

Submission

To the

Green Growth Advisory Group

On

“Green Growth – Issues for New Zealand (released on 05 July 2011)”

INTRODUCTION

1. Straterra Inc was formed in 2008 to be a collective voice for the New Zealand resource sector. Our membership represents 84% by value of New Zealand minerals production (excluding oil & gas, and geothermal), as well as exploration, research, service and support. Straterra works closely with the petroleum sector, and has links to the geothermal sector.
2. The resource sector makes a significant contribution to the New Zealand economy¹. Oil, gas, coal, gold, aggregates and other minerals contributed \$2.15 billion to GDP in 2008, compared to the wine industry (\$0.45bn), and tourism (\$6.66bn). Resource exports in 2009 earned \$3.6bn (8.2% of total goods exports) while dairy in that year was \$10.0bn, and overseas tourism, \$9.3bn. In 2009 there were 6800 people employed directly in mining, and 8000, indirectly, flowing from the economic activity of the 6800. The median wage for a mining employee was \$57,320 in 2008, compared to the New Zealand median of \$33,530.
3. Compared to the wealth generated, mining has a relatively small footprint, occupying 0.016% or 4000 ha of New Zealand’s land area. Most of this area is occupied by quarries, most of which produce aggregate for roading and construction.
4. New Zealand’s resource potential in minerals² dwarfs the sector’s current contribution to the economy and society. Resource potential has been identified for gold+silver (e.g. proposed expansion of Newmont Waihi Gold’s operation), and coal (Bathurst proposal, Buller), and in new areas such as lignite (Southland), offshore ironsands (western North Island), rock phosphate

¹ NZIER (2010). Diamond in the rough. Straterra submission to MED on schedule 4 discussion paper. http://straterra.co.nz/uploads/files/straterra_s4_submission_may_2010.pdf

² Christie, A.B, and Barker R.G. (2011). The value of mineral exploration and research in New Zealand. Conference proceedings, 2011 AusIMM New Zealand Branch Annual Conference

(Chatham Rise), and seabed massive sulphide deposits of base and precious metals (Kermadecs). Properly managed and encouraged, the New Zealand minerals sector's contribution to the national economy could triple or quadruple. As well, New Zealand has potential for further development of oil and gas, and geothermal³.

5. Straterra welcomes the opportunity to submit on the Green Growth discussion paper. We do so from the perspective that minerals and energy will form an essential part of New Zealand's future, and that this reality should be fairly reflected in the transition towards a green economy.

EXECUTIVE SUMMARY

6. The Government's Green Growth agenda lays down a challenge for society to become more efficient in our use of resources. It is argued in the discussion paper there are opportunities for New Zealand in pursuing Green Growth, and risks if we do not. The direction and rationale are generally supported by Straterra.
7. Within the Green Growth context, minerals and energy exploration and development are an essential component, regardless of the policy directions taken and economic incentives created, in New Zealand and worldwide.
8. One may debate what to do with resources, once they are mined or otherwise obtained. But if the economy is to continue to grow, and/or if living standards are to further improve during any transition towards a green economy, then mine we must.
9. The discussion paper says: "Green growth initiatives are already embedded in many of our regulatory frameworks". That is certainly true for exploration and mining. As matters stand, the Resource Management Act 1991 provides for world-class environmental outcomes from development activities, including exploration and mining. As well, new environmental initiatives are underway, such as the freshwater programme, biodiversity offsets, and carbon capture and storage technologies (CCS).
10. In terms of the resource sector, the questions are: where do we mine, under what conditions, and what standards do we meet. Good decision-making will depend on informed debate in New Zealand on resources.

³ New Zealand Energy Strategy. <http://www.med.govt.nz/upload/77402/NZ%20Energy%20Strategy%20LR.pdf>

11. An understanding of the reality of exploration and mining is a pre-condition for that debate. This is that these activities occupy a relatively small footprint, deliver high value per hectare of land use, have strong growth potential, and can be and are managed in ways that are socially and environmentally responsible. Naturally, this must be seen to be the case.

