

<p><b>IN THE MATTER</b></p> <p><b>AND</b></p> <p><b>IN THE MATTER</b></p>	<p>of the Fast-track Approvals Act 2024 (<b>FTAA</b>)</p> <p>of an application for approvals under the FTAA for the Stella Passage <b>Development FTAA-2512-1163</b></p>
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**STATEMENT OF EVIDENCE OF DR RICHARD BRENT MEADE**

30 April 2026

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# 1. Introduction

## 1.1 Scope of this Evidence

1. I have been asked by Ngāti Kuku Hapū Trust (**Ngāti Kuku**) to assess the economic analysis (**the Analysis**) provided by NZIER on behalf of Port of Tauranga Limited (**the Applicant, POTL**) in support of the Stella Passage application (**the Application**) under the Fast-track Approvals Act 2024 (**FTAA**) for the development of port facilities at Port of Tauranga (**the Project**).
2. In particular, I have been asked whether, in my opinion as an expert economist, the Analysis credibly and robustly demonstrates the extent of the Project's regional or national benefits, and whether there are material adverse effects arising from the Project either not addressed or inadequately accounted for in the Analysis. I have also been asked to provide my opinion on the significance of the Project's regional or national benefits, and the level of compensation required to compensate cultural impacts of the Project on Ngāti Kuku.

## 1.2 Background, Experience and Code of Conduct

3. I am a professional economic consultant and researcher with 33 years' experience in providing economic and financial analysis and advice. My primary professional role is as Principal Economist at Cognitus Economic Insight, an economic consulting and research practice I founded in 2002. Since 2023 I have been an Adjunct Associate Professor at Griffith University, and was appointed a Lay Member of the High Court for Commerce Act matters in 2024. In June I retired after being on the organising committee of the Law & Economics Association of New Zealand for 10 years, having been president for three years, and Auckland vice president for six years.
4. Prior to founding Cognitus, I was an investment banker with Credit Suisse First Boston (1992-1998), through which I was a valuation and corporate finance specialist. I have also taught undergraduate and MBA finance and/or corporate finance for Victoria University of Wellington in New Zealand and Hong Kong multiple times, and completed a graduate-level course in finance as part of my PhD (further details below).
5. I have also been a Research Principal at the New Zealand Institute for the Study of Competition and Regulation (2001-2011), and a Senior Research Fellow at Auckland University of Technology (2015-2025). In addition to teaching finance or corporate finance, I have also lectured in industrial organisation and/or environmental economics at Auckland University of Technology and University of Auckland multiple times.

6. Since 1992 I have provided independent advice to nine iwi/tribes, or groups of iwi, in negotiations with the Crown for settlements of historical claims arising from Crown breaches of the Treaty of Waitangi, including the landmark Ngāi Tahu and Central North Island Iwi Collective settlements. Since 2010, I have provided independent economic expert evidence on behalf of Māori claimants seeking binding recommendations from the Waitangi Tribunal against the Crown for historical Treaty breaches, as well as for other claimants before the Tribunal seeking non-binding recommendations for various Treaty breaches. I was an independent economic expert for the plaintiff in the “Nelson Tenth” High Court action against the Crown for breaches of fiduciary duty dating from 1845. I also provided independent economic evidence in the 2025 High Court (Smiler et al. v. Attorney-General) “waters case”, seeking legal recognition of customary rights and interests in freshwater and geothermal resources. I have also provided independent expert advice for multiple other Māori organisations, and government agencies in relation to Māori matters, on a range of policy and commercial matters.
7. I hold the following qualifications: a PhD (awarded with Distinction) in industrial organisation and regulation, as well as an MPhil and MSc in economic theory and econometrics, all from Toulouse School of Economics. I also hold a BSc (Hons, First Class) in statistics and operations research (including papers in economics and finance), a BSc in statistics and operations research, and a BCA in economics and finance, all from Victoria University of Wellington.
8. I belong to multiple professional and academic associations, including the Law & Economics Association of New Zealand (Member), Competition Law & Policy Institute of New Zealand (Member), Asia-Pacific Industrial Organisation Society (Member), New Zealand Association of Economists (Member), the New Zealand Institute of Forestry (Ordinary Member), and the Australian Centre for International Commercial Arbitration (Associate Member).
9. Relevant examples of my work for this exercise include:
  - 9.1. Assessing economic evidence provided in support of other applications under the FTAA, including for the Waihi North, Delmore, and Sunfield FTAA applications (and others in process);
  - 9.2. Undertaking numerous and often-times complex financial evaluations;
  - 9.3. Applying the total economic value (**TEV**) framework for describing and categorising the full range of economic values that attach to a given activity or resource, and also non-market valuation (**NMV**) techniques for ascribing monetary values to product or

service attributes that are not traded in markets and hence which lack identifiable market prices;

