

Vancouver generates enough clean energy from landfill methane gas to power over 7,000 homes. We lead by example with energy-efficient municipal facilities and the lowest greenhouse gas footprint of any major North American city.

Neighbourhood Energy Utility

AN ADAPTABLE, RENEWABLE AND INNOVATIVE ENERGY SOLUTION

The Neighbourhood Energy Utility (NEU) provides heat and hot water to the new Southeast False Creek community, including the Olympic Village. As the city's first renewable district heating system, it launches a program to reduce greenhouse gas emissions by replacing fossil fuels with renewable energy sources.

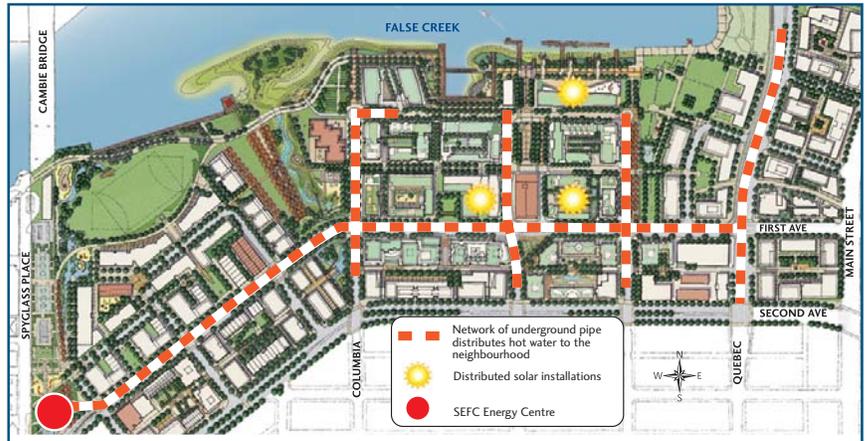
In Vancouver, 54% of greenhouse gas emissions come from buildings. To reduce these emissions, the City plans to make all new buildings in Vancouver carbon neutral by 2020. This will require both aggressive energy efficiency measures and greater reliance on renewable energy, especially for heating.

The green technology used by the NEU is truly innovative – it's the first utility in North America to use waste heat recovery from untreated urban waste water. Solar thermal collectors on the roofs of buildings in the Olympic Village will also supply energy to the NEU.

Environmental Benefits: The NEU reduces greenhouse gas emissions by over 50% compared to conventional energy sources; sewage heat recovery supplies approximately 70% of the annual energy demand.

Social Benefits: The use of renewable energy in a system adaptable to future clean energy technologies stabilizes energy costs for customers, compared to more volatile fossil fuel prices.

Economic Benefits: The NEU is a self-funded utility that provides a return on investment to taxpayers. For developers, its economies of scale make it a more cost-effective way to meet renewable energy targets than stand-alone systems in separate buildings.



FALSE CREEK ENERGY CENTRE

The False Creek Energy Centre makes use of innovative architectural design to showcase its unique function. Its finger-like exhaust stacks integrate eye-catching public artwork that responds to the energy consumption of the neighbourhood it serves: LED lights change colour from blue in times of low energy demand to red at times of high demand.



How the Process Works

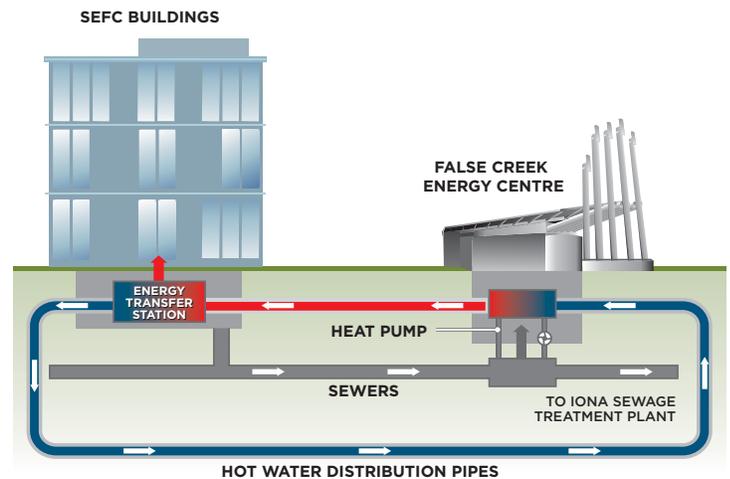
The False Creek Energy Centre, integrated with a sewage pumping station, recovers heat from untreated urban wastewater, a renewable energy source. Similar to a geothermal application, heat pumps transfer the energy to a hot water distribution system.

Sewage heat recovery outperforms most geothermal systems, thanks to a warmer heat source and lower installation cost. On the coldest days of the year, NEU heat pumps are supplemented with high-efficiency natural gas boilers, which ensures reliability and competitive cost.

A system of insulated underground pipes circulates hot water around the neighbourhood, distributing heat from the Energy Centre and from solar collectors atop some buildings. Energy transfer stations in each building exchange energy with the circulating hot water, metering the building's energy production and consumption for billing.

From the energy transfer stations, space heat and domestic hot water is delivered to residents by each building's mechanical system. These systems are owned and managed by the property holders, and can include radiant floor/ceiling systems, baseboard heaters and forced-air systems.

The NEU can be readily adapted to a variety of renewable energy sources. This flexibility lets the system keep pace with advances in technology, future-proofing customer buildings and ensuring long-term energy security and affordability.



MOVING FORWARD

Building on the success of the NEU, Vancouver is committed to expanding renewable energy systems across the city. A new partnership with BC Hydro will drive a number of sustainable initiatives: identifying redevelopment areas with high potential for neighbourhood energy systems, and working directly with large greenhouse gas emitters on opportunities to switch to low-carbon heat sources.

