



**Submission to
Review of the Crown Minerals Act 1991 from the
Wise Response Society Inc.**

**For
Ministry of Business, Innovation and
Employment**

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Introduction

In the preparation of our response to the *Review of the Crown Mineral Act*, we found that the questions and format we were asked to use very restrictive and already assumed agreement with some aspects of the document, *Responsibly Delivering Value*, which we wished to challenge.

Our submission therefore follows a structure and format that allows us to discuss key concepts and principles in the following order:

- Biophysical Constraints
- Vision
- Principles
- Environmental and Social Responsibility notions
- Well-being: Natural Capital
- Purpose.

Each section starts with the relevant quotation from one of the two document under discussion, followed by a Wise Response Comment, then a Wise Response Recommendation.

Summary

The Review of the Crown Minerals Act and *Responsibly Delivering Value* describe a vision, together with principles, objectives, environmental, social and well-being notions, and a purpose based on these for the sector at a time when the world is experiencing an environmental crisis of an unprecedented magnitude.

Both documents ignore the pivotal IPCC 1.5 Report, which states that to avoid a 1.5°C scenario would require rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems. The major causes underlying the necessity for this transition include that first, we are approaching physical limits to the stock of non-renewable physical resources (including minerals) on which the economy currently depends. Second, our capacity to access these resources is steadily diminishing as the energy return to fossil fuel declines. Third, we are polluting the environment (air, land, ocean and sea bed) in a manner and at a rate that now literally threatens all life on earth.

The absence of these fundamental strategic issues shaping our world (what we have called 'Biophysical Constraints') means that the two documents are at odds with modern science, as well as an economic framework and system based on that science. It means that the sector will continue to traverse a business-as-usual path that cannot prepare the sector and New Zealanders for the urgent and necessary changes.

As a result, we recommend that 1A (2) of the current Act be replaced with:

The allocation of rights to prospect for, explore for, and mine Crown owned minerals should only be granted when:

- a) *the allocation is sufficient to provide for the basic necessities of life within safe biophysical limits and sensible energy return;*
- b) *hazardous pollution and ecological degradation are prohibited or minimised, and all wastes kept within the safe assimilative capacity of the local environment;*

- c) *adequate plans exist to show how resources used for the extraction will be recycled;*
- d) *recycling industries are in place to recycle and reuse manufactured product that the sector does not necessarily directly produce itself;*
- e) *no feasible renewable alternatives exist;*
- f) *the decline in the rate at which non-renewable resources can be extracted be set to equal or be greater than the rate at which renewable substitutes are being developed;*
- g) *the application is consistent with other Government strategies and policies that together, maintain healthy, functioning and resilient life-support systems across New Zealand.*
- h) *the only reason for one or more of these above conditions to be waived is when medium to longer-term advantage of observing the biophysical constraints can be achieved through, (for example) new technology and innovations.*

The Strategy's vision lacks a basic purpose for the sector. Currently it reads:

A world-leading environmentally and socially responsible minerals and petroleum sector that delivers affordable and secure resources for the benefit of current and future New Zealanders.

The problem with this vision is that it rests on a number of principles that are neither fundamental nor comprehensive. Key notions of environmental and social responsibility include behaviour that can cause harm and damage to the world. Companies and organisations have a smorgasbord of choices for understanding these concepts, many of which do not entail any significant changes to current unethical behaviour, while enabling the claim they are acting responsibly.

The notion of 'benefit' is described as best achieved by increasing New Zealand's economic wealth through maximising the economic recovery of New Zealand's Crown-owned mineral resources. This leaves open the use of an out-dated and narrow definition of economic benefit inconsistent with other steps taken by the Government to modernise the definition of this benefit and the idea of what makes up a successful economy. In particular, it ignores the four capitals of financial/physical, human, social and natural which enable the well-being of New Zealanders to be pursued.

We recommend that the vision and the purpose in the revised Act be amended as follows:

The purpose of this Act is to provide essential materials, goods and services sufficient to support in a sustainable and efficient way, consistent with national emission reduction targets and the well-being of current and future New Zealanders.

We support the adoption of a circular economy, recognising that the whole life cycle of the production process from extraction to manufacturing is not vertically integrated. Hence the circular economy framework needs to be supplemented with principles and policies that can apply to each of the other segments of the life cycle.

Nowhere in these documents are effective strategic tools employed to enable a realistic evaluation of the underlying assumptions of the sector. As a result, they do not allow either the sector or New Zealanders to prepare for the radical upheavals about to impact on our current way of life. Without these tools, the vision and purpose we propose cannot be achieved.

1 Biophysical Constraints

*The current purpose of the CMA is focused on developing the Crown mineral estate for the benefit of New Zealand. Specifically, section 1A of the CMA (the purpose statement) states that: (1) The purpose of this Act is to promote prospecting for, exploration for, and mining of Crown owned minerals for the benefit of New Zealand. (2) To this end, this Act provides for— (a) the efficient allocation of rights to prospect for, explore for, and mine Crown owned minerals; and (b) the effective management and regulation of the exercise of those rights; and (c) the carrying out, in accordance with good industry practice, of activities in respect of those rights; and (d) a fair financial return to the Crown for its minerals. **Source: Discussion Document: Review of the Crown Mineral Act (16)***

WR Comment on the purpose of the Act 1A (2)

In 1A (2) of the current Act, there is no mention of the biophysical constraints that must be taken into account if the sector is to survive and contribute to the well-being of New Zealanders. These include:

1. both globally and nationally we are inexorably approaching physical limits to the stock of non-renewable physical resources (including minerals) on which the economy currently depends ¹;
2. our capacity to access these resources is steadily diminishing as the energy return to fossil fuel declines ²; and
3. largely through the use of minerals and mineral products, directly or indirectly we are polluting the environment (air, land, ocean and seabed) in a manner and at a rate that now literally threatens all life on earth ³.

These constraints are reflected in such matters as loss of biodiversity and species, oceans becoming less resilient as they warm, depletion of fish stocks, massive soil erosion and wildfires, and pressure on water sources leading to diminishing crop yields. Poor land use is also behind almost a quarter of the planet's greenhouse gas emissions. Key factors are the destruction of forests, huge cattle numbers, and overuse of chemical fertilisers.

The concept of a carbon budget of biophysical constraints illustrates the way that limiting average climate warming to less than 2°C above preindustrial levels requires strictly limiting the total amount of carbon emissions. The IPCC 1.5-degree report estimated that to stay within the 1.5 degrees target with a 66% chance, the world could emit no more than 420Gt CO₂ (Table 2.2 below ⁴). But that left out feedback (100Gt) and the forcing of other gasses (250 Gt). Also, it appeared two years ago, so that now a further 84Gt CO₂ needs to be deducted. Once these additional factors are taken into account (i.e. 420-100-250-84) it suggests that the global budget for limiting warming to 1.5 degrees is already expended at a probability of 66% (Lloyd, R per com, Jan 2020).

