

**Before the Decision-Making Committee of the
Environmental Protection Authority**

**Application for Marine Consent for
Shell Todd Oil Services Limited**

IN THE MATTER OF

**the Exclusive Economic Zone and
Continental Shelf (Environmental
Effects) Act 2012**

AND

**An application by Shell Todd Oil
Services Limited for a marine
consent for existing and planned
future activities relating to the
extraction, production and
transport of natural gas and
condensate at Maui Platform A
and B, natural gas field.**

Submission by Climate Justice Taranaki

24 February, 2014

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MIHI

1. Ko Rangi
ko Papa
ka puta ko Rongo
ko Tanemahuta
ko Tangaroa,
ko Tumatauenga
ko Haumiatiketike
ko Tawhirimatea.
Tokona ra ko te rangi ki runga
ko Papa ki raro
ka puta te ira tangata
ki te whai ao
ki te ao marama
Tihe, mauri ora!
2. He mihi tenei ki a ratou kua wehe atu ki te po, ki a ratou kua wheturangitia, ki nga kuia, nga koroheke i whawhai mo te tiaki i te whenua, te moana me te mana motuhake! Haere, haere, haere atu ra. Ko te kupu a Te Whiti: Ko te po te kaihari i te ra, ko te mate te kaihari i te oranga. No reira, kei te tuku mihi te ropu nei ki a koutou, koutou o Te Mana Rauhi Taiao [EPA]. Ko Climate Justice Taranaki te ingoa o te ropu nei, e tuhituhi ana. No Taranaki matou.
3. I nga tau kua hipa, i tae mai tenei kamupene – a, ko STOS – ki roto o Taranaki ki te keru hinu, mo te kapuni. Kahore matou i te tautoko tera momo mahi. No te mea, kahore he pai mo te moana, nga kararehe, me te ao katoa.
4. No reira, kahore matou e whakaae ki te mahi kino o te kamupene ra. Haere atu!
5. No reira, e te komiti, anei nga korero o to motou ropu CJT. Tena koutou, tena koutou, tena koutou katoa.

INTRODUCTION

6. This submission is made by Climate Justice Taranaki (CJT). CJT is a community group made up of residents and concerned citizens from in and around Taranaki who oppose the further extraction of fossil fuels because of its impacts on climate change and social justice. CJT advocates for a sustainable Taranaki and the urgent phasing out of investments and dependence on all non-renewable energy sources. CJT has lodged an application to become an incorporated society on 23 February 2015.
7. CJT submits that the application should be declined in full for the following reasons:
 - a. The proposed activity does not meet the purpose of the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ), which is to promote sustainable management of natural resources.

- b. This application breaches Te Tiriti o Waitangi and fails to provide active protection of Maori interests and taonga as afforded in section 12, but also negates Kaitiakitanga by tangata whenua over the environment.
- c. The impact assessment (IA) does not provide any thorough assessment or assurance of the integrity of existing and new structures associated with the activity, considering the increasing extreme weather events (due to climate change), changing ocean chemistry and intensifying activities from existing interests. As far as can be ascertained without access to the documents in question, STOS' approved Safety Cases for Maui-A and B have not been amended to take into account the activities proposed.
- d. The IA does not provide adequate assessment of effects, especially cumulative effects, of the activity on the environment and existing interests, notably effects from the wide range of contaminant discharges over the consent duration. The assessment of environmental effects is incomplete.
- e. The proposed activity will have adverse effects on the environment, which cannot be remedied, mitigated or avoided. The application further threatens the habitats and survival of globally and nationally threatened species, notably the Maui's dolphin and Blue whale.
- f. Uncertainties in this application are unacceptable and contrary to the provisions of the EEZ Act. The government should apply the precautionary principle in the case of uncertainty.
- g. The economic analysis is not based on best available information. It ignores potential costs and opportunity loss.
- h. The need to keep fossil fuels in the ground, reduce energy use and transition onto renewable energy to meet the target of 2 degree C increase in global air temperature, to avert catastrophic climate change.
- i. The application will run contrary to New Zealand's obligations under the various international conventions relating to the marine environment, including the United Nations Convention on the Law of the Sea 1982, the Convention on Biological Diversity 1992, the Noumea Convention 1986 and the London Convention on Dumping.

STATUTORY REGIME

Treaty Breach

- 8. This application breaches Te Tiriti o Waitangi and fails to provide active protection of Maori interests and taonga as afforded in section 12, but also negates kaitiakitanga (or stewardship) by tangata whenua over the environment.
- 9. International law makes it clear that contracts, agreements and treaties shall be honoured. It is well established that the Crown signed a document with many Maori rangatira on 6th February 1840 at Waitangi and later other rangatira from many other regions. The document is known by two names: Te Tiriti o Waitangi or the Treaty of Waitangi, the former preferred under international law and the doctrine of contra preferentum as it is written in the native language.

10. Te Tiriti o Waitangi, the Maori text signed by the majority of those rangatira, states clearly: *“Ko te Kuini o Ingarani ka wakarite ka wakaae ki nga Rangitira ki nga hapu – ki nga tangata katoa o Nu Tirani te tino rangatiratanga o o ratou wenua o ratou kainga me o ratou taonga katoa.”*
11. In translation Maori did not give up their authority, control and possession of 'taonga'. Hirini Moko Mead describes 'taonga' as “something highly valued by Maori, and there is also an implication of something being handed down. He further states: “As taonga, land was regarded as probably the ultimate gift.” Land obviously includes the seafloor and submerged land and land-formations as argued in the Takutai Moana Act.
12. Tangata whenua of Taranaki have never deserted Taranaki, maintaining a presence despite war and land confiscation, in the coastal area for many centuries, perhaps over a millennium.
13. The WAI 796 Report on the Management of the Petroleum Resource 2010 stated: *“because of their low level of engagement with Maori interests and perspectives, decision-makers will tend to minimise the importance to New Zealand of Maori values and concerns, and consequently elevate the importance of other values and concerns. Such an outcome cannot be consistent with the Treaty. As the Tribunal in the Te Tau Ihu report acknowledged regarding the resource management regime generally, ‘Maori are confined to being submitters rather than decision-makers, and, as a result, their core values are not well understood by those who are making the decisions’.(Waitangi Tribunal, Te Tau Ihu, vol 3, p 1224) When key decisions must be made by weighing Maori interests against others, as is the norm under both the Crown Minerals Act and the RMA, the result is that Maori interests are minimised and systemically prejudiced. In particular, when measured against economic imperatives, it would appear that Maori concerns are often far outweighed. Before due weight can truly be given to Maori interests, therefore, the system itself needs to be changed so as to make it inclusive of the Maori values and concerns it needs to weigh. Until that happens, it will not meet Treaty standards, nor, we believe, the standards set for it in law.”*
14. In respect to the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), the WAI 796 Petroleum Report 2010 also stated *“The Crown appears to have failed to consider the implications of the declaration when developing its petroleum management policies, with the result that it is operating in a policy vacuum”.*
15. It has not been clearly established that the Crown owns fossil fuels under land (including the seafloor). Quite the contrary is more likely true. The WAI 796 Petroleum Report 2010 concluded that:

“There is no doubt that exploring for and mining the petroleum resource in and around New Zealand is a matter of importance to the nation... that was the Crown’s justification for appropriating the resource in 1937. However, some of the specific reasons for nationalisation given at the time no longer apply. Those that remain relevant relate to the efficient use of the resource and encouraging exploitation in this part of the world, despite the difficulties and disadvantages involved. Another feature of the situation in 1937 was that New Zealand’s territory extended just three nautical miles from shore. So it was the petroleum within that zone that was appropriated by the Crown, without compensation being paid to its previous owners, and there were no dangers to the environment, wahi tapu, and taonga, from mining in what has become New Zealand’s EEZ. Further, in 1937 the petroleum industry was in its infancy in New Zealand so prospecting, exploration and mining activities posed little threat to other, potentially conflicting, interests. ...

16. *The changes since 1937 have led us to ask whether and, if so, how they are reflected in the current legal regime for managing the petroleum resource. In particular, we have been interested to discover whether the Crown's current view of the 'national interest' in the petroleum industry reflects the fact that today a complex mix of economic, environmental and, in particular, Maori cultural interests and perspectives, are involved. We have not found any clear evidence that this is so.*
17. *The Crown's overarching policy for the petroleum resource is to increase the level of productive activity in order to increase the industry's contribution to the economy. It seems however, that the Crown is not prepared to pursue that aim at all costs. The clearest indicator that non-economic interests also figure in the Crown's petroleum policies is the fact that certain lands, such as conservation lands, are excluded from petroleum mining. Other possible indicators are, however, more ambiguous. One example is the manner of exercise of the Minister of Energy's discretion to exclude from mining land of particular importance to the mana of iwi. For tribes who have applied without success for the exclusion of land that is of the greatest possible importance, and who are aware of the two successful applications (although limited to land above sea level), the use of the Minister's discretion must appear inconsistent. But more than that, the rejection of their application is indefensible from their standpoint: there is no justification for failing to protect lands that are inherently tapu from mining. For them, economics do not enter the equation. We have seen no evidence that the Minister has engaged earnestly with that understanding.*
18. *Overall, our view is that the modern management of petroleum is a complex business, in which there are many interests. The Crown, as we noted above, has an interest both in seeing the resource developed for the good of the economy, and in protecting the environment, wahi tapu and taonga, Maori interests, and the heritage of this nation, from unnecessary or inappropriate damage or interference. Because iwi lack the capacity to participate effectively in Crown Minerals Act and RMA processes; because the Crown is not monitoring the performance of its delegated Treaty duties, so as to identify and solve problems; and because central and local government lack the capacity unassisted by Maori to truly comprehend and therefore fairly assess and balance Maori interests; it is our finding that the Crown is failing in its Treaty duty actively to protect those interests to the fullest extent practicable."*
19. Further in regard to ownership, The Waitangi Tribunal summarised its recommendations in its WAI 796 Petroleum report (2003) in this way, as discussed in the document [Maori and Mining \(2003\)](#)¹⁴:
- *"Prior to 1937, Maori had legal title to the petroleum in their land.*
 - *A Treaty interest was created in favour of Maori for the loss of legal title to petroleum by:*
 - *the alienation of land prior to 1937 by means that breached Treaty principles; and*
 - *expropriation under the Petroleum Act 1937, without payment of compensation to landowners and without provision being made for the ongoing payment of royalties to them.*
 - *Whenever that Treaty interest arises, there will be a right to a remedy and a corresponding obligation on the Crown to negotiate redress for the wrongful loss of the petroleum. The redress to be provided is in addition to any other entitlement to redress.*

• *It is in breach of Treaty principle for the Crown to exclude petroleum-based remedies from settlements. Therefore, the Crown's royalty entitlements, and its remaining interest in the Kupe petroleum mining licence, ought to be available for inclusion in settlements with affected claimants.*

However, the Government of the day ignored these Tribunal recommendations. The only instance where Maori have been successful to date in arguing ownership of a mineral pursuant to the Treaty of Waitangi is pounamu."

