

UBC Neighbourhood District Energy System



University of British Columbia

Welcome!

The purpose of this Open House is to provide information on the first phase of the Neighbourhood District Energy System (NDES) project. This project is being undertaken by UBC and CORIX Utilities to serve new residential developments on UBC lands.

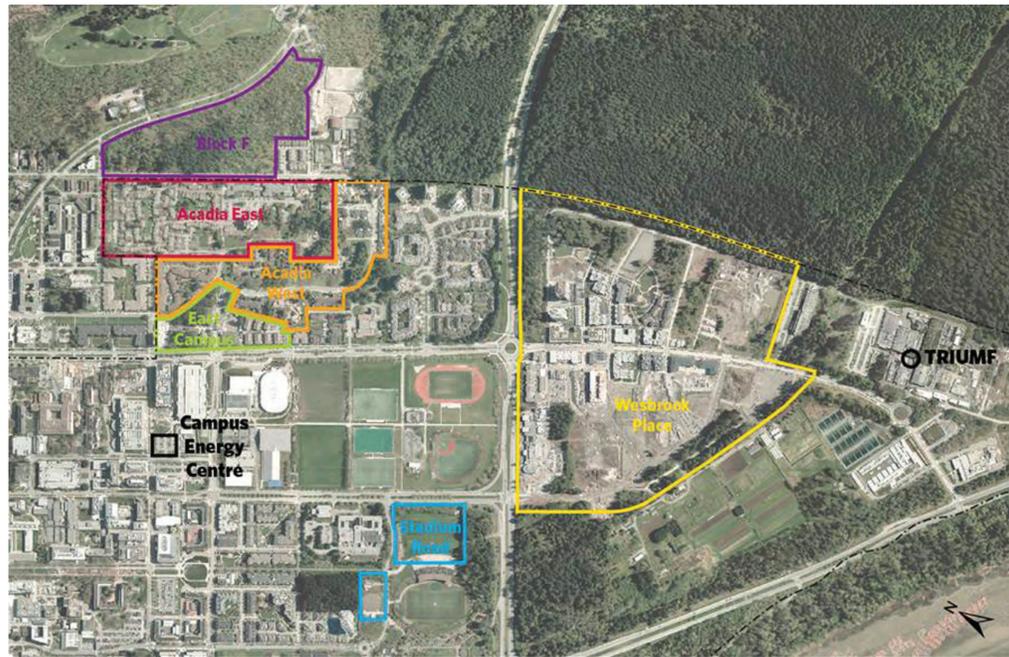
Your Feedback is Important!

Please review the material presented and provide us with your thoughts by completing a feedback form. We will be consulting with members of the community during all phases of the project. Community input will be considered along with technical and financial considerations as decisions are made throughout the project.

Prefer to give us your feedback online? Online consultation runs from June 16 to 29 at planning.ubc.ca



What is the UBC Neighbourhood District Energy System (NDES) Project?



UBC's vision is for a complete live, work, learn community that demonstrates UBC's commitment to sustainable development, and as such has named CORIX Utilities as its District Energy partner in 2013 from a selection of international and national District Energy providers.

In 2010, UBC committed to aggressive greenhouse gas (GHG) reduction targets for the Vancouver campus. The Climate Action Plan targets a 33% reduction in GHG emissions by 2015, a 67% reduction by 2020 against a 2007 baseline and the elimination of fossil fuel consumption by 2050.

In 2013, the University Neighbourhoods Association and UBC completed a Community Energy and Emissions Plan (CEEP). This plan was developed in consultation with UBC's residential community and identified District Energy as a key action for achieving the low carbon vision and targets set out in the CEEP.

If approved by the BC Utility Commission, the UBC Neighbourhood District Energy System will provide cost effective, low carbon energy for UBC residential areas. The project will serve new developments on UBC lands including:

- Wesbrook Place
- Stadium
- East Campus
- Acadia
- Potentially Musqueam Block F

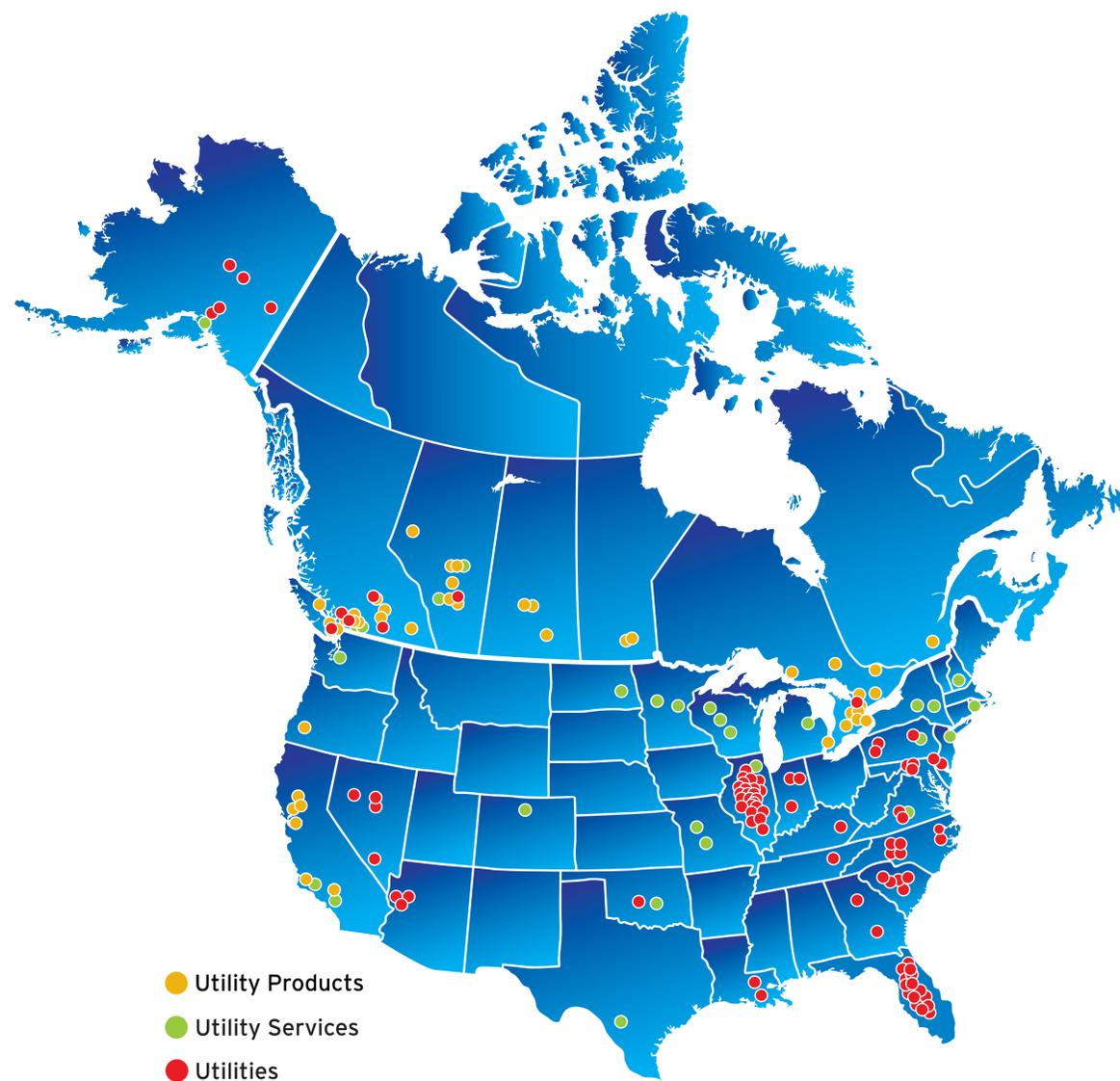
It is a key infrastructure system to help achieve aggressive community GHG reduction targets, through use of waste heat recovered from cooling towers at TRIUMF, Canada's national laboratory for particle and nuclear physics.



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Who is CORIX Utilities?



In communities across North America, CORIX delivers safe and cost effective utility infrastructure products, services and systems for water, wastewater and sustainable energy. CORIX is a BC based company with extensive experience in the design, construction and operation of innovative energy, water and wastewater systems.

