

# Submission on the proposed Minerals Strategy for New Zealand to 2040

31 July 2024

Thank you for the opportunity to submit on the Ministry of Business, Innovation and Employment's (MBIE) consultation on *A Draft Minerals Strategy for New Zealand to 2040* (Minerals Strategy).

We support the proposed Minerals Strategy. We have identified two further opportunities for improvement set out below. This submission contains no confidential information.

## The minerals stocktake should record any underground storage potential

The proposed Minerals Strategy commits to "engage Geological and Nuclear Sciences Limited [GNS] to complete a detailed stocktake of New Zealand's known mineral potential." We support this stocktake and recommend that the scope of the stocktake should include the potential for underground storage of gaseous hydrogen.

One of the challenges of the clean energy transition is providing long-duration storage of energy to back up the electricity system during long periods of low output from intermittent and seasonal renewables. Internationally, one of the leading technologies vying to provide that long-duration storage is underground hydrogen storage. Many places in the world have large salt deposits that they are able to create cavities within for the storage of the hydrogen. Our understanding is that New Zealand does not.

When GNS complete their stocktake, they should be mindful of the opportunity posed by underground cavities including porous rocks. The University of Canterbury-led Pūhiko Nukutū project is investigating hydrogen geostorage in depleted gas fields and sedimentary rocks.<sup>1</sup> Care should be taken for GNS not to duplicate Pūhiko Nukutū work, although the scope of Pūhiko Nukutū is relatively narrow.

If there are other prospective minerals GNS are aware of with relevant properties (soluble and impermeable) suitable for creating stable underground cavities, these should be identified in the stocktake.

## The Crown Minerals Act needs to account for storage

Paragraph 3g of the Minerals Strategy commits to "...investigate the efficiency of the Crown Minerals Act system as it relates to the allocation and management of emerging minerals such as natural hydrogen" within the first three years of the Minerals Strategy.

We support this and are comfortable with the lower-priority timing. We recommend that this investigation needs to examine the suitability and efficiency of the Crown Minerals Act for permitting injection and re-extraction of non-natural hydrogen. This non-natural hydrogen may or may not be co-mingled with natural hydrogen.

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<sup>1</sup> The project's webpage is <https://www.puhikonukutu.nz/>

# Submitter information

The Ministry of Business, Innovation and Employment (MBIE) would appreciate if you would provide some information about yourself. If you choose to provide information in the “About you” section below it will be used to help MBIE understand the impact of our proposals on different occupational groups. Any information you provide will be stored securely.

## A. About you

Name:

Privacy of natural persons

Email address:

climatejusticetaranaki@riseup.net

## B. Are you happy for MBIE to contact you if we have questions about your submission?

Yes

No

## C. Are you making this submission on behalf of a business or organisation?

Yes

No

If yes, please tell us the title of your company/organisation:

Climate Justice Taranaki Incorporated

## D. The best way to describe your role is:

Academic/researcher

Independent expert (please specify below)

Consultant (please specify below)

Business owner (please specify below)

Tradesperson (please specify below)

Student (please specify below)

Industry group (please specify below)

Other (please specify below)

Industry participant (please specify below)

Prefer not to say

Please specify here:

**E. Privacy information**

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*I do not want my submission placed on MBIE's website because... [insert reasoning here]*

**F. Confidential information**

**I would like my submission (or identifiable parts of my submission) to be kept confidential and have stated my reasons and ground under section 9 of the Official Information Act that I believe apply, for consideration by MBIE.**

**If you have checked this box, please tell us what parts of your submission are to be kept confidential.**

# A Draft Minerals Strategy for New Zealand to 2040

## Climate Justice Taranaki submission, 31 July 2024

Climate Justice Taranaki (CJT)<sup>1</sup> is a community group dedicated to environmental sustainability and social justice, notably inter-generational equity in relation to climate change. Based in Taranaki 'Gasland', our members, especially tangata whenua and long-term residents living next to oil and gas wells and petrochemical facilities, have generations of experience dealing with the impacts of mining. Using this lived experience and careful research, we have submitted on many consultation papers and Bills in relation to mining, energy and resource management over the past decade.

