



Taranaki VTM Fast Track Application
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6 October 2025

Comment on the Taranaki VTM Project [FTAA2504-1048] under Fast-track Approvals Act 2024

To the Panel,

Thank you for the opportunity to comment on the Taranaki VTM Project Fast Track substantive application for resource consent. Much of what is covered in my commentary will be presented to the panel by others who are also commenting. Some of these issues have also been highlighted in the EPA's section 51 report on the project. The main purpose of my commentary is to lay out the key issues that, in my view, the panel will need to consider and balance in order to make an informed decision on this project. The panel will be aware of most, if not all, of these considerations.

Environmental effects

Elements of the project have almost certain material environmental impacts, although of uncertain duration and value. Other elements will have environmental effects, which are uncertain and may or may not be material.

The most obvious and certain environmental impact is the removal of seafloor biota. The process of vacuuming seafloor sediments will almost certainly kill most, if not all, benthic organisms while displacing, disturbing or otherwise disrupting the remainder. This is a significant material impact of the proposed activity.

While we have a good understanding of how these benthic ecosystems function, there remains considerable uncertainty about the value of the ecosystem services they provide. Making a judgement about the significance and value of those services will be a key matter for the panel to weigh up. There is also a large degree of uncertainty about the recovery time of the affected ecosystems – it could be years, decades or even centuries. The time required to reach an acceptable level of restoration is a key consideration in the materiality of the environmental impact of the destruction of those ecosystems.



The disruption of the seafloor through the mining process will also have impacts on the ecology of the water column through the mobilisation of sediment, minerals and chemicals into the water. This will likely affect the productivity of biota, such as algae and phytoplankton, that live in the water column. The sediment plume and its effects on meio- and micro-biota may also disrupt the fish, marine mammals and seabird populations that feed or migrate through the area. Similarly, the noise impacts on marine mammals may also be significant. The panel will need to consider whether the information available provides sufficient certainty about the materiality of the disruption caused to these species and ecosystems.

Similarly, the environmental impacts of the treated water that is discharged following the extraction process will also need to be considered. What impacts will the sediment discharge, changes in temperature, salinity and other properties have on the water column and its ecology? How long will those impacts persist? These are further questions the panel will need to consider.

One issue that may not have been considered is the potential for the mining activity to release CO₂ stored in the marine sediment. A NIWA report that I commissioned in 2023 investigated this issue in a general sense.¹ The panel should address the extent to which the release of carbon contributes to New Zealand's emissions.

I appreciate that assessing all these environmental impacts and determining their materiality will be difficult for the panel, particularly in the face of uncertainty. Some uncertainty stems from the fact that this type of project and the processing proposed is novel to New Zealand and relatively novel internationally. There is also limited information on the marine environment in question, although I understand it is improving.

The panel will also need to consider whether the information presented to it is “the best available”. A range of literature pertinent to this application has been published since 2016, but it does not appear to have been considered by the applicant. For example, the NIWA marine sediment carbon report referred to above is new. There are also scientific papers that the panel should consider. These include, but are not limited to, a report on the potential impact on underwater noise on marine mammals, proactively released by the Department of Conservation (DOC) in September 2025; a 2025 scientific paper on benthos and sedimentary recovery post marine sand mining, and a 2019 UNEP report on environmental governance of global sand resources.^{2,3,4}

In considering the overall materiality of the environmental harm, I am sure the panel will be cognisant of the three-step test set out in the Supreme Court judgment and the application of the information principles.

¹ Nodder, S. et al. (2023). *Organic carbon stocks and potential vulnerability in marine sediments around Aotearoa New Zealand*. NIWA report 2023162WN, p.118.

² UNEP, (2019). *Sand and sustainability: Finding new solutions for environmental governance of global sand resources*. GRID-Geneva, United Nations Environment Programme, Geneva, Switzerland.
<http://www.unepgrid.ch>

³ Jolliffe, C, et al. (2025). *Trans-Tasman Resources Limited's Fast-Track Application – Taranaki VTM, 2025: Scientific Peer Review in Relation to Underwater Noise and Marine Mammals*. Technical report by JASCO Applied Sciences for Department of Conservation – Te Papa Atawhai.

