

Background

The following is an excerpt of OSEC's written submission to the Joint Panel:

A. Greenhouse Gas Management and Climate Change

i. Failure to Manage Growing Greenhouse Gas Emissions

There is a strong scientific consensus that GHG emissions from human activities, if allowed to continue on “business as usual” trends, are likely to cause catastrophic environmental, economic and human impacts worldwide by the end of the present century. The objective of the United Nations Framework Convention on Climate Change, ratified by Canada and virtually the entire international community, is to stabilize atmospheric GHG concentrations at a level that prevents “dangerous” climate change. Analysis has been conducted to examine the maximum rise in average global surface temperature that can be tolerated if dangerous climate change is to be prevented, the level at which atmospheric GHG concentrations must consequently be stabilized, and the reductions in GHG emissions globally and from industrialized countries needed to meet that GHG concentration limit. The conclusion of this analysis is that by 2050, global GHG emissions must be reduced by at least 30–50 percent below the 1990 level, and Canada's GHG emissions must be reduced by 80 percent below the 1990 level.¹

Oil sands development is projected to be the largest source of increases in Canada's GHG emissions over the next several years. Between 2003 and 2010, oil sands are projected to contribute 41–47 percent of the projected business-as-usual growth in Canada's total GHG emissions. If all projects announced up to November 2005 proceed, GHG emissions in Canada from oil sands extraction and upgrading will increase from 25.2 megatonnes of carbon dioxide equivalent (Mt CO₂e) in 2003 to 113.1–141.6 Mt in 2020. These projections do not take account of any CO₂ capture and storage, but they do assume that emissions intensity will decline at an annual rate of 1–2.3 percent (the 2.3 percent annual rate is equivalent to the Alberta government's target of a 50 percent improvement in GHG intensity over 30 years (1990–2020)). The projections are based on the use of natural gas as the main source of energy; emissions will be up to 50 percent higher if bitumen or coke is used as an energy source.²

ii. Imperial's GHG Pollution

Under the heading “Marginal GHG increments” the proponent identifies that at full operations the Kearl Project will contribute 0.51 % and 1.7% of the most recently reported national and provincial GHG emissions (2002 data). (Volume 5 – Page 2-166).

¹ Bramley, M. 2005. *The Case for Deep Reductions: Canada's Role in Preventing Dangerous Climate Change*. David Suzuki Foundation and Pembina Institute. Available at <http://www.pembina.org/climate-change/pubs/doc.php?id=536>.

² Bramley, M. et al. 2005. *The Climate Implications of Canada's Oil Sands Development*. Pembina Institute. Available at <http://www.pembina.org/climate-change/pubs/doc.php?id=586>.

Imperial indicates that the GHG intensity for the project will range from approximately 38 to 44 kg ECO₂/bbl bitumen (Volume 5 – Page 2-167). Imperial then notes that this intensity “...is in the range of intensities specified in approvals for other developments in the oil sands region,” and presents Table 2-72 ((Volume 5 – Page 2-167).

Table 2-72: GHG intensities for Recently Approved Oil Sands Developments

Project	Approval Number	GHG Intensity ^(a) (kgECO ₂ /bbl)
Shell Jackpine Mine – Phase 1	153125-00-00	31.5
TrueNorth Fort Hills Oil Sands Mine	151469-00-00	31 to 39
Canadian Natural Horizon Project	149968-00-01	90.4
Devon Jackfish SAGD Project	183875-00-00	65 to 70
OPTI/Nexen Long Lake Project	137467-00-00	180 to 220

NOTE:

(a) GHG Intensity in approvals provided as kilograms of equivalent carbon dioxide per barrel.

Unfortunately this comparison is not particularly relevant and does not provide a useful analysis of Imperial’s performance relative to its peers. Comparing the Kearl Project to *in situ* SAGD projects (Devon Jackfish and OPTI/Nexen Long Lake) is not a useful comparison given that these projects employ fundamentally different approaches to bitumen extraction. Similarly, Imperial fails to note that the apparently high GHG intensity provided for Canadian Natural’s Horizon Project arises from the fact that this project will include an upgrader that will process bitumen into synthetic crude oil. It is more meaningful to compare the Kearl Project’s GHG intensity with that of their oil sands mining peers. For example, Petro-Canada/UTS’s Amendment Application for the Fort Hills Project notes that its GHG intensity will be 32.85 kg/barrel (Application for Amendment 2002, pg. 6-6, March 2005). Therefore, when comparing the Kearl Project’s GHG intensity with that of the Shell Jackpine Mine – Phase 1 project or the PetroCanada/UTS Fort Hills Oil Sands Mine one finds that is considerably higher (at least 7 kg/barrel).

