

# **Climate Justice Taranaki**

## **Representation at the EPA Board of Inquiry Hearing**

In the matter of

**Beach Energy Resources NZ (Kupe) Limited for  
marine consent and marine discharge consent applications  
for Kupe Phase 2 development drilling programme,  
offshore Taranaki**

7 December 2022

[www.climatejusticetaranaki.info](http://www.climatejusticetaranaki.info)

# **Our Key Points of Objection**

- 1. Cultural impacts**
- 2. Cumulative effects**
- 3. Disjoint processing of applications**
- 4. Economics and jobs**
- 5. Urgent just transition**

# 1. Cultural impacts

*“Ngāti Ruanui and Ngāruahine oppose the Beach Energy Application to the EPA based on the nature and significant scale of **cultural impacts** on the moana and the people of the iwi...*

*The proposed drilling and discharge application and its proposed area where it will operate, and surrounds have **high cultural significance** to Ngāti Ruanui and are **habitats of taonga species** including indigenous flora and fauna.*

*There are cultural impacts on **whakapapa, tikanga, mātauranga and kaitiakitanga** that are significant and cannot be avoided or remedied...*

***“Ngāti Ruanui traditional knowledge of the affected local marine environment confirms the presence of **sensitive benthic habitats, threatened marine seabirds and mammals** within the proposed exploration area and surrounds.***

***There is inadequate information on the state of the marine environment on the proposed drilling and discharge area and surrounds leading to **uncertainty**. A lack of data does not provide a firm well-informed decision-making therefore **precautionary principles** should be favoured...”***

**Cultural Impact Assessment by Ngāruahine me Ngāti Ruanui**  
(Appendix F of Beach Energy Resources NZ (Kupe) Limited Kupe Phase 2  
Development Drilling Programme Marine Consent and Marine Discharge Consent  
Application)

**The impact assessment “does not appropriately consider, nor address, the **actual and potential adverse effects to Māori existing interests and the cultural environment** on which is contextualised by those existing interests...”**

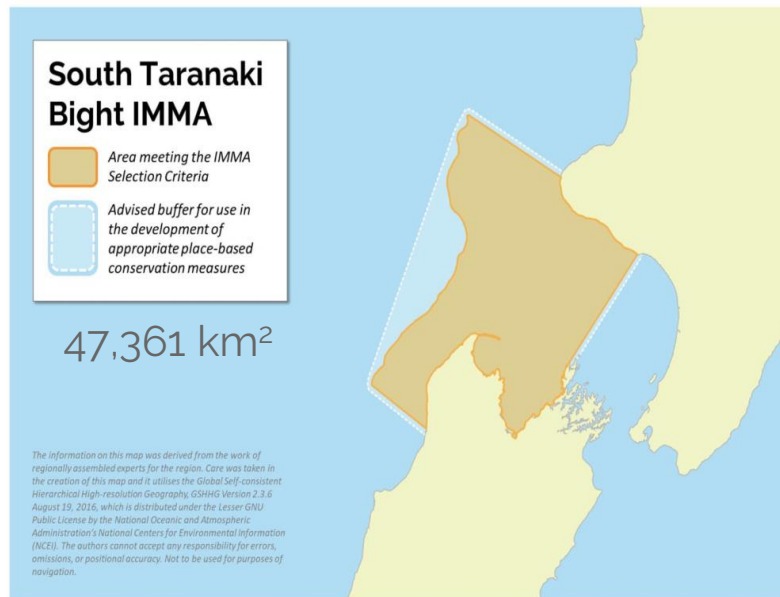
**The application does not adequately address the opposition by Ngāti Ruanui and Ngāruahine to the proposal.”**

**Ngā Kaihautū Tikanga Taiao Report –  
EEZ100021-1 and EEZ 100021-2**

<https://www.epa.govt.nz/assets/FileAPI/proposal/EEZ100021/External-advice-and-reports-EPA-reports/NKTT-Final-Report-Beach-Energy-EEZ100021-16-September-2022.pdf>



# Marine mammal global significance



## Qualifying Species and Criteria

**Māui dolphin – *Cephalorhynchus hectori maui***

Criterion A (Sp./population Vulnerability)

**Hector's dolphin – *Cephalorhynchus hectori***

Criterion A

**Pygmy blue whale – *Balaenoptera musculus brevicauda***

Criterion A; C (ii Feeding area, iii); D (i) Distinctiveness

**New Zealand fur seal – *Arctocephalus forsteri***

Criterion C (i) Reproductive area

**Antarctic blue whale – *Balaenoptera musculus intermedia***

Criterion A

**Humpback whale – *Megaptera novaeangliae***

Criterion A; C (iii) Migration route

**Fin whale – *Balaenoptera physalus***

Criterion A

**Sei whale – *Balaenoptera borealis***

Criterion A

**Sperm whale – *Physeter macrocephalus***

Criterion A

**Southern right whale – *Eubalaena australis***

Criterion C (iii)

**Common dolphin – *Delphinus delphis***

Criterion C (ii)

**Killer whale – *Orcinus orca***

Criterion D (i)

## Marine Mammal Diversity

Criterion D (ii) Diversity

*Globicephala melas, Caperea marginata, Tasmacetus shepherdi, Mesoplodon bowdoini, Balaenoptera bonaerensis, Berardius arnuxii, Tursiops truncatus, Balaenoptera edeni, Lobodon carcinophaga, Ziphius cavirostris, Lagenorhynchus obscurus, Pseudorca crassidens, Mesoplodon ginkgodens, Mesoplodon grayi, Mesoplodon hectori, Hydrurga leptonyx, Stenella attenuata, Kogia breviceps, Grampus griseus, Steno bredanensis, Globicephala macrorhynchus, Hyperoodon planifrons, Mirounga leonine, Lissodelphis peronii, Phocoena dioptica, Mesoplodon layardii, Stenella coeruleoalba*