⁴ Lopez Lopez, L. (2025) *Macrobenthos and morpho-sedimentary recovery dynamics in areas following aggregate extraction cessation*. <https://doi.org/10.1016/j.marpolbul.2025.118184>



Economic impacts

The economists in my office have also reviewed the NZIER report on estimating the benefits of the proposal.⁵ Their analysis is set out in the appendix to this letter.

The main concerns raised are as follows:

- The modelling approach used by the NZIER probably overstates the economic benefits of the project. Our analysis suggests that a more appropriate conservative estimate at the national level would be a GDP impact of \$98 m rather than \$246 m, and the employment impact would be 397 rather than 1,320 jobs.
- There is no attempt to assess net benefits by considering costs, such as the environmental impact and opportunity cost of restricting other uses of the ocean space. Factoring in these additional economic costs would reduce the net economic benefit even further than the estimate above.
- Any assessment of net benefits would need to appropriately discount the different impacts depending on when they occur.

As I have commented previously, both to the panel convenor and to the panel considering the Waihi mine fast-track proposal, it is particularly important that the economic analyses used to assess projects are robust and independently verified.⁶ In this case, the analysis has been based on cash flow models provided by the applicant. Understandably, it is in the applicant's best interest to provide input to an analysis that favours its proposal. The panel needs to satisfy itself that it has a sufficiently robust economic analysis with independent verification on which to base its determinations.

Balancing

As the panel will be aware, a key judgement that it needs to make is whether or not the adverse impacts are sufficiently significant to be out of proportion to the regional or national benefits.⁷ Drawing on my comments above, the issues I consider most pertinent in that balancing judgement are:

- What is the cost of the almost certain material harm to the seafloor ecosystems, and to what extent can those costs be capable of being mitigated by restoration, the likelihood of which is highly uncertain?
- What is the net environmental cost of the pollution of the water column from the sea floor disturbance and the discharge of pollutants in the sediment and water released back into the environment after processing?
- How does the panel apply the Supreme Court's three-step test in the context of its assessment under the Act? And how will the panel reconcile that it must favour

⁵ NZIER. 2025. Economic impact assessment of TTRL's Taranaki VTM Iron Sands Project. A report for Trans-Tasman Resources Limited.

⁶ <https://pce.parliament.nz/publications/letter-response-to-waihi-north-invitation-to-comment/>

⁷ Fast-track Approvals Act 2024, ss.85(3)–(5).



caution and environmental protection, if the information available is uncertain or inadequate, within the Act's constraints on decision-making?

- What is the most appropriate estimate of **net** economic benefit to use?

Conditions

As part of its balancing judgement, the panel will in due course have to consider conditions that might mitigate any environmental impacts. As noted, there is significant uncertainty about the environmental impacts of the project. It will be important that any conditions manage this uncertainty appropriately, including giving consideration to whether an adaptative management approach is available that could require mining activity to be curtailed or cease in the event that the environmental impacts are worse than anticipated.

I would like to be consulted on the conditions proposed, if the process reaches that stage.

Rt Hon Simon Upton

Parliamentary Commissioner for the Environment
Te Kaitiaki Taiao a Te Whare Pāremata

Appendix

PCE critique of NZIER Report: Economic impact assessment of TTRL's Taranaki VTM Iron Sands Project

NZIER Findings

NZIER's findings may be summarised as follows (this section contains the key numbers and is taken directly from the report):

- TTRL's VTM Iron Sands Project will directly create a total of 303 new full-time equivalent (FTE) jobs across the Taranaki region and Whanganui District, with an annual direct expenditure of \$221 million on a range of industries in New Zealand.
- TTRL will employ 173 crew members to operate the IMV and FSO vessels, with over 50 staff members required to support, engineer, perform environmental monitoring and conduct fuel bunkering roles. There will also be 35 staff who will undertake general administration roles for the day-to-day operation of the project. In addition, TTRL plans to establish its New Zealand head office in New Plymouth, which will add 35 roles to provide marketing and corporate management.
- TTRL plans to spend a total of \$221 million (in 2024 New Zealand dollar terms) in New Zealand across a range of industries, of which \$217 million of this direct operating expenditure will occur in the Taranaki region and Whanganui District, and within that (i.e. as part of the \$217 million) \$47 million in the South Taranaki and Whanganui districts. These are all based on local authority boundaries. In total, the project's operational activities will directly create 303 FTE jobs in the Taranaki region and Whanganui, with 77 of those being in the South Taranaki and Whanganui districts.
- We estimate the project will increase New Zealand's annual GDP by \$246 million and employment by 1,320 jobs, with about 83% of these economic impacts in the Taranaki and Whanganui economies.