- 9.4. Co-authoring a study commissioned by Te Puni Kōkiri on the economic value of recognising and protecting Māori taonga;
  - 9.5. Providing expert evidence or commercial advice regarding fair sharing – e.g. of net social benefits or commercial returns;
  - 9.6. Co-authoring a study commissioned by Kāhui Wai Māori on translating traditional Māori concepts regarding customary rights (over freshwater and geothermal resources) into contemporary economic terms;
  - 9.7. Providing expert economic evidence (including for multiple landmark cases) in the High Court, Waitangi Tribunal, and Environment Court;
  - 9.8. Assisting Māori peak bodies with their engagement with the Ministry for the Environment regarding the reform of the RMA (under both the previous and current governments), including a particular focus on recognising and protecting Māori rights and interests;
  - 9.9. Undertaking research on how land use is affected when land provides cultural services as well as commercial value, as well as research more broadly on the role of cooperative ownership in affecting business viability and behaviour.
10. I confirm that I have read the Environment Court Practice Note 2023 – Code of Conduct for Expert Witnesses (**the Code**), and have complied with it in the preparation of this evidence. I also agree to follow the Code when participating in any subsequent processes, such as expert conferencing, directed by the Panel. I confirm that the opinions I have expressed are within my area of expertise and are my own, except where I have stated that I am relying on the work or evidence of others, which I have specified.

### 1.3 Documents Reviewed

11. In preparing this evidence, I have reviewed the following documents for the second substantive Stella Passage Development project:
- 11.1. A report prepared by NZIER for Port of Tauranga Limited dated February 2025, Appendix 5, *Stella Passage Development: Economic Effects Assessment – Final (NZIER Report)*;

- 11.2. A report prepared by Ngāti Kuku Hapū Trust dated April 2025, *Cultural Impact Statement – Port of Tauranga Stella Passage Development – Substantive Application (Ngāti Kuku CIS)*;
- 11.3. A slide presentation by Port of Tauranga Limited dated March 2026, Expert Panel Overview Conference – Stella Passage Development (**POTL Presentation**);
- 11.4. An undated document prepared by or on behalf of the Applicant, *Appendix 5 – Proposed consent conditions: Regional Structures, Reclamation and Dredging Conditions (Draft Conditions)*; and *Appendix 5A Proposed Consent Conditions – District (Land Use Consent)*;<sup>1</sup>
- 11.5. A memorandum of counsel on behalf of Port of Tauranga Limited dated 19 January 2026 which included reference to cultural impacts mitigation measures in other consenting processes (**Impacts MoC**);
- 11.6. A draft statement of evidence of Dr Simon Edward Paul Hales dated 30 April 2026 filed on behalf of Ngāti Kuku (**Hales Evidence**);
- 11.7. Other draft briefs of evidence being filed on behalf of Ngāti Kuku including where relevant independent expert evidence;
- 11.8. Response information provided by the Applicant in response to Minute 3 (RFIs) including Annexure A (**Kneebone Evidence**), and Annexure B (**Project Alignment with Māori Economy**); and
- 11.9. Other documents and materials as referenced throughout this report.

#### **1.4 Summary of Main Conclusions**

12. In the following sections I set out my detailed assessment of the Analysis. By way of summary, it is my opinion that:

- 12.1. The FTAA requires a clear assessment of whether the Project delivers net benefits to New Zealand’s social welfare once all costs, disbenefits, and adverse impacts are

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<sup>1</sup> The principal focus of my evidence has been on the proposed Regional consents.

accounted for. In economic terms, this necessitates a cost-benefit analysis (CBA), rather than an economic impact assessment (EIA).

