

# The place of coal in New Zealand's energy future

## Mark Aliprantis

*Manager, Petroleum and Minerals Investment, Crown Minerals, Ministry of Economic Development, PO Box 1473 Wellington, New Zealand.*

*Ph 64-4-472 0030, email: mark.aliprantis@med.govt.nz*

Good morning and thank you for the opportunity to address this year's New Zealand Minerals Conference.

As you have already heard from the Associate Minister of Energy, the Government believes that the minerals industry is an important part of our economy. In particular our coal and lignite resources, have the potential to play an important role in New Zealand's energy sector as both a primary fuel and as a means to produce electricity.

The Government has taken a keen interest in the primary fuel sector given the declining reserves of natural gas sector. The energy sector is a key driver of economic growth and it is therefore critical that we have a reliable supply of primary fuel as part of the energy mix.

In a global sense, New Zealand is like many other countries regarding the need to secure energy for the future. Natural gas will be a key bridging fuel in the transition from an energy market based on fossil fuels to one based on renewables over the next century.

However, natural gas as a solution to this energy transition has some pragmatic limitations for New Zealand. There is uncertainty as to when new domestic reserves of gas can be discovered and developed. And the alternative of imported LNG poses a number of costs and risks to the economy.

New Zealand's coal resources are vast - estimated to be enough to last hundreds of years at the current rate of extraction. The main question is can extraction be increased and sustained to meet the demand of domestic power producers and at the same time meet commitments to lucrative international markets?

At this point it is appropriate for me to place coal into context with Governments overarching policy objectives for energy. The Government has stated objectives for the energy sector emphasising energy efficiency and an increased focus of renewable energy, while still ensuring security of supply and certainty as to energy costs and risk. Coal certainly can make a contribution to these objectives going forward.

Amongst the challenges facing the continuing use of fossil fuels, the effect of CO<sub>2</sub> on the earth's climate is recognised as one of the most serious. New Zealand is committed to addressing its energy challenges within the constraints of managing greenhouse gas emissions. However, this does not mean that we will not develop our hydrocarbon resources. Our climate change policies simply mean that the costs to the environment of various energy options will need to be considered and managed. Therefore if projects are economically feasible with the environment considerations factored in, and they are able to pass the relevant local authorities consent process, then there is no reason why they should not go ahead.

The Government has a role to ensure there is a proper balance of resources, and it is with some urgency that we need to consider our options around securing reliable supply of primary fuels.

This requires balancing short term needs against long term goals. It also means creating certainty for business around costs and choices. Securing an energy future also means wider community trust and confidence in the neutrality and transparency of the decision making process.

As I said earlier, securing a renewable energy future does not mean excluding coal. However, it does mean working with energy researchers and adopting a long term strategic approach to establish a small environmental footprint particularly around carbon management. The world is changing, and technology is a big factor in this change. There is little doubt that this will influence how coal can be used in a more environmentally acceptable manner in the future.

New Zealand's coal producers, in particular Solid Energy, have adopted this approach by collaborating with national and international research organisations and by working closely with environmental groups and the wider community.

New Zealand's coal industry has undergone some major changes in recent years, thanks largely to growing demand from international markets.

China is rapidly emerging as New Zealand's largest potential market for coal and other resources which reinforces the importance of developing stronger economic relations with China via a Free Trade Agreement. The significance of this relationship is underlined by the presence of Mr Liu Quan at this conference.

I encourage all of you to understand the significance and value of developing closer economic relations with China.

Last year New Zealand produced some 5.15 million tonnes of coal, and in recent times new coal deposits have either been brought into production or new fields such as the Pike River Coal Field have been granted resource consent. While these are healthy signs, questions remain on the amount of recoverable resource.

The Ministry of Economic Development has commissioned studies to assess the current recoverable coal resource, and to gain a wider understanding of the technical issues and economic value of coal and lignite.

One of the issues raised by these studies is the fact that the Government has ownership and management responsibility for less than 50% of the resource, and there are competing interests in its acquisition and use. Given its immense strategic value and national importance, some discussion is required to determine how the national interest can be best managed and protected.

As many of you will be aware, lignite deposits – principally in Southland and Otago - comprise the majority of this resource. One particular study has made some preliminary assessment of the economic value of these deposits. The results will surprise those with a mindset that “brown coals” have no value. On the contrary, they have huge strategic value.

I will briefly outline some of the more significant findings of the study:

- The deposits are New Zealand's largest readily available energy resource, equivalent to about 83,000 petajoules.
- They have the potential to be used both as viable future feedstock for electricity production and possible conversion to petrochemicals or liquid fuels.
- In excess of 70% of the in-ground resource can be recovered.
- There have been significant reductions in the costs associated with mining this type of resource, and with the gasification / conversion technologies.
- The technology to process lignite is proven and full scale plants are in production.
- There is a high level of interest by investors in New Zealand's lignite resources.
- Finally, utilising lignite is not restricted to simply burning the resource; there is even greater value in producing other products which yield higher returns.

The following facts about one particular deposit - the Hawkdun Lignite deposit – are quite staggering, and highlight the full extent of lignite’s value and the potential for investment in it;

- Mined and converted to synthesis gas the deposit would have a minimum natural gas equivalent of 7.05 tcf – about twice the total original Maui Gas Field.
- If the lignite were converted to transport fuels in the form of petrol, diesel, jet fuel etc. it could provide 71 million tonnes of fuel – enough to supply New Zealand’s total requirements for 15 – 20 years.
- If the lignite were converted to Ammonia and Urea Fertilizer it could provide all New Zealand’s nitrogenous fertiliser requirements for the next 127 years and provide additional exports of 1.9 million tonnes per year giving an income of \$800 million per year.
- If the lignite were converted to Methanol it could provide an export income of \$1.4 billion for the next 65 years.
- If the Hawkdun lignite were developed to produce electricity it could supply all of the South Island electricity demand or about 30% of the national Electricity demand for the next 65 years.

However, it should be noted that most of this deposit is located on Crown pastoral lease land that is currently subject to tenure review. In the course of the review, some difficult decisions will need to be made regarding the competing conservation and economic values of the land. Without due regard of both considerations there is a risk that future access to this resource could be restricted.

In closing, New Zealand’s coal resources represent considerable opportunity in an energy sector which is entering a new era. The challenge is now with the industry to prove the technology exists to extract and process the resource while also managing carbon emissions.

The Government now looks to the industry to make the most of the opportunities that are out there, for new exploration and collaboration with researchers to ensure development of natural resources are achieved with a acceptable environmental impact.