Weaknesses of the modelling approach used

Firstly, NZIER's analysis depends entirely on the cashflow model provided by Trans-Tasman Resources. As far as we can tell, NZIER did not scrutinise that model to see how realistic it is. Given the uniqueness of this project, there is likely to be a large amount of uncertainty associated with the estimates of expenditure. It would have been good to see that reflected in the form of a sensitivity analysis in NZIER's report.

In order to conduct its analysis, NZIER developed a regional input-output (I-O) multiplier model. This looked at the impacts on the local (South Taranaki/Whanganui), regional (Taranaki region/Whanganui) and New Zealand economies. It estimated the direct economic impact of the project's operational activities, as well as the indirect impact (multiplying the direct economic impacts through supporting industries) and the induced impacts (the impact of increased earnings in supporting industries).



There is no plausible alternative to this model at a local level. It would simply be too expensive to build a bespoke model for a local economy. The results are also likely to be more accurate at a local level. However, there are several large and well-known methodological problems with using this kind of model to estimate the impact of a mining project at the national level. These problems mean that the regional and particularly the national results need to be interpreted carefully as they are likely to overestimate the economic benefit. These methodological issues and a possible alternative approach are discussed in more detail below.

The model also doesn't give an estimate of the *net* benefit from the project as it excludes opportunity costs and environmental impacts. Finally, to account for the varying temporal nature of different impacts in a net benefit calculation, the impacts would need to be discounted appropriately. These issues are discussed in the final section of this letter.

Methodological issues

The NZIER report acknowledges the methodological problems in its report:

“There are several limitations associated with using economic multipliers to estimate flow-on impacts:

- Linear relationships – they assume that relationships between industries are linear and that firms always require the same quantity and mix of inputs to produce the same level of output.
- No displacement – they do not consider the potential for displacement that may occur when output in one industry increases and requires additional resources.
- No price effects – they assume that prices remain fixed and do not consider the effects of suppliers raising or lowering prices in response to changes in demand.
- No supply constraints – they assume that resources (including labour and capital) are available in unlimited quantities and that extra output can be produced in one industry without taking resources away from other industries.”

Having acknowledged these limitations, NZIER does not then take the next step of setting out the implications. As mentioned above, this model is a reasonable (cost effective) compromise for estimating very localised benefits. However, decades of research have shown these assumptions are unrealistic for a regional or national level economic analysis.⁸ The model is essentially assuming that all the resources used by the project – for example, labour and transport suppliers – are currently sitting idle and would only be employed as a result of this project. In reality, most of the jobs generated will be filled by people coming from other businesses. A good degree of secondary

⁸ Dwyer, L, Forsyth, P and Spurr, R. (2005). *Estimating the impacts of Special Events on the Economy*. *Journal of Travel Research*, Vol 43, p. 351–359.



industry (such as transport) will be diverted from other work, and prices will rise as a result. In short, the economy would adjust.

Some resources do lie idle, but the chances of these being employed by this project are relatively small. The country does have some unemployment, currently just over 5%. Historically, unemployment rates are similar to the national average in South Taranaki and slightly higher in Whanganui.⁹ However, mining is nowadays a relatively skilled activity. Less than 10% of the jobs within the industry could be described as “unskilled”.¹⁰ The likelihood of a skills match with an unemployed person is relatively low, unless there is a previous history of similar activity in the region (given the uniqueness of the project that is unlikely here).

As a result of these methodological problems the estimates provided by NZIER’s model are likely to overstate the economic benefits at the regional and national level.