UBC Partnership with CORIX

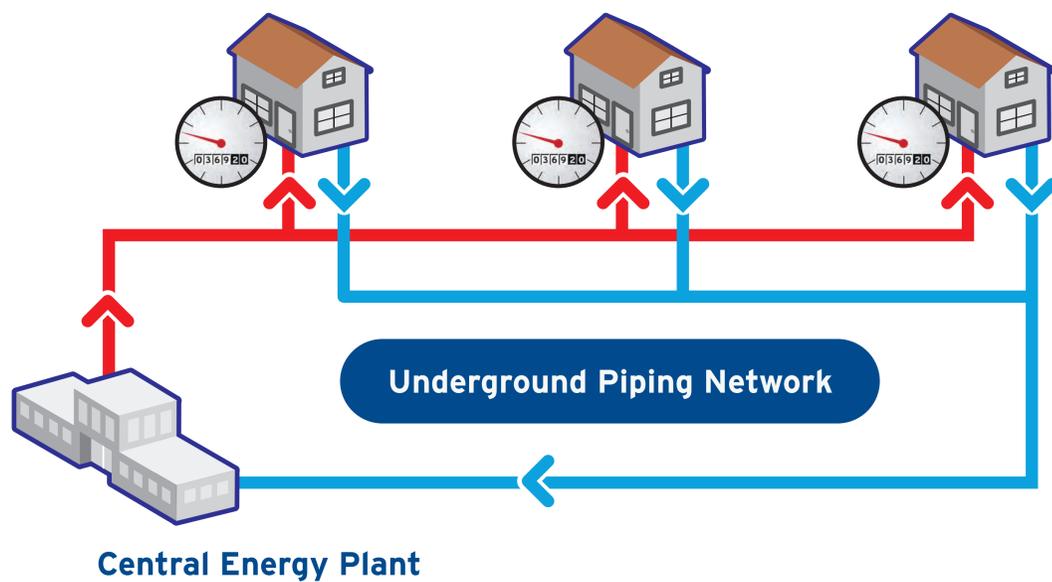
The Neighbourhood District Energy System (NDES) is being developed by CORIX in partnership with UBC. CORIX was chosen in a competitive bid process based on their established expertise and track record of successful community partnerships for energy and utility systems.

CORIX will design, construct, own and operate the district energy system with oversight by UBC and the BC Utilities Commission (BCUC). The BCUC regulates all energy utilities in BC and approves rate structures and customer billing models to ensure transparency.



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What is District Energy?