<https://www.marinemammalhabitat.org/portfolio-item/south-taranaki-bight/>

# Cumulative effects on marine species and ecosystems



<https://www.doc.govt.nz/nature/native-animals/marine-mammals/dolphins/maui-dolphin/>

Prof. Elizabeth Slooten's expert evidence (2014) on the OMV applications for drilling in the STB stated:

***“Cumulative impacts of the proposed oil drilling need to be considered in combination with other, existing impacts on marine mammals in the area. These impacts include fishing, seismic surveys, ship strike and other activities... At this stage, the addition of any further impacts would mean that there is little if any chance of NZ reaching its goal of ensuring the long term viability and recovery of Maui's dolphin.”***

<https://climatejusticetaranaki.files.wordpress.com/2014/06/slooten-omv-evidence-30sept2014.pdf>

Ngāti Manuhiakai hapū assessed the cumulative effects from Beach Energy's planned activities as having **“Moderate”** residual impact on mauri for marine mammals and seabirds (IA Appendix F).

# Emerging threats add to cumulative effects

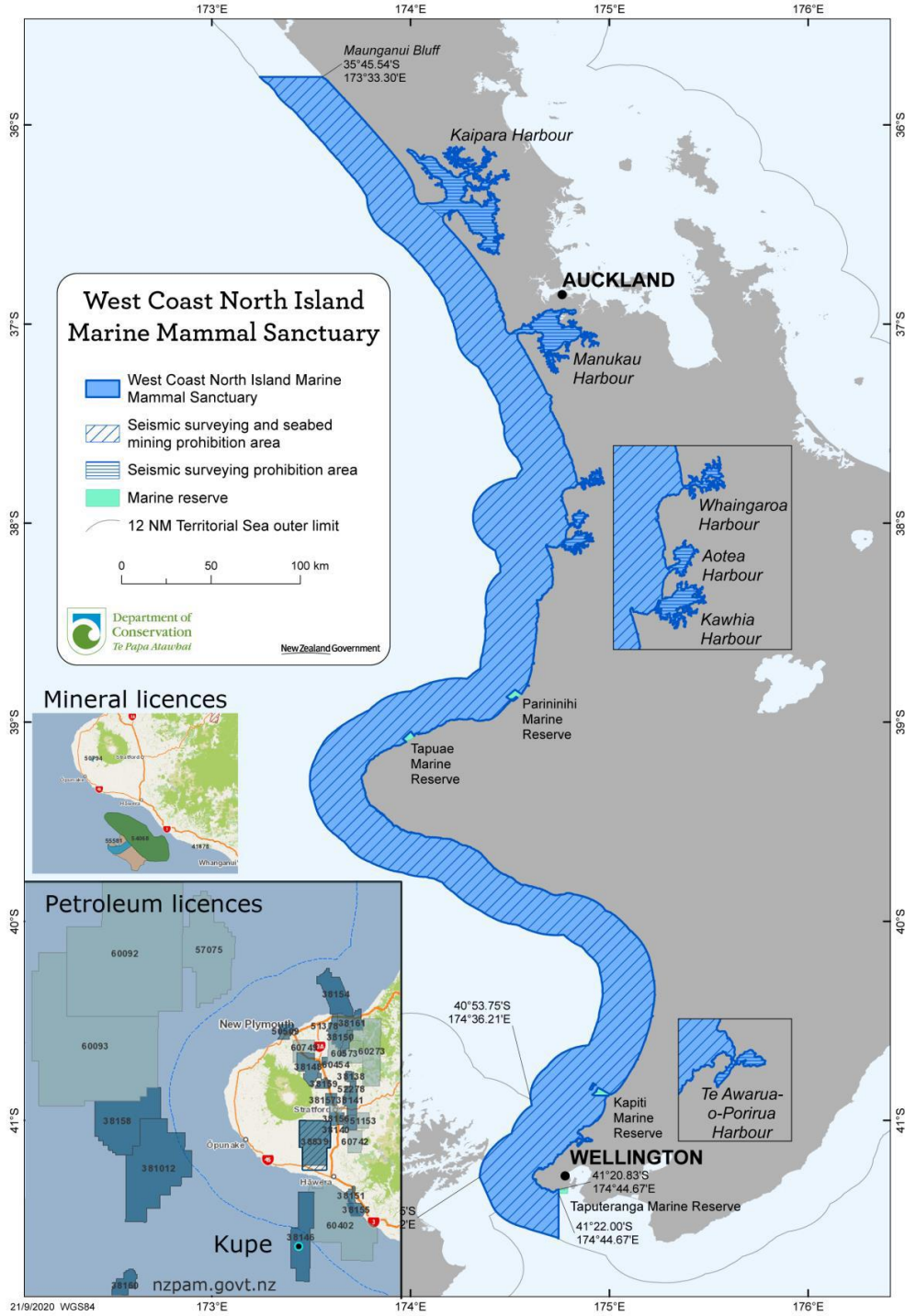
A 2022 DOC report identifies **changes in food supply** as the biggest threat to marine mammals in NZ waters.

*“This is likely to **impact populations** including **kekeno/NZ fur seal** in the Westland region and **blue whales foraging at the South Taranaki Bight**,”* says Hannah Hendriks.

*“**Māui dolphins** also appear vulnerable, based on their location at the warm end of the species' range and an apparent low availability of prey species.”*

Projected changes to the NZ environment include sea surface temperatures rising more than **3°C**, changes in atmospheric climate and **oceanographic circulation**, rising sea levels, and widespread **ocean acidification**.

<https://www.doc.govt.nz/news/media-releases/2022-media-releases/review-predicts-big-climate-change-impact-on-some-marine-mammals/>



“93. The **cumulative deposition of drill cuttings from multiple wells across time** is unlikely to have any noticeable effects on marine mammal foraging opportunities as:

(a) the area ... is small;

(b) no marine mammal species that could be present in the area is entirely reliant on benthic prey; and

(c) marine mammals have large foraging distributions.

