# UBC Neighbourhood District Energy System

## June 2014
## Public Consultation Summary

June 30, 2014

campus + community planning

a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA

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# 1. Executive Summary

This report provides a summary of what was heard during the June 24 stakeholder meeting and June 25 public consultation on the UBC Neighbourhood District Energy System (NDES). Background information on the development of the plan, information on the consultation process, public and stakeholder engagement and notification, as well as detailed results of public consultation are presented in the sections that follow. Campus + Community Planning (C+CP) provided notification of this public consultation opportunity to **over 40,414** contacts through advertising and outreach activities. As a result of the outreach activities, we had:

- **9** invitees attended the Stakeholder Meeting held Tuesday, June 24, 2014.
- A total of **15** people attended the Public Open House held Wednesday, June 25, 2014.
- **59** unique page views to the Neighbourhood District Energy System pages on C+CP website
- **130** unique page views to the C+CP event calendar

Consultation participation numbers were as follows:

- **11** questionnaires were taken (**5** online and **6** in-person)

## 1.1 Summary of Consultation Feedback

In terms of the material provided during the consultation phase, the majority of respondents felt the information gave them a better understanding of the UBC Neighbourhood District Energy System and the project goals.

The information most requested from the feedback forms was the costs of the project and comparisons to other systems, such as electric, ambient and solar and some respondents expressed concern about mandatory connection of future buildings to the NDES. Many respondents recognized the NDES as a tangible solution to reducing greenhouse gas emissions and meeting sustainability goals. Conversely, the same number of participants also responded that the benefits were unclear.

There was not a unanimous trend from participants on the appearance of the Temporary Energy Centre (TEC), though the marginal preference was to blend it into the natural landscape.

Key themes from the stakeholder meeting include location of the TEC's and permanent facility, the opportunity for sub-metering, rate structure and comparison to the market, existing building compatibility for tie-in, and timing of connection to TRIUMF.

Detailed questionnaire results, demographics, participation and notification numbers are provided in Sections 4, 6 and 8 of this report.

# 2. Background

As part of its commitment to sustainability, the University of British Columbia seeking approval from the British Columbia Utilities Commission for the implementation of a Neighbourhood District Energy System (NDES) to provide space heating and domestic hot water to new developments on UBC land. The objective of the NDES is to provide low-carbon energy to UBC residential neighbourhoods, including Wesbrook Place, East Campus, Acadia and Stadium. The NDES will also support UBC's goals to reduce greenhouse gas emissions and create a sustainable live-work-learn community.

If the project is approved, the preferred energy source will be the utilization of waste heat from TRIUMF's cooling towers as the most effective way of providing the GHG reductions needed. Potential synergies between the NDES and the Academic District Energy System will also be explored in future phases, including possible research and educational opportunities that are consistent with UBC's goals for the Campus as a Living Lab.

### 2.1 What is a District Energy System?

A district energy system is a way of sharing energy efficiently across a community. The System uses a central energy plant to product 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 fluid has cooled it returns to the central energy plan to be reheated and recirculated. A district energy system has the ability to use a variety of alternative energy sources including biomass, GeoExchange, solar and waste heat recovery and can help UBC meet its GHG emission reduction targets.

# 3. Public Consultation Process

A **stakeholder meeting was held on June 24** with members of the UBC community, which included an overview and status update of the project presented by UBC and Corix. The material presented was the same information provided in the Open House boards, and stakeholders were also given a handout with the same details. During the meeting, there was an open Q+A/discussion session and attendees were given a feedback form and invited to the Open House. In addition to the stakeholder meeting, a **public open house was held on June 25**. Open houses are an important way to provide information to the public regarding a new opportunity that will affect the campus community. The public was offered both online and in-person opportunities to provide an early identification on questions and concerns as they relate to the NDES.

### 3.1 Consultation Timeline

The first UBC Neighbourhood District Energy System Project Open House was held on November 26, 2013 in order to provide information about district energy, and the proposed project and timeline.

The second UBC Neighbourhood District Energy System Project Open House was held on June 25, 2014. The purpose of this consultation was to present more detail about the first phase of the project and gather additional input from stakeholders and the public.

UBC and Corix are committed to a program of community and stakeholder communication and consultation throughout the phases of the project, and will continue to gather input through stakeholder meetings, open houses and web based feedback.

# 4. Public Notification and Stakeholder Engagement

Key stakeholders were identified in order to deliver the information presented to a broad audience and provide communication tools to assist with information distribution to their networks. They include students, campus residents and student residences.