With respect to TTR’s capital investment, NZIER rightly notes that much of this will be made offshore and will “not directly contribute to the New Zealand GDP”. We also don’t know where that investment is coming from, and therefore who will benefit from the dividends (which should be included in the GDP estimate). For this reason, jobs are probably the best indicator of local benefit, followed by GDP. Jobs are more likely (though far from certain) to employ locals and the wages of people employed by the project are likely to boost the local economy. Increased investment or exports are not useful indicators of the benefit from the project.

National level economic impacts from this project would be more accurately estimated by using a Computable General Equilibrium (CGE) model. This model would account for the fact that most of the labour and some of the machines employed by this project are not lying idle. This is particularly the case for the estimated indirect and induced impacts. A CGE model would build in the displacement and price impacts that would eventuate as a result.

A regional input output multiplier is more appropriate at a very local level as many of the jobs created will be filled by people moving in from outside that local area. Therefore, in a sense, the jobs are additional *to that place*. Even then, Dwyer, et al. (2005) demonstrated that the estimates of regional multipliers are speculative at best. When employing a similar multiplier model EY caveat their result by saying “direct value add is commonly put forward as the most appropriate measure of the relative contribution of an industry to the economy”.¹¹ In our judgement, the results of CGE modelling would also normally be much closer to the direct impacts. In order to be conservative, we would recommend that at the national level the more appropriate GDP impact to focus on would be \$98 m rather than \$246 m, and the employment impact would be 397 rather than 1,320.

⁹ <https://rep.infometrics.co.nz/south-taranaki-district/employment/unemployment?compare=new-zealand,whanganui-district>

¹⁰ Labourers made up 549 of the 5,796 people employed in the mining industry in the 2023 Census.

¹¹ https://www.weride.org.au/wp-content/uploads/2023/11/The_Australian_Cycling_and_e-scooter_Economy_in_2022_WeRide_and_EY_2023_Report_Final_web.pdf



As noted above, the ideal would be to use a CGE model, particularly for national level impacts. Naturally, there are cost constraints in conducting any economic analysis and it may not be plausible to commission both a CGE model for national impacts and still use a regional input-output multiplier model for local impacts. Given the fast-track legislation talks about projects of national and regional significance, it would be useful to have a clearer steer on the Government's priorities so that an appropriate model can be used to estimate benefits in the future.

An alternative approach

Even in the absence of commissioning a CGE model to conduct an analysis of the project, it would still be possible to get a rough estimate of the output that a CGE model would generate. The key question is: what benefits from this project are truly additional to the country? In our view there are two:

1. The royalties from mining accrue to the government and would not occur without this project.
2. Mining has high labour productivity. As a result, additional employment in the mining sector is likely to increase productivity (even if it comes at the expense of employment in other sectors) with associated increases in average incomes and tax revenues.

Each is explored in turn below.

1. Royalties

Estimated royalties for this project can be taken straight from the NZIER analysis (though it is worth noting again that NZIER doesn't seem to have checked the numbers provided by TTR). NZIER estimated royalties at \$36–54 m per annum.

2. Increased labour productivity

According to Infometrics, mining has considerably higher productivity than other sectors at \$526,609 of GDP per filled job in 2024.¹² This high figure is largely due to the high capital intensity in the sector and the rents attached to the one-off extraction of scarce, non-renewable natural resources. However, this means that the figure includes the economic impact of the capital investment that the mining company makes.

The average across all sectors was \$149,163, so if we assume that a new mining worker comes from an "average" sector of the economy, the mining job generates an additional \$377,446 in GDP per year. In many cases, this is likely to be an overestimate – some of the people employed will come from high productivity sectors. However, a few are likely to come from less productive sectors and a few will be previously unemployed, so these effects should net out.

¹² <https://rep.infometrics.co.nz/new-zealand/productivity/industry-productivity>



According to the NZIER study (based on TTR figures), around 170 of the jobs directly created by this project will be in the mining industry. The others are in secondary associated industries, and therefore are less likely to increase labour productivity by the amount estimated.

Based on the estimated additional labour productivity of these 170 new mining jobs, the total additional GDP impact would be \$64 m per annum. This would include returns to investors who may not all necessarily be based in New Zealand, so this may be an overestimate. Combined with the royalties above, that gives a total economic benefit to the national economy of \$100–\$118m per annum. This is significantly lower than the \$265 m estimated by the NZIER analysis and similar to the more conservative estimate of direct benefits.