94. The background **noise levels** of the STB are elevated ...While the proposed development drilling activities will add to this soundscape (and therefore the potential for masking), the effects will be temporary, and noise from development drilling activities will cease once the drilling programme is complete...

95. **Multiple other threats** to marine mammals are present in STB. Despite this, a **diverse marine mammal** assemblage is still present ...

102. While I agree with DOC that **blue whales** are present in STB waters year-round, based on the evidence presented... I consider **DOC's statement** that this species is “virtually certain to be present in the 20 km buffer area around PML38146” could be **misleading** as it implies a continuous presence in this area...

107. ...While acknowledging that cumulative effects are **difficult to assess**, I believe any cumulative effects from development drilling on marine mammals will be temporary and are **not predicted to elicit population level consequences...**

113. In general, the proposed development drilling activities in the Kupe field do not represent a substantive increase in risk to **Māui dolphins**, as this subspecies typically occurs in coastal waters and are **only rare visitors** to the WHP. On this basis, I believe that it is **highly unlikely** that the proposed drilling operations would directly contribute to the mortality of one of these dolphins. In addition, sub-lethal impacts such as habitat degradation are also unlikely as the drilling location is not situated in the core habitat of this threatened species. ...”

~Helen McConnell, Evidence for Beach Energy

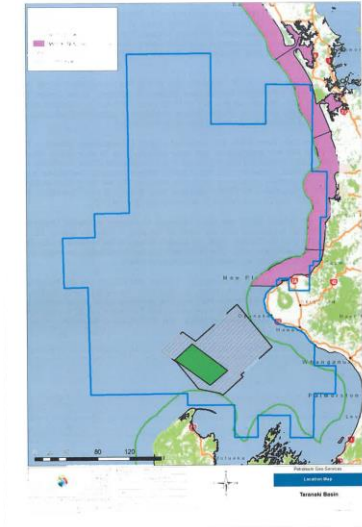


**Table 1:** Marine mammal detections recorded during week 3 of survey operations. Interruptions of seismic operations that occurred as a result of mitigation action are shown in **bold**.

Date	DOC Sighting ID	Species (common name)	Number of animals	Time of closest approach (24 hr)	First detected by <sup>1</sup>	Closest distance to array (m)	Seismic status <sup>2</sup>	Mitigation required <sup>3</sup>
31-10-2016	018	Blue whale	2 (m + c)	08:51	Crew	3399	NG	None required
31-10-2016	019	Blue whale	1	17:12	MMO	1534	NG	None required
31-10-2016	020	Blue whale	1	17:20	MMO	6388	NG	None required
01-11-2016	021	Blue whale	1	14:56	Crew	1980	FP	None required
01-11-2016	022	Baleen whale	1	15:49	MMO	1716	NG	None required
01-11-2016	023	Blue whale	2 (m + c)	17:40	MMO	529	NG	None required
01-11-2016	024	Blue whale	2	19:59	MMO	2693	NG	None required
02-11-2016	025	Blue whale	1	07:33	MMO	2996	FP	None required
02-11-2016	026	Blue whale	1	18:44	MMO	1611	NG	None required
02-11-2016	T029	Common dolphin	5+	22:05	PAM	N/A	NG	None required
03-11-2016	T030	Common dolphin	2	N/A	PAM	N/A	NG	None required
03-11-2016	027	Blue whale	1	10:38	MMO	544	NG	None required
03-11-2016	028	Blue whale	3	11:38	MMO	2061	NG	None required
03-11-2016	T031	Blue whale	1	12:27	MMO	2109	NG	None required
03-11-2016	T032	Blue whale	1	13:28	MMO	1621	NG	None required
03-11-2016	029	Blue whale	2	17:14	MMO	1494	SD (due to 030)	None required <sup>x</sup>
03-11-2016	030	Blue whale	1	16:48	MMO	1676	FP	<b>Shutdown</b>
04-11-2016	031	Blue whale	1	08:39	MMO	858	FP	<b>Shutdown</b>
04-11-2016	032	Baleen whale	1	09:35	Crew	1435	SS	<b>Shutdown</b>
04-11-2016	033	Baleen whale	1	11:15	MMO	2564	FP	None required
04-11-2016	034	Blue whale	1	13:13	MMO	924	FP	<b>Shutdown</b>
04-11-2016	035	Blue whale	1	14:35	MMO	1199	FP	<b>Shutdown</b>
04-11-2016	036	Baleen whale	1	16:52	MMO	1911	NG	None required
04-11-2016	037	Baleen whale	1	16:58	MMO	2168	NG	None required
05-11-2016	038	Blue whale	1	10:30	MMO	517	SD*	<b>Shutdown</b>
05-11-2016	039	Baleen whale	1	10:34	MMO	3548	SD*	None required
05-11-2016	040	Baleen whale	1	11:42	MMO	6238	FP	None required

Date	DOC Sighting ID	Species (common name)	Number of animals	Time of closest approach (24 hr)	First detected by <sup>1</sup>	Closest distance to array (m)	Seismic status <sup>2</sup>	Mitigation required <sup>3</sup>
05-11-2016	041	Blue whale	1	11:48	Crew	1054	FP	<b>Shutdown</b>
05-11-2016	042	Blue whale	1	12:06	MMO	4490	SD**	None required
05-11-2016	043	Baleen whale	1	17:00	MMO	4188	NG	None required
05-11-2016	044	Baleen whale	1	19:54	MMO	4709	SD***	None required
05-11-2016	045	Long-finned pilot whale / bottlenose dolphin	40	19:11	MMO	764	FP	<b>Shutdown</b>
05-11-2016	046	Blue whale	1	19:42	MMO	1453	SD***	<b>Delay start</b>
05-11-2016	047	Baleen whale	1	20:38	MMO	1986	FP	None required
06-11-2016	048	Blue whale	1	11:11	MMO	2141	FP	None required
06-11-2016	049	Blue whale	1	11:59	MMO	3013	FP	None required
06-11-2016	050	Baleen whale	1	12:22	MMO	1433	FP	<b>Shutdown</b>
06-11-2016	051	Baleen whale	1	12:11	MMO	3339	FP	None required
06-11-2016	052	Blue whale	1	12:24	MMO	2006	SD	None required
06-11-2016	053	Baleen whale	2 (m + c)	13:02	MMO	3078	SS	None required
06-11-2016	054	Baleen whale	1	12:59	MMO	2323	SS	None required