iii. The Absence of a GHG Management Plan

Despite the higher than average GHG intensity for the Kearl Project Imperial has failed to provide any plan for achieving GHG reductions for the project. The Government of Alberta sought supplemental information regarding Imperial Oil’s GHG emissions, specifically requesting a detailed GHG Management Plan with specific emissions reduction targets and timeframes (Supplemental Information Requests, Question 143, p.4-379). Rather than providing the requested plan, Imperial oil noted that it “...will comply with any and all provincial and federal regulations regarding greenhouse gas reductions in the timeframes required.” (Supplemental Information, p.4-379). Imperial noted that they are committed to taking “...actions to improve energy efficiency and conservation opportunities” and “...has set internal targets for energy efficiency in its corporate business plans for many of its larger facilities” (Supplemental Information, p.4-379). Ultimately, Imperial failed to provide the information requested noting that “Precise plans for meeting obligations will depend on conditions at the time” and

suggested that it “...would manage GHG obligations on a corporate wide basis, as it is expected that this would be more cost-effective than management on an individual facility basis” (Supplemental Information, p.4-379). It appears that Imperial does not take the matter of climate change seriously and is only interested in reducing GHG emissions when there is an economic benefit derived from enhanced energy efficiency and reduced energy costs. This is in sharp contrast with a number of its peers in the oil sands industry who have acknowledged the need to achieve reductions in GHG emissions in order to address climate change

In Alberta’s oil sands sector, one company has already demonstrated the feasibility of targets to reduce and offset GHG emissions far below planned emissions levels. Shell Canada’s policy is to “have committed to a 50 per cent voluntary reduction in GHG emissions from those estimated when the [company’s first oil sands] Project was officially launched, in late 1999. For further oil sands development, we will set emissions reduction targets, on a full-cycle basis, that are better than the most likely commercial supply alternative expected at start-up.”³ It was the application of this policy to Shell’s first oil sands project that resulted in the 50 percent reduction target, equivalent to a level six per cent less than the emissions associated with the imported oil that the project displaces.⁴ Similarly, for its proposed Muskeg River Mine Expansion project, Shell committed:

“to setting an emissions reduction target or goal for new facilities (on a full cycle basis) that is better than the “most likely commercial supply alternative at start-up”. For the MRM Expansion I⁵ Project, we plan to set out a GHG commitment and management plan in 2007, which will achieve a meaningful reduction of GHG’s below business as usual.

We believe that the GHG management plan for Expansion 1 should have a greater reliance upon viable technological solutions under our direct control and less reliance on offsets. We will continue to evaluate CO2 capture and sequestration as one of these technical solutions.

The GHG reduction commitment and management plan for MRM Expansion will be based on the following inputs:

- *Full Cycle Analysis and most likely commercial alternative analysis*
- *Emerging federal government policy*
- *Stakeholder perspectives*
- *Technology options and offset opportunities*
- *Economics and cost of Carbon*

³ <http://www.shell.ca>, accessed June 19, 2006.

⁴ Shell Canada. 2001. *2001 Voluntary Climate Change Action Plan Update*, p.10. Available at <http://www.ghgregistries.ca/registry/out/C0127-VCR2001E-PDF.PDF>.

⁵ Shell Canada defines “Expansion I” as an additional train at Jackpine Mine, integration with the Muskeg River Mine, and an expansion of the upgrader at Scotford, adding 90,000 bbl/d production to Albion/Shell’s Base Business.

- *Analysis of several long-term reduction goals, including carbon neutrality by 2020*⁶

From OSEC's perspective this type of commitment is the minimum standard for proponents of oil sands projects.