¹ Jackson, T and R Webster. 2016. *Limits Revised A review of the limits to growth debate*. All Party Parliamentary Group. Retrieved from <http://limits2growth.org.uk/revisited>

² Michaux S, *Oil from a Critical Raw Material Perspective*.
http://tupa.gtk.fi/raportti/arkisto/70_2019.pdf

³ IPCC 1.5 report October 2018

⁴ IPCC 1.5 report October 2018, Table 2.22

To remain at 2.0 degrees, the IPCC estimate is 1,320Gt. Other gases will contribute more (350Gt), so the remaining budget ends up being 890Gt from 2020 (i.e.1320-350-84) or about 20 years at current emissions rates and a 66% chance. Thus, globally, we need to roughly halve our omissions by 2030.

Regarding a budget for NZ, when the 2 degree C global budget of 890Gt is distributed equally on a per capita basis, a budget for New Zealand amounts to 593Mt, which would be exhausted in 15 years at a constant current rate of 40Mt/an. If a path is set to decline from 40 Mt to zero linearly, that would take about 30 years or till 2050 which is the Government's goal at the same probability.

Table 2.2 | The assessed remaining carbon budget and its uncertainties. Shaded blue horizontal bands illustrate the uncertainty in historical temperature increase from the 1850–1900 base period until the 2006–2015 period as estimated from global near-surface air temperatures, which impacts the additional warming until a specific temperature limit like 1.5°C or 2°C relative to the 1850–1900 period. Shaded grey cells indicate values for when historical temperature increase is estimated from a blend of near-surface air temperatures over land and sea ice regions and sea-surface temperatures over oceans.

| Additional Warming since 2006–2015 [°C] ⁽¹⁾ | Approximate Warming since 1850–1900 [°C] ⁽¹⁾ | Remaining Carbon Budget (Excluding Additional Earth System Feedbacks ^{*(5)}) [GtCO ₂ from 1.1.2018] ⁽²⁾ | | | Key Uncertainties and Variations ^{*(4)} | | | | | |
|--|---|---|------|------|---|--|--|---|--|--|
| | | Percentiles of TCRE ^{*(3)} | | | Earth System Feedbacks ^{*(5)} | Non-CO ₂ scenario variation ^{*(6)} | Non-CO ₂ forcing and response uncertainty | TCRE distribution uncertainty ^{*(7)} | Historical temperature uncertainty ^{*(1)} | Recent emissions uncertainty ^{*(8)} |
| | | 33rd | 50th | 67th | | | | | | |
| 0.3 | | 290 | 160 | 80 | Budgets on the left are reduced by about -100 on centennial time scales | ±250 | -400 to +200 | +100 to +200 | ±250 | ±20 |
| 0.4 | | 530 | 350 | 230 | | | | | | |
| 0.5 | | 770 | 530 | 380 | | | | | | |
| 0.53 | -1.5°C | 840 | 580 | 420 | | | | | | |
| 0.6 | | 1010 | 710 | 530 | | | | | | |
| 0.63 | | 1080 | 770 | 570 | | | | | | |
| 0.7 | | 1240 | 900 | 680 | | | | | | |
| 0.78 | | 1440 | 1040 | 800 | | | | | | |
| 0.8 | | 1480 | 1080 | 830 | | | | | | |
| 0.9 | | 1720 | 1260 | 980 | | | | | | |
| 1 | | 1960 | 1450 | 1130 | | | | | | |
| 1.03 | -2°C | 2030 | 1500 | 1170 | | | | | | |
| 1.1 | | 2200 | 1630 | 1280 | | | | | | |
| 1.13 | | 2270 | 1690 | 1320 | | | | | | |
| 1.2 | | 2440 | 1820 | 1430 | | | | | | |

The IPCC 1.5deg report also makes it clear that the difference between the risks for natural and human systems between 1.5 degrees and 2 degrees is significant (see Figure SPM 2 from the report). As they say, "Climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase with global warming of 1.5°C and increase further with 2°C"⁵.

The implication is that the capacity of natural and human systems to adapt successfully to 1.5 degrees and still retain an agreeable existence will be sorely tested, let alone the extremes (in both degree and frequency) accompanying 2 degrees.

Taking a more ambitious reduction path also reduces the risk of passing a climate "tipping point". Two decades ago, such an event was considered likely only if global warming exceeded 5 °C above pre-industrial levels. Yet both the recent IPCC Special Reports (2018 and September 2019) suggest that tipping points could be exceeded even between 1 and 2 °C of warming"⁶.

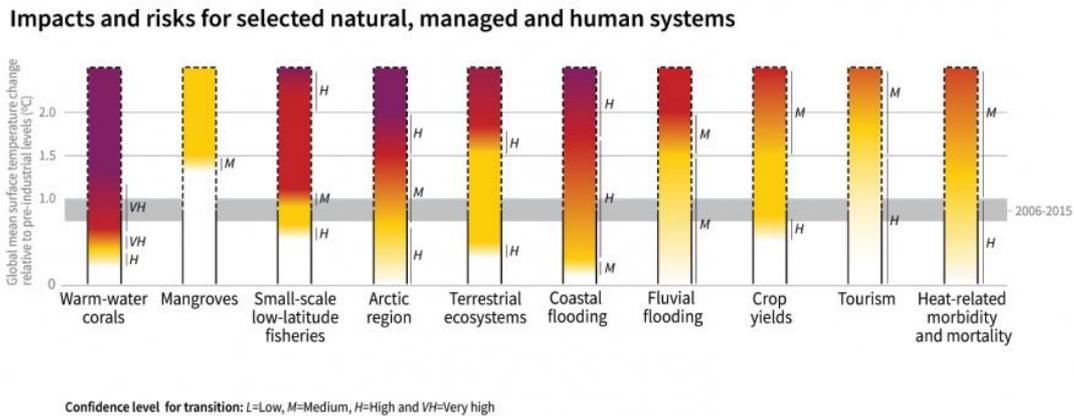
⁵ https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Headline-statements.pdf

⁶ Lenton T., Rockstrom J. et al, *Climate tipping points — too risky to bet against*, 27 November 2019, <https://www.nature.com/articles/d41586-019-03595-0>



Moreover, they state that, "Avoiding overshoot and reliance on future large-scale deployment of carbon dioxide removal (CDR) can only be achieved if global CO2 emissions start to decline well before 2030 (high confidence)" when the necessary technology remains unproven for that purpose.

Figure SPM 2 ⁷



Of course, biophysical limits other than atmospheric assimilative capacity also impact on the sector, such as freshwater quality, soil, biodiversity, energy return. They also will have to be taken into consideration if the Government is to achieve its long-term wellbeing and sustainability goals.

On the basis of this science, exceeding the limits to growth is causing an existential crisis. This calls for urgent and decisive leadership focused on eliminating all mining activity inconsistent with re-establishing a stable climate and steady state economy.

Also relevant is the distortion effect of continued extraction of some minerals at low cost (often aided by opportunistic investment and subsidy) suppressing the development and adoption of substitutes. Full cost pricing, including external costs for all virgin materials is required.

Therefore, New Zealand, through the Government and its agencies (e.g. the Climate Change Commission) and procedures (e.g. RMA and ETS when they are reformed), must plan how to optimise the use of its remaining budget allocation. Every sector and part of its economy needs to change so that the cumulative emissions follow the agreed emissions drawdown path without exceeding the budget.