20. Tangata whenua have practiced kaitiakitanga for many generations. In Taranaki, whakapapa links Maori directly to the waka migrations from Hawaiki, but also to Te Kahui Maunga and ultimately to Ranginui and Papatuanuku. Maori do not see themselves as separate from other life-forms or the land, air and waters. They see themselves containing the same mauri (life force) as all else and therefore intrinsically connected and inseparable. Harm to one is harm to another. If you take you must do so with respect and give back equally to restore the mauri. This can be seen in the stories of Rata attempting to cut down the tree or Maui attempting to become immortal. They also believed in para kore (zero waste) where long-term pollution was not acceptable practice as can be seen in the many tikanga (protocols) around hygiene, tapu and rahui.

21. Again the WAI 796 Petroleum Report 2010 concluded that:

"The available evidence confirms that Maori, their authority, and their taonga, are not being protected in the management of the petroleum resource. Maori are not included in the key decision-making that directly impacts on their role as kaitiaki, and nor are their interests adequately taken into account by the decision-makers. As a result, they are rendered 'powerless', as claimant witness Mere Brooks put it. This, then, is a key prejudicial effect of the Crown's legislation and processes: Maori feel powerless where they ought to be partners. The effect is that Maori cannot exercise kaitiakitanga, to protect and conserve for future generations the taonga with which they have been entrusted. Instead they must watch as their sacred sites are 'modified', interfered with or simply obliterated."

22. Taranaki hapu have learned from decades of experience with the petroleum industry that the benefits do not really come their way, only the destruction and further alienation from their lands and taonga. Much like the beads and blankets of yesteryears, a new roof on a wharenui or sponsored company-emblazoned rugby shirts are not adequate compensation, if that was ever really sought in the first place.

23. We certainly agree with a statement made in the STOS Impact Assessment:

"... it is a deeply held belief by Taranaki Iwi that the seabed (part of Taranaki's journey) is sacred territory and should be left undisturbed." (IA p.103)

24. Rawiri Doorbar (Taranaki Otaraua hapu chairman)ⁱⁱ said on January 31st this year:

"Within the area which we call Otaraua... there's simply well over a hundred wells. So the oil industry is well established here, let's put it like that. It's not like other parts of the country where the exploration is just starting. This started back in the 70s through the 80s and council's only just started talking to us at the beginning of the 90s and the regional council stopped talking to us altogether several years after that. They simply weren't interested in what we had to say about the protection of both our old places and the environment... The advice I could give to any of you guys that are

planning to oppose any oil and gas activities within your own area... it's really important you beat them to the gate... you shut that gate and you don't let them in. Because once they're established a whole new set of laws come in to play and you're now stopping them carrying out their lawful and legal activities and you're now looking like the bad guys. If anyone's going to put one of these in your backyard stop it before it gets in the gate."

Exclusive Economic Zone and Continental Shelf Act 2012

25. The application does not satisfy the requirements of the EEZ Act. It will not satisfy the purpose of the Act in s 10, 11, 12 or 59. Nor will it satisfy the central legislative requirements of sections 11 and 12 of the Act.

International Law

26. The application neither continues nor enables the implementation of New Zealand's obligations under various international conventions relating to the marine environment, including the United Nations Convention on the Law of the Sea 1982, the Convention on Biological Diversity 1992, the Noumea Convention 1986 or the London Convention on Dumping. It will not enable New Zealand to protect and preserve the marine environment, and this is not in accordance with New Zealand's duty to protect and preserve the marine environment.
27. A precautionary approach to this proposal is required to ensure the lasting health of the marine environment. New Zealand has repeatedly signed up to the precautionary approach in numerous international instruments and therefore has an obligation to apply it. Its widely accepted formulation is in Principle 15 of the Rio Declaration: *"In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."*
28. The precautionary approach is an essential component and an obligation because of its ability to reduce environmental risk as it involves an anticipatory preventative action in response to uncertainty. We do not have a full understanding of the physical, chemical or biological components or processes, nor the ecosystem functions, nor the life that exists in the area, resident or transient, and how that life interrelates within the surrounding environment. This application is far from comprehensive. The applicant has not provided a robust application proving that their proposal is safe for the marine environment and poses no threat to future viability. Taking a precautionary approach to major projects of this nature is internationally recognised. The EPA must apply the precautionary approach to this application and apply the provisions of section 10 and section 59(2) EEZ/CS Act to ensure that the marine environment is protected in accordance with that Act.

PROCEDURAL MATTERS

Consultation and Natural Justice

29. The applicant has not informed or consulted properly with the people of New Zealand, particularly with the people of Taranaki. The application is voluminous. It is highly unlikely that the public have had enough time or information to understand properly the effects of the application or the level of detail in order to be able to properly respond on an informed basis.

30. Under s 42, the EPA has made two further requests for information from STOS. The EPA has been relatively flexible about the date on which STOS must supply this information but have not provided the same opportunities to submitters to formulate their responses. The latest request for further information was made by the EPA on the 20th of February just two working days before the date on which final submissions are due. This request included questions around key elements of the application. The applicant has been allowed until the 19th of March to prepare its response. Submitters will be unable to comment on this response in their submissions and unless they are able to appear at the hearing, will not be provided with any opportunity to comment. The EPA is restricting its ability to receive the best possible information under s 61 and breaching principles of fairness and natural justice.
31. The EPA has accepted a discharge management plan (DMP) on behalf of STOS. The EPA has not provided submitters with the DMP and has yet to provide a response to STOS application under s 158 for the DMP to remain confidential. The plan must include information about managing and avoiding the discharge of any potential pollutants and must contain emergency spill response procedures. CJT submits that the public interest, and relevance to understanding of potential impacts and management thereof, in the DMP outweighs any commercial sensitivity arguments of STOS.
32. It is our view that this way of proceeding with the application increases the likelihood of a favourable decision for STOS, because important information has either been withheld from the public or is made available either just before submissions close or even after. This is not a fair and open process.

THE PROPOSED ACTIVITY DOES NOT MEET THE PURPOSE OF THE EEZ ACT

33. The application fails to satisfy the requirements of section 10. The application will not promote sustainable management of the natural resources of the exclusive economic zone (EEZ) and the continental shelf. It will not sustain the potential of natural resources to meet the reasonably foreseeable needs of future generations and will not safeguard the life-supporting capacity of the environment.
34. The extraction of fossil fuels – a resource that took millions of years to form – cannot possibly be managed sustainably at the current rate that it is being extracted and consumed. STOS admits that the Maui *“field is now in its twilight years having come off plateau production. STOS’ focus has shifted from running and maintaining the asset for maximum reliable production, to finding ... ways to economically unlock more difficult remaining volumes from the existing reservoirs...”* (IA 6.13). In other words, the natural resource – petroleum at the Maui field in this case – has been extracted at such an unsustainable rate that it is now running out and STOS plan to finish it off (the *“remaining volumes”*) in whatever ways they can.
35. There is no plan, strategy or concerted effort by STOS and/or the New Zealand government to use, develop and protect the resource in the Maui field in a way, or at a rate, that would sustain the potential of the resource to meet the foreseeable needs of future generations; and safeguard the life-supporting capacity of the environment. There is no information about how long the so called *“twilight years”* will last for without additional drilling.

36. In light of the demonstrated inability of STOS as an operator to manage the resource in a sustainable manner, and their lack of intention to do so in their intended work-program for which this consent has been sought, it is clear that the purposes of the EEZ are not being met and the consent should be declined.