The Board has previously directed the proponent of a project with large GHG emissions to offset those emissions to meet a target significantly below the project's planned emissions level. In December 2001, the Board directed EPCOR to fulfill its voluntary commitment of offsetting GHG emissions from the coal-fired Genesee power plant expansion to a level equivalent to that of a natural gas combined cycle plant.⁷ Alberta Environment now publicizes this "Clean as gas standard," stating that "Alberta is the first province in Canada to require all new coal-fired power plants to lower their greenhouse gas emissions to the level of a natural gas plant, potentially cutting in half their greenhouse gas emissions."⁸

iv. Cost Effective Options to Reduce GHG Pollution

The financial feasibility of targets to reduce and offset GHG emissions from oil sands far below planned emissions levels is relatively straightforward to calculate, based on scenarios for future prices of GHG offsets and on projections of the cost of emission reduction technology such as CO₂ capture and storage. A recent calculation by Groupe Investissement Responsable showed that Alberta's oil sands producers could achieve net zero emissions ("carbon neutral") by 2020 at a cost ranging from \$1 to \$6 per barrel of synthetic crude, even if offset prices were as high as \$75 per tonne CO₂.⁹ A cost in this range is a small fraction of the anticipated profit margin of oil sands projects.¹⁰

The Pembina Institute is currently undertaking a similar analysis to identify the cost range associated with achieving carbon neutral oil sands production.

⁶ Section 2.3 of Issue Resolution Document for the Proposed Muskeg River Mine Expansion Project. Prepared By: Albion Energy Inc. (Albion) and the Oil Sands Environmental Coalition (OSEC), August 21, 2006.

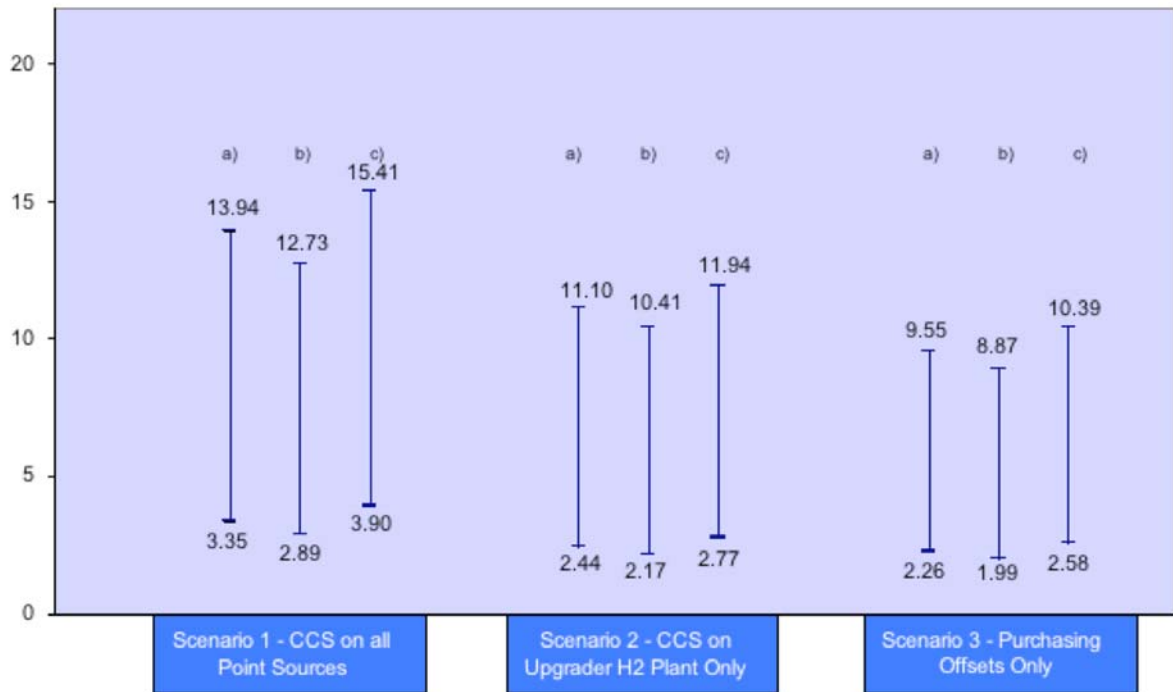
⁷ Energy and Utilities Board. 2001. *Decision 2001-111, EPCOR GENERATION INC. AND EPCOR POWER DEVELOPMENT CORPORATION, 490 MW Genesee Power Plant Expansion Application No. 2001173*, p.65. Available at <http://www.eub.ca/docs/documents/decisions/2001/2001-111.pdf>.

⁸ <http://www3.gov.ab.ca/env/climate/accomplishments.html#clean>, accessed June 19, 2006.

