

SUSTAINABILITY HIGHLIGHTS

Energy is crucial to the ongoing functioning of our communities and the economy. We use energy to provide power and heat to homes and businesses, for manufacturing processes and transportation, and to cook and heat water. BC has a significant supply of renewable energy through hydroelectricity, and other renewable energy sources are being pursued, such as solar, wind and tidal energy. However, the Fraser Basin and British Columbia still rely on a significant proportion of non-renewable energy, such as oil, natural gas and other fossil fuels. Most electricity in BC comes from hydroelectricity generation facilities in the Columbia and Peace River systems, along with numerous smaller generators. However, the associated reservoirs result in the flooding of river valleys and loss of natural resources and ecosystems.

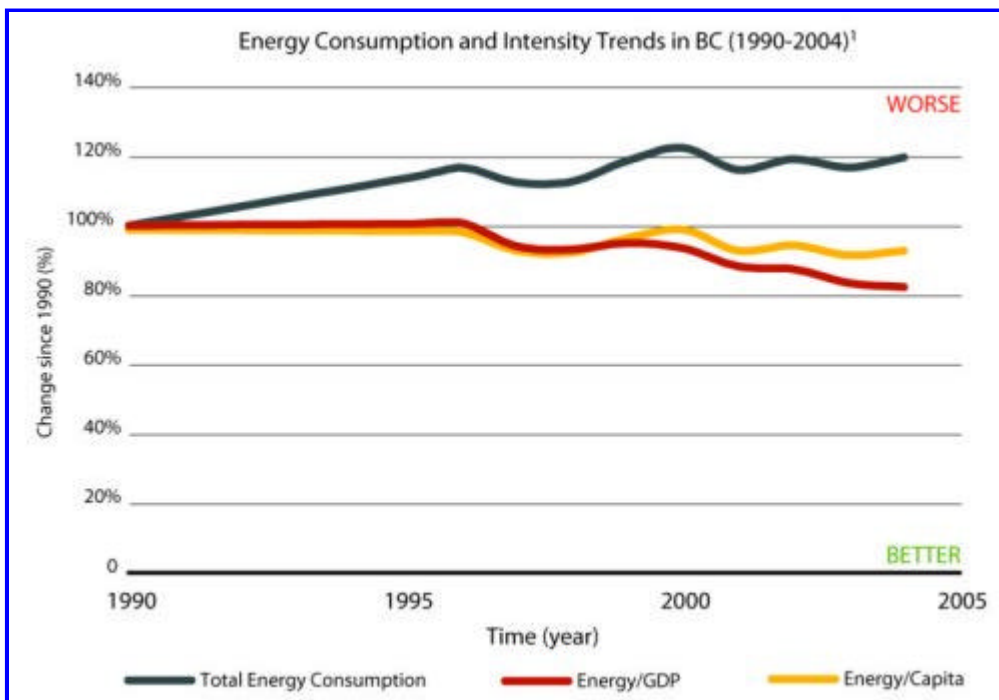
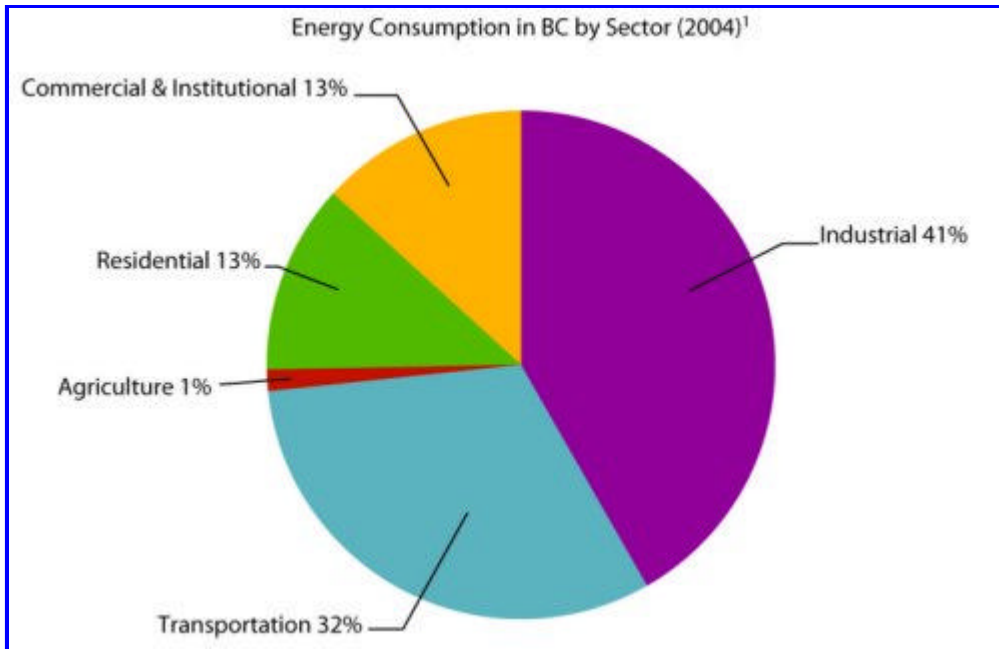
- Although total energy consumption in BC rose 20% between 1990 and 2004, during this period the population grew by 28% and GDP grew by 71%, suggesting significant gains in energy efficiency.
- The transportation sector had the greatest increase in energy consumption (39%) since 1990.
- Average residential consumption of hydroelectricity in the Fraser Basin was 9,320 KWh per year in 2005.

