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MEDIA RELEASE

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Can Canada “green” its electrical grid through integration?

The Pacific Institute for Climate Solutions (PICS) is beginning a major research project to explore the costs and benefits of a range of electrical grid integration options for Canada, initially between British Columbia and Alberta, but eventually country-wide and into western North America.

The five-year, \$1.5-million study, called *The 2060 Project: Energy Pathways for British Columbia and Canada*, brings together energy-system engineers and economists who will tap the expertise of hydrologists, regional climate experts, senior utility planners, electricity system operators, regulators and policy makers.

Grid integration—connecting electricity grids from different regions—has been hailed as an effective means to reduce greenhouse gas emissions if one region with abundant “clean” renewable electricity supply can displace a heavy emitter (such as coal-fired electricity) in a neighbouring jurisdiction. The idea has gained recent political traction with the October 2013 signing of the Pacific Coast Action Plan on Climate and Energy by the BC, California, Oregon and Washington governments, which made regional grid integration one of their strategic goals.

Dr. Andrew Rowe, project leader and a University of Victoria (UVic) professor of mechanical engineering, says the first phase of the 2060 project will look at expanded grid interconnections between BC and Alberta, taking into account factors such as expected changes to hydrology and dam water supplies 50 years from now due to climate change.

“These are two very different systems: one is dominated by large hydroelectric generation operated by a public utility (BC Hydro) and the other is dominated by coal and natural gas generation, operating as North America’s most deregulated system,” he says. “Our research is expected to illuminate how further grid integration will influence costs, reliability and emissions from a more connected region.”

Future work will investigate the impact of large-scale energy systems across Canada under various carbon policies and global growth scenarios, as well as greater integration into the Western Interconnect, the grid that BC is currently connected to. Results will be released at different stages.

Rowe says this winter’s ice-storm power outages in Toronto and Newfoundland, for example, underscore the importance of electrical grid reliability. And, he says, integration also expands the access of energy consumers to renewable energy sources such as wind, solar and biomass.

PICS executive director Dr. Tom Pedersen says grid integration may be a solution to achieving a low-carbon electrical supply within North America, and for the possible elimination of coal-fired electricity in some regions including Western Canada. “The idea of connecting provincial and even US grids has been around for decades, and this project will give decision-makers a solid analysis of the economic, societal and environmental impacts of doing so, in order to transform that idea into action.”

PICS is a collaboration of BC’s four leading research universities, hosted and led by UVic.

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