If the extractive industries are to play their part responsibly, the Act needs to refer to these wider plans and strategies. The relevant place for such reference is in para 2 of Section 1A of the Act. The sector also needs to take into account commitments made by the Government about reducing its carbon emissions. For example, New Zealand is one of the countries pledged to the Powering Past Coal Alliance's Declaration to accelerate the transition from coal to clean energy ⁸.

WR Recommendation on Changes to 1a (2)

- i. The allocation of rights to prospect for, explore for, and mine Crown-owned minerals should only be granted when-

⁷ <https://www.ipcc.ch/sr15/chapter/spm/>

⁸ Powering Past Coal Alliance, <https://poweringpastcoal.org/about/declaration>

- a. the allocation is sufficient to provide for the basic necessities of life within safe biophysical limits and a sensible energy return;
- b. hazardous pollution and ecological degradation are prohibited or minimised, and all wastes kept within the safe assimilative capacity of the local environment;
- c. adequate plans exist to show that resources used for the extraction, will be recycled;
- d. when recycling industries are in place to recycle and reuse manufactured product that the sector does not necessarily directly produce itself;
- e. no feasible renewable alternatives exist;
- f. the decline in the rate at which non-renewable resources can be extracted be set to equal or be greater than the rate at which renewable substitutes are being developed;
- g. the application is consistent with other Government strategies and policies and commitments that together, maintain healthy, functioning and resilient life-support systems across New Zealand.
- h. The only reason for one or more of these above conditions to be waived is when medium- to longer-term advantage of observing the biophysical constraints can be achieved through (for example) new technology and innovations.

2. Vision

World-leading

*We want to support practices that effectively deliver the resources we need in a way that preserves the environment, iwi/hapū and the communities involved. The world should be able to look to New Zealand for an exemplar of good regulation and industry practice. While ambitious, we already have a head start in the strong culture of responsibility that exists across industry. Through partnering with iwi, industry, communities and Government, we can extend this head start towards a future where we lead the world in the way we develop resources. **Source: Responsibly Delivering value, (25)***

WR Comment on the Proposed Vision

2.1 Transition Speed

To be a world leader, New Zealand will have to transition fast to the new low-carbon economy and so provide/sell expertise and technology to those following.

2.2 World Leading

We want to be world leading not in the way we develop non-renewable resources, but in the way we conserve and utilise them.

2.3 Absence of a Basic Purpose

Absent from this vision is what should be the basic purpose of the sector: to provide the resources from which materials, goods and services contribute to the ability of New Zealanders to live fulfilling and genuinely sustainable lives.

2.4 Strong Culture of Responsibility

We do not accept that a strong culture of responsibility exists within the sector. The sector has considerable work to do to persuade New Zealanders to believe it has the public's interests at heart, rather than narrow commercial and short-sighted interests that have manifested themselves in the past.

From the late 1950s and 1960s, Humble Oil, later Exxon Mobil, knew about the significant contribution of fossil fuels to the threat of climate change. Between 1979 and 1983, the American Petroleum Institute, together with the USA's largest oil companies, ran a task force to monitor and share climate research, indicating that the oil industry, not just Exxon alone, was aware, far earlier than previously acknowledged, of its possible impact on the world's climate. The group's members included senior scientists and engineers from nearly every major US and multinational oil and gas company. They included Exxon, Mobil, Amoco, Phillips, Texaco, Shell, Sunoco, Sohio as well as Standard Oil of California and Gulf Oil, the predecessors to Chevron. All this according to internal documents obtained by InsideClimate News and interviews with the task force's former director.

In New Zealand, when the fifth Labour Government (1999-2008) talked about introducing a carbon tax, business groups commissioned a report that estimated it would cost about \$1 billion or 1% of GDP. McDonald from Tiwai Point Smelter joined other business leaders campaigning against a tax ⁹.

Pike River Mine

After the Royal Commission on the Pike River disaster, the in-seam drilling contractor Valley Longwall International pleaded guilty and was fined just under \$50,000. Whittall, the General Manager of Pike River Mine, pleaded not guilty, and the company, then in receivership, did not even make an appearance to plead. District Court Judge Farish found against the company, citing "a systematic failure of the company to implement and audit its own (inadequate) safety plans and procedures". She ordered the company pay \$3.4 million in reparation to the victims' families, and imposed a fine of \$760,000 for multiple breaches of the law. The judge was well aware, however, that any punishment she handed down to the company would be all but meaningless, given the company's limited funds and the fact that it owed a number of creditors ¹⁰.

The Ministry of Business, Innovation and Employment announced that it had dropped all 12 charges against the only person considered for prosecution, Peter Whittall. Details emerged that one of the factors leading to MBIE dropping the charges was a deal whereby the \$3.4 million in compensation owed to the families would be paid by the directors' insurance. MBIE says that Whittall's offer was a relatively minor factor in their decision to withdraw the charges. Rebecca Macfie says that though MBIE was advised that there was sufficient evidence to possibly get a conviction, it failed to meet the "public interest" test, which factors in the severity of the sentence if a guilty verdict is reached. In this case, the most likely outcome would have been a relatively light financial fine and no custodial sentence. Perversely, the fact that relatively minor charges carrying a light sentence had been laid against Whittall became a justification for dropping the changes.

Since then, new requirements for directors and officers to show due diligence that health and safety requirements are in place. As the institute of Directors and Worksafe New Zealand state:

- directors and other officers will be personally liable if they breach their due diligence duty;

⁹ *Hot Air*. Film Documentary. Available at <https://www.nzonscreen.com/title/hot-air-2014>

¹⁰ D. White. May 2014. *No consequence after Pike River*. <http://thewireless.co.nz/articles/no-consequence-at-pike-river>

- the maximum penalty for a serious breach of the due diligence duty is imprisonment for up to 5 years and/or a fine of up to \$600,000.
- insurance cannot be used to pay fines under HSWA6 ¹¹.

While these requirements heighten and improve accountability for health and safety matters, they do not extend to the health and care of the environment.

Tiwai Point Aluminium Smelter

Taha Asia Pacific, owned from Bahrain, contracted with New Zealand Aluminium Smelters to take gross syphoned off from the main smelting operation. In August 2018, it went into liquidation. A deal to share the \$4 million cost of cleaning up the waste was made: the smelter and the government will pay three-quarters of the cost, and the four Southland councils and four landowners will cover the rest. Environment Minister David Parker said the government decided to pay a share of the clean-up cost rather than spend it on legal fees. As he explained, "I'd have to say this should never be able to happen again and if it ever did arise again, I would be expecting the Crown to be suing those responsible rather than contributing to the cost of removal of this substance ¹². The primary responsibility for the waste should rest with the smelter, said Mr. Parker.

