

**MEDIA RELEASE**

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**Energy Efficiency Studies Identify the Best Opportunities for Greenhouse Gas Reductions in Alberta**

*Edmonton, Alberta* – Results of the groundbreaking comprehensive assessment of energy consumption and opportunities to mitigate greenhouse gas (GHG) emissions show that more than eighty per cent of the electric energy used in the province comes from fossil fuels (coal and natural gas). Researchers have identified there is considerable room to improve energy efficiency and reduce emissions.

Notably, the top consumer of energy in Alberta is industry, consuming fifty-eight per cent of all energy used in 2010. Nearly seventy per cent of the energy consumed in industry is used for mining activities, specifically the extraction of oil and gas to produce the bulk of the energy we consume. The transportation sector is the next large consumer of energy, yet its energy use in 2010 was about a third that of industrial sector. The residential, commercial, and agricultural sectors follow, with the agricultural sector using two per cent of the energy in 2010.

The study shows that in both the residential and commercial sectors, about sixty per cent of the energy we consume is used for space heating. The largest potential for both GHG mitigation and cost savings by 2050 are:

- In homes: replacing regular furnaces with high-efficiency furnaces and improving the lighting sector with efficient bulbs and by adopting high efficiency appliances.
- In the commercial sector: in the use of high-insulation walls and windows in building envelopes, auxiliary equipment, high-efficiency boilers for space heating, and motors with variable speed drives.
- In the transportation sector: the use of high-efficiency gasoline and hybrid vehicles for both passengers and freight.

Dr. Surindar Singh, Executive Director, Renewables and Emerging Technologies, Alberta Innovates - Energy and Environment Solutions (AI-EES), says, “These studies provide insights on how the government could maximize the impact and benefits of its climate change and energy efficiency policies.”

The work was carried out by a research team under the supervision of Dr. Amit Kumar, the NSERC/Cenovus/Alberta Innovates Associate Industrial Research Chair in Energy and Environmental Engineering in the Department of Mechanical Engineering, University of Alberta. His team used the data-intensive Long-range Energy Alternative Planning system (LEAP) model and assessed more than 100 different scenarios in the three energy demand sectors. “These studies are comprehensive and the results will help in making investment decisions and formulating policy,” says Kumar.

The results of the first report describe energy use, and the second report describes a range of energy efficiency improvement options in three energy demand sectors in terms of GHG mitigation potential and costs. Work is currently underway on a comprehensive system-level assessment of energy efficiency improvement and GHG mitigation options in Alberta’s other demand (i.e., industrial, agricultural) and supply (electricity generation and oil and gas production) sectors.

This research was supported by AI-EES, the lead agency advancing energy and environmental technology innovation in Alberta. AI-EES serves as a catalyst for the development of innovative, integrated ways to convert Alberta's natural resources into market-ready, environmentally responsible energy and the sustainable management of Alberta's water resources.

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