an annual reduction in GHG emissions of 2%, until 2018, an overall goal of 12% reduction from 2007 levels. At that time, the rate of community GHG emission reduction will need to be examined. It is not unreasonable to consider that the community, with assistance and support from the City, could continue to reduce GHG emissions to a net decrease of 35% by 2050. Until the Integrated Community Sustainability Plan (ICSP) is developed and the target finalized, these draft targets will be utilized to meet the City's legislated requirements for GHG targets.

The City has a responsibility to the community to provide support for initiatives in energy conservation and greenhouse gas reduction. Further, the City has a responsibility to work with the community, the Regional District as well as the provincial and federal governments to provide opportunities and networks which make the goals of innovation, efficiency and reduced energy demand reachable.

Vernon is responding to these pressures through the land use plan, use of transportation demand management measures and a strong emphasis on sustainable decision making at all policy levels. The land use plan is the central tool for addressing community wide energy efficiency and opportunities for alternative energy creation. Through the designation of neighbourhood centres and the implementation of transportation demand management measures, the City will be able to guide development to ensure alternative transportation is a viable option for Vernon residents. As well, these tools help to provide opportunities for neighbourhood and district energy and heating infrastructure implementation to provide accessible energy supply options in new developments.

In addition, provincial requirements for public sector operations to become carbon neutral, to modify purchasing and fleet decisions, and to encourage energy efficiency through the broader community, are putting pressure on municipalities to develop timely, comprehensive approaches to energy efficiency and sustainability. The City of Vernon is a signatory to the UBCM Memorandum of Understanding regarding the British Columbia Climate Action Charter. As such, the City has made a voluntary commitment to build energy

awareness and provide active support for innovation in energy efficiency in City operations and as part of overall community planning.

Supporting Policies

- 12.1 Ensure that energy efficiency and alternative energy infrastructure are implemented as part of neighbourhood centre planning processes, including the consideration of district energy options.
- 12.2 Encourage innovation in building design and raise awareness of green building options, materials sourcing, energy alternatives and consideration of the needs of future property owners for energy efficient options balanced with the cost of construction.
- 12.3 Ensure that Zoning Bylaw provisions do not impede implementation of energy efficient technologies and green building practices which comply with and exceed the minimum requirements in the BC Building Code.
- 12.4 Explore the desirability and feasibility of requiring facilities for electrical charging for vehicles, including motorized scooters, as part of the development of large parking areas intended for long term parking.
- 12.5 Promote energy conservation and community awareness of energy use and its alternatives.
- 12.6 Work with community members and organizations to promote community energy efficiency, determination of the community carbon footprint and consideration for the creation of a community carbon footprint reduction program
- 12.7 Encourage the use of green infrastructure to support and maintain ecological services within the city. These measures will assist in decreasing the costs associated with City energy demands as related to infrastructure maintenance, repair and replacement over time as green infrastructure tends to be less energy intensive in its operation.
- 12.8 Publicize City initiatives to reduce energy consumption to raise awareness of energy efficiency in the community.
- 12.9 Undertake a City Corporate Energy Audit and implement measures to decrease City energy demand and unnecessary use. Develop a strategy to achieve carbon neutrality.
- 12.10 Adopt a Community Energy Plan to provide direction for appropriate alternative energy infrastructure implementation for the community as a whole.

- 12.11 Work towards access to sustainable energy choices, including transportation, heating and cooling of buildings and access to food and amenities, throughout the community.
- 12.12 Participate in the development of regional and provincial energy infrastructure projects to ensure Vernon is part of the establishment of new networks and the introduction of amenities, and keeps pace with current directions in community energy advancement.
- 12.13 Support the continued greening of the BC Building Code by promoting energy efficiency in future review processes.
- 12.14 Work towards an annual reduction of GHG emissions of 2% until 2018. In addition, work with community stakeholders on refining this target in the development of the ICSP, including the establishment of achievable targets beyond 2018.