Total Energy Consumption in BC		GETTING WORSE - Total energy consumption in BC has increased by 20% (1990-2004).
Energy Intensity in BC		GETTING BETTER -Energy consumption per capita and per \$ of GDP have decreased since 1990 (by 6% and 18% respectively).
Hydroelectric Consumption in the Fraser Basin		GETTING WORSE -Total industrial consumption increased in 4 of 5 Fraser Basin regions, and average residential consumption increased in 3 of 5 regions (1990-2004).

ISSUES AND TRENDS

Energy Consumption in BC (1990-2004) ¹

Total energy consumption of all energy sources in BC rose by 20% between 1990 and 2004. However, energy intensity is improving. The amount of energy consumed per person has decreased by 6% on average, and the amount of energy required to produce one dollar of GDP has decreased by 18%. The greatest growth in energy consumption was seen in the transportation and agriculture sectors (39 % and 33% respectively).

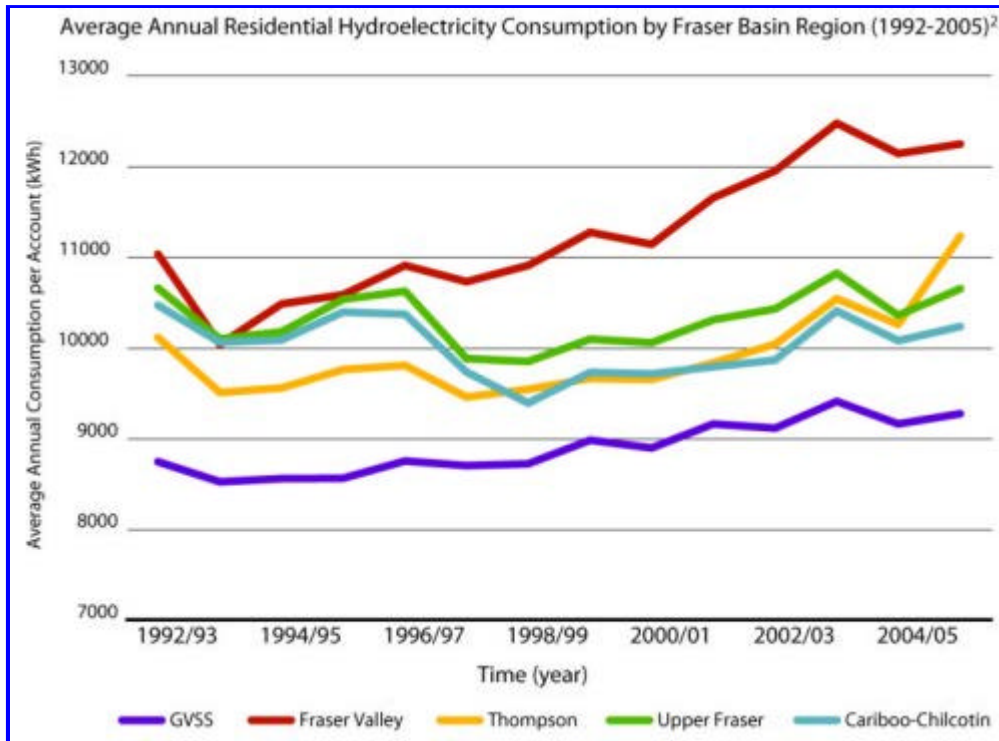


Energy Use by Source in BC (1990-2004) ¹

The major energy sources in BC are natural gas, electricity and refined petroleum products such as gasoline and diesel. Growth between 1990 and 2004 was slowest for electricity consumption (16%), followed by natural gas (18%) and refined petroleum products (30%). Although coal consumption represents a small proportion of total energy consumption, it had the highest increase at 333% (**See Climate Change, Air Quality**).

Hydroelectricity Consumption in the Fraser Basin²

BC Hydro provided electricity use data for the five regions of the Fraser Basin, broken out by residential, industrial and commercial use.