Tui and Martha Mines

The Waihi Gold Mines are required to fund a bond for rehabilitation. Some \$43.535 million dollars are held for the rehabilitation aspect of the Waihi Gold mines. All these bonds, which are held in favour of the Waikato Regional Council and Hauraki District Council, are reviewed on an annual basis in a process undertaken in conjunction with the Hauraki District Council and determined by the consent conditions. In simple terms, the Company provides a rehabilitation report each year detailing the works that have occurred over the past year, those proposed for the next year, and those required to rehabilitate the site. Depending on the nature of the forthcoming works, the report is reviewed by the independent peer reviewers associated with the site and any other experts deemed necessary by the Councils ¹³.

But there is significant doubt about whether the amount is sufficient. In 2007, 5000 kg of heavy metals – zinc, iron, manganese and 100 kg of arsenic, cadmium, and lead – were released from the Tui mine. The Tui and Tunakohoa streams, which flow into the Waihou River, and from there into the Firth of Thames, are totally devoid of fish and invertebrate life, as well as being unsafe for humans. This annual dose of contamination is likely to have been occurring at similar levels since the Tui mine closed in 1973. Heavy metals are continuously released into the waterways from approximately 135,000 tonnes of mine waste (tailings) and two small mining tunnels.

in March 2010, an Assessment of Environmental Effects revealed the alarming extent of pollution from the mines. Plans are being prepared to clean up contamination from the Tui Mine at a cost to taxpayers of approximately \$17.5 million, says Coromandel Watchdog spokesperson Denis Tegg. Seeing that Tui is New Zealand's most contaminated site, when you compare Tui's 135,000 tonnes of

¹¹ Institute of Directors and Worksafe New Zealand. *Health and Safety Guide: Good Governance for Directors* (2016).
https://www.iod.org.nz/Portals/0/Governance%20resources/Health%20and%20Safety%20Guide_Good%20Governance%20for%20Directors.pdf

¹² Heron, M. March 20 2018. "Govt issues warning to smelters over toxic waste."
<https://www.radionz.co.nz/news/political/352885/govt-issues-warning-to-smelters-over-toxic-waste>

¹³ Sheryl Roa, Principal Advisor – Consents | Resource Use. Waikato Regional Council | Te Kaunihera ā Rohe o Waikato. Email response 5 April 2018.

tailings to the current 40 million tonnes of tailings at Waihi's Martha Mine, the potential threat to waterways is a very frightening scenario," says Mr. Tegg.

The Martha Mine, run by Newmont Waihi Gold, has generated tailings approximately 300 times larger than those at the Tui mine. Using the Tui mine costings as a benchmark, if just 10% of the Martha mine tailings required similar remedial work in the future the cost to taxpayers would be approximately \$500 million¹⁴.

In 2016, the Coromandel Watchdog also questioned the safety of the tailing dams in the case of an earthquake¹⁵. The Minister of Energy evaded a response, saying that it was a matter for the Waikato Regional Council.

2.5 Public Advocacy

The feedback we received from the NGO sector is that the extractive industries are unsympathetic, dismissive, and reluctant to consider any of the issues being put forward that differ from its own. The sector draws on its financial resources to promote its traditional positions, and uses its advertising expenditure to support programmes and media segments such as sporting activities, just like the tobacco industry. Its political lobbying lacks a strong culture of responsibility to the public good in general.

WR Recommendations on the Vision

- ii. That a vision ought to incorporate the fundamental aim of the sector: to provide essential materials, goods and services sufficient to support in a sustainable and efficient way, consistent with national emission reduction targets, and the well-being of current and future New Zealanders.
- iii. That the sector be encouraged to recognise that its culture and values are out of step with many in the New Zealand community, especially young people, and that it be urged to seek guidance on how to remedy the problem and implement such advice.

3. Principles

Principles to guide everyone

1. *The environment, ecosystems, and biodiversity are respected now and in the long term.*
2. *Māori cultural interests are understood and respected.*
3. *Support the transition to a carbon neutral economy by 2050.*
4. *The impact on people, communities and regions are managed in a just and inclusive way.*
5. *Support a circular economy by meeting resource needs through resource efficiency, recycling and reuse.*
6. *Actions taken within the minerals and petroleum sector should align with the strategic direction of other related sectors and Government strategies.*

¹⁴ Coromandel Watchdog. The toxic legacy of a mine. <https://watchdog.org.nz/older-news/multimedia/true-extent-of-toxic-legacy-from-coromandel-mine/>

¹⁵ Tegg, D. Nov 2016. How earthquake safe are the mine tailings dams at Waihi? <https://teggtalk.wordpress.com/2016/11/30/how-earthquake-safe-are-the-mine-tailings-dams-at-waihi/>

Principles for the Crown:

7. The Crown honours its duty towards Māori as a Treaty partner, adheres to the Principles of the Treaty of Waitangi and its duty to meet settlement commitments.
8. The Crown receives a fair financial return for its minerals and petroleum.
9. The Crown regulates in a way that is fair, transparent, reasonable and proportionate.
10. The Crown honours the rights of current permit holders to continue production or exploration activities under existing permits.
11. The Crown makes policy decisions based on the best evidence, and accounting for the foreseeable need for minerals and petroleum, both now and for future generations.
12. The Crown proactively engages and consults with relevant stakeholders and decisions are communicated in a clear and transparent way.

Principles for industry (in addition to principles 1-6 and voluntary principles adopted by industry):

13. Pursue continuous improvements in health and safety.
14. Strive to implement industry best practice in operations.
15. Seek innovative ways to improve the resource efficiency of extraction operations; and minimise the negative impacts of these operations.
16. Engage with stakeholders and implement management systems to understand and manage impacts, and realise opportunities for redress where needed.

While this Strategy is a living document, it will be formally reviewed every five years to ensure that it remains relevant, and continues to meet the needs and ambitions of New Zealanders in the transition to a low emissions economy. **Source:** *Responsibly Delivering Value, (10)*

WR Comment on the Proposed Principles

3.1 The concept of Respect [Principle 1]

Any change respects the environment by preserving it, restoring it where it is degraded or enhancing it.

To build a more ecological ethical framework¹⁶, we recommend the adoption of core ethical principle or principles such as key moral concepts including respect for nature, care, integrity, oneness, intrinsic value, resilience, stewardship, wholeness, and reverence for life. If we choose just one principle, it needs to be rich enough to generate the secondary concepts, schema, and sets of obligations that to define a relationship to guide behaviour. If more than one concept is chosen, then they need to be integrated to avoid conflicts and contradictions¹⁷.

The World Charter for Nature ("Nature shall be respected and its essential processes shall not be impaired") promotes the notion of respect. Hence, we support the adoption of this principle.

We note that for the principle to be effective, much work will need to be done to translate it into a statement of purpose, codes of conduct, policies, strategies, risk analysis, implementation, and reporting on the impacts and effects of its adoption.

¹⁶ The Earth Charter uses a number of concepts including respect, ecological integrity, care, equity, and justice; see <http://earthcharter.org/>.

