

Supporting Statement

30% of Royal Dutch Shell plc's (the "Company") total resources, some 20 billion barrels of oil equivalent (boe)¹, are Canadian oil sands, a heavy and difficult to access oil that requires large inputs of energy to extract and process. The largest proportion of those long-term resources is too deep to be mined as most of the Company's oil sands are today and will therefore require in situ extraction². Techniques for in situ extraction are the most energy intensive of all.

Concerns regarding: (i) the carbon intensity of the oil sands projects at a time of anticipated regulation and pricing of greenhouse gas (GHG) emissions; (ii) forecasted carbon prices; (iii) the limitations and cost of emissions mitigation; and (iv) local environmental and livelihoods issues, mean that shareholders require assurances regarding the assumptions made by the Company in deciding to proceed with oil sands projects about: (i) future carbon prices; (ii) oil price volatility; (iii) demand for oil; (iv) anticipated regulation of greenhouse gas emissions; and (iv) other legal and reputational issues.

Operational Risks

At a time of growing international consensus regarding the need to regulate and price GHG emissions, there is a risk of significant costs arising for the Company from oil sands projects. The extraction of oil sands produces on average 3 times the Greenhouse Gases (GHGs) of conventional production.³ Emphasis on in situ production increases this considerably.

The International Energy Agency has suggested the price of carbon emissions in industrialised countries will need to be \$50 per tonne in 2020 rising to \$110 by 2030. This would add \$5 and \$11 respectively to the cost of producing a barrel of average oil sands.⁴

A recent report commissioned by WWF suggests that the potential of Carbon Capture and Storage (CCS) to address the GHG emissions of oil sands operations is limited. It states that, "*the overall reductions from upstream operations could be in the 10% to 30% range at the best process locations by 2020 and the 30% to 50% range industry wide by 2050.*"⁵

¹http://www.shell.com/home/content/investor/news_and_library/press_releases/2008/strategy_update_17032008.html

²http://www.shell.com/static/investor/downloads/financial_information/quarterly_results/2006/q2/q2_2006_qra.pdf

³ Charpentier, A.D., Bergerson, J.A., and MacLean, H.L. "Understanding the Canadian oil sands industry's greenhouse gas emissions" in *Environ. Res. Lett.* January-March 2009.

⁴ International Energy Agency, World Energy Outlook 2009.

⁵ WWF-UK and The Co-operative Financial Services October 2009. *Carbon Capture and Storage in the Albertan Oil Sands: A Dangerous Myth.*

Further, the cost of making these marginal reductions could be prohibitively expensive at \$110 to \$290 per tonne. This compares unfavourably with estimates for CCS for coal-fired generation at \$60 to \$150 per tonne.⁶

Added to the potential costs of mitigating GHG emissions are the potential costs of land reclamation and costs and delays from litigation brought by local communities, increasingly affected by pollution, deforestation and wildlife disturbance, claiming breaches of the treaty rights protecting their traditional livelihoods.⁷

Market Risks

Given its high capital intensity, the profitability of oil sands projects is dependent on sustained high oil prices. Various independent studies have cast doubt on the reliability of such market conditions suggesting that high oil prices constrain oil demand through economic contraction and consumer behaviour change.

Cambridge Energy Research Associates suggest that when oil prices rise above \$100/bbl GDP is constrained and alternatives gain increasing market share.⁸ Energy business analysts Douglas Westwood analysing recessions since 1973 observed that when oil consumption breaches 4% of US GDP the US goes into recession. They calculated that the oil price at which that happens is \$80/bbl at 2008 prices.⁹

Deutsche Bank suggests that over the next five years, increasingly tight supply will push oil prices higher triggering a move to much more efficient oil use through technology switching. This may reach a point at which efficiency gains overtake demand growth and a peak in global oil demand is reached. In their opinion, “*The value of high capex intensity, long lead time, currently un-developed oil, such as undeveloped Canadian heavy oil sands, oil shales, and Brazilian pre-salt and other ultra-deepwater plays could be far lower than the market currently expects.*”¹⁰

Long-term demand forecasts made by the IEA, OPEC and the US government have fallen by some 20% since 2006.¹¹ The IEA’s most recent demand forecast for 2030 has been revised down from 116mb/d in its 2007 report to 105mb/d under its current reference scenario (one in which climate change continues unchecked). Its more realistic 450ppm scenario puts 2030 demand at 89mb/d.¹²

⁶ Ibid.

⁷ Alphonse Lameman and the Beaver Lake Cree Nation v Her Majesty the Queen Right of the Province of Alberta and the Attorney General of Canada.

⁸ *Dawn of a New Age: Global Energy Scenarios for Strategic Decision Making-The Energy Future to 2030*; Cambridge Energy Research Associates 2006 Multi-client Study. Cited in *Macro-Economic Limits to Oil Price and ‘non-conventional’ Oil*. Innovest Strategic Value Advisors. February 2009.

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⁹ Douglas Westwood Energy Business Analysts, 22 June 2009. *Oil: What price can America afford?* Available at: <http://www.dw-1.com/files/files/438-06-09 - Research Note - Oil - What Price can America Afford - DWL website version.pdf>

¹⁰ Deutsche Bank Global Market Research, 04 October, 2009. *The Peak Oil Market: Price Dynamics at the end of the oil age*. p.5.

¹¹ See OPEC World Oil Outlook, July 2009, p.74

¹² International Energy Agency, World Energy Outlook 2009.

Oil price volatility, resulting from both the economy's low tolerance to high oil prices and the drive to constrain oil demand to prevent climate change and enhance energy security, is a very real threat to the profitability of the oil sands projects and, accordingly, shareholders require assurances regarding the Company's assumptions on demand and price volatility.

In the time since our Company committed significant resources to acquisitions in Alberta, debate about the future of the oil market has shifted considerably. While economic forecasts can vary, the likelihood of continuing shifts in the oil market appears very real. In light of our Company's significant long-term commitment to the oil sands, these shifting circumstances deserve much greater examination than they have had thus far.