- 12.2. The NZIER Report provides an EIA and is therefore not fit for purpose under the FTAA framework. It measures economic activity rather than welfare, includes costs as benefits, omits significant adverse impacts, and relies on unrealistic assumptions and counterfactuals. The results are presented as “illustrative” only, lack transparency, and materially overstate the project’s economic contribution. Accordingly, the claimed impacts (let alone benefits) are not robustly established.
- 12.3. Critically, the analysis excludes major costs, including substantial public health impacts from air pollution associated with port activities. These are estimated at approximately \$78 million per annum (present value of approximately \$3.4 billion over 35 years), with disproportionate impacts on Ngāti Kuku and the Mount Maunganui community. Environmental degradation, catastrophic risk, and cultural impacts are also not assessed.
- 12.4. A central economic issue is the Project’s failure to recognise and provide for Ngāti Kuku relationships with their ancestral lands, waters, and taonga, including through its denial of the Hapū’s rangatiratanga. In economic terms, this denial results in the inability of Ngāti Kuku to exercise meaningful control over the access to and use of resources for cultural and economic purposes, and to secure a fair share of the benefits generated from them. This represents a significant adverse impact requiring direct compensation, which I assess by reference to established fair sharing benchmarks.
- 12.5. In particular, the absence of fair sharing of project returns means Ngāti Kuku do not participate in the economic upside of activities occurring on, or dependent upon, their ancestral whenua and moana.
- 12.6. Relatedly, the Project further fails to recognise and provide for Ngāti Kuku’s relationships with their ancestral lands, waters, and taonga, by frustrating the Hapū’s ability to discharge cultural obligations such as kaitiakitanga, manaakitanga, and obligations to both ancestors and future generations. In economic terms, this gives rise to a range of costs, including environmental degradation, reduced access to customary resources, diminished wellbeing, and significant health impacts. Importantly, it also gives rise to non-market costs in the form of pain and suffering associated with the inability to discharge such cultural obligations. These represent

significant additional adverse impacts of the Project requiring direct compensation, which I assess by reference to established metrics for compensating such non-market harms.

12.7. These aggregated cultural impacts materially reduce the project's net benefits and, if unaddressed, may outweigh any claimed economic gains. If the Project proceeds, they represent substantial uncompensated cultural adverse impacts.

12.8. Hence, if the Project proceeds, I recommend direct compensation that is indicatively at least \$19 million per annum (35 year present value of \$335–475 million), including \$10-11m/year fair revenue sharing of incremental Project revenues assuming a fair sharing rate based on relevant benchmarks of 4-4.3%, plus a further \$8.7m/year compensation for the adverse impacts of the Hapu's ability to discharge cultural obligations being frustrated (assuming the required compensation is \$5,000/adult/year based on a variety of relevant compensation metrics).

12.9. The above figures are compensation for the Project treating its adverse impacts as being independent of cultural adverse impacts relating to POTL's overall future activities. However, since POTL's existing activities give rise to ongoing and cumulative adverse impacts that the Project adds to but fails to address, this gives rise to an additional failure to recognise and provide for Ngāti Kuku's relationships with their ancestral lands, waters, and taonga:

12.9.1. Applying my assessed revenue fair sharing rate of 4-4.3% to POTL's overall revenues – not just the Project's incremental revenues – assuming that level of revenue is sustained in future, adds an extra c. \$19-20m/year to the \$10-11m/year compensation figure above, which over 35 years has a present value of an extra \$221-233m (using Treasury's commercial discount rate) or c. \$476-501m (using Treasury's social discount rates, treating revenue sharing as achieving a cultural objective – i.e. recognising and providing for Ngāti Kuku relationships and values).

12.10. These compensation amounts – even just annually – are materially greater than the applicant's proposed mitigation package of \$6.1 million in total over 35 years (which has a 35 year present value of \$5.3m).

12.11. Overall, the project's claimed benefits are not credibly demonstrated, while its adverse impacts – particularly those affecting Ngāti Kuku – are substantial and

under-assessed. On the available evidence, it is unlikely that the project delivers net regional or national benefits as required under the FTAA.

## 2. Cost-Benefit Analysis Required, Not Economic Impact Analysis

### 2.1 Overview

13. In this section I:

13.1. Explain why I recommend the use of cost-benefit analysis (**CBA**) for FTAA purposes; and

13.2. Further explain why economic impact analysis (EIA) of the sort used in the Analysis, which assesses the Project's "impacts" rather than its "benefits", is inappropriate, and how reliance on project "impacts" can result in projects being approved that lessen social welfare/wellbeing – i.e. result in disbenefits at a regional or national level.

### 2.2 Cost-Benefit Analysis Framework

14. The FTAA's focus on project "benefits" (net of monetary project costs and other monetary disbenefits), suitably weighed against project adverse impacts (including, among other things, non-monetary costs), necessarily requires an assessment of how that project enhances New Zealand's social welfare/wellbeing (at a regional or national level), since if a project does not increase social welfare/wellbeing, then in economic terms it is not beneficial at an aggregated (i.e. regional or national) level.

