

July 21, 2015

Ms. Meghan Fay Zahniser, Executive Director
AASHE c/o STARS Steering Committee
1536 Wynkoop St, Suite 100
Denver , CO 80202

Re: University of British Columbia
Innovative Conversion of District Heating System

Dear Members of the Steering Committee,

Please accept this letter as written affirmation as to the innovative and compelling project undertaken by the University of British Columbia Energy and Water Services Department in converting their district heating network from steam to hot water distribution. We respectfully submit that you consider this project unique, innovative and meriting consideration under the AASHE STARS program.

The Academic District Energy System (ADES) steam to hot water conversion is a significant undertaking to dramatically cut greenhouse gas (GHG) emissions on the UBC Vancouver Campus and is a pivotal component to their ambitious Climate Action Plan aimed at reducing campus-wide GHG emissions by 33% by 2015 compared to 2007 levels.

This five year, \$88-million project, started in 2011, will replace UBC's aging steam infrastructure with a more efficient hot water district heating system to provide space heating, process and domestic hot water to over 130 buildings on campus, totalling more than 8.6 million square feet of occupied space. This project is one of the largest hot water conversions in North America with 11 km of pre-insulated hot water distribution piping, over 100 energy transfer stations in building mechanical rooms, and a new state-of-the-art 60-megawatt, natural gas-powered Campus Energy Centre Hot Water Plant.

This project is designed to reduce UBC's thermal energy use by 24 by per cent and GHG emissions by over 22 per cent, the equivalent of reducing 11,000 tonnes of GHG emissions, or taking 2,000 cars off the road. Additionally, the project will reduce annual campus water consumption by 36 million gallons (136,000 cubic metres) when completed, resulting in annualized cost savings and cost avoidance of \$5.5 million per year.

UBC's steam to hot water conversion project demonstrates an innovative approach to infrastructure management. The new hot water system's lower operating temperature will allow for increased compatibility and a more flexible platform for integrating future clean energy and renewable supply technologies into the UBC grid. Economically, the project is intended to avoid \$190 million in deferred maintenance of the aging steam distribution system, while reducing operating costs and enhancing energy and water efficiency. The new system will also provide a platform for collaboration between researchers, students, staff and industry partners to explore operational best practices and integration of renewable energy sources.

The International District Energy Association (IDEA) is a non-profit trade association founded in 1909 to facilitate the exchange of information among district energy professionals. IDEA currently has over 2000 members in 27 countries, and is governed by a 22-member, all-volunteer Board of Directors. Our members own and operate, or provide goods and services for, district energy and CHP systems serving universities,

colleges, industrial facilities, hospitals, military bases, airports and downtown areas throughout North America and around the world.

I am pleased to provide additional information if requested and can be reached at the address above.

Sincerely,

A handwritten signature in black ink that reads "Robert P. Thornton". The signature is written in a cursive style with a prominent initial "R".

Robert P. Thornton
President and CEO
International District Energy Association