1. MMO, PAM, Crew.
  2. FP = full power; SS = soft start; TT = testing; ST = steaming/no gear; SD = shut down; NG = no source/gear out; DS = delay start; SA = source aboard; MT = mitigation source; DR = deploy/retrieval gear
  3. None required; No action; Delay soft start; Shutdown
- <sup>x</sup> Although detected inside mitigation zone, sighting 030 triggered the shutdown first.  
\*Shutdown caused by sighting 038 at 10:08.  
\*\* Shutdown caused by sighting 042 at 11:49.  
\*\*\* Shutdown caused by sighting 045 at 18:58



<https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/mmia/pgs-taranaki-west-3d-seismic-survey-mmia.pdf>

**Total 41 detections of marine mammals in a week (31/10/2016-6/11/2016), ten resulted in mitigation procedures.**

**24 of the sightings were confirmed Blue whale (everyday), others were unidentified baleen whale & a pod of 40 “long-finned pilot whale / bottlenose dolphin”**

Excerpt from EPA OIA response, 21 Oct 2022

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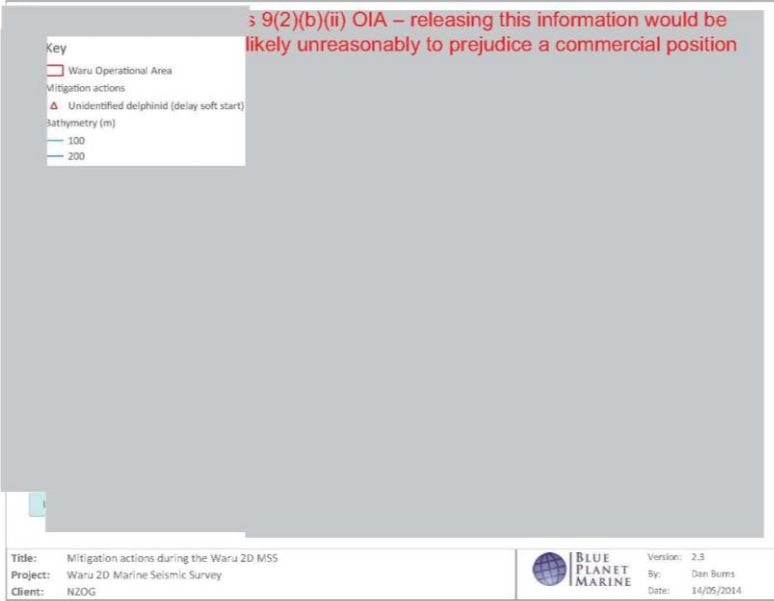


Figure 15: Marine mammal mitigation actions undertaken during the survey.

Out of scope

**What about records of mammal and seabird sightings and/or collisions/injuries/deaths associated with previous drilling, flaring, discharge and other oil and gas activities?**

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## Appendix 2: Marine mammal sightings and PAM detections recorded during the survey.

No.	Date (2014)	Time	On or off survey	Detected by MMO/PAM	Vessel lat. (south)	Vessel long. (east)	Species ID	Pod Comp.	Predominant behaviour	Distance to source (m)	Seismic status	Sighting conditions	Water depth (m)	Mitigation action required?
1	04/04	14:42	Off	MMO	s 9(2)(b)(ii) OIA - releasing this information would be likely unreasonably to prejudice a commercial position		Baleen whale	1 adult	Travelling	n/a	Steaming no gear	Good	s 9(2)(b)(ii) OIA	No
2	04/04	14:49	Off	MMO			Baleen whale	1 adult	Travelling	n/a	Steaming no gear	Good		No
3	04/04	14:52	Off	MMO			Blue whale	3 adults	Travelling	n/a	Steaming no gear	Good		No
4	04/04	15:00	Off	MMO			Blue whale	1 adult	Travelling	n/a	Steaming no gear	Good		No
5	04/04	15:01	Off	MMO			Blue whale	1 adult	Travelling	n/a	Steaming no gear	Good		No
6	04/04	15:22	Off	MMO			Blue whale	1 adult	Travelling	n/a	Steaming no gear	Good		No
7	04/04	15:30	Off	MMO			NZ fur seal	1 adult	Resting	372	Steaming no gear	Good		No
8	04/04	15:33	Off	MMO			Blue whale	1 adult	Travelling	n/a	Steaming no gear	Good		No
9	04/04	15:34	Off	MMO			Blue whale	1 adult	Travelling	n/a	Steaming no gear	Good		No
10	04/04	15:36	Off	MMO			Baleen whale	1 adult	Travelling	n/a	Steaming no gear	Good		No
11	04/04	17:36	Off	MMO			Baleen whale	3 adults	Travelling	n/a	Steaming no gear	Good		No

## Disjoint processing of related applications

*“Beach will be applying for a separate marine discharge consent for the discharge of these harmful substances once they are known to avoid potential uncertainty with the drilling fluids involved” (IA s 3.1.3).*

That later application will be **non-notified** under the EEZ-CS (Discharge and Dumping Regulations) 2015 section 21.