C+CP provided notification of the June 16th to June 29th public consultation period to over **40,414** contacts through advertising, email, in-person meetings and stakeholder outreach.

In addition to email invites for the stakeholder meeting (see Appendix III for the full list of stakeholder groups), notification was provided through the following print advertisements and online channels:

- 15 community stakeholders invited to the June 24 stakeholder meeting
- Vancouver Courier - June 13 and June 20 editions

- The Ubyssey, online publication during the period of June 16-29 (circ 12,000; online: over 115,000 unique page views per month and over 65,000 unique visitors)
- The Campus Resident on June 16 (circ 10,650)
- The UNA e-newsletter – June 10, 17 and 24. The UNA publishes a weekly email newsletter, each Thursday, which has over 2,000 subscribers
- The C+CP event calendar (130 unique page views)
- Campus digital signage from June 16th to June 29th (12,000 impressions)
- Neighbourhood District Energy System pages on C+CP website (59 unique page views)
- Posts to C+CP Twitter account throughout the public consultation period (over 1500 followers)
- C+CP e-newsletter in June (circ 2,060)

# 5. Public Consultation

Public consultation included online consultation from June 16 to June 29, in addition to a Stakeholder meeting held on June 24 and a Public Open House held on June 25. During this phase:

- **11** questionnaires were taken (**5** online and **6** in-person)

Copies of the information presented at the Stakeholder meeting and Public Open House, and the questionnaire are provided in Appendices I and II.

### 5.1 Stakeholder Meeting

A stakeholder meeting was held on June 24 with members of the UBC community. During the meeting, UBC and Corix presented an overview and status update of the project, and stakeholders were invited to participate in an open Q+A/discussion session. The material presented during the meeting is the same information provided in the Open House boards, and stakeholders were given the same feedback form available during the online consultation and Open House. A summary of the key themes discussed during the meeting are below:

1. **Location of the facilities**
   Participants were interested in the location of the temporary facilities and their proximity to neighbourhoods, as well as the permanent facility location relative to the TRIUMF energy source.

2. **Opportunity for sub-metering**
   Participants expressed interest in sub-metering for new development. People felt that if individual suite owners were accountable for their own heat and hot water costs, it would be fairer and owners would be incented to consume less.

3. **Rates**
   Participants were interested in the rate structure and how rates would be held at competitive rates at different stages of development.

4. **Existing building compatibility**
   Participants wondered about existing buildings and which might be suitable for hook-in to the District Energy System.

5. **Timing**
   Participants asked about the timeline for the permanent facility and hook-in to TRIUMF, and what the alternate energy source would be during the interim period.

### 5.2 Online Consultation – June 16-29, 2014

As part of the online consultation period from June 16 to 29, the C+CP website provided the same information as was available at the Stakeholder Meeting and Public Open House on June 24 and 25, respectively. The web content was posted to the C+CP website, and the link to the online questionnaire was also posted to the Public Consultation page. The online questionnaire included links to the relevant supporting information on the Campus + Community Planning website. The online questionnaire included the same set of questions as those asked at the stakeholder meeting and public open house.

# 6. Detailed Questionnaire Feedback

Below is the detailed feedback received from the 5 questions in the questionnaire. The total number of participants is 11.

Question 1. Does the material presented give you a better understanding of the UBC Neighbourhood District Energy System (NDES) and the project goals? If No, why not?

| Comments | No of references |
|---|---|
| Yes | 9 |
| No, need more information on economics | 2 |

Question 2. Are there any topics we have covered that you would like to learn more about? If Yes, please identify which topics.

| Comments | No of references |
|---|---|
| More details on technology used | 1 |
| More information on total budget and costs | 1 |
| Comparison to other systems, such as ambient, electric or solar and Business as Usual | 2 |
| More details on timing, connection to and future of TRIUMF | 1 |
| No | 6 |

Question 3. Do you have any concerns or comments about the proposed project? If Yes, please identify your concerns or comments.

| Comments | No of references |
|---|---|
| Benefits need to be explained more clearly | 1 |
| Concern for mandatory connection | 2 |

| | |
|---|---|
| Costs need to be detailed / will initial higher costs be passed on to customers? | 6 |
| Provide information on back-up system in the event of a break down | 1 |
| Justification for not connecting to TRIUMF until (approx.) 2024 | 1 |
| Possibility of organic waste based bio-digestion as a future component of the system | 1 |
| Concern that lease payments won't be to the UNA for the TEC land use | 1 |
| No | 3 |

Question 4. What do you think is the greatest benefit that the NDES could bring to the residential community at UBC?