SAFETY AND INTEGRITY OF THE STRUCTURE

37. The Impact Assessment (IA) does not provide any thorough assessment or assurance of the integrity of existing and new structures associated with the activity, considering the increasing extreme weather events and changing ocean chemistry ([IPCC report, 2014](#))ⁱⁱⁱ. As far as is known, STOS' approved Safety Cases for Maui-A and B have not been amended to take into account the activities proposed.
38. The issues of structural integrity of wells, pipelines and other structures are critical in assessing potential effects on the environment and existing interest of the activity, and NZ's ability to implement its obligations under various international conventions (e.g. MARPOL).
39. Industry studies (e.g. [Watson and Bachu, 2009](#))^{iv} have shown, *"about 5% of all oil and gas wells leak immediately because of integrity issues, with increasing rates of leakage over time."* In 20 years, over half of the wells will leak ([Ingraffea et al. 2012](#))^v. *"With hundreds of thousands of new wells expected, this problem is neither negligible nor preventable with current technology... Pressures under the earth, temperature changes, ground movement from the drilling of nearby wells and shrinkage crack and damage the thin layer of brittle cement that is supposed to seal the wells. And getting the cement perfect as the drilling goes horizontally into shale is extremely challenging. Once the cement is damaged, repairing it thousands of feet underground is expensive and often unsuccessful. The gas and oil industries have been trying to solve this problem for decades"* ([Ingraffea, 2013](#))^{vi}. All the above does not take into account high seismicity common in NZ which further compromises well integrity and longevity.
40. Another study in the US investigating the state of structural integrity loss in oil and gas wells over a 13 year period revealed, *"Pennsylvania state inspection records show compromised cement and/or casing integrity in 0.7–9.1% of the active oil and gas wells drilled since 2000, with a 1.6- to 2.7-fold higher risk in unconventional wells spudded since 2009 relative to conventional well types. Hazard modeling suggests that the cumulative loss of structural integrity in wells across the state may actually be slightly higher than this, and upward of 12% for unconventional wells drilled since January 2009. This wide range of estimates is influenced by significantly higher rates of impairment in wells spudded in the NE counties of the state (average of 12.5%, range: 2.2–50%), with predicted cumulative hazards exceeding 40%..."* ([Ingraffea, et al. 2014](#))^{vii}. So there appears to be wide variations in well integrity and longevity across regions.
41. Well casing failures have already been documented in Taranaki. In September 2009, Taranaki Regional Council was advised by Austral (operation subsequently taken over by Cheal Petroleum / Tag Oil) that two production wells within the Cheal-A facility had developed leakages, and were discharging fluids to the Urenui Formation at a depth of approximately 1,400 m below ground. **"The**

discharge to the Urenui Formation was occurring due to integrity issues with casing patch seals within the wells.” The casing patch seals were installed back in April 2007 and were “not successful in fully isolating the wellbore, and leakage of power fluids subsequently developed” ([TRC 1133945, 2013](#))^{viii}.

42. In October 2013, Tag Oil’s Cardiff-3 well at Cheal-C wellsite encountered a “**well integrity issue**”, as recorded on WorkSafe list of 61 “**petroleum dangerous occurrence notifications**” (8 July 2013 - 7 Feb 2014). In May 2014, Tag Oil’s own news alert reported that at Cardiff-3 well, “the fracture stimulation [fracking] was affected by a [poor cement bond \(Tag Oil, 2014\)](#)^{ix} over the interval, or skin damage must exist in the near wellbore area, restricting flow.” When WorkSafe NZ was asked under an OIA request about the Cardiff-3 well integrity issue, it declined to release any information, citing that it was subject to an on-going investigation. Then in December 2014, WorkSafe revealed that the investigation was concluded and “did not identify any breaches of the Health and Safety in Employment (Petroleum Exploration and Extraction) Regulations 2013, and that the matter did not require a report.” There appears to be little transparency in the investigation process and the public is left in the dark re the safety of the well and any environmental impacts the integrity issue might have caused.
43. Bruffato et al. (2003)^x evaluated more than 15,500 wells and found numerous cases of cement job failure, leading to sustained casing pressure and possible fluid migration into US drinking water supply: “...many of today’s wells are at risk. Failure to isolate sources of hydrocarbon either early in the well-construction process or long after production begins has resulted in abnormally pressurised casing strings and leaks of gas into zones that would otherwise not be gas bearing” (Figure 1).
44. Back on the case of Maui, because “all the existing well slots on both MPA and MPB have been used... future drilling and casing would have to be drilled (i.e. side-tracked) from existing wells” (IA 3.3.3). STOS’ IA provides no data or monitoring results on the structural integrity of the existing wells (26 at MPA and 32 at MPB) and other structures, or the amount of gas and chemical leakage from them and their impacts on the environment over time. STOS has not provided EPA with the approved Safety Cases for MPA and MPB either.
45. STOS’ response to EPA (21 Jan 2015) states: “A number of the activities for which consent is sought would require an amendment to STOS’ approved safety cases under clause 34, including drilling activities and modifications to topsides facilities. If these activities are authorised by a marine consent, and are to be undertaken, amendments to the safety cases will be made at the appropriate time”. **The existing Safety Cases for Maui-A and B have not been amended for the proposed activities subject to the current IA.**
46. According to the EEZ Act s61, EPA must make full use of its powers to request information from the application, base decisions on the best available information, and take into account any uncertainty or inadequacy in the information available. Clearly EPA cannot make a decision on the application without such crucial information as the existing and amended Safety Cases.
47. The IA gives no mention of the **effects and risks of re-injecting** all produced water from MPA into MA-12 well and it’s continuous (future) use has not been assessed or approved with a Safety Case. It is well known and documented in scientific literature that deep well **injection of wastes can and has caused earthquakes** ([Keranen, et al. 2014](#))^{xi} and increased seismicity. **Fracking** has also been linked

to increased seismicity ([The Associated Press, 2014](#))^{xii}. Also of concern is that there has been at least one case in Lancaster where a well was 'deformed' following a drilling-induced earthquake.

48. CJT wants to raise a number of questions which have simply not been answered in the application and which are essential to the EPA's consideration. These include:
- a. Has there been any assessment on the effects of produced water re-injection (in the past and next 35 years) on local and regional seismicity, groundwater and well integrity?
 - b. What would be the capacity of MA-12 well for produced water re-injection? How much can it hold and for how long?
 - c. Has hydraulic fracturing (fracking), well stimulation (water injection) or well work-over been conducted or planned for the Maui field? If yes, has there been any impact assessment or monitoring of effects?
49. The IA has not considered the **effects of increasing extreme weather events (driven by climate change) on the integrity of structures on site**, especially existing structures that have aged and/or weakened by natural events over the last three decades. Even new wells can fail because of structural issues and potentially from environmental factors such as earth movements. Some of the side-track wells to be drilled from existing wells may be 8 km long, presumably with greater risks of integrity issues.
50. It is unclear how the planned well servicing and workover (40 interventions each at MPA and MPB from 2015 to 2019) will ensure or improve well integrity for the planned extraction, production and reinjection activities over the next 35 years, considering future extreme weather events. It is also unclear what kind of monitoring regimes will be put in place to detect issues in structural integrity and environmental effects over the consent duration sought. **While some of these activities will be regulated by the Health and Safety in Employment Regulations 2013, the environmental effects from structural integrity issues should be assessed and managed under the EEZ Act.**
51. With the intensification of activities, especially seismic surveys and maritime transport associated with the oil and gas, seabed mining and other industries in and around the area, the likelihood of non-routine, adverse effects from accidents and incidents (such as unlawful anchoring) will increase. The IA does not give thorough analyses or clear indication of how STOS intends to ensure safety and protection of their structures on site, especially submarine cables and pipelines, as the level of risks increase with use intensification and over time.
52. It is not clear how the current level of patrol of the protection areas will be adequate with increasing activities in and around the area by STOS and other operators. It is also unclear how the management and protection of the sections of submarine cables and pipelines within 12 nm from shore under the RMA are ensured, and coordinated with the sections within the EEZ.

EFFECTS ON EXISTING ENVIRONMENT AND INTERESTS

Inadequate assessment of effects

53. The impact assessment (IA) does not provide adequate assessment of effects, especially cumulative effects, of the activity on the environment and existing interests.

54. The IA lacks some crucial and basic information about the activities involved and the effects that they may have. One example is the discharge of *“produced water, and small amounts of coal, sand and clays. The majority of these materials are re-injected into sub-surface formations or discharged to sea as part of the produced water stream... The quantities of these materials in the production water are not measured.”* (IA p.56)
55. At MPB, produced water containing “small quantities” of chemicals is discharged directly to the ocean while any associated residual solids such as sand and drilling muds from the well bore may be deposited on the seabed. Although STOS says all hazardous substances brought into NZ must be approved under HSNO, the **Hazardous Substances and New Organisms Act 1996 (HSNO) is far from adequate in protecting the environment**. E.g. The EPA admitted in April 2012 that the majority of fracking chemicals were self assessed by companies and approved under the group standard ‘additives, process chemicals and raw materials’ ([CJT submission, Nov 2012](#))^{xiii}. Neither EPA nor the Department of Labour seemed to have much knowledge or control about the import, storage, usage and disposal of the chemicals. In terms of compliance, a 2012 EPA survey of 400 businesses found that 75% of businesses were not fully compliant with a sample of 8 key risk management controls ([MBIE, 2014](#))^{xiv}.
56. STOS say **produced water and contaminant discharges** are approved by MNZ with the DMP. But there are no quantitative figures on the amounts of produced water to be expected/approved. The only information provided in STOS response to EPA (21 Jan 2015) on this subject include total volume (105,900m³) discharged in 2014, objectives and frequency of monitoring, and a restriction on “dispersed oil content” (50mg/L) of the produced water from MPB. Based on those two figures, 5 tonnes of oil may have been released into the ocean via produced water each year (Also see paragraphs 86 and 93).
57. The volumes of sediment discharged in produced water also have not been fully quantified. **While such discharges may be approved by MNZ through the DMP, the environment effects should still be assessed under the EEZ**. How can the effects be assessed without information on the quantity that will be discharged?
58. The total amount of **drill cuttings** produced from 22 side-track wells is estimated at over 3,624m³ for drilling from MPA and 1,308m³ from MPB. These, together with residue synthetic based drilling muds (average oil-on-cuttings 6.9% or 9.4% if esthers or ethers-based) and some milling swarf and milled components of well bore equipment will be discharged at sea.
59. The IA revealed that **within 500m of the platforms, zinc and/or lead were found at levels exceeding ANZECC 2000 guidelines** in some samples – both metals are toxic to some marine species. Mercury and cadmium were also found. Barium level is above background levels at all sites. Total petroleum hydrocarbons in the C15-C18 groups were elevated at some stations (IA 5.4.4). All these contaminants can impact negatively on the health and productivity of the benthic communities which could have serious implications on species higher up the food chain.