Of particular relevance to the Ministry for Business, Innovation and Employment (MBIE)'s Draft Minerals Strategy for New Zealand to 2040<sup>2</sup> are our recent submissions on the Fast Track Approvals Bill<sup>3</sup>, Crown Minerals Amendment Bill<sup>4</sup>, seabed mining<sup>5, 6</sup> and energy transition<sup>7, 8</sup>. Earlier this month, we organised a webinar focussing on the Draft Minerals Strategy. It generated many important points which inform our current submission<sup>9</sup>.

For a global context, the United Nations Environment Programme warns that a rapid increase in demand for critical minerals could have significant impacts on biodiversity and nature, food and water security, increase pollution and spark conflicts. Its foresight report offers *"insights that can shift the momentum from the brink of polycrisis to polystability. Key to a better future is a focus on intergenerational equity and a new social contract reinforcing shared values that unite us rather than divides us. A new social contract would involve the global community pursuing transformative change across technological, economic and social factors and paradigms and collective goals"* (UNEP, July 2024)<sup>10</sup>.

## Answers to the questions for the consultation

### **1. Are the strategic pillars of the Draft Strategy (Enhancing prosperity for New Zealanders, Demonstrating the sector's value, and Delivering minerals for a clean energy transition) suitable or is there more we need to consider?**

Yes, they are suitable     No, they are not suitable     Not sure/no preference

***Is there anything you would like to tell us about the reason(s) for your choice? Or is there more we need to consider?***

The Draft Minerals Strategy reads like a madman's suicidal economic pipedream with beliefs of centuries ago that plundering the land for wealth was a wise and moral imperative, as opposed to the murderous and harmful reality it was and still is.

Mining is an extractive industry that generates prosperity for the shareholders of mining companies at the expense of Aotearoa New Zealand's natural environment and local communities. It disrupts social cohesion and fuels inequality. Mining towns are exposed to boom and bust cycles. Taranaki towns and villages closest to the gas wellsites and petrochemical facilities are among the most deprived in the nation<sup>11</sup>. There are more jobs that can be derived from green investments per \$1 million than from extractive, unsustainable investments globally<sup>12</sup>.

The value of the mineral sector is hugely overstated in the strategy and is concentrated in the hands of a few companies whose primary appetite is on gold or coal. The costs on the environment and communities are externalised by the industry and ignored in the strategy. Given the climate science, international agency warnings<sup>13</sup> and threats to NZ's already eroding 'clean green' image, any expansion of coal mining is irresponsible and foolish. Acid mine drainage from coal mines have severe detrimental effects on water

quality and mahinga kai<sup>14</sup>. Mining, gold mining especially, is extremely energy hungry, requires fossil fuels and contaminates water and land with heavy metals like mercury, arsenic and toxic chemicals, leaving long-term, often irreparable damage and harm. The remediation<sup>15</sup> costs, and costs on ecosystems damage, local communities and incompatible non-extractive industries, notably sustainable crop production for food security<sup>16</sup> and resilience, are immense. Additionally, the costs on NZ from increasingly frequent, extreme weather events associated with climate chaos far outweigh the meagre royalties and supposed trickle down benefits from mining.

The 'clean green transition' is little more than rhetoric, smokescreen and desperate greenwashing effort for mining profiteering. Only a small fraction of gold is used in electronics, technology and other industries, the bulk becomes jewellery, coins or bars sitting in vaults<sup>17</sup>. This means that there is plenty of gold already for the energy transition without the need for new mining<sup>18</sup>. Moreover, so-called 'critical minerals' are not all or always critical to our lives or the economy, as technology evolves rapidly, and social transformation takes hold. A case in point, lithium can be extracted from geothermal fluid<sup>19</sup> rather than open-pit mining and emerging sodium ion batteries<sup>20</sup> do not require lithium. A recent study<sup>21</sup> focusing on lithium and water revealed that there are significant hydro-social impacts across the life cycle of energy storage from various technologies. The bottom line is that a thorough understanding of the full lifecycle, cumulative impacts is needed, and a precautionary approach should be taken when this is lacking, as it clearly is in the strategy as written.