¹⁷ Howell, R., "How are we to live?" Fabians NZ, 2015. <https://drive.google.com/file/d/0B95bmHyVng3KZzJxb0R1WXF1ejA/view>

3.2 Transition to a Carbon Neutral Economy by 2050 [Principle 3]

Speed of Transition

The chosen date of 2050 suggests that we have time for an orderly and smoothly paced transition to a low carbon economy. But in Section 1 above, Biophysical Constraints, our evidence shows that we need rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems. These transitions, which will be disruptive, disorderly, and transformative across the economy – particularly in the mining sector – must be immediate, not over 30 years. The impacts of a rise of to just below 1.5°C are already obvious in Australia. Such damage will become more severe and more prevalent worldwide as we move towards 2.0°C. One estimate of the difference between achieving a 1.5 degrees C and 2 degrees C target is the death of 150 million people from air pollution alone¹⁸. That is the equivalent of 25 Holocausts, 3 times the size of the death toll of the Great Leap Forward in China, and twice the number of deaths occurring in World War 2¹⁹.

Despite the commitments made by each country at the COP21 meeting in Paris in 2015, and assuming that those commitments will be met, global average temperatures will still increase to more than 3°C over pre-industrial levels. We are currently tracking for over 4.0°C²⁰.

Consistent with this assessment, 11,000 scientists from 153 countries warned in a joint statement of 2019 that without major transformations to global society “We declare clearly and unequivocally that planet Earth is facing a climate emergency,” and we face “untold suffering due to the climate crisis”²¹. They confirm that there is no time to lose: “The climate crisis has arrived and is accelerating faster than most scientists expected. It is more severe than anticipated, threatening natural ecosystems and the fate of humanity.” One of their recommendations is that fossil fuel be left in the ground.

It is thus clear that we will thus not restabilise the climate without immediate and profound change in the way that the mining sector operates.

Scenario Strategy

In *The Art of the Long View*, Peter Schwartz describes strategic processes in Royal/Dutch Shell that do not assume business as usual. But these are absent from the November 2019 document *Responsibly Delivering Value*. Schwartz explains how prior to the 1973 the oil price shock after the Yom Kippur war in the middle East, the strategic planners took their directors through at least two scenarios. Either the oil price would stay stable or there would be an oil price crisis sparked by OPEC.

In 1983, the company considered two further scenarios: "Incrementalism" and "The Greening of Russia". The latter considered the impact of a virtually unknown man named Gorbachev if he came to power. In both of these examples Shell prepared for significant changes that contradicted the traditional mindset. Shell benefitted accordingly.

¹⁸ Shindell, D. et al. March 2018. "Quantified, Localized Health Benefits of Accelerated Carbon Dioxide Emissions Reductions." *Nature Climate Change* 8 pp.291-95. Retrieved from <https://doi.org/10.1038/s41558-018-0180-y>

¹⁹ Wallace-Wells, D. 2019. *The Uninhabitable Earth*, Alan Lane.

²⁰ En-ROADS Climate model, Climate interactive, 2020

²¹ <https://www.theguardian.com/environment/2019/nov/05/climate-crisis-11000-scientists-warn-of-untold-suffering>

Systems Approach

The authors of *Responsibly Delivering Value* state that:

Plants need nitrogen to survive. New Zealand produces urea at Kapuni in Taranaki, which is an inexpensive form of nitrogen fertilizer. It is produced from natural gas, sourced from the Maui gas field. Petroleum by-products can also be used as fertilizer. Organic fertilizers also exist, and researchers are continuously exploring ways to improve the production of sustainable fertilizer.

This mindset and approach fail to consider the harmful effects of agricultural nitrogen and the introduction of forms of farming such as regenerative and organic agriculture, that do not use it. Nor does it consider the introduction of non-animal or plant-based meat production.

Subsidizing Emissions

For the last decade, a small number of industrial polluters – known as Emissions Intensive, Trade Exposed (EITE) industries – have received free credits equating to 90 per cent of their emissions, almost entirely insulating them from the cost of their pollution. Rio Tinto, for example, receives free credits in addition to other subsidies. If it was to continue operating and keep production at current levels, it would be subsidised to the tune of \$1b by 2030. One has to question the value of these subsidies, and ask would it not be better to use the money instead to transition workers to alternative resilient work and different technologies.

The immediate and near future will to be characterised by the increase of severe weather events which like Australia's experience with its fires, are outside the business as usual frameworks. Any plans for a transition to a carbon-neutral economy in New Zealand will need to prepare for unexpected developments and events such as the 1973 the oil price shock, and geopolitical manoeuvrings between Western, Asian and Middle Eastern interests.

Strategic planning for the future needs to take into account the art of the long view, which is unfortunately absent from current documents.

3.3 A Circular Economy [Principle 5]

The concept at the heart of the circular economy is to ensure we can unmake everything we make. It is based on the following three principles: design out waste and pollution; keep products and materials in use; and regenerate natural systems²². The discussion document states that the sector should support a circular economy by meeting resource needs through resource efficiency, recycling and reuse.

More than one framework is available for an appropriate human-Earth relationship²³ and the evaluation of safe environmental practices. We discuss the criteria for the evaluation of different options further down this section.

²² Ministry for the Environment <https://www.mfe.govt.nz/waste/circular-economy>

²³ Human-human responsibilities are those between humans, such as the responsibility that parents have for caring for their children. A human-Earth responsibility is when humans have a responsibility for caring for the non-human world such as looking after animals and protecting the air from pollution. Howell, R. 2018. *An Environmental Ethic*. <http://a-resilient-world.blogspot.com/>

We support the adoption of a circular economy, recognising that the whole life cycle of the production process from extraction to manufacturing products to reuse, is not vertically integrated. Hence the circular economy framework needs to be supplemented with principles and policies that apply to each of the other segments of the life cycle.

An example is the three rules proposed by Herman Daly²⁴. It should be noted that Daly's framework is consistent with modern scientific laws, contrary to the current economic systems, and in particular the thermodynamic laws.

Accordingly, if the Government adopts the circular economy principle, then it needs to ensure that any licences for further mining are only approved when recycling industries are in place to recycle and reuse manufactured product that the sector does not necessarily directly produce.

Providing mineral recycling services would be an obvious, responsible and potentially profitable way of for some mining operations to compensate for the necessary restricted mining of new materials.

3.4 Crown Regulation [Principle 9]

The Crown regulates in a way that is fair, transparent, reasonable and proportionate.

The obvious questions arising from this principle are "to whom does it apply?", "what are the criteria for fair and reasonable" and "what is proportionate and why?" In this current form it adds nothing to the strategy.

3.5 Current Permit Holders [Principle 10]

The Crown honours the rights of current permit holders to continue production or exploration activities under existing permits.

The country and the world are still waiting for the massive redirection that the IPCC argued was required: The IPCC 1.5 Report states that avoiding a 1.5 °C scenario requires rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems²⁵.

This situation is analogous to that of the Phoney War early in WW2, which was marked by a lack of major military operations. Everyone recognised that there was a war, but did little by way of preparation. Only when Churchill was appointed did changes come by way of investment: Britain rapidly switched to building fighter rather than bomber planes. It was also a time when Western alliance-based multinational companies and financiers were duplicitous in working for profit rather than supporting the war effort²⁶.

As this analogy suggests, our current situation is similar to that of Bomber Command in WW2, when its leaders failed to see beyond their narrow perspective and interests.