| Comments | No of references |
|---|---|
| Tangible way of meeting sustainability goals / reduced GHG emissions | 4 |
| Users do not have to worry about infrastructure replacement costs | 1 |
| Benefits unclear | 4 |

Question 5. Do you prefer the West Temporary Energy Centre (TEC) to A) be displayed prominently as a landmark feature or B) blended into the surrounding natural landscape? Do you have any other suggestions or comments about the appearance of the TEC?

| Comments | No of references |
|---|---|
| A) Prominent landmark | 2 |
| B) Blended into natural landscape | 3 |
| Underground or within a building | 2 |
| Tea kettle | 1 |
| Opportunity for public art | 1 |

# 7. Written Submissions

One email submission from the University Neighbourhood Association was received during the public consultation period with additional questions and concerns about the NDES project, including:

- Mandatory or voluntary connection of future buildings to the NDES
- Ownership of Corix
- Retrofit costs and benefits for existing buildings currently heating with electric baseboards
- Connection to TRIUMF earlier than 2024

- Appearance and location of the Temporary Energy Centre (TEC)
- NDES vs. hot water metering vs. utilization of current UBC Academic District Energy System (ADES)
- NDES servicing of UEL and Musqueam Block F neighbourhoods

# 8. Participant Demographics

Participant demographics are calculated at 11, the total number of participants.

| What is your primary affiliation with UBC? | Count |
|---|---|
| Resident | 5 |
| UNA | 4 |
| Alumni | 2 |
| Student | 1 |
| Other | 3 |

| Where do you live? | Count |
|---|---|
| UBC | 7 |
| Other | 4 |

# 9. Next Steps

UBC and Corix will be consulting with members of the community during all phases of the project. Another public consultation event will be planned if and when the project is approved and moves to Phase 2.

In addition, UBC and Corix plan to attend the UNA's board meeting on July 8 to review the Consultation Summary Report and address questions.

# 10. Appendices

**10.1 Appendix I: Public Open House Display Boards (Attachment)**

**10.2 Appendix II: Public Open House Handout (Attachment)**

**10.3 Appendix III: Stakeholder Notification List**

| | |
|---|---|
| 1 | University Endowment Lands |
| 2 | University Neighbourhood Association |
| 3 | UBC Alma Mater Society |
| 4 | UBC Graduate Students' Society |
| 5 | Vancouver School Board |
| 6 | TRIUMF |
| 7 | First Nations Musqueam band |

## 10.4 Appendix IV: Questionnaire Feedback Received

Question 1. Does the material presented give you a better understanding of the UBC Neighbourhood District Energy System (NDES) and the project goals? If No, why not?

| |
|---|
| There was no presentation of the economics - only a verbal statement from CORIX that Strata energy costs would be equivalent to today's costs. No detail provided - was referred to BCUC submission to be made in July. |
| The is hardly any information presented. This presents a concept. There is nothing here that lets the public understand the detailed merits/demerits of the system. This is a blue sky presentation asking for public support without enough information to give the public the chance to properly evaluate its worth. |

Question 2. Are there any topics we have covered that you would like to learn more about? If Yes, please identify which topics.

| |
|---|
| More details on the technology involved. |
| Comparison to electric-only system per building, sub-metered? Why not UBC's own system? Why a 2nd one? |
| I don't get the information of total budget about this project. |
| How is this better than individual smaller systems in each building as each building still needs a heat exchanger and a water distribution system ? Benefits are very very nebolous ! Will you pay UNA a lease payment for the TEC situated on UNA land for 10 years ? If so, how much is it ? Why is this better, for GHG, the environment and/or stratas than a sub-metered building where both water, gas and/or electricity is sub-metered by unit ? Isn't this were the real savings lie i.e. in less consumption on often vacant or unoccupied units or by using less water or heat intentionally ? Why not connect to Triumf right now ? Why wait 10 years to 2024 ? Why does UBS not mandate solar panels on each building say 10% of unit size so that a 1000 sq ft condo has at least 100 sq ft solar panel on roof or building ? Why is there no proof anywhere of specific buildings to show true GHG or energy savings ? it all looks like too much make-belief to me as NO existing DE systems were shown that actually saved money besides somewhat reduced infrastructure investments per building. |
| Amount TRIMUF contributes to overall heating - seasonally and annually. Length of time boilers are required before TRIMUF heat can be harvested. Why hot water system is used instead of ambient system - ambient is much more flexible. What is the rate structure and what are the rates? Overall infrastructure cost and how the money is recouped. What are the details of the agreement with Corix? Short term GHG implications of DES vs BAU. Long term GHG implications of DES vs BAU. Short term rate implications of DES vs BAU. Long term rate implications of DES vs BAU. Other ways to achieve GHG reductions. Other ways TRIUMF heat could be used at less cost. TRIUMF long term plans - will they shut down? |