Any energy transition that relies on destructive mining cannot possibly be regarded as clean or green. The existing Minerals Strategy (2019-2029)<sup>22</sup> has respecting "*the environment, ecosystems and biodiversity now and in the long term*" as the number 1 guiding principle and is consistent with no new mines on public conservation land. On the contrary, the Draft Minerals Strategy to 2040 encourages mining exploration in conservation areas other than Schedule 4 conservation land. This puts a significant portion of Aotearoa's indigenous biodiversity and unique ecosystems (e.g. Archey's Frog in the Coromandel<sup>23, 24</sup>, Waikoropupū Springs in Golden Bay)<sup>25</sup> at risk of mining impacts. This is unacceptable to our group, Forest & Bird<sup>26</sup> and numerous others.

The strategy does not state how the Crown would honour Te Tiriti o Waitangi and has no mention of the Principles of the Treaty of Waitangi. Simply ensuring that "*iwi and hapū are consulted with on the issuing of mining permits and the management of minerals*" or recognising their views and interests are little more than 'window dressing'. Iwi and hapū should be at the decision-making table and have the rights to say no. Yet, the Fast-track Approvals Bill, a key action under this draft strategy, if passed into law as drafted, would ensure that "*tangata whenua can only be involved in mineral decisions in their rohe if minerals are already included in their deeds of settlement*", explains Catherine Delahunty, a leading, long-term Pākehā activist in environmental, social justice, and Te Tiriti o Waitangi issues<sup>27</sup>.

Aotearoa has a long history of fighting companies who threaten our environment and people. There are many groups, iwi and hapū across the country who will take legal action, protest action and lay shame on polluting companies and politicians to their international funders or to their voting constituencies. We will not allow these companies and politicians to harm us so they can make a quick buck.

Consider seriously the shift from an extractive economy reliant on Gross Domestic Product (GDP) growth and concentration of wealth and power to a regenerative economy that consumes less energy and materials, and restores the integrity and wellbeing of people and the environment for the long-term.

**2. Are the key actions the right ones to deliver on our strategic pillars, and are they ambitious enough?**

- Yes, the actions are the right ones and are ambitious enough
- No, the actions are not the right ones and not ambitious enough
- Not sure/no preference

***If No, what else might we need to consider?***

The Fast-track Approvals Bill is anti-nature, anti-democratic and disrespectful of Te Tiriti o Waitangi. There is huge opposition against this Bill from across society, including many iwi, hapū, esteemed bodies like the Parliamentary Commission for the Environment and the Auditor General, many local councils, community groups<sup>28</sup> and well over 27,000 submitters<sup>29</sup>. Coal, gold and other mining companies were invited to consider the Fast-track option<sup>30, 31</sup>. It cannot be a key action of the strategy.

The amendment of the Crown Minerals Act and Resource Management Act and national direction to make it easier for mining permits and resource consents to go through will be disastrous for the environment and local communities. Such regulatory capture is dangerous and cannot be a key action of the strategy.

Including the above would make a mockery of the strategy's aims, notably building public confidence and trust for social license, and integrity and credibility for attracting sector investment.

