



July 23, 2009

## Emissions from oil sands comparable to other crude oils

*Calgary...* Two independent studies have found direct emissions from producing, transporting and refining oil sands crude are in the same range as those of the other crudes refined in the United States.

The *Life-Cycle Analysis of North American and Imported Crude Oils* is based on two independent studies that comprise the first robust comparison of domestic, imported and oil sands crude processes in U.S. refineries. The research, conducted over the past year by U.S.-based consulting companies Jacobs Consultancy and TIAX LLC, was funded by the Alberta Energy Research Institute (AERI).

The studies found that direct greenhouse gas (GHG) emissions from the oil sands are generally about 10 per cent higher than direct emissions from other crudes in the U.S. If cogeneration is taken into consideration, oil sands crudes would be similar to conventional crudes in terms of GHG emissions.

Previous studies used a simplified model representation for calculating direct emissions from different crude oil sources. This new research shows a wide range of emissions resulting from the production, transportation and refining of oil. The range of emissions is based on several factors including location, reservoir depth, oil characteristics and production technology.

“The likelihood of comparable GHGs has been supported intuitively in some studies over the last couple years, but we felt it was critical to ascertain, in an open and transparent manner, if the data supported it,” said Dr. Eddy Isaacs, Executive Director of AERI. “It can be difficult to test past assumptions, but the facts in this case provide an additional level of confidence.”

“One of the key considerations is that emissions from the oil sands will continue to decline as new technologies continue to be field tested and commercialized,” said Dr. Isaacs. “We are pleased to further this kind of research as technology and innovation hold the key to reducing greenhouse gas emissions.”

All AERI non-proprietary research is made available to researchers and policy-makers around the world - for the benefit of global solutions. Established in 2000, AERI’s mission is to enhance the development of clean energy resources through research, technology and innovation. AERI is working with the Government of Alberta to support or provide advice on initiatives that work to advance sustainable energy development and address greenhouse gas emissions.

To review the entire studies or for more information, visit: [www.aeri.ab.ca](http://www.aeri.ab.ca)

## **Backgrounder: Summary of reports**

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## Summary of the life cycle analysis reports

Life Cycle Analysis (LCA) provides a fair comparison of crudes processed in the U.S. It is intended to determine the greenhouse gas (GHG) impact during the life cycle (from production to consumption) of transportation fuels.

The LCA project expert advisory group made a unique decision to conduct two independent research studies to establish the energy used and the GHG emissions of crudes processed in U.S. refineries. The studies were conducted by two U.S.-based consulting companies, Jacobs Consultancy and TIAX LLC and were funded by the Alberta Energy Research Institute (AERI). The studies were opened up for expert review and critique at various stages, including extensive study reviews in January, March and June.

### Highlights of the reports

- Consistent with other studies, direct emissions were the focus of this study. A range of data is accessible for the measurement of direct emissions.
- Both the TIAX and Jacobs reports showed that there is a spectrum of direct GHG emissions determined by geological, reservoir, transportation and refining factors.
- Direct emissions from the oil sands are generally about 10 per cent higher than direct emissions from other crudes in the U.S. but, if cogeneration is taken into consideration, oil sands crudes are similar to conventional crudes in terms of GHGs.
- Direct GHG emissions are changing over time.
  - GHG emissions for conventional crudes will continue to *increase* due to global shift to heavier and more difficult-to-produce conventional crudes.
  - GHG emissions for oil sands crudes will further *decrease* through technological advances.
- A model has been developed that can now be used to provide an objective and consistent basis for examining new scenarios and lead to best practices.

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