## Exclusive Economic Zone and Continental Shelf (Environmental Effects—Discharge and Dumping) Regulations 2015

16. The discharge of harmful substances described in [regulation 4\(a\) and \(b\)](#) from offshore processing drainage, displacement water, and **production water** from an existing structure is classified as a **non-notified** activity under the Act.

21. The discharge of harmful substances contained in **drilling fluids** is classified as a **non-notified activity**....

<https://www.legislation.govt.nz/regulation/public/2015/0228/11.0/whole.html#DLM6593960>

## Exclusive Economic Zone and Continental Shelf (Environmental Effects—Non-notified Activities) Regulations 2014

5. Activities described in [section 20\(2\) or \(4\)](#) of the Act that are involved in **exploration drilling** for petroleum in the exclusive economic zone or in or on the continental shelf are classified as **non-notified activities**...

(Note exploration includes appraisal drilling)

<https://www.legislation.govt.nz/regulation/public/2014/0043/latest/whole.html#DLM5935407>

# Transparency & Accountability?

*“The EPA conducted an inspection in 2018 that has resulted in an **ongoing investigation**. We hold two reports relating to the inspection. The reports are withheld under section 6(c) of the OIA, they are **directly connected with a process of enforcing the EEZ Act by ensuring compliance or investigating non-compliance with the EEZ Act and associated regulations**.*

*The making available of the inspection reports prior to conclusion of the investigation would be likely to prejudice the investigation underway.”*

Group General Manager  
Regulatory Systems and Operations,  
21 March 2021

*“The EPA has an **open book policy** and we endorse the principle of availability of information.*

*However, we can't release information that forms part of an investigation until the investigation and any associated activity is concluded....”*

EPA Official Correspondence Advisor,  
Government Engagement and Official  
Correspondence, 18 Nov 2022

# Economics

*“In short, including flow-on effects, I estimate that the regional impacts of the proposed drilling campaign (for 2 wells) could equal increased GDP of up to **\$20.9 million**, employment for **164 FTE-years**, and household incomes of \$11.0 million. These are significant impacts and will provide much needed support for a skilled local workforce as it **gradually transitions** toward a different energy future...*

*I am not aware of any specific **economic costs** that have been overlooked, or **opportunities** that Beach Energy would pursue in New Zealand otherwise.”*

Fraser Colegrave, Evidence for Beach Energy.

**A 2018 report by Victoria University and NIWA commissioned by The Treasury, which draws on international scientific peer reviewed evidence, has found that **climate change related floods and droughts** has cost the New Zealand economy at least **\$120M** for privately-insured damages from floods and **\$720M** for economic losses from droughts over the last 10 years. This is expected to be a **conservative estimate...****

<https://www.treasury.govt.nz/sites/default/files/2018-08/LSF-estimating-financial-cost-of-climate-change-in-nz.pdf>

# How climate change could send your insurance costs soaring

LEITH HUFFADINE  
Last updated 05:00, January 6 2018



**“Council chief executive Tim Grafton says New Zealand can expect to face, on average, **annual costs of \$1.6 billion**... from natural disasters, based on data going back to 1900.”**

<https://www.stuff.co.nz/environment/climate-news/98001955/how-climate-change-could-send-your-insurance-costs-soaring>

# Climate Disruption Costs

## Climate Change Commission

In Aotearoa, we’ve also experienced one of our hottest summers on record and experienced record rainfall and flooding in many parts of the country. **Extreme rainfall made 2021 a record year for weather damage claims** – a storm system in mid-July cost private insurers more than **\$130 million** alone.

<https://www.climatecommission.govt.nz/news/the/>

## New Zealand ill-prepared for rising cost of climate change

<http://www.newstalkzb.co.nz/news/national/new-zealand-ill-prepared-for-rising-cost-of-climate-change/>

NewsTalk ZB Staff, National, Sunday, 17 December 2017, 7:08AM



# Climate-friendly Investments Create More Jobs Per Dollar than Polluting Alternatives

*“I am not aware of any other project that would be pursued by Beach in New Zealand in lieu of extending Kupe’s field life, so any comparisons to other sectors or projects is an academic exercise that is unlikely to assist decision makers.”*

Fraser Colegrave, Evidence for Beach Energy

## Job Creation Comparison between Green and Unsustainable Investment Types



**Building efficiency** creates **2.8 times** as many jobs as fossil fuels per \$1 million  
**Industrial efficiency** creates **1.8 times** as many jobs as fossil fuels per \$1 million  
**Solar photovoltaic** creates **1.5 times** as many jobs as fossil fuels per \$1 million  
**Upgrades to existing grids** create **1.5 times** as many jobs as fossil fuels per \$1 million  
**Wind energy** creates **1.2 times** as many jobs as fossil fuels per \$1 million



**Pedestrian-only infrastructure** creates **1.3 times** as many jobs as road construction per \$1 million  
**Bicycle-only infrastructure** creates **1.4 times** as many jobs as road construction per \$1 million  
**Mass transit** creates **1.4 times** as many jobs as road construction per \$1 million  
**Railways** create **0.8 times** as many jobs as road construction per \$1 million



**Electric vehicle manufacturing** creates **0.9 times** as many jobs as ICE vehicles per \$1 million  
**Battery cell manufacturing** creates **1.2 times** as many jobs as ICE vehicles per \$1 million  
**Electric vehicle charging infrastructure** creates **2.0 times** as many jobs as ICE vehicles per \$1 million



**Ecosystem restoration** creates **3.7 times** as many jobs as oil and gas production per \$1 million

<https://www.wri.org/insights/green-investments-create-more-jobs-polluting-alternatives>

“Consequently, extending the life of the Kupe field will **help those with lower socio-economic means to continue using their gas-fired appliances for as long as possible...**” Fraser Colegrave, Evidence for Beach Energy

