Researchers seek 'preheater' for oil sands

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A new international research partnership based in Alberta hopes to answer an intriguing question: Could the warm rocks of deep Earth wean the oil sands off their heavy natural gas diet?

The University of Alberta has linked arms with the Helmholtz Association of German Research Centres, Germany's largest scientific organization, in hopes of furthering research into this and other oil-sands-emissions-related questions.

The partnership, signed yesterday, brings with it the promise of international financing and German expertise in research areas where Canada has not typically excelled. One area is the use of geothermal energy in the oil sands.

Some researchers believe the earth in northeastern Alberta is hot enough to use as a sort of "preheater" for major oil sands mines, which use 40-degree Celsius water to separate oil from sand. Most of that heat comes from natural gas; the industry uses about one billion cubic feet of gas a day, or 7 per cent of Canada's daily production – a tally expected to grow substantially.

Replacing some of that natural gas with geothermal energy "could make a contribution in terms of the overall carbon emissions from oil sands production," said Martyn Unsworth, a professor of geoscience at the University of Alberta, who is working on the project.

The oil sands industry uses 7 per cent of Canada's daily production of natural gas. LARRY MacDOUGAL FOR THE GLOBE AND MAIL

The research will not be quick: It could take five years before the first test well is drilled. And even geothermal promoters acknowledge there are major technical and policy hurdles to making it work.

Alison Thompson, executive director of the Canadian Geothermal Energy Association, admitted that the price of existing technology limits its usefulness to the oil sands, which sit on bad geothermal real estate.

"If you were just independently looking around the world at where you'd want to do geothermal, you wouldn't pick there," she said.