**3. Are there opportunities for our minerals sector we haven't considered?**

- Yes, there are
- No, there are none
- Not sure/no preference

***If Yes, what are the opportunities for our minerals sectors we should consider?***

Supporting urban e-waste mining innovation and investment, and the recovery and reuse of demolition wastes for construction rather than aggregate mining should be considered thoroughly. The strategy is very thin on this area even though circular material technologies and business models already exist<sup>32</sup>. Of the seven strategy actions proposed, the action on accelerating a circular economy of critical minerals involving recovery, re-use and recycling technologies, deserves much greater thought. It is an area where civil societies would be keen and able to contribute and lead, given adequate support. Of relevance is the EU Critical Raw Minerals Act 2024 which establishes a target to recycle at least 25% of critical raw minerals<sup>33</sup>.

**4. Are there challenges for our minerals sector we haven't considered?**

- Yes, there are other challenges not considered
- No, all challenges have been considered
- Not sure/no preference

***Is there anything you would like to tell us about the reason(s) for your choice?***

There are serious challenges and far-reaching consequences from the government's substantial cuts to budget and staff across scientific, research and regulatory institutions and agencies<sup>34, 35</sup>. How is the government going to ensure that there will be robust, unbiased environmental, social and economic impact assessments associated with the planning, monitoring, decommissioning, clean up and remediation of mining operations and sites? Worryingly, many of the most contaminated sites in the country are abandoned mines in conservation land managed by the Department of Conservation which no longer has

adequate resources to deal with them<sup>36, 37</sup>. Some of the mining companies with interest here have terrible environmental and human rights records overseas, e.g. Oceana Gold in the Philippines<sup>38</sup>.

Protection for mining workers and nearby populations from the health and safety risks posed by an expanding, potentially fast-tracked, mining industry, are deplorably ignored in the strategy. With ever more unpredictable and extreme weather events associated with global heating<sup>39, 40</sup>, the likelihood of more tragedies that kill people and destroy homes and ecosystems, like the collapse of dams around toxic tailing ponds at the bauxite mine in Kolontar (Hungary)<sup>41</sup>, Mount Polley copper/gold mine (Canada)<sup>42</sup> and Jagersfontein diamond mine (South Africa)<sup>43</sup>, increases. Breaches of tailing ponds have also been caused by earthquakes (Tapo Canyon mine in USA<sup>44</sup>, Ohya mine in Japan)<sup>45</sup>. The number and size of mineral permits MBIE recently granted<sup>46</sup> just north of Lake Taupō<sup>47, 48</sup>, coinciding with the mapped lithium hotspot in the draft strategy, is concerning. Of course, NZ is seismically active, sitting on the Pacific Ring of Fire<sup>49</sup>.

Another challenge is the risk of NZ being sued by overseas mining companies under Investor State Dispute Settlement (ISDS) processes in various trade and investment agreements. Several Australian mining companies have or are suing other nations (e.g. PNG<sup>50</sup>, Thailand, Greenland<sup>51</sup>, Australia<sup>52</sup>) for refusing to grant or extend mining permits, claiming billions of dollars of damages. For instance, people living near the Chatree gold mine in Thailand were found to have elevated levels of heavy metals, including arsenic, manganese and cyanide, in their blood<sup>53</sup>. When the Thai government ordered closure to the mine and others in the country, it was sued by the company for loss of future profits. In January 2022, the Thai government granted the company permission to resume and extend the concession, and the court case was dropped. NZ is not immune from such legal challenges<sup>54</sup>. Indeed, the strategy as written is an open invitation for future litigation along these same lines.

**5. Are there any other things we have missed that we should include, or things we should not include?**

***These things could be economic/financial, environmental, health and safety related, or other areas.***

“Deep-seabed minerals” and seabed mining should not be included in the strategy. New Zealand has committed to supporting a moratorium on deep sea mining in areas beyond national jurisdiction<sup>55</sup> because of the threats to indigenous islands people and marine ecosystems<sup>56</sup>. A report by the Environmental Justice Foundation<sup>57</sup> concluded that the argument by deep-sea mining proponents that such mining is “*needed to fill a future gap in the supply of critical minerals required for the clean energy transition*” is flawed. The reasons include modelling uncertainties, the rapid development of battery technologies and the impact of circular economy. New scientific discoveries of the seafloor continue to demonstrate that we know little about it<sup>58</sup>. Seabed mining could destroy species and critical ecosystem functions and biophysical processes that we are yet to discover or understand. As a responsible, forward-looking nation, we should not be exploring deep-seabed minerals or allowing seabed mining within our territorial waters.

