

October 5, 2009

## **RSC/SRC Expert Panel on Environmental and Health Impacts of Canada's Oil Sands Industry**

Among the many public-service roles of national academies around the world, one of the most important is the preparation of expert assessments on critical issues of public policy. The national academies in the United States are the most active in this regard, but the senior academies in other nations, notably in England, France, and other European countries, have been very active on this front for many years. Such reports are designed to be balanced, thorough, independent, free from conflict of interest, and based on a deep knowledge of all of the published research that is pertinent to the questions that have been posed.

The Royal Society of Canada also has a long record of issuing definitive reports of this kind, either on its own initiative, or in response to specific requests from governments or other parties. The project being announced today, "Environmental and Health Impacts of Canada's Oil Sands Industry," is one of a new series that the Society has commissioned, at its own initiative, on issues of significant public interest and importance at the present time. Announcements on the other projects will follow over the course of the coming months.

The Society relies on the advice of one of its senior committees, The Committee on Expert Panels (CEP), in formulating new projects of its own and in responding to requests for panel projects from external parties. In addition, the members of the Society's CEP are responsible for selecting the membership of panels, including the chair; overseeing the conduct of panel activities; managing the peer review of the draft final report; and assisting the panel members with any difficulties that arise during the conduct of their work.

Over the course of the past year, the CEP has brought forward suggestions on a new series of expert panel reports for consideration by the Society's governing board. The board has approved a number of these suggestions, including the project on "Environmental and Health Impacts of Canada's Oil Sands Industry." The additional information, attached, identifies the members of the panel who have agreed to write this report, as well as the preliminary terms of reference for this project.

This report is expected to be completed and released to the public in the Spring of 2011.

## Questions about this project may be directed to:

Dr. Steve E. Hrudehy (panel chair), professor emeritus, University of Alberta:

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## Members of the RSC/SRC Expert Panel

(Panel Members)

### Chair: Steve E. Hrudehy, FRSC:

- Professor emeritus of Environmental Health Sciences, University of Alberta;
- Chair, RSC Expert Panel on Air Quality Models (2001);
- Environmental Appeals Board, Alberta: member 1996 – 2005, chair July 2005 – July 2009.

### Members:

#### 1. Air quality /emissions control technology:

- **Mark Rood**, Ivan Racheff Professor of Environmental Engineering, University of Illinois:  
<http://cee.illinois.edu/node/130>

#### 2. Aquatic toxicology /ecology/water quality (2 panellists):

- **Alice Hontela**, CRC in Ecotoxicology, University of Lethbridge: <http://people.uleth.ca/~alice.hontela/>
- **Glen Van Der Kraak**, Professor of Zoology & Associate Dean of Research, College of Biological Sciences, University of Guelph:  
[www.uoguelph.ca/zoology/department/people/faculty/g\\_vanderkraak.htm](http://www.uoguelph.ca/zoology/department/people/faculty/g_vanderkraak.htm)

#### 3. Hydrogeology:

- **René Therrien**, Professor of Hydrogeology, Université Laval:  
[www.ggl.ulaval.ca/personnel/rtherrie/Rene.Therrien.html](http://www.ggl.ulaval.ca/personnel/rtherrie/Rene.Therrien.html)

#### 4. Land reclamation/terrestrial ecology:

- **Anne Naeth**, Professor of Ecology, Land Reclamation, Revegetation, and Restoration Ecology, University of Alberta: [www.ualberta.ca/~anaeth/index.html](http://www.ualberta.ca/~anaeth/index.html)

#### 5. Process technology (2 panellists):

- **Ajay Dalai**, Head, Department of Chemical Engineering, and CRC in Bio-energy and Environmentally Friendly Chemical Processing, University of Saskatchewan:  
[http://www.engr.usask.ca/faculty/Dalai\\_Ajay.php](http://www.engr.usask.ca/faculty/Dalai_Ajay.php)
- **Zhenghe Xu**, Teck Professor, NSERC Industrial Research Chair in Oil Sands Engineering, and CRC in Mineral Processing, University of Alberta: <http://www.uofaweb.ualberta.ca/cme/xu.cfm>

6. Public Health:

- **Pierre Gosselin**, Director, Directorate of biologicals, environmental and occupational risks, Québec National Institute of Public Health and Université Laval:  
[www.chuq.qc.ca/oms/en/direct/gosselin.htm](http://www.chuq.qc.ca/oms/en/direct/gosselin.htm)

7. Resource Economics:

- **André Plourde**, Professor and Former Chair, Department of Economics, University of Alberta: [www.economics.ualberta.ca/faculty\\_andre\\_plourde.cfm](http://www.economics.ualberta.ca/faculty_andre_plourde.cfm)

## **Environmental and Health Impacts of Canada's Oil Sands Industry**

### *Context and Preliminary Terms of Reference*

**(Note: The panel members will develop the final terms of reference for their study at their first meeting, and this document will be posted on the RSC/SRC website following the meeting.)**

#### *The Context for the Project.*

The Athabasca oil sands (or tar sands) in northern Alberta have become a focus of intense economic development in recent years, and synthetic crude production from the oil sands has raised the prospect of Canada being a reliable and relatively secure net exporter of petroleum products. Oil production from this source has become increasingly controversial because of several environmental and health issues, such as: overall greenhouse gas emissions (the oil sands are Canada's largest source); major landscape disruption from surface mining; massive tailings ponds holding wastes toxic to fish; and major consumptive water use. These features have drawn the attention of international environmental groups such as Greenpeace, who have labelled the product from this source as “dirty oil.” Media attention over the killing of more than 500 ducks on a tailings pond in April 2008, as well as ongoing claims of a cancer cluster being caused by oil sands contamination in the downstream (predominantly aboriginal) community of Fort Chipewyan, has contributed to promoting the “dirty oil” label.

On the economic side, the Athabasca oil sands have been a major source of investment in Canada, supporting not only Alberta but the federal government (through increased taxes), the Ontario manufacturing sector, and skilled trades from across Canada who have migrated to Ft. McMurray for employment. A poll of Canadians (in Edmonton and Toronto) for the Canadian Association of Petroleum Producers (CAPP) found 46 per cent of respondents believe that oil sands companies have not done a good job in balancing the environment and the economy, while 63 per cent of respondents believe Canada benefits from oil sands development and 64 per cent said the oil sands are important to providing a secure supply of Canada's future oil needs. CAPP and the Alberta government have launched major public relations campaigns to counter the “dirty oil” label that has already led to signs that some markets may be closed to oil sands products. Some politicians and groups in the United States, which is the market for much of the oil, have called attention to the environmental impacts of oil sands development, and a few have advocated a boycott.

#### *Preliminary Terms of Reference for the Project.*

Canadians need to have an independent expert assessment of the environmental and health impacts of the development of the Athabasca oil sands.

## **Some Possible Questions for the Panel**

1. 1. What are the major environmental and health impacts of oil sands development?
2. 2. What current Canada and Alberta regulatory standards apply to the environmental and health impacts of oil sands development? And, in this context:
  - a. Are current practices, as managed by the industry and overseen by provincial and federal regulators, in compliance with these standards?
  - b. Are the current Canadian and Albertan regulatory standards adequate for the protection of health and the environment?
3. 3. What alternatives for better management of environmental and health impacts are available in the short-term and the longer term, and what would be their estimated costs? How would the costs of such alternatives affect the economic viability of the industry?
4. 4. What are the quantifiable economic and social impacts of oil sands development currently, and over the next 10 years and the next 30 years, for Alberta, Ontario, and Canada?