60. Some of the 45 threatened fish species under DOC listing may forage in the contaminated area (IA 5.5.5). The potential impacts on local fisheries cannot simply be judged by the percentage area that the AOI represents (excluding the Safety Zones) because fish are free to travel into the AOI to feed and potentially be affected by contaminated food sources, indirectly affecting commercial fishing outside the AOI. **There is no quantitative assessment or monitoring of possible bioaccumulation of contaminants (e.g. lead, zinc and others derived from the Maui operations over the last 30 years) in tissues of marine species** such as bivalves, fish, seabirds and marine mammals. Benthic monitoring has been conducted at an annual basis only and largely determined by the dates of drilling, without the possibility of seasonal analyses.
61. The IA does not provide any assessment on biosecurity risks associated with the activity, especially in relation to the expected increase in the number of vessels to be involved in the program.
62. The IA describes ultra-high pressure water jetting for cleaning, which will use up to 5,000 L of clean water per day. If this large quantity of fresh water is derived from desalination on site, the effects of discharges (such as brine) associated with the desalination are not assessed.
63. The Parliamentary Commissioner for the Environment said, *“The bigger challenge comes once a well has been abandoned. The likelihood of an abandoned well leaking increases with its age.”* ([PCE, 2014: Drilling for Oil and Gas, 2014](#))^{xv} It is critical that abandonment and decommissioning are conducted to high standards to reduce environmental and safety issues later on. Moreover, Taranaki iwi are seriously concerned with the decommissioning process and impacts.
64. There are nine unused exploration wells on site (IA 3.1). **STOS say they are considering options for future removal or otherwise of the 3 exploration wells with wellheads.** Based on that decision, either a consent to remove the wellheads or a dumping permit to leave them in place will be sought (IA p.51). STOS say they hold dumping permits issued under Marine Transport Act Part 180 for FPSO anchors and groundwires. What are the environmental effects of such dumping and that of the wellheads?
65. What are STOS’ plans with the six unused exploration wells that do not have wellheads yet? Are there further drilling plans set for these wells in addition to the 22 side-track wells? We argue that this information should be included in the IA, and a decision should be made on the three wellheads so that the cumulative environmental effects of all associated activities can be considered in this consent application. The IA itself defines cumulative impacts as those *“that act together with other impacts (including those from concurrent or planned future third party activities) to affect the same resources and/or features as the Operations”* (IA Box 4.1).
66. Overall this area has been the subject of gradual industrialisation, baselines should have been set for the period prior to when the first stages of oil and gas extraction began. If such baseline data were collected, these are not referred to in the IA.

Cumulative impacts

67. The IA gives inadequate assessment of the cumulative effects of increased vessel movement, notably increased risks of boat strike (direct impact) with different species of marine mammals and indirect impacts such as confusion and difficulties in foraging and finding mates due to increased

undersea noise and other forms of pollution, traffic movement above and below the sea and high intensity lights.

68. The drilling duration can take 30-150 days per well or longer; a drilling campaign would involve drilling 2-8 wells and last a minimum of 6 months up to 2 years. So drilling 22 side-track wells could take up to 6 years. And noise from hydrocarbon processing, production, well servicing and associated activities could continue over the next 35 years, if the consent is granted. The consent does not account for the cumulative impact of noise. Based on international evidence, the underwater noise from all these activities over such a long period of time is potentially harmful to marine mammals and detrimental to critically endangered species such as the Maui's dolphin. There is no on-going assessment of the impact of noise on fish or marine mammals.
69. There has been an inadequate assessment of the cumulative impact of plumes and other environmental effects. Further information has been requested by the EPA (but is still to be provided) on how quickly the plume from the discharge of drill cuttings is expected to settle. There are also concerns over how the tide will affect the plume and whether there are heavy metals in the plume. Similar questions remain in respect of produced water.
70. While acknowledging that the non-routine and drilling operations that are the subject of this consent application do have the potential to result in cumulative effects in combination with other, simultaneous offshore activities in the area (IA 6.12), **STOS made no attempt to quantify or assess the potential cumulative effects.** The only mitigation measure proposed is open communications with other operators to reduce scheduling overlaps.

Impact from Noise

71. We do not agree with STOS' conclusion that the residual impact significance from noise on marine mammals will be negligible to minor (6.9.2). Even if an individual activity may be considered to have minor impact significance, when similar impacts from all the activities are considered, the overall or cumulative impact would be far and above minor.
72. At the peak of activities, there could be 12 sailings of supply vessels per month, plus additional support and resupply vessels where needed (IA 3.1.4.), or five per week during a drilling campaign (IA 6.6.2). There will also be large scale construction or demolition works that require large vessels, a floatel that could accommodate 500 personnel and require anchoring, additional helicopter flights and 2 to 3 supply vessel visits per week (IA 3.2.3); all of which would create noise, disturbance and risks on marine mammals nearby.
73. **The cumulative, long-term as well as permanent effects associated with the above activities are not adequately assessed.** The IA defines long-term impacts as those that *“will continue over an extended period, but cease when the activity ceases. These will include impacts that may be intermittent or repeated rather than continuous if they occur over an extended time period (e.g. repeated seasonal disturbance of species as a result of maintenance/inspection activities)”* (IA Box 4.1). The effects on endangered species may last beyond the duration of the activity.
74. According to EEZ s59(2)(b), the EPA must take into account the effects on the environment or existing interests of other activities undertaken in the area, including effects of activities that are not regulated under the EEZ Act. **The EPA must therefore seriously consider the effects of fishing,**

seismic testing, exploratory drilling and shipping on endangered marine mammals such as the Maui's dolphin and Blue whale (Figures 2 and 3).

Hydrocarbon and chemical spills

75. In addition to the contaminants and oil introduced in produced water and drill cuttings, there are significant risks on the marine environment, biodiversity, ecosystems and threatened species from a major accident such as a hydrocarbon (condensate or vessel fuel) or hazardous or noxious substance spill.
76. *"While the likelihood of a spill in New Zealand may not be high, the consequence of a spill on a small inshore population of cetaceans with a small home range could be catastrophic. The grounding of the MV Rena off the Astrolabe Reef, off Tauranga in 2011 highlighted the potential impact ... it is not just the oil itself that may impact on the dolphins, but many aspects of an oil spill response will have direct or indirect effects on the population, eg, the use of dispersants to clean up the oil, increased vessel activity in the area, the use of sonar for tracking lost cargo etc."* (MPI and DOC, 2012).
77. There is little doubt that **the risks of spills and major accidents are increasing, with greater number of wells, extensive lengths (kilometres) of directional drilling (22 side tracked from old wells, the longest being 8 km), accompanied by increased activities associated with offshore production, storage, offloading and transport.**
78. As we were finishing off this submission, we received notice of yet another oil spill off the coast just south of the Maui Platform – OMV's third spill in the Maarie permit area. The number of notified oil spills in Taranaki has grown sharply over this past decade. Cumulative effects of multiple operators must be properly considered.
79. The EPA must consider this application in the wider context of the number of exploratory, development and production wells in the vicinity (56 existing wells under MPA and MPB alone) including the north and south Taranaki Bights, and the cumulative risks and effects on the marine environment and species, especially threatened species (Figure 4).
80. NZ has little capacity for dealing with offshore spills ([Radio NZ, 20 April 2011](#)). Section 4.1 of the Maui field oil spill contingency plan (excerpt provided in STOS' reply to EPA, 21 Jan 2015) described some rather basic spill kits content stored in "wheelie bins" on MPA and MPB, spill response trailers for shoreline clean-up and access to helicopter and supply vessels in the event of a Tier 1 spill. The IA explains that *"MNZ is the designated combat agency for Tier 3 spills and would assume control of the incident response..."* In the unlikely event of a loss of well control, it'd take 106 days if a drilling rig has to be mobilised from overseas to drill a relief well (IA 7.3.1).
81. The MBIE discussion document on Health and Safety at Work Act ([MBIE, May 2014](#)) explains the problem: *"The regulatory challenge associated with major hazard facilities is the low frequency but catastrophic nature of failure. Making a case for regulation and the deployment of regulatory resources to an area where the frequency of failure is extremely low is difficult to make. ... Part of the problem is the way in which risks are identified and managed.*
82. *Traditional risk assessment processes tend to categorise events that are unlikely or rare as having a lower risk rating than other, more likely events. While this type of risk assessment works as a general*

approach, it is not particularly effective as a tool for thinking about the management of facilities with potential for a major accident. The internationally accepted principle is that where an activity has potential for a major accident, the regulatory focus should be on proactively managing the activity regardless of the likelihood.

83. *However, the consequences of a major accident at these types of facilities cannot be overstated.”*

INTERNATIONAL OBLIGATIONS

84. The proposed activities will further threaten the habits and survival of threatened species, notably the globally listed Critically Endangered Maui’s dolphin and Blue whale. The government should apply the precautionary principle to honour New Zealand’s international obligations.
85. The UN Convention Law of the Sea (UNCLOS) Article 145 requires authorities to protect the marine environment from harmful effects such as pollution, drilling, disposal of waste, construction and operation of installations, and to protect and conserve natural resources and prevent damage to flora and fauna of the marine environment (UNCLOS, 1982).
86. UNCLOS Article 194 requires states to undertake all measures consistent with the Convention to prevent, reduce and control pollution of the marine environment from any source. The latter includes the release of toxic, harmful or noxious substances by dumping, pollution from installations, etc. The NZ government, being state party to UNCLOS, has the obligation to meet its statutory requirements. Yet the proposed activity may dump tonnes of oil and quantities of other pollutants in produced water and other discharges annually (See paragraph 56).
87. The EEZ Act s59(2)(d) requires EPA to consider *“the importance of protecting the biological diversity and integrity of marine species, ecosystems, and processes”*
88. The EEZ Act s59(2)(e) states clearly that the EPA must take into account *“the importance of protecting rare and vulnerable ecosystems and the habitats of threatened species”*.
89. The EEZ Act s11 also says: *“This Act continues or enables the implementation of New Zealand’s obligations under various international conventions relating to the marine environment, including—*
(a) the United Nations Convention on the Law of the Sea 1982: (b) the Convention on Biological Diversity 1992.”
90. This requires that measures be taken to avoid, remedy or mitigate effects associated with the Maui facilities on biological diversity and NZ’s ability to comply with the Convention on Biological Diversity (CBD). STOS’ interpretation on NZ’s compliance with the CBD therefore appears inaccurate (IA 2.4.6).
91. Climate change, more thoroughly addressed in a later section of this submission, is a challenge of global significance that requires local as well as global responses and solutions. Numerous international summits on the subject have been held, for example through the United Nations. The COP meetings (Conference of the Parties to the UN Framework Convention on Climate Change) have attracted wide attention and the NZ government has participated in these discussions. While

different parties will have different approaches, the ultimate goal is to reduce greenhouse gas emissions. Negotiators will have a further opportunity to find solutions at a COP meeting in Paris later this year. While negotiations like these are on-going, granting companies 35-year consents to extract fossil-fuels is totally inappropriate. If a consent is issued at all, it should certainly not be for such a long duration, given that NZ is part of international negotiations to reduce greenhouse gas emissions.