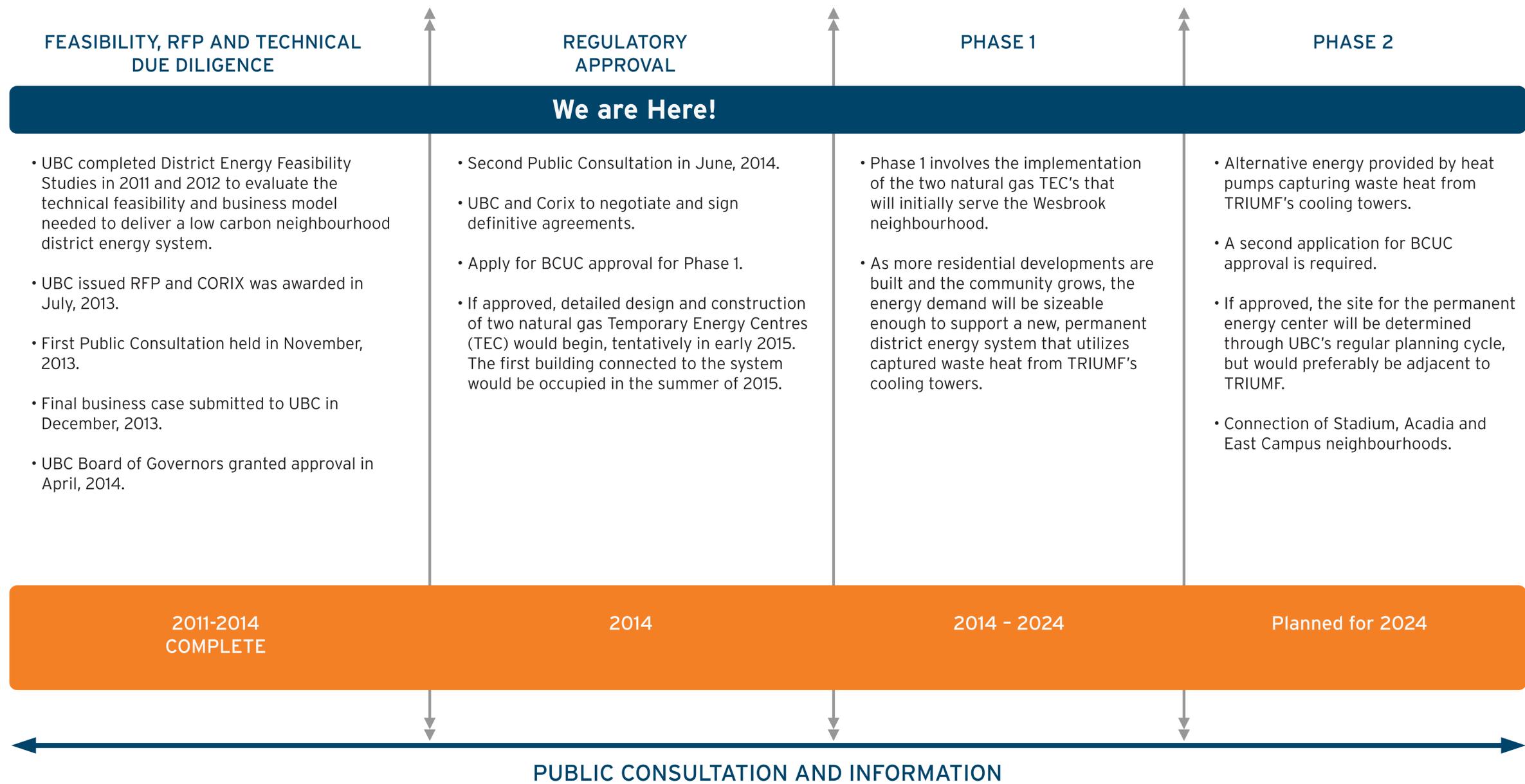


District Energy Systems are a way of sharing energy efficiently across a community.

The System uses a central energy plant to produce hot water, which is then distributed through an underground piping network to heat exchangers located in each building. The heat exchangers, in turn, provide space heating and domestic hot water for residents. Once the water has been used it returns to the central energy plant to be reheated and recirculated.

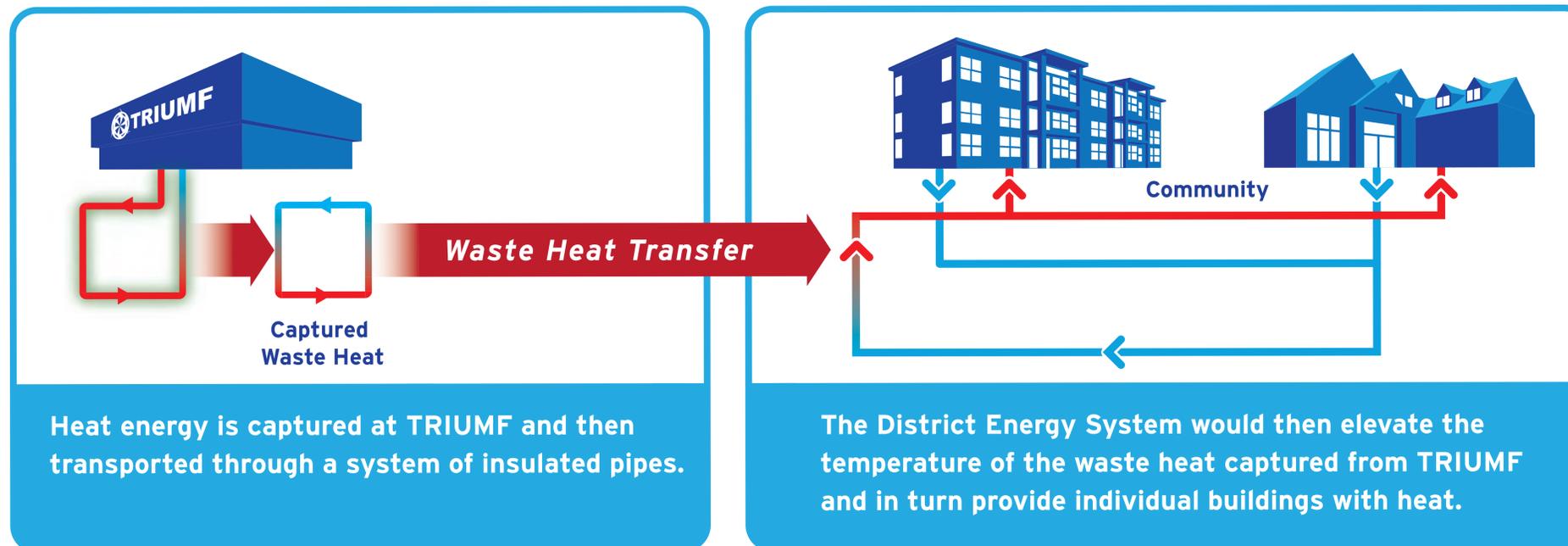
A District Energy System can substantially reduce greenhouse gas emissions through higher efficiencies and the ability to use a variety of alternative energy sources including biomass, GeoExchange, solar and waste heat recovery.