RECOMMENDATIONS

12. Straterra makes the following recommendations to the Green Growth Advisory Group:

- a) Note Straterra’s support of the Green Growth agenda, as a sound economic and social objective;
- b) Note that minerals and energy will form an essential component of Green Growth, regardless of the path taken;
- c) Note that many aspects of mining in New Zealand are already “green” (refer to Appendix 1 for case studies of green mining);
- d) Note developments are being made in legislation, regulations and policies, affecting exploration and mining, which have been generally, but not always, fair and positive;
- e) Accordingly, for the Government to promote informed debate and decision-making on exploration and mining in New Zealand in the Green Growth context; subject to
- f) Actions by industry and government to improve public understanding of the resource sector in New Zealand.

BACKGROUND

13. The Green Growth Advisory Group launched a discussion paper entitled “Green growth – issues for New Zealand” on 5 July for public consultation. Submissions close on 20 September 2011. The GGAG was established “to evaluate and advise on opportunities for green growth”.

14. The GGAG terms of reference are:

- i. How NZ, and in particular government agencies, can help exporters leverage greater value in international markets from our “clean, green” brand;

- ii. Opportunities for smarter use of existing technologies and innovation, as well as greater development and adoption of new technologies (including clean technologies) in our productive sectors;
- iii. Options for our SMEs to move to a lower carbon economy while sustaining the desired level of productive growth.

The work is in the context of an OECD report released in May 2011 entitled “Towards green growth”⁴. Reading this reveals that Green Growth is largely a repackaging of the term “sustainable development”. Key differences are that in Green Growth, there is no injunction to second guess the world’s future needs, and more focus on climate change. Brief comments on the topics raised in the discussion paper are presented in Appendix 2.

MINERALS, ENERGY, AND GREEN GROWTH

- 15. Minerals and energy will be a vital input into Green Growth, regardless of the economic pathway chosen. This is axiomatic.
- 16. Consider this statement from a consumer perspective. A mobile phone is made of minerals from around 20 different mines⁵. The average household has some 1000 mineral products, 250 of which are quarrying products⁶. Indeed, every facet of life entails the consumption of energy and minerals, whether mined locally, or sourced from abroad, for direct use, or embedded in imported products and services.
- 17. The same is true for the manufacturer. Nothing can be made without the input of energy and minerals, and that also goes for anything “green”. Two examples will suffice. Public transport services would be inconceivable without steel, glass, cement, aggregate and bitumen in abundance, or the use of machinery driven on fossil fuels for transport and assembly of materials. A wind turbine contains more than 250 tonnes of steel, and is made of at least 20 different “hi-tech” metals (op. cit.).

⁴ OECD (2011). Towards green growth.

http://www.oecd.org/document/10/0,3746,en_2649_37465_47983690_1_1_1_37465,00.html

⁵ Geological Survey of Finland (2011). Finland’s Minerals Strategy.

http://www.mineraalistrategia.fi/etusivu/fi_FI/etusivu/ files/84608401427464240/default/FinlandsMineralsStrategy.pdf

⁶ Association of Quarries and Aggregates (AQA)

18. Having established the vital necessity of minerals and energy, the discussion turns to the management of any environmental effects of their production and use – where can we mine, under what conditions
19. Energy is produced by a combination of renewable sources, and fossil fuels. New Zealand (and the rest of the world) cannot simply stop using coal, oil and gas, now or in the foreseeable future. Therefore, it will be important to use these energy sources in an environmentally responsible way. We believe emissions from large point sources can be addressed with carbon capture and storage (CCS). The case for fossil fuels, in a climate change and global context, is made more fully in Appendix 3.
20. Next at issue are the environmental effects of exploration and mining in New Zealand. Under our laws, these must be managed to society’s satisfaction. It is Straterra’s contention the industry does that, for at least three reasons: we are so required by law, we have our reputations to consider⁷, and we depend on having a “social licence” to operate. Case studies of “green” mining are provided in Appendix 1.