South Taranaki Bight provides critical habitat for the world’s most diverse marine mammal fauna, including endemic, endangered species. It supports food webs and provides feeding grounds for seabirds and kaimoana for tangata whenua. The Chatham Rise also supports many marine mammals, deep sea corals, rich benthic ecosystems and a unique fishery<sup>59</sup>. Notably, seabed mining applications off the Taranaki coast and on the Chatham Rise have been through the courts for most of the past decade and failed. If they are granted fast-tracked approvals, it will be a travesty of natural justice<sup>60</sup> with decades of impacts across our environment, biodiversity, society and economy.

Antimony should also be excluded from the strategy. It is highly toxic, posing extreme risks to the environment and the health and safety of mining workers and communities<sup>61</sup>. It is widely used by the military industry globally, of which we do not want to be part<sup>62</sup>.

The strategy, as written, is founded in 19<sup>th</sup> Century thinking, before the limits to growth and planetary boundaries were well understood. It represents a big backwards step. There is huge opportunity loss by allocating land and marine areas for mineral mining, rather than protecting them and supporting environmentally friendly and restorative industries. The latter include regenerative and organic farming that don't require phosphate mining, diverse local food and fibre production, ecosystem restoration and nature-based jobs. The age of ecologically damaging extractivism must end. NZ can, and should, lead the way.

Our community strategy *Toitū Taranaki 2030*<sup>63</sup> offers a range of pathways for a just transition to an economy that prioritises collective wellbeing, equity, and care for people and nature.

As a final remark, we borrow Catherine Delahunty's recent quote (29 July 2024)<sup>64</sup>:

*"Betty was always trying to get the courts to understand that, for Indigenous people, good decision-making was about looking far beyond the short-term. She explained that the 'seven generations wellbeing test' meant that if the companies and the courts couldn't prove that there would be at least seven generations of true benefit from extracting a mineral from its natural place, they should not be allowed to mine.*

*The kind of wellbeing and benefits envisaged in the test were not the short-term gains of a government receiving a 2 percent royalty for a few years, or a miner getting a job. It was wellbeing guaranteed by clean water and soil, good quality kai, and healthy relationships between all parts of the natural world, including ourselves...*

*In seven generations, in a climate-compromised world, we may not be talking about the extraction of minerals – we may be deep into mining landfills and electronic waste instead.*

*My profound hope is that we'll be finally listening to the wisdom of peoples still connected to the living planet, and not lobbyists for multinational profits. Ngā mihi to Betty Williams and many other Indigenous voices, whose vision for their mokopuna is based on protecting te taiao, the natural world that all our children will inherit."*

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<sup>1</sup> <https://climatejusticetaranaki.info/>

<sup>2</sup> <https://www.mbie.govt.nz/have-your-say/proposed-minerals-strategy-to-2040>

<sup>3</sup> <https://climatejusticetaranaki.info/wp-content/uploads/2024/04/cit-submission-fast-track-approvals-bill-19apr24.pdf>

<sup>4</sup> <https://climatejusticetaranaki.info/wp-content/uploads/2023/01/cit-submission-crown-minerals-amendment-bill-23jan23-final.pdf>

<sup>5</sup> <https://climatejusticetaranaki.info/wp-content/uploads/2023/10/cit-submission-trl-eez-cs-act-application-6oct23-1.pdf>

<sup>6</sup> <https://climatejusticetaranaki.info/wp-content/uploads/2023/06/cit-submission-inquiry-into-seabed-mining-final-23june23.pdf>