NDES Project Process



Future of the UBC NDES Project

- Future phases of the NDES project will integrate alternative energy sources (minimum 60%) into the district energy system.
- TRIUMF is Canada's national laboratory for particle and nuclear physics, located on the south campus of UBC. It has been identified as the preferred alternative energy source, but other sources such as biomass are also being considered.
- TRIUMF is one of the single largest users of electricity in the Province of BC, currently consuming approximately 65GWh of electricity per year - enough energy for 6,500 single family homes. The majority of this energy is rejected as waste heat that is released into the atmosphere as hot, moist air via cooling towers.
- Approximately 12 MW of waste heat from TRIUMF could be available to serve the district energy system.



Environmental and Community Benefits

The UBC Neighbourhood District Energy System will provide numerous benefits to the community and its residents.



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Energy Efficiency and Reduced Carbon Footprint – the District Energy System would decrease residents' carbon footprint through greater energy efficiency and the use of alternative energy sources that decrease the greenhouse gas emissions that lead to climate change.

Reliability – community residents would have reliable heat and hot water 7 days a week, 12 months of the year. Exposure to weather-related power outages is reduced compared to traditional electricity-based systems.

Resilience – the system would have the flexibility to add or change energy sources over time without having to modify residential building systems.

Customer Service – customers of the utility will have 24/7 direct access to dedicated maintenance and service teams, leading to a higher level of service.

Simplicity – customers would no longer have to manage complex building energy systems or set aside funding for future boiler system replacements.

Price Stability and Cost Management – because the system uses alternative fuel sources, residents' exposure to fluctuating gas and electricity prices is reduced. In addition, operations and maintenance costs are reduced because the need for each building to have its own boiler, hot water storage tank and other associated equipment is eliminated.

Competitive Rates – due diligence studies indicate that on a life cycle basis, customers' energy costs would be similar to current energy costs within the community.

Sustainable Energy Projects



UniverCity, Burnaby, BC



Sun Rivers Golf Resort Community, Kamloops, BC



Beaver Barracks, Ottawa, ON

A Local Example

Southeast False Creek in Vancouver has a community energy system that delivers hot water for space heating and domestic hot water to all buildings. The system uses sewer heat recovery as the primary source of energy with high efficiency boilers for backup and supplemental heat on the coldest days. The neighbourhood utility also collects heat from solar thermal arrays located on roof-top.

Sustainable Energy Systems in other CORIX Communities

UniverCity, Burnaby, BC

CORIX is working with UniverCity, an award-winning, mixed-use community, located adjacent to Simon Fraser University, to design and install a biomass-based district energy system that provides heat and hot water to residents. The temporary district energy system started serving the first buildings in 2011.

Sun Rivers Golf Resort Community, Kamloops, BC

CORIX designed, installed and operates a comprehensive range of utilities including ground source heating and cooling, making Sun Rivers Canada's first GeoExchange community.

Beaver Barracks, Ottawa, ON

CORIX designed, installed, owns and maintains a GeoExchange loop field system and central energy plant which provides heating, cooling and domestic hot water to 247 low-cost rental units managed by Centretown Citizens Ottawa Corporation, a private non-profit housing organization.



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Construction Impacts



If approved, construction on the TEC's would begin in early 2015, following the issuance of all permits by UBC Campus and Community Planning and the Ministry of Transportation, and is scheduled to complete in May, 2015.