## First Gas 'zero carbon' gas advert pulled for misleading claims

Olivia Wannan · 17:18, Jul 23 2021

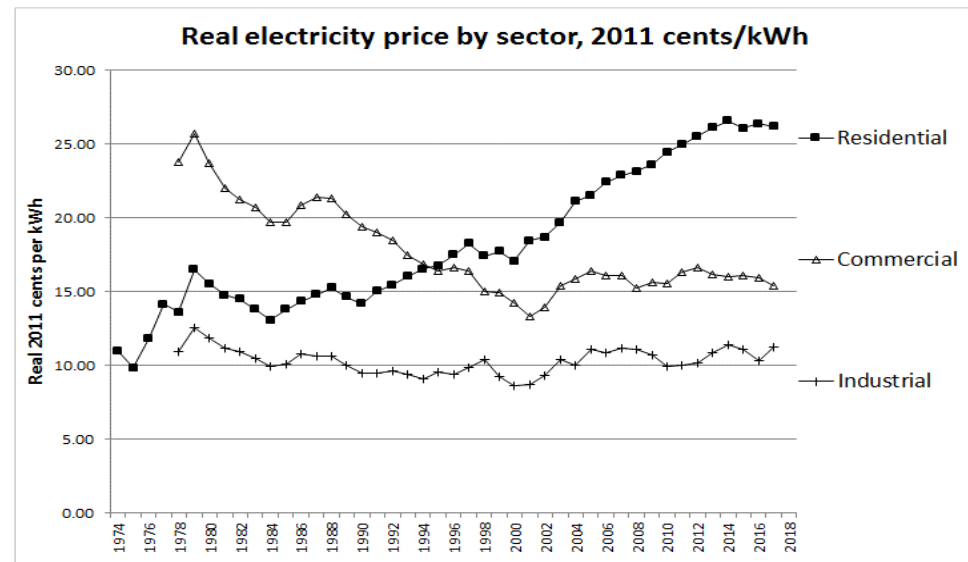


<https://www.stuff.co.nz/environment/climate-news/125841196/first-gas-zero-carbon-gas-advert-pulled-for-misleading-claims>

An advert telling consumers natural gas is “going zero carbon” has been found to be misleading by the Advertising Standards Authority, which has ordered it to be withdrawn.

The [authority noted](#) the advert implied the proposed change to zero-carbon gas was imminent, whereas First Gas is planning to introduce 20 per cent low-emissions gas into its network in 2030. The statement customers need to do “absolutely nothing” was also misleading, since gas consumers will eventually need to purchase and fit hydrogen-compatible appliances, the board ruled.

The pricing regime for electricity is deeply flawed, the **spot price** being based on the marginal most expensive mode of generation during any 30-minute increment, even though about 75% of electricity is generated through the renewable sources of hydro and geothermal, which costs 0.6c per kWh; **electricity generated from gas and coal costs typically 6.5c/kWh...** <https://www.odt.co.nz/opinion/nz%E2%80%99s-elec-trickery-pricing-deeply-flawed>



Excerpt from U3A lecture by Geoff Bertram, 31 May 2019

- **Productivity has gone down 42% since 1986**
- **Residential prices have gone up 90% since 1986...**
- **Gross profit has gone up 81% since 1986**

<https://u3awellingtoncity.org.nz/wp-content/uploads/2019/05/Electricity-Pricing-Bertram-310519.pdf>



# Transition? Gas is a bridge to nowhere!



## Fugitive emissions captured by a FLIR camera in Texas

<https://www.youtube.com/watch?v=RAo3mh8CwMU&feature=youtu.be>



<https://www.youtube.com/user/earthworksaction/videos>

<https://vimeo.com/205496570> (Australia)

[https://d3n8a8pro7vhm.cloudfront.net/lockthegate/pages/3861/attachments/original/1495068484/FLIR\\_Report\\_FINAL\\_20170501\\_Small.pdf?1495068484](https://d3n8a8pro7vhm.cloudfront.net/lockthegate/pages/3861/attachments/original/1495068484/FLIR_Report_FINAL_20170501_Small.pdf?1495068484)

The expansion of natural gas infrastructure jeopardizes energy transition, as natural gas is not a bridge technology towards a 100% renewable energy system as defined by the Paris Agreement.

*"CO<sub>2</sub> is not the only problem; there's also the highly effective greenhouse gas methane, which escapes unburned into the atmosphere along the entire value chain through **fugitive emissions...** underestimated," Fabian Präger, 2022.*

<https://www.sciencedaily.com/releases/2022/07/220705103634.htm#:~:text=Summary%3A,by%20the%20Paris%20Climate%20Agreement.>

**“Beyond projects already committed as of 2021, there are **no new oil and gas fields** approved for development in our pathway, and no new coal mines or mine extensions are required” IEA Net Zero by 2050**

<https://www.iea.org/reports/net-zero-by-2050>

*Why Natural Gas isn't a bridge fuel to a Low Emissions Economy, by Dr Terrence Loomis (2018)*