Question 3. Do you have any concerns or comments about the proposed project? If Yes, please identify your concerns or comments.

| |
|---|
| The fee won't be effect on strata of old building |
| Initial development cost will be high. Is this going to be passed back to the residences? Especially when the initial users are small in number. |
| Overall benefits very unclear. Forced utility? Is this Cuba? Costs very nebulous and likely not lower. |
| I have concerns where is the money from, especially the construction fees and utilities fees. What's the back-up system if the central energy system break down? |
| How is this better than individual smaller systems in each building as each building still needs a heat exchanger and a water distribution system ? Benefits are very very nebolous ! Will you pay UNA a lease payment for the TEC situated on UNA land for 10 years ? If so, how much is it ? Why is this better, for GHG, the environment and/or stratas than a sub-metered building where both water, gas and/or electricity is sub-metered by unit ? Isn't this were the real savings lie i.e. in less consumption on often vacant or unoccupied units or by using less water or heat intentionally ? Why not connect to Triumf right now ? Why wait 10 years to 2024 ? Why does UBS not mandate solar panels on each building say 10% of unit size so that a 1000 sq ft condo has at least 100 sq ft solar panel on roof or building ? Why is there no proof anywhere of specific buildings to show true GHG or energy savings ? it all looks like too much make-belief to me as NO existing DE systems were shown that actually saved money besides somewhat reduced infrastructure investments per building. |

| |
|---|
| 1. Lack of detailed economic justification. 2. Why can't TRIUMPH be connected on Day 1, since they have been involved for much of the planning? 3. High rise buildings - according to CMHC/NRC studies of several years ago are the LEAST energy-efficient forms of housing construction. These studies were pre-LEED, so things may have changed, but it seems futile to pump energy - no matter how "green" into a building form that is just going to waste it. The economics of strata buildings are different from institutional buildings in that stratas are designed to minimize "first cost" whereas institutional buildings are designed for a lifetime cost - likely 20 years. So the developers need to be asked how to minimize these lifetime costs - which include energy. The result could be savings that exceed those achieved with an NDES (which are essentially zero because the energy cost target appears to be parity with today's costs). |
| Project looks great. I would like to know if you considered or are considering organic waste based biodigestion as a future component of the system. If you have ruled it out, I would like to understand the reasoning. I do understand that the campus currently uses composting to handle certain types of organic waste. |
| -The system should be ambient -TRIUMF can only contribute a limited percentage of heat the remainder needs to be fossil fuel with impacts GHG -Hot water system means cooling service is not available - Interim boilers contribute greatly to GHG. Better to have individual buildings utilize heat pump systems -Should follow Coquitlam's lead and make hooking up optional. -Worried the system will be too much like LEC. Utility cost will be too high compared to BAU. -BCUC oversite does not guarantee fair rates. BCUC allows infrastructure costs to be recouped plus a percentage. This means rates will allways be higher than BAU. |

Question 4. What do you think is the greatest benefit that the NDES could bring to the residential community at UBC?

| |
|---|
| Tangible process towards sustainability goals. |
| Reliable source of more sustainable form of energy. |
| Renewable energy. User do not have to worry about maintenance of boilers, etc. |
| Higher union wages? Benefits not clear! Corix wins – who else? |
| it is totally unclear what the benefits are. Too much make-belief without ZERO evidence ! Higher income for BC IM. Is bigger, like ICBC, BC Hydro or Coris better than smaller systems ? |
| None - unless the economic model provides a major benefit over TODAY's energy costs. See also #5 below. |
| Lower greenhouse gas emissions. |
| With a hot water loop there is little benefit. |

Question 5. Do you prefer the West Temporary Energy Centre (TEC) to A) be displayed prominently as a landmark feature or B) blended into the surrounding natural landscape? Do you have any other suggestions or comments about the appearance of the TEC?

| |
|---|
| Underground please! Or in a building. Land is $20M/acre at UBC. No free loading on public land please! |
| Underground please. Or in an existing building. |
| Design the TEC in the shape of a tea kettle. The resulting controversy would do more to publicize UBC's sustainability initiatives than anything the PR department can roll out. |
| Opportunity for public art -- make it look nice. |
| Is this a joke? Do you think painting it green and putting some spindly trees blends it in? |