

Temperature Trends and Energy Demand

Evaluating the influence of climate change on energy demand to assess future strategies for energy market transformation

CONTEXT

Climate change has significant potential to affect how Yukon manages its energy resources. Changing temperatures and precipitation patterns may have multiple effects on energy demand. Changing market dynamics, including growing demand in Yukon's residential sector, is also leading to a transition period in how electricity is generated.



Photo: Government of Yukon

OBJECTIVE

To help inform energy resource planning by identifying potential risks and opportunities for the Yukon energy sector resulting from climate changes that affect supply and demand.

APPROACH

This project compiles a forecast of energy demand in Yukon that includes the influence of climate change. The Yukon government's Energy Solutions Centre and Yukon Energy Corporation then worked to analyze the impacts of the projected changes on the territory's heating and electricity sectors.

RESULTS

The energy forecast showed that climate change is expected to lessen the amount of energy required for residential heat in Yukon. Daily energy consumption may fall by 10 to 137 GWh/year over the short term (2011 to 2014) – the equivalent of annual electricity and heating for 381 to 5520 Yukon homes.

If Yukon is successful in limiting the growth of energy consumption as its population grows, reduced consumption could result in many benefits – including reductions in electrical infrastructure costs, reduced resource pressures, and new economic opportunities. Such benefits will ultimately lower household energy expenses and greenhouse gas emissions.

Significance

Understanding how electricity demands will be influenced by temperature trends will contribute to more effective and comprehensive energy demand and resource planning.

Partners

- Energy Solutions Centre, Government of Yukon
- Natural Resources Canada (Adaptation and Impacts Division)
- Yukon Energy Corporation

FOR MORE INFO

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Pan-Territorial Information Notes
MAR.2015.YT.11
ISSN 2991-3904