92. NZ rated 43rd among 58 of the world's worst-performing countries measured on the Climate Change Performance Index (produced by Germanwatch and Climate Action Network Europe). The Index gives rankings to countries which account for around 90 per cent of global energy-related emissions across 15 indicators in four areas: emissions, efficiency, renewables, and climate policy. NZ also rated 56th for international climate policy and 53rd for national climate policy. The NZ government argues that we are too small to make much impact but clearly we are a larger contributor of greenhouse gas emissions than we should be. As such, this consent would without a doubt demonstrate to the rest of the world this country's hypocrisy and unwillingness in the global effort to reduce emissions.

London Convention on Dumping

93. The disposal of waste in New Zealand waters is managed under both domestic legislation and international law. Part 180 of the Maritime Rules brings obligations into New Zealand Law under the Protocol to the London Convention. In principle this protocol requires that dumping at sea be avoided, except for materials on an approved list.
94. The London Convention incorporates the Polluter Pays principle and the precautionary principle (Article 3.1). STOS has not included the final decommissioning of the Maui Facilities in the current consent application and assessment. CJT submit that it is crucial for a detailed Decommissioning Plan and its effects to be assessed before an activity begins. Furthermore, decommissioning is an expensive activity which takes place at the end of a project. It is unknown whether STOS will be economically capable of removing the wellhead. In this case a bond or insurance should be provided so that the potential effects of dumping are avoided. There is an expectation in the New Zealand Guidelines that wellheads and platforms will be recovered ([MNZ, 1999](#))^{xvi}.

Precautionary principle

95. A government appointed Panel of Experts concluded in 2012 that while 95.5% of Maui dolphin's mortality is caused by fishing, the remaining were ascribed to other causes such as mining, oil exploration, disease, pollution and boat strikes etc. ([Currey et al. 2012](#))^{xvii}. In order to allow the population to recover from Critically Endangered to Endangered and eventually to non-threatened, the total level of human impact on Maui's dolphin would need to be kept below one dolphin death every 10 to 23 years. Alarming, marine mining alone was estimated to cause one Maui's dolphin death every 10 years. **Any increase in mining and other causes of mortality will push the population beyond recovery and NZ's endemic Maui's dolphin to extinction.**
96. In 2014, the International Whaling Commission (IWC) Scientific Committee emphasized that the current protection measures for the Maui's Dolphin "*fall significantly short*" and recommended a

protected area for the Maui's Dolphin to cover its range from Maunganui Bluff in the north to Whanganui in the south, offshore to 20 nautical miles and including harbours (IWC, 2014). So far, the NZ government has not acted on this recommendation.

97. Principle 15 of the [Rio Declaration on Environment and Development^{xviii}](#), adopted by the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil, 1992, states that:

“In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”

98. In the [preamble of the Convention on Biological Diversity^{xix}](#) it is noted that:

“Where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat.”

99. We argue that in order to honor the government's obligations to the Convention of Biological Diversity and the Rio Declaration on Environment and Development 1992, EPA should adopt the **precautionary approach** ([CBD, 2012](#))^{xx} seriously when assessing this application.

ECONOMIC ANALYSIS

100. The economic analysis is not based on best available information. It ignores potential costs and opportunity loss.
101. The proposal will not enable people to provide for their economic well-being as required in section 10 of the EEZ/CS Act. The risks that this activity poses to the existing regional and national economies through degradation of the marine and coastal environment and further tarnishing New Zealand's trading advantage, our clean green image, are significant.

Lack of best available information

102. The section on economic benefits in the IA provides information on incomes (royalties and taxes), jobs and GDP derived from the oil and gas industry Taranaki-wide. There is no quantitative information specific to the Maui operations, be it past years' data or future projections.
103. STOS says ***“The economic benefits of the Maui field have not been quantified”*** partly because each joint venture party pays its own tax and royalty (IA 6.1.31). This does not meet the standard of providing the EPA with the best available information (EEZ Act s61(b)) in order to make its decision. Surely a bit of internal and cross-party communications, arithmetic and modelling would work those out.

104. Many of the profits will be exported overseas, while the environmental damage risk of chronic pollution and a potential ecological catastrophe remains with New Zealand. Low royalty rate will not deliver economic gains and will not provide economic benefits relative to economic and ecological losses.
105. Perhaps the use of overall (not dissimilar to 'cumulative') figures helps to boost the perceived economic and employment benefits from Maui? Because the same cannot be said re the cumulative environmental effects of the various activities proposed within the application, they were largely understated.
106. It is interesting that the IA includes "produce fertilizers" as one of the uses of oil and gas (IA 6.13.1). Indeed a large proportion of gas is used to manufacture urea to support industrial agriculture, notably intensive dairying. Fossil fuel based urea is harmful to soil health and polluting to waterways. Our waterways are under serious threat from agriculture and principally from fertiliser. The cost of repairing the soil and fixing the environment from fossil fuel based fertilizer is of course not taken into account by the IA. This economic loss/cost should be calculated.
107. The total tax income and royalties collected from the oil and gas industry as a whole may seem like large sums, but the IA acknowledges that just 7% of the royalties is derived from gas levies. Moreover, NZ has one of the lowest overall tax takes from the oil industry (46 %) compared with other oil producing countries and the world average of 70% ([WWF, 2013](#))^{xxi}.
108. The IA also does not take into account potential economic losses from a major hydrocarbon spill including cleanup cost and losses by the fishery and tourism sectors. E.g. The Gulf of Mexico disaster "*wreaked billions of dollars' of damage to tourism and fishing businesses along the Louisiana coastline*" yet BP was only fined \$13.7bn for negligence under the Clean Water Act ([The Telegraph, 16 Jan 2015](#))^{xxii}. In NZ, the relatively small Rena disaster has cost Maritime NZ \$36.8 million ([NZ Herald, 25 April 2013](#))^{xxiii}. There are significant risks here.
109. The list of sponsorships/donations listed in the IA represents a pittance compared with the real and potential damages above, or with STOS and its joint venture parties' annual budgets. It'd be naive and short-sighted to consider such sponsorships as significant economic or social benefits for New Zealand. At best, they are little more than advertising investment for the companies and a convenient way of buying a social license.

Market volatility and opportunity loss

110. Given that the consent extends for 35 years, some economic projections based on different scenarios could be useful, bearing in mind the volatility of the market and shifting consumer demands towards renewable energies. Since 2014, there has been growing divestment initiatives across the world, from the Rockefeller Brothers Fund to churches, universities and councils. Already, Taranaki has seen the ripple effects of worldwide oil price drop ([Taranaki Daily News, 13 and 23 Feb 2015](#))^{xxiv} resulting in job losses locally. Instead of continuing to pour money into a dying industry to achieve "life extension" with uncertain returns, it would be far smarter to transition onto real innovations and energy solutions that are less polluting, more sustainable and socially inclusive.

111. The IA says “a “do nothing” option would result in a loss of approximately 20% of New Zealand’s current domestic gas supply. This option would also mean that the useful life of the Maui Facilities was cut short.” But the Methanox plant at Motunui alone consumed 1/3 of domestic gas supply in 2013 and over 95% of the methanol produced is for export, with earnings going to the Canadian owned company. By comparison, the so called “loss” of domestic gas supply by not extending the aging life of the Maui facilities seems rather insignificant, particularly given the clear need to transition to clean, renewable energy.
112. STOS’ economic analysis ignores the opportunity loss for not pursuing renewable energy, low-carbon technologies and green economy ([Royal Society of NZ, 2014](#))^{xxv}. Statistics New Zealand has valued NZ’s global clean, green brand at over NZ\$13 billion while Investment New Zealand estimated that we can create a NZ\$150 billion high-value, low-carbon export economy by 2025 ([Greenpeace, 2013](#))^{xxvi}. Green energy creates four times more jobs than the oil industry globally. In NZ, almost half of all jobs and more than 70% of our goods and services exports rely on our clean green reputation. There is a lot to gain by building on this reputation and a lot to lose by compromising it, by allowing the fossil fuel and other heavy, polluting industries to proliferate, both at sea and on land.
113. We request EPA to seriously consider the findings and conclusions drawn from the key international economic reviews in recent time; notably the [Stern Review \(2007\)](#)^{xxvii}, the [Garnaut Review \(2011\)](#)^{xxviii} and [Valuing the Oceans: The costs of climate change](#) (Ackerman at Stockholm Environment Institute, 2012)^{xxix}.

