

Climate Change and Energy

12



RELATED GOALS

- › 12 (A). Buildings and their component systems are energy efficient, produce few greenhouse gases and have good air quality for occupants.
- › 12 (B). Transportation options reduce fossil fuel dependence, help conserve energy and produce low greenhouse gas emissions and other air contaminants.
- › 12 (C). Durable and sustainable building materials, including those that are local, green, and healthy are promoted and used.
- › 12 (D). Victoria relies on clean, renewable, and efficient energy sources.

OVERVIEW

The Intergovernmental Panel on Climate Change has determined that climates around the world are changing and identifies the human activities of deforestation, waste decomposition, and burning fossil fuels as the primary causes. If greenhouse gas emissions continue to rise worldwide, the earth is projected to warm more rapidly. Cities are well positioned to help slow the pace of climate change through land use management and related policies to improve energy performance in buildings and to reduce the use of fossil fuel burning single-occupancy vehicles, which are two of the greatest sources of greenhouse gases.

In Victoria in 2007, sources for total greenhouse gas emissions were: 45% from transportation, 26% from commercial buildings, 23% from residential buildings and 5% from the management of solid waste. Per capita emissions are significantly lower in compact urban neighbourhoods such as Harris Green and Downtown, where shorter trip lengths from homes to destinations enable walking and cycling and multi-unit building forms are more energy-efficient. Local impacts of global climate change in Victoria could include: damage to property and infrastructure from more frequent and intense wind and rain storms; contamination of potable water if flooding occurs; disruptions to food supply routes; and, reduced tourism.

To help Victoria become a more climate change resilient community the plan includes policies to address climate change mitigation and adaptation through the development of a Community Climate Change and Energy Resiliency Plan. With respect to climate change mitigation, the City's 2020 target for greenhouse gas emissions is to reduce levels by 33% from 2007 levels. Achieving this target depends on compact and complete urban development that supports alternative transportation modes, renewable energy and heating systems, and better performance in new and existing buildings. Climate change adaptation aims to lessen the community's vulnerability to climate change impacts, such as those from severe wind storms that pose a hazard to the built and natural environment.

BROAD OBJECTIVES

The climate change and energy policies of this plan address seven broad objectives:

- 12 (a) That, by 2020, climate change is mitigated through the reduction of greenhouse gas emissions within the City of Victoria to 33% below the levels in 2007.
- 12 (b) That the planning and delivery of climate change mitigation and adaptation is coordinated through collaboration among government, public agencies, community organizations and private sector partners.
- 12 (c) That energy consumption and generation are managed to give priority to demand reduction, waste heat recovery, renewable heat and renewable electricity.
- 12 (d) That the provision of renewable energy as district-wide utilities is achieved.
- 12 (e) That a high standard of energy and water performance in new construction of City facilities and private development is supported and enabled.
- 12 (f) That existing buildings are encouraged to meet a high standard for energy and water performance.
- 12 (g) That management of the supply, distribution and efficient use of energy meets the demands of urban growth and change.

