

# BUILDING COMMUNITY CAPACITY ON LOCAL ENERGY



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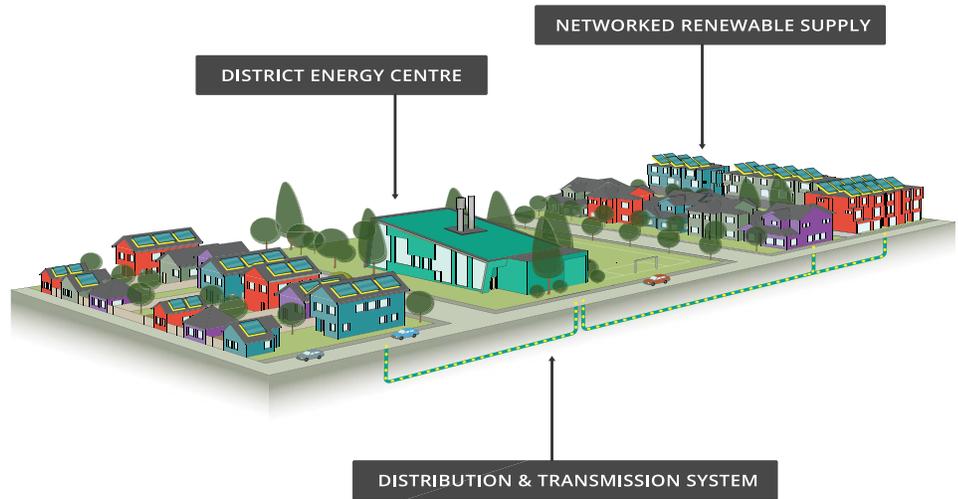


Fig. 1 - CEE 101: What is Community Energy?

WHAT TOOLS DO PLANNERS and community energy managers need to help communities learn about and engage in local energy issues? What is the overall renewable energy capacity of Metro Vancouver and its constituent municipalities? How can citizen science and voluntary geographic information (VGI) on energy be made more relevant and useful for citizens and municipal/local governments? These are some of the research questions that the Collaborative for Advanced Landscape Planning (CALP) at the Faculty of Forestry, University of British Columbia is trying to answer through its online platform - Community Energy Explorer ([www.energyexplorer.ca](http://www.energyexplorer.ca)). Community Energy Explorer (CEE) is a unique highly visual web-resource designed to build energy literacy and capacity among citizens, decision-makers, and local government staff on community energy and related land use issues. CEE provides integrated and interactive information on the Metro Vancouver region that allows users to explore key concepts of local energy & see their implications for typical communities. CEE is intended to assist planners in their community engagement practice by providing images and information to improve and streamline presentations, develop workshops etc.

There is a pressing need to meet municipal and provincial targets for greenhouse gas re-

duction by transforming our energy systems. For example, many cities in BC in their Official Community Plans have committed to massive (80%) reductions in carbon emissions by 2050, in line with provincial targets (as per the BC Greenhouse Gas Reduction Targets Act). The federal government's Pan-Canadian Framework calls for a low-carbon energy transition and mobilizing Canadians to get involved. Securing community buy-in on new energy policies and behavioural transformations by citizens and businesses has become an urgent priority for concerned governments, although the BC public has not yet generally woken up to the need (Rhodes et al., 2014). In this context, enhanced digitally-aided processes and tools like CEE are needed to help build awareness and inform decision-making at the local level (Sheppard et al., 2015), through channels such as neighbourhood energy workshops, Community Energy and Emission Plans (CEEPs), and council decisions on proposed district energy plants. CEE is intended to allow users to engage more deeply on unfamiliar but critical land use and energy issues such as density and district heating/cooling, thereby developing a more informed citizenry, helping to overcome barriers and resistance to new policies and advancing BC communities' leadership in sustainability.