<sup>7</sup> <https://climatejusticetaranaki.info/wp-content/uploads/2023/11/cit-sub-mbie-energy-transition-nov23-final.pdf>

<sup>8</sup> <https://climatejusticetaranaki.info/wp-content/uploads/2023/07/cit-submission-on-electricity-authority-thermal-transition-25jul23.pdf>

<sup>9</sup> [https://us06web.zoom.us/rec/share/y69j\\_wKHcl-YcB-YKD5LTKK5Z0DTXZ3QEfrsdEEY84NL3My2KMqjK9TKVSzvSAzH.HXINBh-Gdz\\_exxPX](https://us06web.zoom.us/rec/share/y69j_wKHcl-YcB-YKD5LTKK5Z0DTXZ3QEfrsdEEY84NL3My2KMqjK9TKVSzvSAzH.HXINBh-Gdz_exxPX)

<sup>10</sup> <https://wedocs.unep.org/handle/20.500.11822/45890>

<sup>11</sup> <https://storymaps.arcgis.com/stories/bd26015b5b01429da82abf1cb268d7fd>

<sup>12</sup> <https://www.wri.org/research/green-jobs-advantage-how-climate-friendly-investments-are-better-job-creators>

<sup>13</sup> <https://www.un.org/en/climatechange/extreme-heat>

<sup>14</sup> <https://niwa.co.nz/freshwater/kaitiaki-tools/what-impacts-interest-you/chemical-contamination/causes-chemical-contamination/chemical-contamination-and-mining>

<sup>15</sup> <https://www.environmentguide.org.nz/activities/hazardous-waste-and-contaminated-land/remediation/>

<sup>16</sup> [https://newsroom.co.nz/2024/02/11/the-security-of-our-food-system/?fbclid=IwY2xjawERagNleHRuA2FlbQlxMAABHW0j014siu4s2Wc6Xa0KmvSGEVARSBFCuEfWNLJKpDw9lolmAy-\\_cfzDTw\\_aem\\_9u\\_4gxFpvk5fD5c4XFfXDG](https://newsroom.co.nz/2024/02/11/the-security-of-our-food-system/?fbclid=IwY2xjawERagNleHRuA2FlbQlxMAABHW0j014siu4s2Wc6Xa0KmvSGEVARSBFCuEfWNLJKpDw9lolmAy-_cfzDTw_aem_9u_4gxFpvk5fD5c4XFfXDG)

<sup>17</sup> <https://www.gold.org/goldhub/research/gold-demand-trends/gold-demand-trends-full-year-2021>

<sup>18</sup> <https://www.pressreader.com/new-zealand/taranaki-daily-news/20240615/281633900400049>

<sup>19</sup> <https://www.rnz.co.nz/news/business/462069/govt-backing-for-plan-to-extract-lithium-from-geothermal-brine>