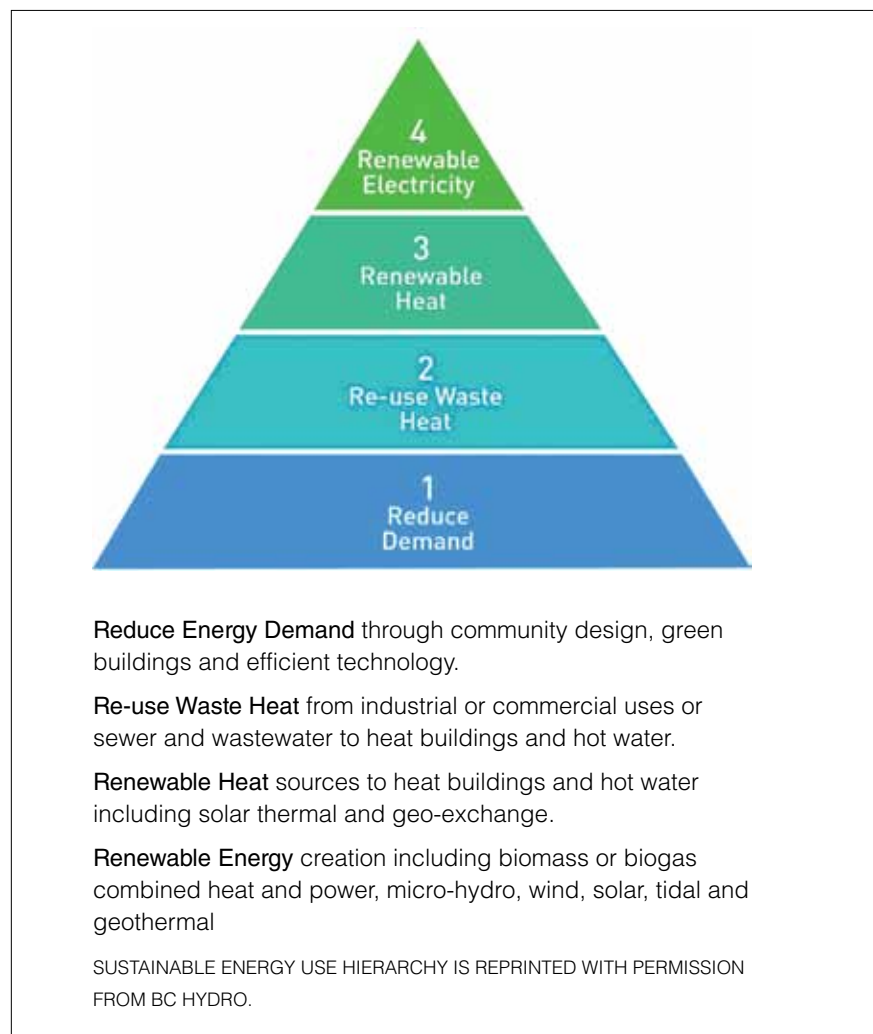
CLIMATE AND ENERGY RESILIENCY

- 12.1 Provide direction for climate change mitigation and adaptation planning and actions through the development and regular update of a Community Climate and Energy Resiliency Plan, that:
 - 12.2.1 Guide the integration of climate change mitigation and adaptation in City plans, policies and projects.
 - 12.2.2 Identify policies, targets and actions for reductions in greenhouse gas emissions on a sectoral basis;
 - 12.2.3 Identify policies, targets and actions for sustainable energy use including conservation and diversification;
 - 12.2.3 Undertake an ongoing and citywide hazard, risk and vulnerability assessment for projected climate change impacts, and consider the knowledge accumulated in City plans and decision-making for adaptation planning;
 - 12.2.4 Develop and maintain a comprehensive Greenhouse Gas Inventory that measures, analyzes and reports on the level of emissions in the community, and evaluates the progress toward reduction targets on a routine basis.
- 12.2 Coordinate the adaptation planning and emergency management benefits of the hazard, risk and vulnerability assessment of projected climate change impacts to strengthen the resiliency of the built and natural environment to future weather events.
- 12.3 Coordinate adaptation planning and infrastructure asset management as part of the development of a carbon neutral plan;
- 12.4 Establish and maintain partnerships with neighbouring jurisdictions, the Capital Regional District, senior governments public agencies, community organizations and the private sector to coordinate plans and actions for climate and energy resiliency.

SUSTAINABLE ENERGY PRIORITY

- 12.5 Use BC Hydro's Sustainable Energy Hierarchy as shown in Figure 14 as the conceptual framework for climate change mitigation, where energy consumption and generation are ranked in descending order of priority, and develop policies and regulations broadly consistent with it.

Figure 14: Sustainable Energy Use Hierarchy



ENERGY CONSUMPTION

- 12.6 Continue to work with the Capital Regional District on energy conservation through participation in the Capital Region Community Energy Plan, and adaptation planning.
- 12.7 Work with the Capital Regional District, utility providers, the private sector and community organizations to encourage energy conservation, in balance with objectives and policies in this plan that may involve greater energy consumption.
- 12.8 Engage citizens, business and community groups to increase public literacy and community initiatives that foster and result in reductions in the average annual levels of household and workplace energy consumption in Victoria and the Capital Region.

BUILDING PERFORMANCE

- 12.9 Require new City facilities and retrofits to existing facilities to satisfy a high standard for green building and sustainable site design, as feasible.
- 12.10 Continue to support and enable the private development of green buildings that are new construction with features that include, but are not, limited to:
- 12.10.1 Building retention and reuse;
 - 12.10.2 Passive building design;
 - 12.10.3 Sustainable site design;
 - 12.10.2 Energy efficiency;
 - 12.10.3 Renewable energy;
 - 12.10.4 Water conservation and efficiency; and,
 - 12.10.7 Sustainable transportation facilities.
- 12.11 Encourage new developments that are adaptable to future green building retrofits, such as sustainable energy technology improvements, green roofs for solar thermal and purple pipes for grey water reclamation aligned with the BC Building Code.
- 12.12 Consider non-regulatory tools that support and enable the private development of green buildings that are new construction.
- 12.13 Support and enable the reuse and retrofit of buildings through municipal regulations and incentives, as appropriate.

- 12.14 Develop and maintain partnerships that promote the replacement of inefficient heating and cooling systems through high efficiency system upgrades and renewable heating systems.
- 12.15 Advocate for senior government incentives for energy upgrades to existing buildings.

RENEWABLE ENERGY

- 12.16 Work with the Capital Regional District, utilities and the private sector to investigate the feasibility of renewable energy as a utility on a district scale:
 - 12.16.1 Consider opportunities for renewable energy systems, such as geo-thermal exchange; and,
 - 12.16.2 Consider ways to derive energy from waste streams and reuse waste heat.
- 12.17 Support and enable the feasibility of renewable energy at a district scale through broad objectives and policies for land management and development in this plan, that:
 - 12.17.1 Encourage large-scale mixed use developments where energy demands are complementary, and small, compact, multi-family development, which use less energy per household;
 - 12.17.2 Include renewable energy facilities in urban place designations, where appropriate;
 - 12.17.3 Identify potential locations for actual facilities;
 - 12.17.4 Consider all available statutory tools for site-specific and area-wide development; and,
 - 12.17.5 Investigate non-regulatory tools for site-specific and area-wide development.