CURRENT DEVELOPMENTS IN GOVERNMENT POLICY AND LEGISLATION

21. Accepting the above arguments, there is a strong case for promoting environmentally-responsible exploration and mining in New Zealand, as a core part of Green Growth. To a great extent, this is already occurring.
22. Straterra lists the following government actions: the Marine and Coastal Area (Takutai Moana) Act 2011; environmental effects Bill for New Zealand’s wider marine jurisdiction; the freshwater programme; draft National Policy Statement on indigenous biodiversity; other Resource Management Act 1991 reforms; review of the Crown Minerals Act 1991; the Department of Conservation’s new approach to statutory land management planning; DOC’s Biodiversity Offsets Programme; the NZCCS (New Zealand Carbon Capture and Storage) Partnership; NZ Energy Strategy; and public good science reforms.
23. In all of the above, Straterra has either submitted to a public policy process⁸, and/or has participated as a stakeholder in some other way. These developments have been generally but not always positive, in terms of fair treatment of the resource sector, and adequate recognition

⁷ Straterra Membership Policy. <http://www.straterra.co.nz/Straterra%20membership%20policy>

⁸ Straterra’s submissions. <http://www.straterra.co.nz/Straterra%27s+Submissions>

of and provision for promoting the sector's contribution to the economy. It is noted that Straterra's submissions – in particular, on the review of the New Zealand Emissions Trading Scheme, and on the proposed NPS on indigenous biodiversity - proposed improvements to achieve fairness, workability, and alignment with policy intent.

PROMOTING INFORMED DEBATE AND DECISION-MAKING ON RESOURCE ISSUES

24. Despite the value to New Zealand of the resource sector, and of the sector's future prospects, a campaign of misinformation is underway in New Zealand⁹. This is aimed principally at opposition of all fossil fuels development in New Zealand, as well as against mining in special places, and, to a lesser extent, against mining generally.
25. Efforts must be made, and are being made, to promote in New Zealand a better understanding of mining (Appendix 4), and to set the record straight¹⁰. In this, Straterra welcomes opportunities for dialogue within and outside of government, and the Government's Green Growth agenda is a useful opportunity.

⁹ Baker, C.D. (2011). Exposing the anti-resource campaign. Conference proceedings. 2011 AusIMM NZ Branch conference

¹⁰ Straterra on exposing the myths. <http://www.straterra.co.nz/Exposing%20the%20myths>

APPENDIX 1: CASE STUDIES OF GREEN MINING

Newmont Waihi Gold, Coromandel

Newmont Waihi Gold operates the Martha open pit at Waihi, Coromandel, and the nearby Favona underground mine (also the portal to the Moonlight and Trio ore bodies). The company is proposing a new underground gold+silver mine under East Waihi, called Correnso. Environmental management is a cornerstone of NWG, a founding member of the Global Mining Initiative.

Once lifeless as a result of mining in Waihi under previous owners and previous legislation, the Ohinemuri is now one of the top trout streams in the North Island because of water treatment, and riparian conservation efforts made by NWG. As part of this work, NWG has planted 450,000 native trees and shrubs.

NWG operates a New Zealand dotterel conservation programme in partnership with the Department of Conservation. The inspiration for this work is the use of the waste impoundments by dotterels.

Waste material is being rehabilitated into grazing land, as the area once was, and native shrubland.

NWG has carried out restoration of historic heritage, and runs education programmes in Waihi on its mining operations. NWG is a key stakeholder in Waihi's plans for community development, against the day mining operations cease.

A trust has been set up to manage mine sites and residual installations post-closure, e.g. the lake that will eventually fill the open pit, rehabilitated waste empoundments.



Tailings dam

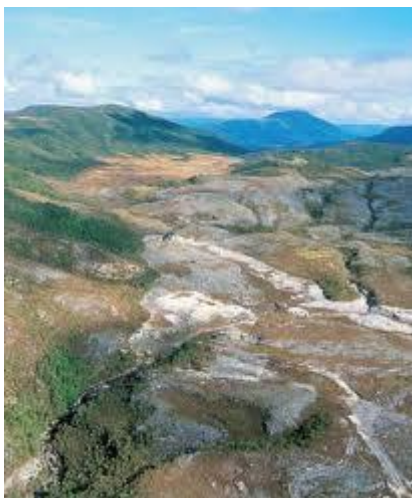
Solid Energy NZ, Cypress extension to the Stockton mine, West Coast

Mining of coal on the Stockton plateau started in 1885, leaving the current miner a host of legacy issues to manage. Recent rehabilitation and environmental mitigation activities at Stockton are a water treatment plant, a native planting programme (70,000 seedlings a year), and a multi-million dollar native snail conservation programme.