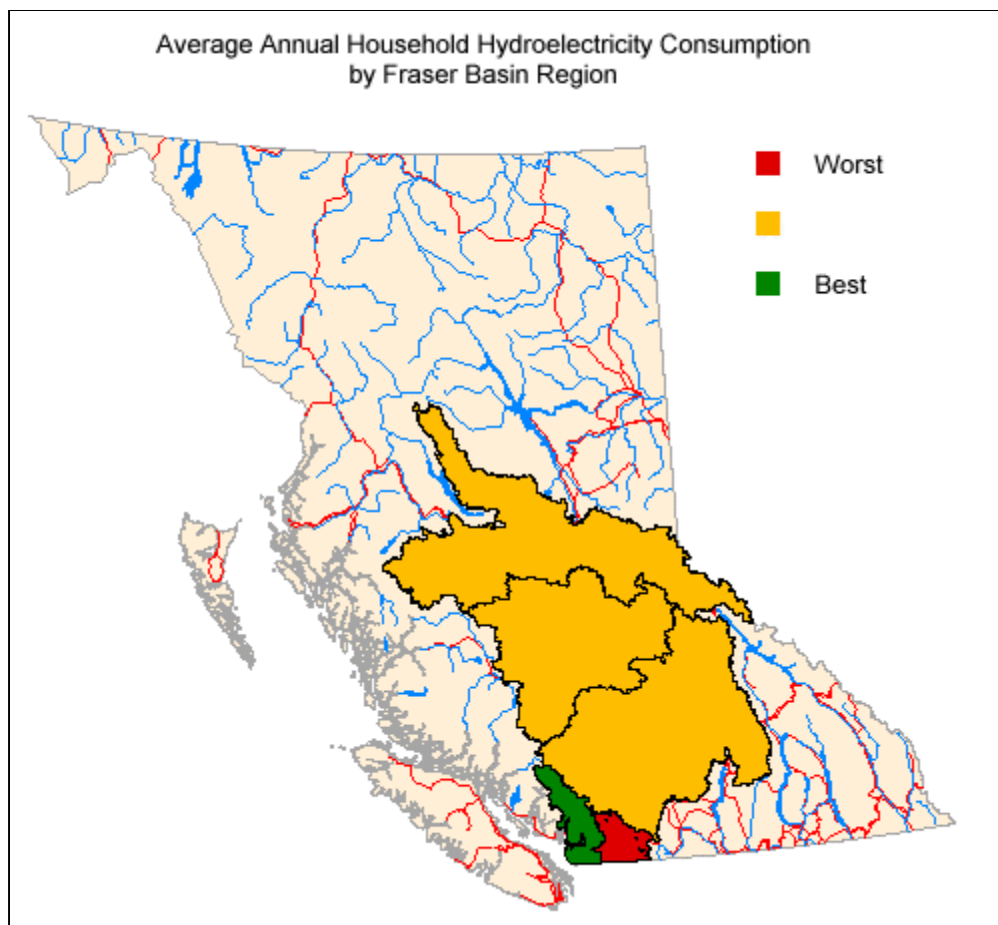


Residential (1992-2005)²

Over the past 13 years, the average annual consumption of electricity per residential account in the Fraser Basin has been relatively constant, ranging from 9,223 KWh (1992), to 9,320 KWh (2005). However, there are significant regional variations, which are illustrated in the table.

Residential Hydro Consumption in 2005²

Fraser Basin Region	Average Consumption per Residential Account (KWh)	Compared with Fraser Basin Average
GVSS	8,654	-7%
Fraser Valley	12,245	+ 31%
Thompson	11,228	+ 20%
Cariboo-Chilcotin	10,233	+ 10%
Upper Fraser	10,649	+ 14%
Fraser Basin	9,320	



