NSERC SMART MICROGRID NETWORK
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Project 1.1

Control, Operation, and Renewables for Remote Intelligent Microgrids

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Objectives

- To develop robust control and protection strategies for remote microgrids.
- To maximize penetration of renewables through proper control and operation.

Benefits to Canada

- Mitigation of fuel consumption in Canadian diesel-powered remote communities.
- Electrification of powerless Canadian remote communities.
- International market for off-grid and hybrid remote electrification systems.

Research Team

Supervised at Ryerson

- A Masters candidate since Sep. 2011.
- A Ph.D. candidate is to be admitted for Jan. 2013.

Co-Supervised with UofT

- A Ph.D. candidate is to be co-supervised with University of Toronto.

Hosted at Ryerson

- A Ph.D. candidate from McGill has been hosted since Jan. 2012.

Research Activities and Progress

Small-scale off-grid hydroelectric systems

- Literature review and modeling underway
- Focused on self-excited induction generators with rugged and inexpensive electronics
- Also considers governor-less, direct-drive systems

Robust islanded control of electronically interfaced distributed energy resources

- In collaboration with McGill University
- One journal paper prepared thus far

Thank You

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