<sup>20</sup> <https://www.nature.com/articles/s41578-021-00324-w>



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- <sup>21</sup> <https://wires.onlinelibrary.wiley.com/doi/10.1002/wat2.1748>
- <sup>22</sup> <https://www.mbie.govt.nz/dmsdocument/7148-responsibly-delivering-value-a-minerals-and-petroleum-strategy-for-aotearoa-new-zealand-2019-2029>
- <sup>23</sup> <https://watchdog.org.nz/mining-by-stealth-in-coromandel-forest-park/>
- <sup>24</sup> <https://www.newshub.co.nz/home/new-zealand/2022/04/dispute-between-oceanagold-and-anti-mine-activists-over-planned-coromandel-mine.html>
- <sup>25</sup> <https://www.rnz.co.nz/national/programmes/ninetonoon/audio/2018943677/thousands-call-for-halt-on-proposed-fast-track-gold-mine>
- <sup>26</sup> <https://www.forestandbird.org.nz/resources/govt-love-letter-mining-companies-latest-attack-nature>
- <sup>27</sup> <https://e-tangata.co.nz/comment-and-analysis/mining-and-the-seven-generations-test>
- <sup>28</sup> <https://www.stopthefasttrackbill.com/>
- <sup>29</sup> <https://climatejusticetaranaki.info/2024/06/20/a-fast-track-hijack/>
- <sup>30</sup> <https://www.rnz.co.nz/news/political/514743/government-releases-list-of-organisations-shoulder-tapped-for-fast-track-consents>
- <sup>31</sup> <https://www.rnz.co.nz/news/business/523108/australian-company-to-develop-gold-field-in-central-otago>
- <sup>32</sup> <https://www.unicore.be/en/about/unicore-at-a-glance/>
- <sup>33</sup> <https://www.mfat.govt.nz/assets/Trade-General/Trade-Market-reports/EU-Securing-the-Supply-of-Critical-Raw-Materials-July-2024.pdf>
- <sup>34</sup> <https://www.rnz.co.nz/national/programmes/middayreport/audio/2018946212/warnings-over-job-cuts-to-science-sector>
- <sup>35</sup> <https://www.rnz.co.nz/news/national/523340/worksafe-assures-staff-it-will-be-able-to-do-core-job-despite-cutbacks>
- <sup>36</sup> <https://www.thepost.co.nz/environment/350332297/toxic-legacy-cleanups-landfills-mines-be-delayed-after-budget-cuts>
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- <sup>38</sup> <https://www.philstar.com/headlines/climate-and-environment/2023/03/02/2248776/77-groups-urge-philippines-stop-oceanagolds-mining-ops-nueva-vizcaya>
- <sup>39</sup> <https://mg.co.za/the-green-guardian/2022-06-15-rate-of-catastrophic-mining-waste-failures-rising-across-the-planet/>
- <sup>40</sup> <https://onlinelibrary.wiley.com/doi/10.1155/2019/4159306>
- <sup>41</sup> [https://wwf.panda.org/wwf\\_news/?199897/Six-months-after-the-red-mud-tragedy-in-Hungary-tailings-dams-in-region-still-major-threat](https://wwf.panda.org/wwf_news/?199897/Six-months-after-the-red-mud-tragedy-in-Hungary-tailings-dams-in-region-still-major-threat)
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- <sup>43</sup> <https://mg.co.za/the-green-guardian/2022-09-12-free-state-dam-collapse-premier-awaiting-preliminary-report/>
- <sup>44</sup> <https://escholarship.org/uc/item/8xx7w310>
- <sup>45</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0267726114002127>
- <sup>46</sup> <https://www.nzpam.govt.nz/maps-geoscience/minerals-webmaps>
- <sup>47</sup> <https://www.newshub.co.nz/home/new-zealand/2022/12/tsunami-in-lake-taupo-damages-boats-residents-scared-by-hair-raising-earthquake.html>
- <sup>48</sup> <https://www.rnz.co.nz/national/programmes/afternoons/audio/2018948995/the-taupo-tsunami>
- <sup>49</sup> <https://www.nzherald.co.nz/nz/ring-of-fire-countries-constantly-struck-by-volcanic-eruptions-and-earthquakes>
- <sup>50</sup> <https://michaelwest.com.au/another-australian-miner-sues-another-poor-country-this-time-barricks-porgera-in-png/>
- <sup>51</sup> <https://www.arctictoday.com/chinese-linked-australian-mining-company-sues-greenland-for-billions-of-usd-over-lost-revenue/>
- <sup>52</sup> <https://www.theguardian.com/australia-news/2020/dec/18/clive-palmer-could-seek-unquantifiable-commonwealth-compensation-under-singapore-free-trade-deal>
- <sup>53</sup> <https://news.mongabay.com/2022/05/thai-gold-mine-blamed-for-sickening-local-villagers-is-set-to-reopen/>
- <sup>54</sup> <https://theconversation.com/how-the-fast-track-law-could-expose-future-nz-governments-to-expensive-trade-disputes-229363>
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