**CEE INCORPORATES VARIOUS FORMS OF MAPPING, INFOGRAPHICS,** videos, and visualisations of future energy scenarios that fill a vital gap in helping communities understand what Community Energy means to them. The CEE provides interactive access to several key resources:

- A "Community Energy 101" introduction to various low-carbon energy concepts and sources, illustrated with animations, photographs and 3-D visualizations (fig. 1)
- Modelled energy demand and GHG intensity for single family homes across the region (fig. 2)
- Local renewable energy mapping for multiple types of supply, allowing the user to see what mix of energy sources can be found locally. Regional results suggest that Metro Vancouver has the potential capacity to provide over one third of its building energy needs from within its boundaries (fig. 3)
- Case studies illustrating different energy options in typical Metro Vancouver neighbourhoods (fig. 4)

[www.energyexplorer.ca](http://www.energyexplorer.ca)

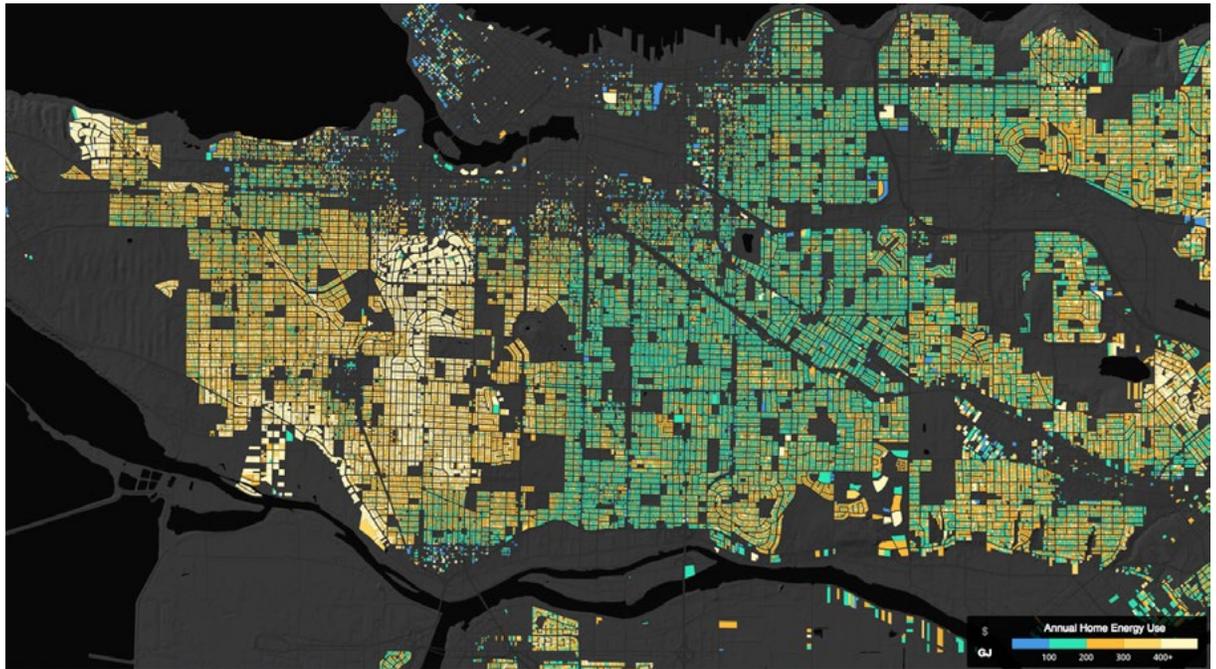


Fig. 2 - Projected single-family home energy use in Vancouver

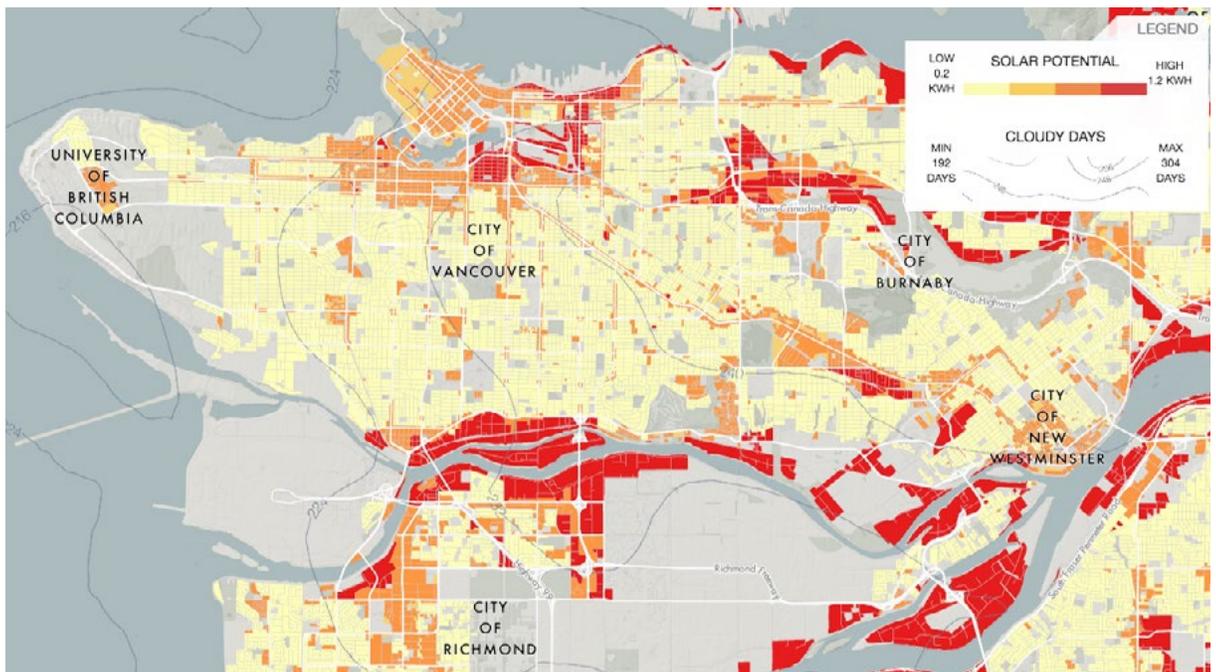


Fig. 3 - Renewable energy (solar energy selected) mapping

CEE WAS BETA-TESTED in January 2015 by sustainability managers, energy planners and community advisors across various municipalities and organisations. The survey provided valuable feedback on the usability and implementation of the website, including critical ways to improve its effectiveness. Review of the test results suggest that CEE provides useful information and tools on community energy for informing both decision makers and non-experts, filling a vital gap in helping communities meet municipal climate change targets. Currently in its fourth year of re-

search, development, and use by practitioners and the public, CEE is in its second phase being further upgraded with additional input from planners and municipal energy managers to include:

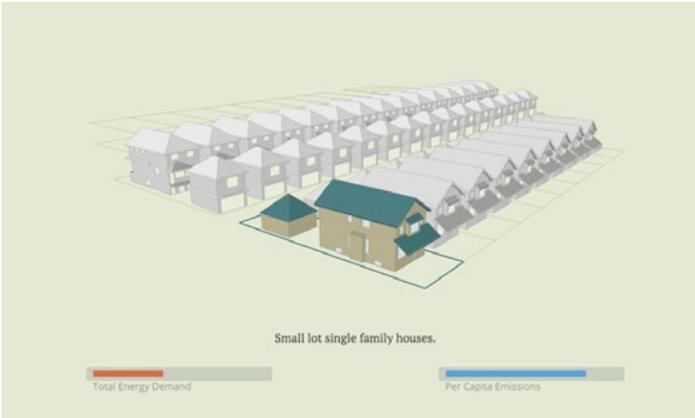
- additional case studies on neighborhood retrofitting options in West Vancouver, mass thermal imaging (Westerhoff et al., 2017) to stimulate home energy upgrades in BC, urban forest scenarios for cooling homes as summers warm up, climate change adaptation in the Columbia Basin ([www.climateandcommunity.ca](http://www.climateandcommunity.ca)), and density trade-offs in

Revelstoke, BC (Senbel et. al 2013).

- a 'do-it-yourself' Citizen's Toolkit for addressing climate change and urban forestry with neighbours at the residential block-scale,
- a prototype citizen science map interface to engage home owners and building managers in reporting their energy usage in multi-unit residential buildings (MURBs); and
- a template or guide for other local governments or practitioners to develop their own highly accessible, visually powerful online platform that replicates the CEE in other cities and regions across BC.



Fig. 4 - Case studies on Richmond downtown redevelopment (top) and sustainable housing in Surrey (bottom)



Lastly, the potential for widening the uptake of these tools by high school students and youth organizations across BC is being explored through development of a teacher's guide to using the CEE. It is hoped that this effort to educate and engage young people in the field of urban planning for community energy will open up an innovative new pathway for much-needed civic discussions and social learning on the energy choices communities' face. ■

For more information on the Community Energy Explorer and other digital tools for public engagement, visit [www.calp.forestry.ubc.ca](http://www.calp.forestry.ubc.ca) or contact Deepti Mathew Iype, Research Scientist, CALP UBC at [deepti.mathewiype@ubc.ca](mailto:deepti.mathewiype@ubc.ca) or 604-822-8912

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