

Demand flexibility: Planning and scheduling of smart electric water heaters and electric baseboard thermostats

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Abstract:

Demand flexibility is the capability to modify the electricity consumption of a load away from its original or usual shape. It can be used to balance supply and demand and can be useful for integrating renewable energy and supporting the electrical grid during peak demand periods. As smart grid technologies are being increasingly deployed, it is becoming easier for utilities to find and capture demand flexibility from their clients. This presentation will provide an overview of the current and future R&D activities related to demand flexibility conducted by Natural Resources Canada's CanmetENERGY laboratory. It will discuss the planning and scheduling strategies used in both laboratory and field tests conducted with smart electric water heaters and electric baseboard thermostats. Different load aggregation methods and their applicability for utilities will also be presented.



Véronique Delisle is a project manager in the Renewable Energy Integration Program at CanmetENERGY. Véronique holds Masters and PhD degrees in Mechanical Engineering from the University of Waterloo and Polytechnique Montréal, respectively.

In the last 10 years, the focus of her research at the government has been on the integration of photovoltaic systems in high performance residential buildings. Recently, she has taken on a management role in smart grid research and development projects related to demand flexibility, storage, grid integration as well as standards and codes.



Louis-Philippe Proulx leads activities related to load flexibility in the Renewable Energy Integration Program at CanmetENERGY. He holds a bachelor of Science degree in mathematics from the University of Sherbrooke and a bachelor's degree in electrical engineering from École de technologie supérieure.

In the last five years, he has been responsible for conducting various demand response field tests and laboratory performance assessment of connected residential loads including smart thermostats and electric water heaters. His research activities currently focus on the planning and scheduling of flexible aggregated loads.

Thursday September 20 2018,

10h30-10h45: Come meet the speaker and other researchers over drinks and snacks

10h45-12h00: Presentation, Pavillon André-Aisenstadt, Université de Montréal, room 4488.

All are welcome • Contact: osg@polymtl.ca

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