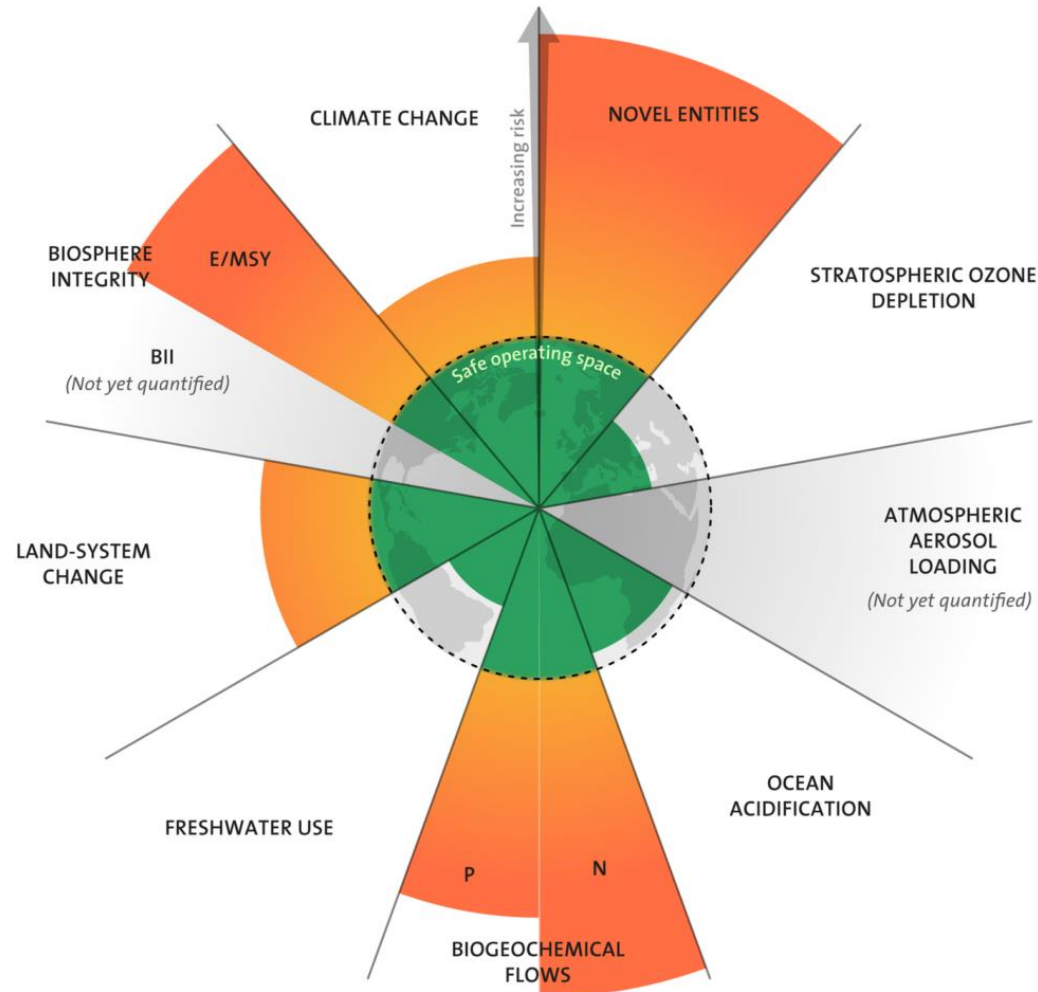
[https://www.researchgate.net/publication/327230654\\_Why\\_Natural\\_Gas\\_isn't\\_a\\_Bridge\\_Fuel\\_to\\_a\\_Low\\_Emissions\\_Economy](https://www.researchgate.net/publication/327230654_Why_Natural_Gas_isn't_a_Bridge_Fuel_to_a_Low_Emissions_Economy)

**Global Methane Pledge** - a collective effort to reduce global methane emissions at least **30 percent** from 2020 levels **by 2030...**

<https://www.globalmethanepledge.org/>

# Moral reasons – ecological overshoots

## The nine planetary boundaries (Jan 2022)



On 18 Jan 2022, scientists from the [Stockholm Resilience Center](https://www.stockholmresilience.org/) confirmed that we have crossed a 5th planetary boundary : the “*chemical pollution*” boundary or “*introduction of novel entities into the biosphere*”.

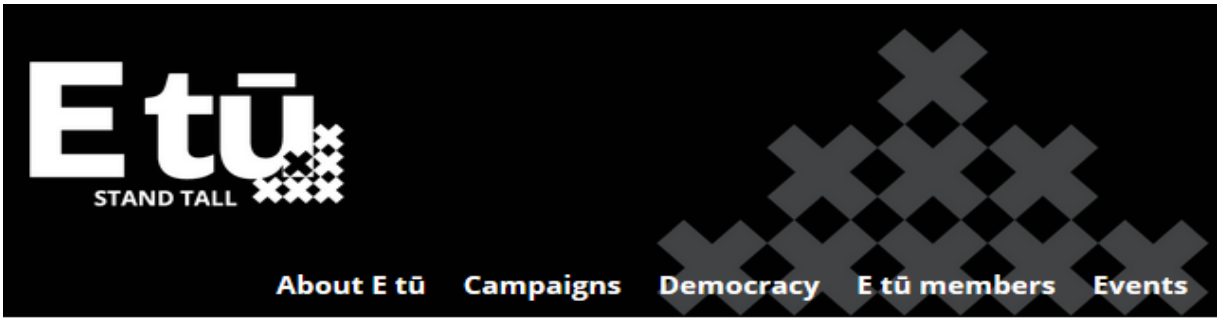
<https://bonpote.com/en/the-5th-planetary-boundary-has-been-officially-crossed-and-nobody-cares/>

*“Those who have more means to reduce dangerous greenhouse gas emissions also have a greater responsibility to do so.”*