²⁴ Herman Daly, *Steady-State Economics*, second edition (Washington, DC: Island Press, 1991). Herman Daly, *Beyond Growth* (Boston MA: Beacon Press, 1996). Herman Daly, *Ecological Economics and Sustainable Development* (Cheltenham, UK: Edward Elgar, 2007).

²⁵ IPCC 2018. *SPECIAL REPORT Global Warming of 1.5 °C* <https://www.ipcc.ch/sr15/>

²⁶ LeBor, A. *A tower of Babel* NY Public Affairs 2013.

3.6 Public involvement and Strategic Assessment by the Crown and Sector (Principles 12 and 16)

In matters concerning the sustainable management of all natural and physical resources, it is repeatedly demonstrated that involving the wider public, with direct pecuniary interests in the outcome, is most likely to result in sound long-term decisions. Two mechanisms in particular will help ensure that this is achieved.

First, both public and community need to be involved in all prospecting and mining proposals, not just selected sector stakeholders and Ministry representatives. This must be in addition to, not instead of, decision-making and consultation under the RMA and other laws.

Second, mandatory Strategic Environmental Assessments need to be done in relation to minerals programmes, mineral consent applications, consent exchange proposals (ie from exploration to mining), and environmental impact assessments. All of these need to be publicly reviewable and open for public and independent scrutiny.

The Strategic Environmental Assessment should consider whether the minerals activity is needed at all, together with alternative methods and substitutions by renewables and alternative locations, and biodiversity impacts. Should the RMA not be amended, consideration of greenhouse gas emission alternatives and the use of the product should be considered, as well as production methods and ancillary works affecting the sensitivity of the receiving environment.

WR Recommendations on Principles

- iv. We support the adoption of the moral principle of respect, but note that to be effective, much work is required to in translate it into a statement of purpose, codes of conduct, policies, strategies, risk analysis, actions taken to implement the principle, and reporting on the impacts and effects of such implementation.
- v. The sector needs to recognise that rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems will be required. We urge the sector to seek guidance from appropriate experts on the fuller impacts and implications of such a change and embracing transition.
- vi. That various strategic exercises be commissioned to take into account the strategic tools associated with the art of the long view, and to include options and scenarios based on the disruptive events associated with an increase in severe weather events.
- vii. That because the framework of a circular economy rests on more fundamental principles, the following principles replace references to the circular economy:
 - a) *That the human-Earth principle be based on enabling humans to live within the capacity of the Earth to support all life;*
 - b) *That the sector's principles, policies and practices be made consistent with modern science;*
 - c) *That its economic principles be consistent with this science.*
- viii. That as a principle, the requirement that Crown honour the rights of current permit holders to continue production or exploration activities under existing permits, be deleted. Compensation for lost return on investment, as applied to the coal industry by the German Government, may be fair in some instances.

- ix. The Mining Act is required to provide the opportunity for public participation in all prospecting and mining proposals. Also, that Strategic Environmental Assessments be undertaken and made publicly available for all mining programmes, consent applications/exchange proposals, and environmental impact assessments.

4. Environmental and Social Responsibility

Environmental and Social Responsibility

Minerals and petroleum development can have significant impacts on the local environment and communities. Environmental and social responsibility is about avoiding, mitigating and remedying negative impacts and maximising positive impacts during all steps of development.

Environmental responsibility includes: avoiding, and if unavoidable, minimising disturbance, waste, pollution and emissions; efficiently using inputs such as water and energy; seeking positive environmental outcomes; and rehabilitating the environment during operations and once operations cease.

Social responsibility includes: active engagement between operators and iwi/hapū and the wider community to ensure community and cultural interests are respected and meaningfully considered.

*Desirable outcomes are about creating opportunities to benefit the environment and communities. This can include harnessing the funds and resources that mining can bring to enhance environmental understanding, advance pest control and providing employment opportunities and social amenities specifically to local iwi and communities. **Source: Responsibly Delivering Value, (25)***

WR comment on Environmental and Social Responsibility

In Section 4 of *Submission by Wise Response Society on the Conduct of Financial Institutions to Financial Markets Policy Building, Resources and Markets, Ministry of Business, Innovation and Employment* in June 2019, we pointed out the conceptual muddle displayed by the majority of definitions of environmental and social responsibility. For example, the Responsible Investment Association Australasia (RIAA) states that responsible investment sector is hugely diverse, due to a plethora of investment approaches, all in addition to fundamental financial analysis. Some lack any moral assessment.

The RIAA declares that ethical investment cannot be defined. But New Zealand strongly supported United Nations' Universal Declaration of Human Rights. In 1977, New Zealand set up the Human Rights Commission, working under the Human Rights Act (1993). Its purpose is to promote and protect the human rights of all people in Aotearoa New Zealand. These human-human responsibilities are at the very minimum grounded in this value.

As Henry Shue cogently argues, Human-Earth responsibilities extend this idea. Using the social contract tradition to advocate for a rights approach based on fairness²⁷, he²⁸ states that the purpose of a right is to provide protection for human

²⁷ Henry Shue, "Ethics, the Environment and the Changing International Order," *International Affairs* 71, no. 3 (1995): 453–461. Henry Shue, "Global Environment and International Inequity," *International Affairs* 75, no. 3 (1999): 531–545. Henry Shue, "Human

beings against a threat to which they are vulnerable and against which they may be powerless without such protective action. To be effective, such protective action must be international and intergenerational. Rapid climate change places current and future generations in the kind of circumstances that call for the construction of rights-protecting institutions. Climate change threatens the right to life, the right to health, and the right to subsistence. These human-human and human-Earth responsibilities can be encapsulated in different forms, but remain necessary components of any validated principles, codes or charters, such as the Earth Charter.

The difficulty with using concepts of environmental and social responsibility without clear validated definitions means that companies and organisations have a smorgasbord of choices, many of which do not entail any significant changes from current unethical behaviour, while being able to claim they are acting responsibly.

WR Recommendations on Environmental and Social Responsibility

- x. Many of the notions of social and environmental responsibility are invalid due to conceptual muddles, many of which contain no moral components. The choice of appropriate moral principles should be based on well-validated measures. The Earth Charter is an example of one such code. WR recommends that more relevant and validated measures embedded in codes or charters such the Earth Charter be adopted.

5. Wellbeing: Natural Capital

New Zealand Emissions Trading Scheme (ETS) Emissions are priced and managed in New Zealand through the ETS, which is the Government's main tool for meeting domestic and international climate change targets.

CMA Schedule 4 provides for the protection of the surface of high value conservation land, such as National Parks, from all but minimum impact exploration and mining activity, by limiting access to it. Resource Management Act 1991 (RMA) The RMA regulates the environmental effects of minerals and petroleum activities on land and within the territorial sea. Resource consents, if required, will impose conditions to avoid, remedy, or mitigate adverse effects of the proposed activity on the environment.

Conservation legislation The Department of Conservation is responsible for protected species under the Wildlife Act 1953, and Marine Mammals Protection Act 1978, Conservation Act 1987. Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ) Under the EEZ Act the Environmental Protection Authority manages the environmental effects of petroleum and minerals activities beyond the territorial sea. A marine consent is required from the EPA for those activities not permitted in the regulations.