The Cypress extension of the coal mine is a self-contained project, located in the upper Waimangaroa valley, West Coast. The footprint of the mine is 184 ha including an extensive public exclusion zone. That area contains habitat for up to four pairs of great-spotted kiwi. In mitigation, Solid Energy is carrying out pest control over 1000 ha of surrounding habitat benefiting at least 30 pairs of kiwi, as well as other native flora and fauna.

Mining itself will be done in sequence from one end to the other and will entail removing native vegetation with the soil profile in 1mx2m chunks, to be later replaced. Landcare Research has shown the method works, where it has been used elsewhere at Stockton, and improvements to initial techniques have been made over time. This is as close as one may come to true ecological restoration at sites. At Cypress, the method is crucial to maintaining a high-altitude wetland, and associated ecosystems.

Solid Energy also carries out voluntary conservation, which may be seen as part of the overall environmental package at Stockton. For example, the company has been working with the Department of Conservation to conserve blue duck in the catchments of the Styx/Arahura and Oparara rivers on the West Coast, increasing their numbers from two pairs to as many as 40 pairs since 2002.



Upper Waimangaroa valley

Perry Resources, Waingaro Quarry, Waikato

In 2011 Perry Resources won the annual Mimico Environmental Award, in recognition of environmental mitigation work in relation to the expansion of Waingaro Quarry near Ngaruawahia.

The quarrying firm spent \$1.5 million on ecological restoration and other measures, exceeding the requirements of resource consents for the quarry expansion. Work included restoration of wetland habitat degraded by other land uses, a passage for giant kokopu and other native fish species, and a 35-metre high bund planted in eco-sourced native trees, to screen the quarry from view.

As well, a car park was built, and the wetlands and stream were designed to maximise the viewing experience of the rail trial, including the planting of kowhai trees to attract tui.

Of the project, former Parliamentary Commissioner for the Environment Dr Morgan Williams said: “The project has created habitats for many native plants and animals ... that are much better than those that prevailed on the land and in the streams prior to development.”

Members of the community participated in many stages of the project, and took advantage of opportunities to visit the quarry and restoration area, as part of Perry Resources gaining a “social licence to operate”.

APPENDIX 2: COMMENTS ON DISCUSSION PAPER TOPICS

Topic 1: Leveraging our clean and green reputation

The NZ resource sector is already green in many ways. Examples include Newmont Waihi Gold, Solid Energy NZ, Perry Resources (Appendix 1). We believe mining and conservation can work together, that we can be part of the solution, that we can enhance the NZ brand. For example, pests are by far the biggest conservation problem in New Zealand¹¹, and mining companies often provide for pest control as part of their environmental and conservation conditions of operation.

On that note, it is the case that tourism and mining are compatible, contrary to claims made by others. On the West Coast of the South Island, for example, the leading source of household income is mining followed closely by tourism and dairying¹². Historic and current mining activities are tourist or visitor attractions in their own right. More than 40,000 people visit the Martha mine open pit every year¹³, bringing tourism spending into the local economy.

Certainly, there is more work to be done and is being done to promote environmentally-responsible mining, e.g. biodiversity offsets¹⁴, and CCS (Appendix 3).

Topic 2: Smarter use of technology & innovation

As stated, there is always room for improvement, e.g. the research underway on biodiversity offsets and a broader framework for mitigation and compensation to achieve no net loss and preferably a net gain in biodiversity. Straterra is a stakeholder in the Biodiversity Offsets Programme, led by the Department of Conservation.

CCS is an area of technology under research, development and implementation. It is essential that we continue to pursue this avenue because, for the foreseeable future, the world and New Zealand will continue to use coal, lignite, oil & gas. Without CCS deployment, New Zealand will find it very difficult to meet the 50% emissions reduction target by 2050. As well, care is required to ensure the NZETS takes due account of the international response to climate change issues.