Johan Rockström, centre researcher

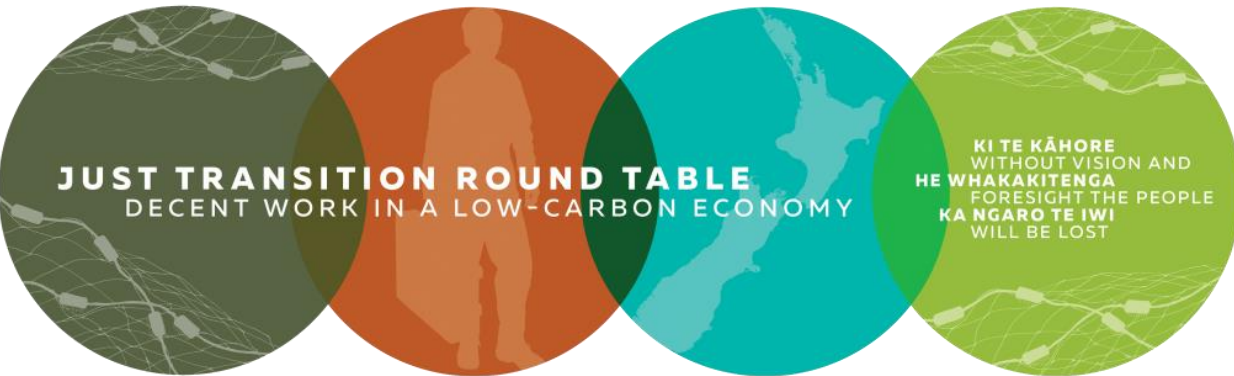
Source: Steffen et al 2015  
<https://www.stockholmresilience.org/research/planetary-boundaries/the-nine-planetary-boundaries.html>

<https://www.stockholmresilience.org/research/research-news/2022-11-10-fair-global-redistribution-of-resources-is-key-for-planetary-stability.html>



*“The shift away from fossil fuels was real as renewable energy became cheaper and technology improved... We can’t continue to **put so many eggs in the oil and gas basket**,”* Ross Henderson, E tū regional organiser, 2018

<https://www.stuff.co.nz/business/102420256/taranaki-oil-sector-ready-to-move-away-from-fossil-fuel-exploration>



See also <https://www.stuff.co.nz/taranaki-daily-news/opinion/107832195/hydrogen-a-great-step-forward-but-first-we-must-dare-to-ditch-our-fossil-fuel-and-economic-growth-addictions>

# Just Equitable Inclusive Transition

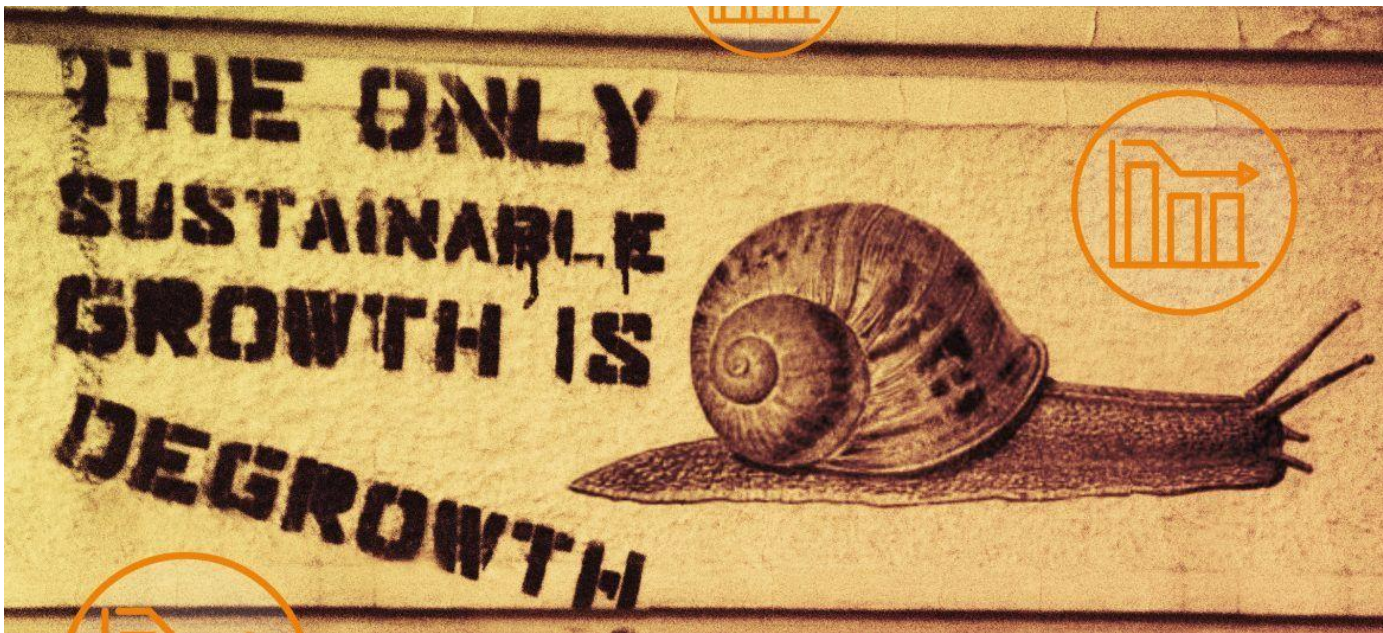


<https://blog.p2pfoundation.net/3-steps-to-building-just-transition-now-with-a-permanent-community-energy-cooperative/2017/05/09>

*“Kicking the can down the road on these decisions will only leave future decision-makers facing fewer choices with worse options. It will also see the cost of delay fall on working families, and those with the least ability to pay in terms of higher energy bills and higher fuel prices.”*

*CTU President Richard Wagstaff says good intentions need to be backed with a plan... (Oct 21)*

<https://union.org.nz/missing-detail-essential-in-governments-emissions-reduction-plan-says-ctu/>



<https://sosyalekonomi.org/degrowth-boundaries-of-growth/>

## “Essential for degrowth is:

- Striving for a self-determined life in **dignity** for all. This includes deceleration, time welfare and conviviality.
- An economy and a society that **sustains the natural basis of life.**

- A **reduction of production and consumption** in the global North and liberation from the one-sided Western paradigm of development. This could allow for a self-determined path of social organization in the global South.
- An extension of democratic decision-making to allow for real political participation.
- Social changes and an orientation towards **sufficiency** instead of purely technological changes and improvements in efficiency in order to solve ecological problems. We believe that it has historically been proven that decoupling economic growth from resource use is not possible.
- The creation of **open, connected and localized economies.**”

<https://degrowth.info/en/degrowth>