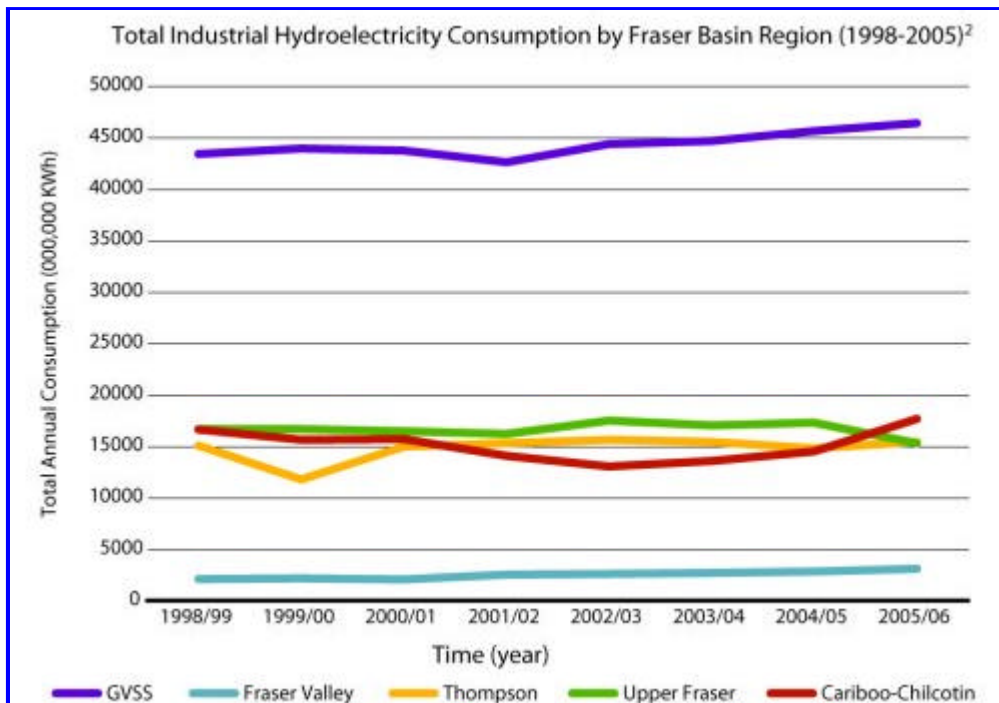
Industrial (1998-2005) ²

Industrial electricity use in the Fraser Basin is increasing. Trends since 1997 are as follows:

- Total industrial electricity use in the Fraser Basin increased by 4% from 9.4 to 9.8 million KWh.
- The GVSS region is home to the largest industrial consumption, and experienced an increase in consumption of 7%.
- The Fraser Valley region had the lowest industrial consumption, but experienced the largest increase (47%).
- The Thompson region experienced a steady increase of 2%
- The Cariboo-Chilcotin experienced a 6% increase, which included a decline in the early 2000s, followed by an increase to the mid-2000s.
- The Upper Fraser was the only region in the Basin that experienced a decrease (-8%).

Commercial (1992-2005) ²

Commercial use of electricity increased by 9.5% in the Fraser Basin over the past five years, from 2001 to 2005. The greatest increase (18%) was in the Fraser Valley region. The Thompson region had the next largest increase (12%), followed by the Upper Fraser (10.6%) and Greater Vancouver (8.5%). The Cariboo-Chilcotin region had a smaller increase in commercial electricity use at 6%.



INSPIRED ACTION

What is being done?

- The BC Hydro Power Smart program has resulted in Annual Cumulative Savings of 1,957 GWh in 2005/06. This is equivalent to the output of a 250-megawatt powerplant. ³
- Renewable energy is estimated to have provided about 14% of the energy produced in BC in 2004. Over 99% of renewable energy produced in BC is from hydroelectricity (76.5%) and biomass (22.7%). ¹
- An estimated 8.2 megatonnes of GHGs have been avoided because of BC's renewable energy sources.
- 29 local governments across BC are participating in the Community Action on Energy Efficiency program, and are developing policies and plans that increase the efficiency of buildings in their communities:
www.bclimateexchange.ca.
- BC Hydro has developed 23 Water Use Plans for its hydroelectric facilities, which are intended to provide a balance of the economic, environmental and social values related to water resources involving a broad range of local governments, government agencies, First Nations, and other interested parties.

What else can we do?

- Walk, bicycle, carpool, telecommute and take transit where available.
- Take advantage of incentives from utilities, such as the BC Hydro Power Smart program, to increase the energy efficiency of your home or business.
- Use efficient lighting such as compact fluorescent light bulbs and LEDs.
- Consider a green building rating system such as LEED® for new buildings or Built Green™ for new homes.
- Purchase Green Power Certificates to encourage the development of green power generation.

Built Green for the Future

Built Green™ is an industry-driven program that encourages homebuilders to use technologies, products and practices that improve energy efficiency, reduce pollution, improve indoor air quality, reduce maintenance, and preserve natural resources. Morningstar Homes recently introduced BC's first Built Green neighbourhood, Yorkson Village, in Langley. For more on Built Green, visit: www.builtgreencanada.ca.



PHOTO: A Yorkson Village Built Green home in Langley.

REFERENCES

1. Nyboer, John, Jian Jun Tu, Chris Joseph. A Review of Energy Consumption and Supply in British Columbia, 1990 to 2004. Canadian Industrial Energy End-Use Data and Analysis Centre. Simon Fraser University. 2006.
2. BC Hydro. Custom Tabulation of Fraser Basin hydroelectricity consumption data (1992-2005).
3. BC Hydro. Annual Report 2006.