Taken together, this indicates that a benefit of around \$100 m per annum is much more likely to be an accurate estimate.

What is missing

As noted by the Griffith University analysis (which makes many of the same points as above), what is missing from the NZIER analysis is a view on total economic value. This would include an estimate of the costs created by the damage the project causes to the country's natural capital (and potentially, its international reputation).

The Griffith University analysis includes a discussion of the opportunity costs of mining associated with competing uses of the marine space, such as fishing and wind power. An opportunity cost is the value of the next best alternative that is given up when a choice is made. There firstly needs to be an options analysis of what the next best option would be. If, for example, wind power is the next best alternative use of this space, an alternative scenario should be developed that sets out the net benefit of using this space for wind power. If the net benefits of wind power are greater than for seabed mining, then seabed mining should not proceed (assuming the objective is to maximise the value of the seabed space for New Zealand). We have not had time to review the offshore wind proposal in similar detail to make a like-for-like comparison.¹³ It might also be worth including the net benefit of fishing in the calculations for both scenarios if one of them is likely to have a greater impact on the fishing industry. It should be possible to illustrate the uncertainty of the impact on fishing in a similar way to the aforementioned uncertainty surrounding the economic benefits.

We note that the Griffith University analysis also includes some estimates of the flow of ecosystem services generated each year by a hectare of coastal seafloor. These values could be used to estimate the environmental cost of this proposal, again to net off against the economic benefit. This would require an estimate of the area of seabed that is likely to be mined and an estimate of the time it would take to recover (i.e. how long the ecosystem services would not be generated for after the mining). Given the uncertainties in the science around recovery time, we would advise using a range of values with a conservative upper bound. This would allow an estimate of the costs of the damage to

¹³ <https://www.pwc.co.nz/pdfs/2024/national-impacts-report-new-zealand-offshore-wind-industry-mar-2024.pdf>



natural capital and would make it possible to estimate (it is only an estimate) of total economic value from the project.

The estimates of the value of ecosystem services generated by coastal seafloor won't account for the stock of carbon stored in the sediment.¹⁴ Mining the seafloor would cause a one-off release of carbon. The amount of carbon released should be estimated and included in the analysis. Given that the New Zealand Emissions Trading Scheme (NZ ETS) does not completely cover the New Zealand economy, the value of carbon used should reflect the Treasury shadow carbon price rather than the NZ ETS price.¹⁵ Officials will also need to consider how this issue is covered by the NZ ETS.

Importantly, the NZIER model also does not use a discount rate. This is essential for any analysis of net benefits as it allows for a proper comparison of benefits and impacts depending on when they occur over time. Based on the latest Treasury guidance the commercial costs and benefits of this proposal should be discounted at 8%, while environmental costs should be discounted at 2%.¹⁶

Finally, it is worth noting that this project is taking place within the range of Māui dolphin, which are critically endangered. We note that one study for Hector's dolphin put the value of each dolphin at \$355,000 in 2014.¹⁷ Given that Māui dolphin are a far rarer sub-species, this is likely to be a low estimate. Of greater concern is that given the low population (around 50 individuals), the loss of one of these animals as a result of this project could be devastating to the species as a whole.¹⁸ What is the value of preserving Māui dolphin? Economic valuations for preventing the loss of a species – particularly charismatic megafauna – tend to become exponentially high. Even assigning a low additional risk posed by this project, there are likely to be high costs from proceeding, which would reduce the total economic value of the project.

¹⁴ <https://pce.parliament.nz/publications/organic-carbon-stocks-and-potential-vulnerability-in-marine-sediments-around-aotearoa-new-zealand/>

¹⁵ <https://www.treasury.govt.nz/sites/default/files/2024-10/cbax-tool-climate-environmental-impacts-oct24.pdf>

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<https://www.treasury.govt.nz/information-and-services/public-sector-leadership/guidance/reporting-financial/discount-rates>

¹⁷ <https://uk.whales.org/wp-content/uploads/sites/6/2018/08/new-zealand-dolphin-report.pdf>

¹⁸ Noting there is debate over whether Māui dolphin are a species or sub-species.