

The Treasury

Solid Energy Information Release

March 2013

Release Document

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In preparing this Information Release, the Treasury has considered the public interest considerations in section 9(1) of the Official Information Act.

Solid Energy: Briefing for Meeting with Hon Parker and Chair (John Palmer) and CEO (Don Elder) on Monday 5 May 2008

To	Minister for State Owned Enterprises Minister for Climate Change Issues	Priority	Routine
Date	28 April 2008	Deadline	5 May 2008

Purpose

You are scheduled to meet with Hon David Parker and Solid Energy Chair, John Palmer, and CEO, Don Elder, on Monday 5 May 2008 between 4.30am and 5.00pm.

The purpose of the meeting is to provide an opportunity for Ministers to discuss Solid Energy's approach to carbon management, and more specifically the future of carbon capture and storage initiatives for some of the company's new energy developments.

Solid Energy's new energy developments

In recent years, Solid Energy has invested in the research and commercialisation of several new forms of energy that use New Zealand's coal resources, and renewables such as biomass and biodiesel.

Two of Solid Energy's largest prospects involve a potential coal to liquids plant in Southland, and underground coal gasification near Huntly. However, both involve potentially large carbon footprints which will require offsetting under New Zealand's proposed Emissions Trading Scheme and/or the application of cost effective carbon capture and storage (CCS) technologies.

Coal to Liquids Plant

Southland's vast lignite resource provides an opportunity for New Zealand to produce its own transport fuels and many other syngas-based products. Solid Energy has invested over \$65 million in land and mineral purchases to date, with a further \$50 million expected – these investments are expected to secure a total available coal resource in excess of 1 billion tonnes.

The proposed plant could be operational by 2020, and capable of producing 40,000 barrels of diesel per day (for over 40 years, with available coal resources) for approximately \$US60 per barrel. At today's oil prices, this leaves a significant margin for factoring in the cost of carbon and/or the cost of CCS.

Shareholding Ministers have expressed reservations about the large scale investment required for the proposed coals to liquids project and the need for future carbon sequestration developments. Solid Energy is expected to proceed with caution and with due consideration to the New Zealand Energy Strategy.

Solid Energy is continuing to build its knowledge about the lignite resource, optimal gasification technologies, and CCS options. In this regard, it has begun investigating potential carbon storage sites in Southland, both on and offshore. It is also contributing

to the Australian Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC) research project located in south west Victoria, into the technical and environmental sustainability of carbon storage.

In a recent media release to coincide with the official launch of the CO2CRC project, Solid Energy's CEO noted that "...the promise of carbon capture and storage includes its potential use in a coal to liquid fuel (diesel) plant that we're investigating, based on our extensive Southland lignite resources...the timeframe for this project would see first product some eight to 10 years from the time of a decision to proceed and, given the rising price of oil internationally, carbon capture and storage technology could be a very attractive option to address the CO₂ emissions of such a plant. This would be one of a number of options for managing the CO₂ footprint including purchasing credits and forestry offsets."¹

Underground Coal Gasification

Underground Coal Gasification (UCG) is the in-situ gasification of coal, achieved by injecting oxidants to create a reaction process and bring the gas to the surface through boreholes. UCG remains at the research and development phase, but has the potential to supply a generator as large as Huntly. Commercialisation is not expected before 2015.

Solid Energy accepts that carbon management will be an integral part of UCG development. As with the coal to liquids plant, UCG will probably depend on CCS technology developments from international research relationships and technology partners. Potential synergies exist with Solid Energy's Coal Bed Methane extraction programme which may create a suitable nearby carbon storage location.

Feasibility and Timing

Carbon capture and storage is technically feasible today. Solid Energy estimates that there are 50 CCS projects in operation and under development across the globe today, mostly involving coal-fired power stations and enhanced oil and gas recovery.

However, CCS is unlikely to be deployed in New Zealand for a number of years for a range of reasons, including:

- the absence of a carbon price in the energy sector (until 1 January 2010)
- imperfect information about suitable storage sites
- lack of research into the risks associated with storing carbon underground for long periods of time
- legal and regulatory uncertainties.

¹ Refer to <http://www.coalnz.com/index.cfm/1,230,695,49.html/CO2-storage-project-marks-major-milestone>

Given the magnitude of the risks and uncertainties currently associated with CCS, it is not clear when (or indeed if) Solid Energy will deploy CCS technologies in New Zealand, even if the projects outlined above proceed. It cannot be assumed that the projects are predicated on CCS, as it may be more cost effective to offset the associated carbon liabilities by purchasing carbon credits and/or through forestry offsets.

Attachments

1. Solid Energy background information entitled “Carbon Capture and Storage”, including further technical details on CCS, some of the operational projects around the world, and other CCS issues such as leakage at storage sites, and regulatory frameworks
2. Ministry of Economic Development report entitled “Feasibility of CCS Deployment” (which I understand you have already seen)

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