*Other Acts Biodiversity Act 2002, Hazardous Substances and New Organisms Act 1996 and Maritime Transport Act 1994. **Source: Responsibly Delivering Value, (17)***

rights, climate change, and the trillionth ton," in *The Ethics of Climate Change*, ed. Denis G. Arnold (Cambridge, UK: Cambridge University Press, 2011), 292–314.

²⁸ Henry Shue, "Ethics, the Environment and the Changing International Order," *International Affairs* 71, no. 3 (1995): 453–461. Henry Shue, "Global Environment and International Inequity," *International Affairs* 75, no. 3 (1999): 531–545. Henry Shue, "Human rights, climate change, and the trillionth ton," in *The Ethics of Climate Change*, ed. Denis G. Arnold (Cambridge, UK: Cambridge University Press, 2011), 292–314.

WR Comment on Wellbeing and Natural Capital

5.1 What do we mean by a successful economy?

Growth in GDP is seen by traditional economists as the measure of success for an economy. Yet is an inadequate and misleading indicator. It does not include or it undervalues some economic activity, including women's and volunteer work. It includes the cost of replacing or coping with events that have destroyed wealth, such as leaky homes (\$47 billion at least), and the Christchurch (\$40 billion) and Kaikoura earthquakes. It ignores the contribution that the environment makes towards our well-being. It also glosses over the many inefficiencies in our economic life, such as the construction sector, badly-managed prisons, or resource depleted areas like the education, health and welfare sectors. It ignores the many people and families in poverty. Claims that the New Zealand economy is well-managed and successful because of a growth in GDP when it ignores these factors are just nonsense.

The Government has changed the mandate of the Reserve Bank to include supporting maximum sustainable employment (in addition to keeping consumer price inflation low and stable). It has introduced the framework of a Well-being Budget based on four capitals: financial/physical, human, social, and natural. For the 2019 budget five priorities were established:

- supporting mental wellbeing for all New Zealanders, with a special focus on under 24-year-olds
- reducing child poverty and improving child wellbeing, including addressing family violence
- lifting Māori and Pacific incomes, skills and opportunities
- supporting a thriving nation in the digital age through innovation, social and economic opportunities
- creating opportunities for productive businesses, regions, iwi and others to transition to a sustainable and low-emissions economy.

These priorities give more importance to the human and social capitals, not only because the natural capital component requires a lot of work for it to become fully operational, but also because during the last decade, social and human capitals were grossly run down. Nevertheless the 2019 Wellbeing Budget is an important step to moving away from a neo-classical economic framework that has dominated economic practice for the last four decades.

WR supports these moves to define more appropriately what is meant by a successful economy.

5.2 Implementation of Natural Capital, and the use of the ETS and RMA

WR agrees and supports the conclusions of the report of the Parliamentary Commissioner where he states that there are huge gaps in data and knowledge that undermine our stewardship of the environment ²⁹.

The ETS is currently under review. The submission of Wise Response is available at www.wiseresponse.org.nz. Reforms of the ETS and the RMA may or may not

²⁹ Parliamentary Commissioner for the Environment. Nov. 2019. "Focussing Aotearoa New Zealand's environmental reporting system."
<https://www.pce.parliament.nz/publications/focusing-aotearoa-new-zealand-s-environmental-reporting-system>.

provide the necessary guidelines and regulations for the effective introduction of environmental protection.

WR Recommendations on Wellbeing: Natural Capital, the use of the ETS and RMA

- xi. WR supports recent moves by the Government to define more appropriately what is meant by a successful economy.
- xii. That recognition be given to the current inability to use the notion of natural capital due to huge gaps in data and knowledge.
- xiii. That proposed reforms of the ETS and the RMA may or may not provide the necessary guidelines and regulations for the effective introduction of environmental protection.

6 Purpose

The current purpose of the CMA is focused on developing the Crown mineral estate for the benefit of New Zealand. Specifically, section 1A of the CMA (the purpose statement) states that:

- (1) The purpose of this Act is to promote prospecting for, exploration for, and mining of Crown owned minerals for the benefit of New Zealand.*
- (2) To this end, this Act provides for—*
 - (a) the efficient allocation of rights to prospect for, explore for, and mine Crown owned minerals; and*
 - (b) the effective management and regulation of the exercise of those rights; and*
 - (c) the carrying out, in accordance with good industry practice, of activities in respect of those rights; and*
 - (d) a fair financial return to the Crown for its minerals. Source: Discussion Document: Review of the Crown Mineral Act p 16*

The Minerals Programmes 2013 set out how the Minister interprets “promote prospecting for, exploration for, and mining of Crown-owned minerals for the benefit of New Zealand”:

- (4) The Minister interprets the words “promote prospecting for, exploration for, and mining of Crown owned minerals” as requiring the Minister and the Chief Executive [of MBIE] to:*
 - (e) ensure that parties interested in prospecting for, exploring for, and mining of Crown-owned minerals are able to do so as readily as possible within the mandate and provisions of the Act; and*
 - (f) publicise and encourage interest and investment in prospecting for, exploring for, and mining New Zealand's Crown-owned minerals.”*
- (5) The Minister sees “for the benefit of New Zealand” as the over-arching objective of the purpose statement and as the touchstone for interpreting the rest of the purpose statement and the provisions of the Act governing various activities and processes. The Minister considers that, within the context and mandate of the Act, “the benefit of New Zealand” is best achieved by increasing New Zealand's economic wealth through maximising the economic recovery of New Zealand's Crown-owned mineral resources.*
- (6) Other important components of “the benefit of New Zealand”, including environmental considerations, are covered in other legislation, as noted in clause 1.4.*

Source: Discussion Document: Review of the Crown Mineral Act (29)

WR Comment on the Purpose of the Crown Minerals Act (CMA)

Taking into consideration the points recommended above, we are concerned about the statement above in the *Discussion Document: Review of the Crown Mineral Act*, namely:

The Minister considers that, within the context and mandate of the Act, "the benefit of New Zealand" is best achieved by increasing New Zealand's economic wealth through maximising the economic recovery of New Zealand's Crown-owned mineral resources.

We are concerned that this leaves open the use of an outdated and narrow definition of economic benefit that is inconsistent with the other steps taken by the Government to modernise the definition of this benefit.

Following on from the discussion in Sections 2 and 3 above, we recommend the statement of purpose refer to the sector providing resources from which materials, goods and services contribute to the ability of New Zealanders to live fulfilling and genuinely sustainable lives. In pursuing this purpose, we should use the notions of the four capitals (financial/physical, human, social and natural), or their equivalent concepts, taking into account modern science, using economic systems that are in accord with scientific principles such as the thermodynamic laws, and respecting nature so that its essential natural processes shall not be impaired.