⁹ François Meloche, "How much would it cost to make our oil sands carbon-neutral?" *Corporate Knights*, 2006 Energy/Investment Issue. Available at <http://www.corporateknights.ca/downloads/CK16.pdf>.

¹⁰ The Pembina Institute is currently conducting a more in-depth assessment of the financial and technical feasibility of carbon neutral oil sands by 2020, and this assessment may be complete and available in time for the Board's hearing on the Project.

**Carbon Neutral Costs Under Low/High Emissions Scenarios &
Low/High Offset Costs
(\$ / per barrel SCO)**



The analysis compared costs for a variety of scenarios in which companies could utilize either or both carbon capture and storage (CCS) and emission offsets. The results demonstrate that costs per bbl could be as low as \$2-3 per barrel. An upper estimate \$9 - \$15 per barrel is estimated; however it is anticipated that industry would not pay more than the lower limit of the upper boundary (i.e. the \$9 through offsets rather than higher through CCS). With regards to the Project at hand, costs would be even lower as all of the above costs assumed upgrading in addition to mining and extraction. To put the results into context, it costs a refinery approximately Cdn\$1 - \$2 per barrel to remove lead from gasoline in today's dollars;¹¹ and to reduce sulphur in diesel fuel from previous levels to 15 ppm in order to meet recent ultra-low sulphur diesel regulations costs approximately Cdn\$1.30 to Cdn\$1.80 per bbl.¹² Further, integrated oil sands companies are estimated to be economic with oil prices at U.S. \$30-\$35 per bbl.¹³ Given past environmental challenges the oil and gas industry has overcome and current market conditions, oil sands companies are well poised to act.

¹¹ Removal of Lead from Gasoline: *Pollution Prevention and Abatement Handbook*, World Bank, 1997. Data on volume of gasoline per barrel provided by the American Petroleum Institute. 1995 data in 2006 dollars adjusted for annual inflation in Canada and 2006 average exchange rate.

¹² Canada Gazette, Vol. 138, No. 40 — October 2, 2004. 2002 cost estimates converted 2006 dollars adjusted for annual Canadian inflation and average exchange rates. Includes removal of all sulphur (i.e. pre 500 ppm level).

¹³ 'Canada's Oil Sands Opportunities and Challenges to 2015: An Update. National Energy Board, June 2006.

Despite the government of Alberta having adopted a firm policy of requiring coal-fired power plants to offset GHG emissions to a level as low as one-half such plants' physical GHG intensity, the government does not appear willing to impose similar requirements on the oil sands sector. Although Minister Boutilier announced in May 2006 his desire to adopt "tough" regulations setting GHG targets for the oil sector and other industries, and his intention to announce details in September,¹⁴ Premier Klein later referred to this having "upset the petroleum industry,"¹⁵ and it is now quite unclear whether provincially regulated GHG targets for oil sands will be set at all. Imperial's projected GHG intensity compares unfavourably with their peers in the oil sands mining industry. This is not in keeping with Alberta's policy, as reflected in the Climate Change and Emissions Management Act, which sets a goal of reducing GHG emission intensity. Further, Imperial has not provided any evidence to suggest that it has the capacity to achieve reductions in emissions or in emission intensity.

The current federal government has not made clear whether or not it intends to regulate industrial GHG emissions, and if so, at what level targets might be set. The current government has, however, been highly critical, publicly and on numerous occasions, of the previous government's climate change policies. The probability of the new government pursuing without modification the previous government's plans to regulate industrial GHG emissions does not, therefore, appear strong.

According to a poll conducted in April 2006, 60 percent of Albertans agree strongly, and 26 percent agree moderately, with the statement that "in each of their oil sands plants, companies should be required to reduce greenhouse gas emissions that are responsible for climate change."¹⁶

¹⁴ Jason Fekete, "Alberta vows to make oilpatch greener: 'We'll have the toughest regulation in all of Canada'," *Calgary Herald*, May 26, 2006.

¹⁵ Renata d'Aliesio, "Alberta is top source of CO₂," *Calgary Herald*, June 16, 2006.

¹⁶ Dyer, S. 2006. *Albertans' Perceptions of Oil Sands Development Poll, Part 2: Environmental Issues*. Pembina Institute. Available at <http://www.pembina.org/climate-change/pubs/doc.php?id=1233>.