Large sections of the project would be built without impacting existing traffic corridors, with the exception of a crossing at Ross Street. Traffic impacts would be minimized whenever possible, in order to maintain access to residences and businesses and maximize traffic flow predictability. Prior to and during construction, the project will generate clear, consistent and accessible construction and traffic information for residents, the UBC community, and the public.

As part of the permitting process, a Traffic Management Plan (TMP) must be approved by UBC. The objectives of a TMP are to:

- Maintain public safety at all times.
- Minimize impacts to the public domain particularly during peak university operating hours which is between 8:30 am and 4:30 pm on weekdays.
- Provide users with advanced warning of impacts and direct them to alternative routes if necessary.

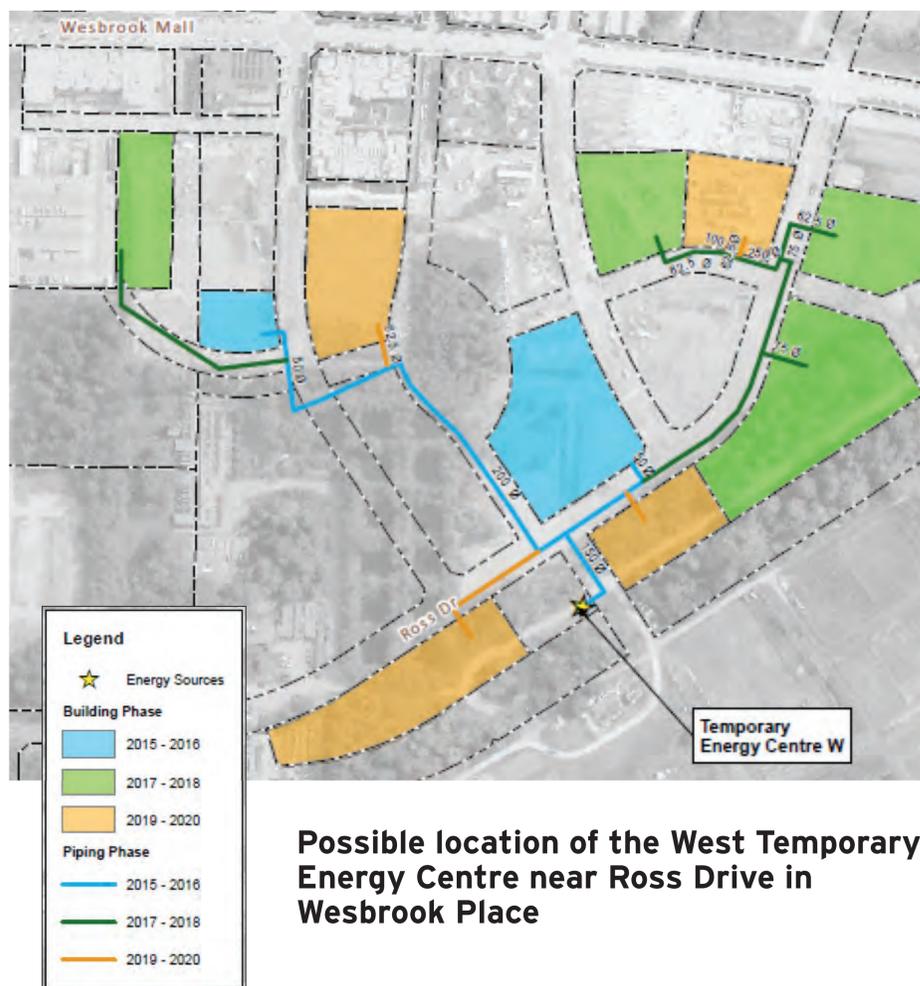
Following approval of all required permits, the project will communicate any traffic impacts via appropriate road signage and on the Campus and Community Planning website, under "Construction and Detours".



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We Appreciate Your Feedback



Possible location of the West Temporary Energy Centre near Ross Drive in Wesbrook Place

Thank you for taking the time to review the information about our proposed Neighbourhood District Energy System.

We hope you will assist us by completing a feedback form. Community feedback will be considered along with technical and financial input as decisions are made throughout the project.

Please hand your completed form to one of the representatives. Should you wish to review this information online and/or submit your form online please visit www.planning.ubc.ca from June 16th to June 29th.

Possible appearance of the West Temporary Energy Centre