WR Recommendations on Purpose of the CMA

xiv. That para 1) in Section 1A be replaced by the following: *The purpose of this Act is to provide essential materials, goods and services sufficient to support in a sustainable and efficient way, consistent with national emission reduction targets, the wellbeing of current and future New Zealanders.*

xv. In pursuing this purpose, the following shall be employed

- *the notions of the four capitals (financial/physical, human, social and natural), or their equivalent concepts,*
- *modern science,*
- *economic systems that accord with scientific principles (such as the thermodynamic laws), and*
- *maintenance of enhancement of healthy life-supporting processes at all levels.*

Summary list of Recommendations

- i. The allocation of rights to prospect for, explore for, and mine Crown owned minerals should only be granted when:
 - a. the allocation is sufficient to provide for the basic necessities of life within safe biophysical limits and a sensible energy return;
 - b. hazardous pollution and ecological degradation are prohibited or minimised, and all wastes kept within the safe assimilative capacity of the local environment;
 - c. adequate plans exist to show that resources used for the extraction, will be recycled;

- d. when recycling industries are in place to recycle and reuse manufactured product that the sector does not necessarily directly produce itself;
 - e. no feasible renewable alternatives exist;
 - f. the decline in the rate at which non-renewable resources can be extracted be set to equal or be greater than the rate at which renewable substitutes are being developed;
 - g. the application is consistent with other Government strategies and policies and commitments that together, maintain healthy, functioning and resilient life-support systems across New Zealand.
 - h. The only reason for one or more of these above conditions to be waived is when medium- to longer-term advantage of observing the biophysical constraints can be achieved through (for example) new technology and innovations.
- ii. That a vision ought to incorporate the fundamental aim of the sector: to provide essential materials, goods and services sufficient to support in a sustainable and efficient way, consistent with national emission reduction targets, and the well-being of current and future New Zealanders.
 - iii. That the sector be encouraged to recognise that its culture and values are out of step with many in the New Zealand community, especially young people, and that it be urged to seek guidance on how to remedy the problem and implement such advice.
 - iv. We support the adoption of the moral principle of respect, but note that to be effective, much work is required to in translate it into a statement of purpose, codes of conduct, policies, strategies, risk analysis, actions taken to implement the principle, and reporting on the impacts and effects of such implementation.
 - v. The sector needs to recognise that rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems will be required. We urge the sector to seek guidance from appropriate experts on the fuller impacts and implications of such a change and embracing transition.
 - vi. That various strategic exercises be commissioned to take into account the strategic tools associated with the art of the long view, and to include options and scenarios based on the disruptive events associated with an increase in severe weather events.
 - vii. That because the framework of a circular economy rests on more fundamental principles, the following principles replace references to the circular economy:
 - a) *That the human-Earth principle be based on enabling humans to live within the capacity of the Earth to support all life;*
 - b) *That the sector's principles, policies and practices be made consistent with modern science;*
 - c) *That its economic principles be consistent with this science.*
 - viii. That as a principle, the requirement that Crown honour the rights of current permit holders to continue production or exploration activities under existing permits, be deleted. Compensation for lost return on investment, as applied to the coal industry by the German Government, may be fair in some instances.
 - ix. The Mining Act is required to provide the opportunity for public participation in all prospecting and mining proposals. Also, that Strategic Environmental Assessments be undertaken and made publicly available for all mining

- programmes, consent applications/exchange proposals, and environmental impact assessments.
- x. Many of the notions of social and environmental responsibility are invalid due to conceptual muddles, many of which contain no moral components. The choice of appropriate moral principles should be based on well-validated measures. The Earth Charter is an example of one such code. WR recommends that more relevant and validated measures embedded in codes or charters such the Earth Charter be adopted.
 - xi. WR supports recent moves by the Government to define more appropriately what is meant by a successful economy.
 - xii. That recognition be given to the current inability to use the notion of natural capital due to huge gaps in data and knowledge.
 - xiii. That proposed reforms of the ETS and the RMA may or may not provide the necessary guidelines and regulations for the effective introduction of environmental protection.
 - xiv. That para 1) in Section 1A be replaced by the following: *The purpose of this Act is to provide essential materials, goods and services sufficient to support in a sustainable and efficient way, consistent with national emission reduction targets, the wellbeing of current and future New Zealanders.*
 - xv. In pursuing this purpose, the following shall be employed
 - *the notions of the four capitals (financial/physical, human, social and natural), or their equivalent concepts,*
 - *modern science,*
 - *economic systems that accord with scientific principles (such as the thermodynamic laws), and*
 - *maintenance of enhancement of healthy life-supporting processes at all levels.*

Thank you for the opportunity to submit on this important Act. We would like to be heard on this submission.

The preparation of this submission has involved a number of people with links to the Society. I wish to acknowledge the particular assistance of the following people in its preparation. Their assistance does not imply that each agrees with all parts of this submission.

Dr Robert Howell
Dugald MacTavish, QSM
Emeritus Professor Bob Lloyd
Professor Lisa Ellis
Dr Stephen Knight-Lenihan
Professor emerita Jocelyn Harris

Appendix A: Background to the Wise Response Society Inc.

1. Wise Response is an Otago-based but New Zealand-wide, non-partisan Society, launched in 2013 with the purpose of persuading the New Zealand Parliament, Government and New Zealand society in general, to confront and respond effectively to any confirmed threats arising from the question:

"As demand for growth exceeds earth's physical limits causing unprecedented risks, what knowledge and changes do we need to secure New Zealand's future wellbeing?"

2. Chairperson Sir Alan Mark conducted a nation-wide tour that year with 11 public meetings from Auckland to Invercargill to explain the Society's purpose and strategy, and gain support. The Society's strength is in the wide range of supporters who participate in online discussions around the "limits" theme, many being experts in their professional fields are able to provide multidisciplinary input into our initiatives. Our Patron is Sir Geoffrey Palmer QC.

3. In April 2014, we presented our 5,000-signature petition to Parliament, recommending that they undertake a Risk Assessment of New Zealand, in five subjects as follows:

- i. **Financial security:** the risk of a sudden, deepening, or prolonged global financial crisis.
- ii. **Energy and climate security:** the risk of continuing our heavy dependence on fossil fuels.
- iii. **Business continuity:** the risk exposure of all New Zealand business, including farming, to a lower carbon economy.
- iv. **Ecological/Environmental security:** the risks associated with failing to genuinely protect both land-based and marine ecosystems and their natural processes.
- v. **Genuine well-being:** the risk of persisting with a subsidised, debt-based economy, preoccupied with maximising consumption and GDP and increasing inequality.

4. The Appeal sought a commitment to a quantitative, cross-party risk assessment of how and exactly where New Zealand is exposed, as a rational, integrated basis for planning a more secure future. The petition was referred to the Finance and Expenditure Select Committee, with a hearing on July 1, 2015. The majority response was negative, claiming Government was adequately addressing the issues of concern, but the three minority parties (Labour, NZ First, Greens) offered strong endorsement.

Other submissions

5. Our Society also makes regular submission on a range of policy change issues. Examples include the Emissions Trading Scheme, the Resource Legislation Amendment Bill, Regional Policy Statement of the Otago Regional Council (and mediation with Dr Royden Somerville QC and Will Anglin as Counsel which has since been appealed to the Environment and High Courts), New Zealand Energy Efficiency and Conservation Strategy, the Productivity Commission, the Child Poverty Reduction Bill and the Tax Review Group, and most recently, the Zero Carbon Bill with particular focus on methane, the NPS-FM and the ETS Amendment.