Jobs amidst mining’s boom/bust and the two-speed economy

114. Taranaki displays the typical symptoms of a mining-dependent ‘two-speed economy’. When markets are profitable, sponsorships and goodwill abound. When shareholder profits drop, sponsorships dry up, workers’ conditions are squeezed and jobs disappear. This type of boom-bust pattern is characteristic of “resource-dependent communities” ([CANA, 2014](#))^{xxx}.
115. Along with this familiar ‘feast or famine’ pattern comes the two-speed economy, where, as the boom accelerates, mining communities divide into the ‘haves and have-nots’; those who can afford the increasing living costs and those who cannot, the latter most often older people or single parents unable to get work in the mines. This has been well-documented in Australia where before the recent slump, the mining boom had pushed up the price of the dollar, creating job losses in manufacturing and other sectors not involved with the mining industry. ([CANA, 2014](#)).
116. The same disparity has also been documented in New Zealand. The University of Otago’s research on [socioeconomic deprivation indexes](#)^{xxxi} revealed that communities with the most intensive oil and gas activities in Taranaki, such as Waitara, Stratford, Eltham, Kaponga and Patea, are all seriously deprived ([NZ Herald, 13 May 2014](#))^{xxxii}; Figure 5).
117. Tradespeople move from existing businesses to higher paid mining jobs. Real estate and food prices become distorted, excluding those who cannot afford them, favouring the ‘big’ money. Inequality increases.

118. While mining does provide jobs, the sector accounts for only 3% of the region’s employment. Per dollar earned, oil and gas creates far fewer jobs than most other industries including dairy. Taranaki has the third-lowest share of skilled and highly skilled employment in New Zealand ([MBIE, 2014](#))^{xxxiii}. It ranks 14th out of the 16 regions in terms of economic diversity as measured by the Tress Index ([Infometrics, 2012](#))^{xxxiv}.
119. Where diversity is a measure of future resilience, Taranaki is too reliant on the vagaries of an industry that must in the short to medium term be phased out if we are to stay within the two degree limit of global warming agreed to by world governments, including New Zealand. To do otherwise is a clear abrogation of responsibility to future generations with respect of true sustainability of resources.
120. In 2014, Coal Action Network Aotearoa produced a “Jobs After Coal” report ([CANA, 2014](#)). Some of their conclusions may also apply to the oil and gas industry:
- there are many job options in industries that will replace oil and gas,
 - skills of oil and gas workers are transferable to other industries, and
 - communities can, indeed must, reinvent themselves to regain a new prosperity after oil and gas.
121. As long as there is an effective transition path and a planned community process that is well supported, these can be achieved with positive outcomes.
122. As a further example of regions looking at low carbon industry diversification as an alternative to fossil fuel extraction, see the *A View to the South* ([Berl, 2012](#))^{xxxv}.

CLIMATE CHANGE CONSIDERATIONS

123. While the DMC cannot take into account the effects of the activity on greenhouse gases (EEZ Act s 59(5)(b)), it must consider the effects of climate change on the existing environment and into the future as a cumulative effect. This must include ocean acidification and changing weather systems. These pose significant environmental, social and economic costs that have not been considered.
124. It is irrational and irresponsible of the NZ government to preclude EPA from considering the effects of discharging greenhouse gases on climate change when reviewing applications for marine consents and submissions (See also DeVantier, 2012)^{xxxvi}.
125. The latest [IPCC report \(2014\)](#) pointed out the vulnerability of New Zealand and the world to catastrophic climate events, and the social and economic costs of not acting now. The urgency to transition off fossil fuels is clear.
126. The Ministry for the Environment acknowledges “*New Zealand must adapt to changes in climate and contribute to coordinated international action to reduce greenhouse gas emissions in the atmosphere*” ([Royal Society of NZ, 2014](#)). The Government has set several targets for reducing national net greenhouse gas (GHG) emissions compared with gross emissions in 1990. Yet under current policy settings, GHG emissions from the energy and transport sectors alone will exceed the 2050 target by 2030.

127. Sir Geoffrey Palmer put it well, "*New Zealand seems to have lost its mojo in looking after the environment generally, but to neglect climate change, the greatest issue of our age, is unacceptable. It is also contrary to all our traditions as a progressive country,*" ([Palmer, 2015](#))^{xxxvii}.

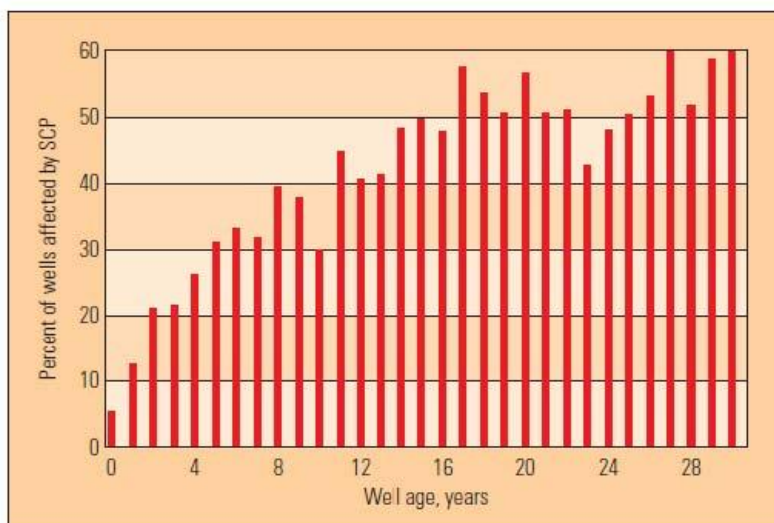
SOCIAL RESPONSIBILITY TO FUTURE GENERATIONS

128. If we were to compare the history of our galaxy, our solar system, our planet and our species to just a single day, the human addiction to fossil-fuels has emerged in the last micro-moments of a second. However, our addiction has severe consequences. Claiming that our galaxy would be affected would entirely overstate our relevance. However, it is certainly impacting on our species, many other species and has created question-marks on whether we will survive as a species – or in other words, if in fact our own actions – the burning of fossil fuels – will make our planet inhabitable.
129. While it is our shared necessity (or shared desire) to burn fossil-fuels that is threatening many species (including adverse local effects of drilling operations that kill soil life), it really is our current economic structure that is driving such destructive behaviour:
- the construct of 'endless growth' – capitalism,
 - the acceptance of unequal wealth distribution, and
 - the belief that our species may conquer everyone and everything.
130. We think there is another way, of living environmentally, socially and economically sustainably on this planet. In fact, only another way will get us out of this mess. This other way exists in the dreams and hearts of those who are still striving to live sustainably yet so often are harmed by our current unsustainable world. It is felt, nurtured and shared across the globe in communities, tribes and countries who are seeking solutions to the problems we are faced with. Voices that are too often removed from normal legal arguments.
131. Taranaki and Te Atiawa kaumatua Hanataua Tito commented on pollution of their sea from fossil fuels on TVNZ's Te Karere in 2013 "*Te ataahua ka kite, naiane... ka tu... nga mahi o te pakeha, te he... me te oil. Kaore i koutou e haere mai ki konei, e puta mai e koutou nei... he mea kino, kei roto ki na matou nei rohe. Ka mate nga ika, ka mate nga tuna, ka mate nga inanga, ka mate katoa o matou nei kai.*" (Translation: The beauty that we have seen... now the work of the Pakeha, the wrong dominates... and the oil. You don't come here. You discharge your bad things in our territory. The fish die, the eels die, the whitebait die, all our food dies.)
132. We have a social responsibility. We inherit this world from previous generations. However, we also just borrow it from future generations. In our role as kaitiaki, as stewards of all things precious, we have to ensure that future generations inherit a world that is still beautiful. There is beauty in many things. There is beauty in a group of Maui's dolphins passing by; there is beauty in a giant blue whale slowly making its way down the coast; there is beauty in clear and clean water as it washes onto a rocky beach, wave after wave. These animals, plants and natural elements are not mere data on a page to be assessed on a cost : benefit ratio for first world humans. They are living, essential components that make this world viable. We must protect them if just for the sake of our own survival and sanity. Let's make sure that this is our legacy.

DECISION SOUGHT

- 133. CJT urges you to **DECLINE** this application.
- 134. CJT requests the right to be heard in support of its submission. We will call expert evidence and also address the DMC in te reo Maori (at times) during the hearing.

Figure 1. Frequency of occurrence of sustained casing pressure / SCP (Bruffatto et al. 2003)



^ Wells with SCP by age. Statistics from the United States Mineral Management Service (MMS) show the percentage of wells with SCP for wells in the outer continental shelf (OCS) area of the Gulf of Mexico, grouped by age of the wells. These data do not include wells in state waters or land locations.