¹¹ Parliamentary Commissioner for the Environment (2010). Making difficult decisions: mining the conservation estate <http://www.pce.parliament.nz/publications/all-publications/making-difficult-decisions-mining-the-conservation-estate>

¹² BERL (2011). Potential contribution of mining to the West Coast region. Development West Coast.

¹³ <http://www.marthamine.co.nz/assets/updates/2011/newmont-update-09-03-2011.pdf>

¹⁴ Department of Conservation Biodiversity Offsets Programme.

<http://www.doc.govt.nz/publications/conservation/biodiversity-offsets-programme/>

Topic 3: SME transition to a lower carbon economy

As above, this needs to be managed with care. For some businesses, e.g. dairy, wood, and timber processors, increasing the price of carbon will translate simply into a cost impost, by up to 65%¹⁵. Here coal and gas are more than transport fuels, they are a process input. This is also the case with many types of mining. For example, OceanaGold Ltd is one of the most efficient gold mining companies around the world in its use of energy. Nonetheless, diesel accounts for 40% of the operating costs of its operations at Reefton (West Coast) and Macraes (East Otago). It is noted that the NZETS Review report¹⁶ has recommended the reconsideration of the criteria for free allocation of emissions units, including the use of fossil fuels as a process input, and fugitive emissions of methane from coal mines.

¹⁵ CRL Energy (2011). Advice to Straterra

¹⁶ New Zealand Emissions Trading Scheme Review Panel (2011). NZETS Review report.

<http://www.climatechange.govt.nz/emissions-trading-scheme/ets-review-2011/review-report.pdf>

APPENDIX 3: FOSSIL FUELS, AND THE CASE FOR CARBON CAPTURE AND STORAGE (CCS)

1. Calls are being made among some sectors of New Zealand to ban all coal, lignite, oil and gas development in New Zealand. The argument is that the world cannot continue to burn fossil fuels if the climate is to be stabilised at +2 degrees (or at 450ppm carbon dioxide equivalent).
2. This is a laudable notion but cannot be achieved in the foreseeable future. This reality is recognised in the NZ Energy Strategy (op. cit.), which was welcomed by Straterra. In endorsing a target of 90% renewable electricity generation by 2025, the Government accepts there will be a gap, and that it will be filled principally by coal and gas. In the realm of transport fuel there are no ready substitutes for oil and gas. For this reason, the Strategy also prioritises security of supply, as well as affordability.
3. This is also an issue globally, where the renewable electricity generation average level is 20-30%¹⁷. (Contrast that figure with New Zealand's 74% currently¹⁸.) The world has a long way to go, and the trend is in the wrong direction.
4. The International Energy Agency has reported that 47% of new electricity generation in the last decade is based on coal¹⁹. In 2009 coal accounted for 41% of global electricity generation. The reason is simple; coal is relatively cheap and available. It will be used while there still is coal, regardless of whether or not New Zealand bans coal and other fossil fuels.
5. To place New Zealand further into context. Total domestic coal production is some 5 million tonnes a year²⁰, much of it exported as coking coal for steel-making. The world's single largest coal mine, in Wyoming, produces 20 times that amount²¹. China alone uses more than 2 billion tonnes of coal a year (200 times NZ production). Global reserves total close to 1 trillion tonnes.
6. If it cannot wean itself of fossil fuels over the next 20 or 30 years, the world will very clearly have to do something other than attempt to ban coal mining, in New Zealand or anywhere else.
7. Straterra believes CCS must form an inevitable part of the mix of policies and technologies to be deployed, if the world is to mitigate CO2 emissions from fossil fuel combustion.

¹⁷ International Energy Agency http://www.iea.org/weo/docs/weo2010/weo2010_london_nov9.pdf

¹⁸ NZ Govt press release, 17 August 2011. <http://www.beehive.govt.nz/release/greenhouse-gas-emissions-electricity-generation-lowest-10-years>

¹⁹ IEA (2011). http://www.iea.org/press/pressdetail.asp?PRESS_REL_ID=410

²⁰ Coal Association of NZ

²¹ Institute of Policy Studies, Victoria University of Wellington, seminar on the future of coal. 17 May 2011. Te Papa, Wellington

8. Even as the world moves to a lower-carbon path, coal will still be needed for steel-making; there is no commercial-scale, alternative technology. Given that steel is essential to making wind turbines, and most other renewable energy technologies, the case for CCS becomes particularly compelling.
9. We hold this view despite allegations that CCS will not deliver²², and despite the many challenges to large-scale uptake and deployment of CCS, in New Zealand, and around the world. We are encouraged by the IEA view that CCS could address 19% of global emissions by 2050²³.