Figure 2. Mining and fishing threats to Maui's dolphins (Maas, 2014)^{xxxviii}

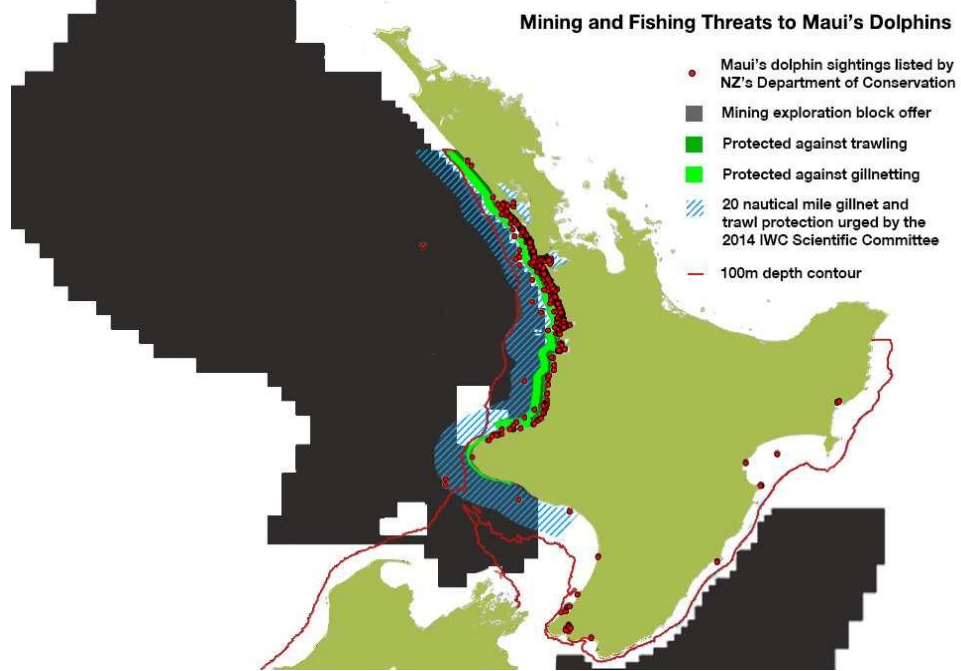
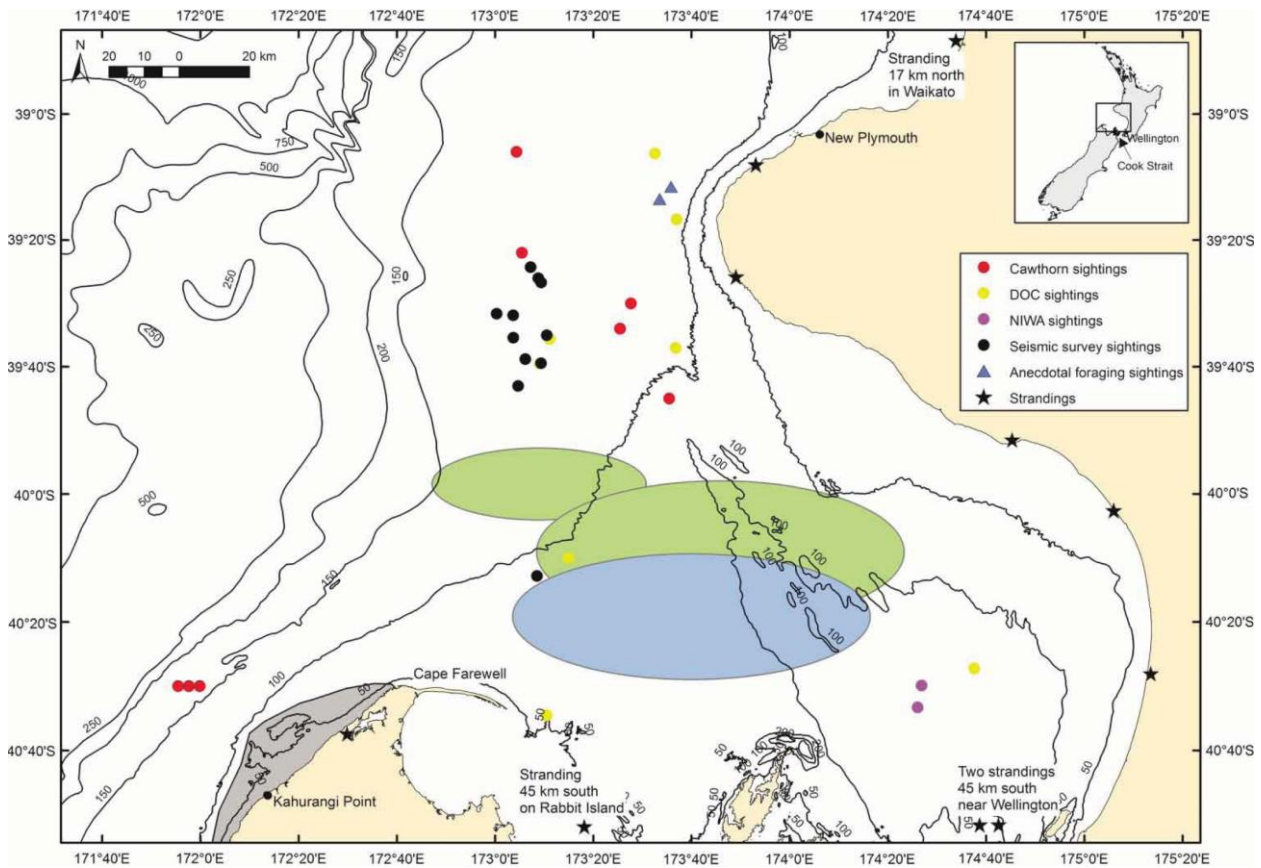
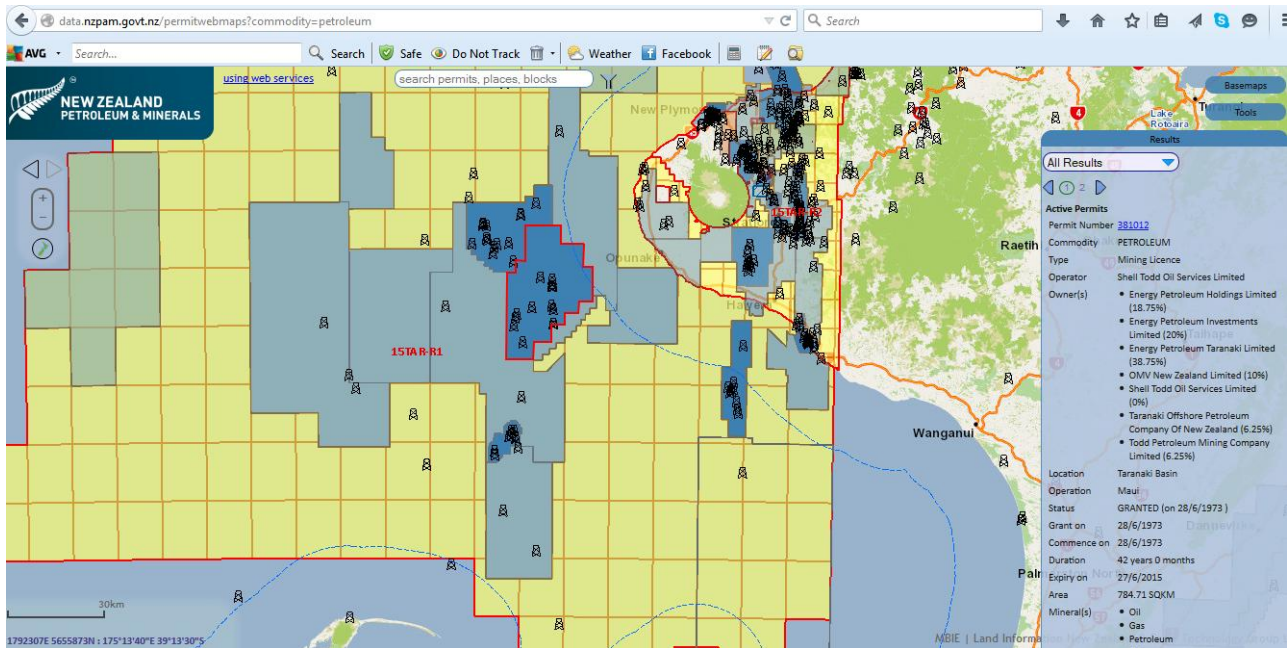


Figure 3. Blue whale sightings and strandings in the South Taranaki Bight (Torres, 2013)^{xxxix}



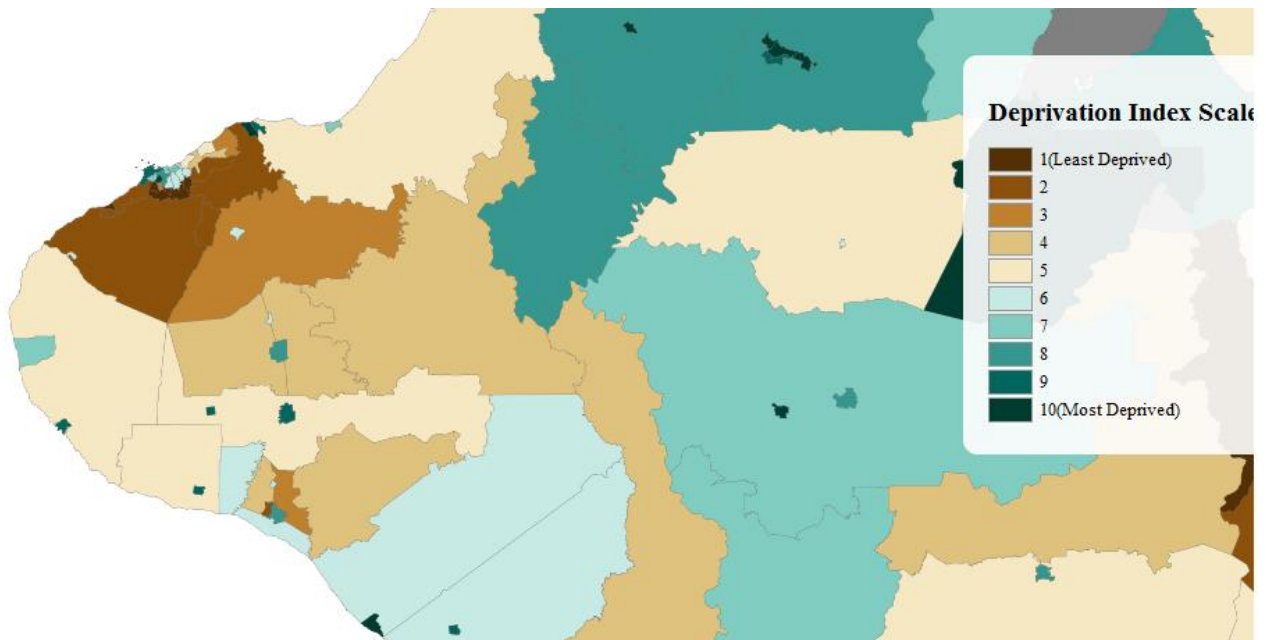
The centre of upwelling off Kahurangi Point is demarcated in grey; tongues of upwelled water extend as a plume to the north and northeast. The ellipses indicate the approximate areas of increased *Nyctiphanes australis* density sampled in March and April 1983 (green ellipses; Bradford & Chapman 1988; James & Wilkinson 1988) and February 1981 (blue ellipse; Foster & Battaerd 1985). No zooplankton sampling has been conducted in the STB north of c. 39°50'S.

Figure 4. Existing petroleum mining and exploration permits, block offers and wells (NZPAM, 2015)ⁱ



Key: Dark blue – mining permit; Light blue – exploratory permit; Yellow – Block offer; Rig – well or wellsite

Figure 5. Deprivation index for Taranaki and surrounds (Adapted from U. Otago and NZ Herald)



ⁱ Ruckstuhl, Katharina, L. Carter, L. Easterbrook, A.R. Gorman, Hauauru Rae, J. Ruru, D. Ruwhiu, J. Stephenson, A. Suszko, M. Thompson-Fawcett and R. Turner, 2013. Maori and Mining. <https://ourarchive.otago.ac.nz/handle/10523/4362>

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- ⁱⁱ Hapu chair says “Stop it before it gets in the gate”. <http://www.lockthegate.org.nz/news-blog/hapu-chair-says-stop-it-before-it-gets-in-the-gate/>
- ⁱⁱⁱ IPCC, 2014. Climate Change 2014: Impacts, Adaptation, and Vulnerability. <http://ipcc-wg2.gov/AR5/>
- ^{iv} Watson, T. L. and S. Bachu, 2008. Identification of wells with high CO₂-leakage potential in mature oil fields developed for CO₂-enhanced oil recovery. <https://www.onepetro.org/conference-paper/SPE-112924-MS>
- ^v Ingraffea, Anthony R. 2012. Some scientific failings with the draft supplemental generic environmental statement and proposed regulations: comments and recommendation. Submitted to the NYS Dept. of Environmental Conservation. http://www.concernedcitizensofthetownofchenango.org/uploads/1/1/0/9/11092266/ingraffea_-_dsgeis_comments_-_january_11_2012.pdf
- ^{vi} Ingraffea, Anthony R. 2013. Gangplank to a warm future. NY Times, 28 July 2013. http://www.nytimes.com/2013/07/29/opinion/gangplank-to-a-warm-future.html?hp&_r=5&
- ^{vii} Ingraffea, A.R., M.T. Wells, R.L. Santoro and S.B.C. Shonkoff, 2014. Assessment and risk analysis of casing and cement impairment in oil and gas wells in Pennsylvania, 2000-2012. <http://www.pnas.org/content/111/30/10955.short>
- ^{viii} Taranaki Regional Council, 2013. Cheal Petroleum Ltd. Deep well injection monitoring programme triennial report 2009-2012. <http://trc.govt.nz/assets/Publications/technical-reports/oil-and-gas-compliance-monitoring-reports/1133945w2.pdf>
- ^{ix} Tag Oil, 7 May 2014. TAG announces FY2015 drilling program and provides operations update. <http://www.tagoil.com/news/tag-announces-fy2015-drilling-program-and-provides-operations-update/>
- ^x Bruffato, C., J. Cochran, L.C.D. Power, S.Z.A.A. El-Zeghaty, B. Fraboulet, T. Griffin, S. Munk, F. Justus, J. Levine, C. Montgomery, D. Murphy, J. Pfeiffer, T. Pornpoch and L. Rishmani, 2003. From mud to cement-building gas wells, Schlumberger. *OilField Review*, 62-76, Autumn, 2003.
- ^{xi} Keranen, K.M., M. Weingarten, G.A. Aers, B.A. Bekins and S. Ge, 2014. Sharp increase in central Oklahoma seismicity since 2008 induced by massive wastewater injection. *Science* vol.345 no.6195 pp448-451. <http://www.sciencemag.org/content/345/6195/448.abstract>
- ^{xii} The Associated Press, 14 Oct 2014. Study links hundreds of Ohio quakes to fracking. [wyvtv.com/2014/10/14/study-links-hundreds-of-ohio-quakes-to-fracking/](http://www.wyvtv.com/2014/10/14/study-links-hundreds-of-ohio-quakes-to-fracking/)
- ^{xiii} Climate Justice Taranaki, Nov 2012. Submission to the Parliamentary Commissioner for the Environment – Investigation into hydraulic fracturing in New Zealand. <https://climatejusticetaranaki.files.wordpress.com/2011/04/cit-submission-to-pce-12nov2012.pdf>
- ^{xiv} MBIE, 2014. Developing regulations to support the new Health and Safety at Work Act – Discussion document. <http://www.mbie.govt.nz/what-we-do/workplace-health-and-safety-reform/pdf-documents-for-health-and-safety-consultation/new-updated-hsw-regulations-discussion-document-3.6-mb-pdf>
- ^{xv} Parliamentary Commissioner for the Environment, 2014. Drilling for oil and gas in New Zealand: Environmental oversight and regulation. <http://www.pce.parliament.nz/publications/all-publications/drilling-for-oil-and-gas-in-new-zealand-environmental-oversight-and-regulation>
- ^{xvi} Maritime NZ, 1999. Advisory circular – Part 180: Dumping of waste or other matter. Issue No.180-1, 30 June 1999. <https://www.maritimenz.govt.nz/Publications-and-forms/Environmental-protection/Sea-disposal-of-waste.pdf>

-
- ^{xvii} Currey R.J.C., L.J. Boren, B.R. Sharp, D. Peterson, 2012. A risk assessment of threats to Maui's dolphins. Ministry for Primary Industries and Department of Conservation, www.doc.govt.nz/getting-involved/consultations/current/threat-management-plan-review-for-mauis-dolphin/
- ^{xviii} Rio Declaration on Environment and Development, 1992. <https://www.cbd.int/doc/ref/rio-declaration.shtml>
- ^{xix} Convention of Biological Diversity – Preamble. <https://www.cbd.int/convention/articles/default.shtml?a=cbd-00>
- ^{xx} Convention of Biological Diversity – Precautionary approach, 1992. <https://www.cbd.int/marine/precautionary.shtml>
- ^{xxi} WWF, 2013. Fossil fuel finance in New Zealand. Part 1: Government support. http://awsassets.wwfnz.panda.org/downloads/wwf_fossil_fuel_finance_nz_subsidies_report.pdf
- ^{xxii} The Telegraph, 16 Jan 2015. BP Gulf of Mexico oil leak not as bad as US government claimed. <http://www.telegraph.co.uk/finance/newsbysector/energy/oilandgas/11349726/BP-Gulf-of-Mexico-oil-leak-not-as-bad-as-US-government-claimed.html>
- ^{xxiii} The New Zealand Herald, 25 April 2013. Maritime NZ bears brunt of Rena costs. http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10879646
- ^{xxiv} Taranaki Daily News, 13 Feb 2015. Industry jobs shrinking with oil price. <http://www.stuff.co.nz/taranaki-daily-news/news/66131327/Industry-jobs-shrinking-with-oil-price>
- ^{xxv} Royal Society of New Zealand, 2014. *Facing the Future: Towards a Green Economy*. <http://royalsociety.org.nz/expert-advice/information-papers/yr2014/greeneconomy/>
- ^{xxvi} Greenpeace, 2013. *The Future is Here: New jobs, new prosperity and a new clean economy*. <http://www.greenpeace.org/new-zealand/en/campaigns/climate-change/The-Future-is-Here/>
- ^{xxvii} Stern, Nicholas, 2007. The Economics of Climate Change – the Stern Review, University of Cambridge pub. http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/sternreview_index.htm
- ^{xxviii} Garnaut, Ross, 2011. The Garnaut Review 2011 – Australia in the global response to climate change. <http://www.garnautreview.org.au/>
- ^{xxix} Ackerman, Frank, 2012. Valuing the Oceans: The costs of climate change. Stockholm Environment Institute. <http://www.sei-international.org/blog-articles/2351>
- ^{xxx} Coal Action Network Aotearoa, 2014. Jobs after Coal – a just transition for New Zealand communities. <https://coalactionnetworkaotearoa.wordpress.com/jobs-after-coal/>
- ^{xxxi} Socioeconomic Deprivation Indexes: NZDep and NZiDep, Department of Public Health. <http://www.otago.ac.nz/wellington/departments/publichealth/research/hirp/otago020194.html>
- ^{xxxii} NZ Herald, 13 May 2014. Where are New Zealand's most deprived areas? http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11254032
- ^{xxxiii} MBIE, 2014. Regional Economic Activity Report. <http://www.mbie.govt.nz/what-we-do/business-growth-agenda/regions/documents-and-image-library/rear-2014.pdf>
- ^{xxxiv} Infometrics, 2012. Labour market and economic profile Taranaki. <http://www.infometrics.co.nz/reports/regional/TEC/Taranaki-Revised-Jun2012.pdf>

^{xxxv} Berl, 2012. A view to the South: Potential low carbon growth opportunities for the Southern Region economy. <http://www.berl.co.nz/assets/Economic-Insights/In-Focus/8655berlwwf-reportsummary.pdf>

^{xxxvi} DeVantier, Lyndon, 2012. Submission on the Review of Crown Minerals Act Regime. <http://www.med.govt.nz/sectors-industries/natural-resources/pdf-docs-library/oil-and-gas/crown-minerals-act-review/crown-minerals-act-regime-submissions/Lyndon%20DeVantier.pdf>

^{xxxvii} Palmer, Sir Geoffrey, 2015. Step up on climate change needed now. <http://www.scoop.co.nz/stories/PO1502/S00195/step-up-on-climate-change-needed-now.htm>

^{xxxviii} Maas, B. 2014. Facing Extinction: Maui's and Hector's Dolphins: New Zealand's recipe for extinction. NABU International Foundation for Nature.

^{xxxix} Torres, L.G. 2013. Evidence for an unrecognised blue whale foraging ground in New Zealand. New Zealand Journal of Marine and Freshwater Research, 47:2, 235-248. <http://dx.doi.org/10.1080/00288330.2013.773919>

^{xl} New Zealand Petroleum and Minerals Permit Webmap (accessed in Feb 2015). <http://data.nzpam.govt.nz/permitwebmaps?commodity=petroleum>