²² Parliamentary Commissioner for the Environment (2011). Lignite and climate change: the high cost of low-grade coal <http://www.pce.parliament.nz/publications/all-publications/lignite-and-climate-change-the-high-cost-of-low-grade-coal/>

²³ IEA (2010). Progress of CCS must be speeded up. Carbon Capture Journal. <http://www.carboncapturejournal.com/displaynews.php?NewsID=655>

APPENDIX 4: MINING 101 – BUILDING A BETTER UNDERSTANDING OF MINING

Mining has a small footprint

1. Mining occupies a small footprint on a national scale, 4000 ha or 0.016% of New Zealand's land area. An underground mine typically has a footprint of 5-20 ha, a medium-sized open-cast mine, 300 ha. Within New Zealand's marine jurisdiction, there are five operating oil & gas rigs. This is because finding and developing an economic oil, gas or mineral deposit is very, very, difficult. Mother Nature puts the ore deposits in very few places. They then have to be found, and the economics (including of environmental management) have to be favourable.
2. The calculation of the costs of a mine includes the costs of environmental management, meeting other conditions under access arrangements and of obtaining permits and consents. It may take years and tens of millions of dollars from initial prospecting to applying for and obtaining all approvals to mine.
3. For these reasons, only 1 in 1000 prospects typically converts into a mine.

Adequate information is only available for specific mining proposals

4. During the process of prospecting, exploration, and preparation of a feasibility study for a mine – only completed if all goes well at each stage – increasingly large sums are spent on information gathering.
5. Only at the project-specific level will there be enough information gathered by the company on the economic, social and environmental issues and how to manage them. They will be unique for each mining proposal.
6. Then there are the different natures of the competing interests to consider. Baseline information may be available in some places for biodiversity but is not available for potential mines, for at least three reasons: it is difficult, costly and time consuming to find mines; the economics of ore extraction changes over time; and it is unnecessary (let alone impossible) to find now all the mines humanity will need in the future.

Case-by-case approach

7. Mining is an issue that is best addressed case by case, principally because of the nature of information acquisition. Because mining has a relatively small footprint, and the characteristics of each proposed mine are unique, mining does not lend itself to being treated in a generalised way. For these reasons, the case-by case approach is the only sensible way of holding a debate

about mining. This already occurs under the RMA, and has been proposed in environmental effects legislation for New Zealand's wider marine jurisdiction.

Environmental management – social licence to operate

Ecological bottom lines

8. There will be places where the conservation values, or environmental/social values are so high that mining should not occur, e.g. the Milford Track, the Tongariro peaks, and others where only some types of mining should be considered. This concept is provided for under the RMA, e.g. Coastal Policy Statement 2010, and the proposed NPS on Indigenous Biodiversity.

Collaborative approach

9. At other places, mining companies work with DOC, councils, iwi and communities - in planning processes, and on specific proposals - to ensure that any mining is environmentally responsible.
10. Ideally, miners would deliver significant economic benefits to communities and nationally, manage the environmental effects of their activities, and achieve biodiversity conservation over a much larger area than the footprint of development. This occurs already, to New Zealand's benefit. Refer to the case studies in Appendix 1.
11. DOC has insufficient resources to meet New Zealand's biodiversity challenge alone, so must prioritise and work with others. This is a 21st Century collaborative approach to mining and conservation, based on new technologies and knowledge.
12. For example, Straterra is among a group of stakeholders working with DOC on biodiversity offsets, to produce a framework that is both workable for businesses and delivers meaningful outcomes for conservation. We convened, with DOC and Solid Energy, a seminar in March 2011 to update the industry on biodiversity offsets. This is also relevant to the proposed NPS on biodiversity.