### 2.3 Focus on Benefits – Not Impacts – Essential for Assessing Whether Projects Improve Social Welfare/Wellbeing

15. Following Treasury guidance, and based on my own assessment – for the purposes of sound economic decision-making – any assessment of whether the Project gives rise to significant regional or national benefits as required under the FTAA necessarily requires a CBA, and not an EIA as provided in the Analysis (discussed further below):

15.1. Such a CBA measures the net benefits of an undertaking like the Project, being the total incremental benefits of the Project, less its total incremental costs (including opportunity costs, and both indirect costs and benefits as well as direct ones),

appropriately adjusted for time and risk, and allowing for any salient distributional impacts;

15.2. By contrast, EIA purports to measure the economic impact of the Project, not its benefits (and hence not its contribution to social wellbeing) *per se* – including by treating Project costs as benefits, even if national wellbeing could be improved by allocating fewer resources elsewhere:<sup>2</sup>

15.2.1. The classic example of EIA indicating a benefit, when society is not in fact made better off by the relevant activity, is paying a person to dig a hole and then pay them to fill it in again.

15.2.2. This is counted as a gain under EIA – two payments of wages – but not under CBA – wage costs are incurred for a socially pointless activity, when the relevant labour resources could have been used for socially beneficial activities elsewhere in the economy at the same wage cost.

16. Indeed, Treasury argues for the use of CBA as follows:<sup>3</sup>

16.1. “[A]ll advice that is aimed at helping decision-makers make a decision, should adopt a CBA framework as an organising principle”; and

16.2. Investment in systematic CBA is justified whenever decisions impact on large numbers of people.

17. By contrast, Treasury notes the following additional shortcomings of EIA (which measures components of GDP):<sup>4</sup>

17.1. It does not measure social welfare *per se* (even if it proxies for social welfare);

17.2. It makes no inherent distinction between economic impact accruing to local parties and economic impact accruing to overseas parties – i.e. it fails to identify whether project impacts accrue to New Zealand (as is required by “significant regional or

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<sup>2</sup> Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 54.

<sup>3</sup> Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 39.

<sup>4</sup> Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 47.

national benefits”) or to overseas parities (about whose welfare the FTAA appears to be unconcerned);

- 17.3. It ignores non-market effects, which can be socially important; and
  - 17.4. It offers no insight as to any distributional concerns – i.e. whether resources are allocated to groups deemed in need of greater access than others.<sup>5</sup>
18. Treasury concludes that “EIA can provide useful contextual information for decision-makers, but it is not suitable as a tool for measuring the balance of costs and benefits of a decision to society”<sup>6</sup> [emphasis added]:
- 18.1. This appears highly pertinent to assessing FTAA applications.
19. To Treasury’s list I would also point out that EIA typically focuses on only gross Project “market” (versus “non-market”) economic impacts (see Section 4.3 below for further discussion), and as such does not account for adverse Project economic impacts (whether market or non-market) or non-market Project benefits for that matter. Hence EIA is inherently partial in its coverage, whereas CBA if applied properly captures all relevant positive or negative project effects:
- 19.1. Furthermore, as above, EIA can even treat adverse project impacts as benefits – e.g. by treating expenditures to remediate adverse impacts as desirable Project impacts – such as due to requiring expenditures on capital, labour or other inputs (whereas in CBA terms such expenditures would be counted as costs incurred to mitigate the social costs of the relevant adverse impacts, with any such mitigation counting as a social benefit).
20. By way of illustration, if an oil spill creates \$10m in non-market social costs (e.g. environmental harms not directly affecting market economic activity), but those social costs are halved by spending \$1m on cleanup, then CBA counts the cleanup costs as a cost, while recording a reduction in the oil spill social costs of \$5m (still counting the remaining unremedied \$5m of the spill’s social costs as an outstanding social cost):

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<sup>5</sup> This latter issue can be partially addressed through an alternative approach involving a social accounting matrix (**SAM**), which the Analysis does not apply.

<sup>6</sup> Treasury, 2015, *Guide to Social Cost Benefit Analysis*, July, at p. 39.

- 20.1. EIA by contrast ignores the social costs of the spill (whether pre- or post-cleanup), but counts the expenditure on cleanup as a positive economic impact – as if a social welfare gain has been enjoyed due to the oil spill, when in net terms society bears \$5m in unmitigated social costs, and spent \$1m of resources that could have been used elsewhere for social benefit (e.g. spending on health, education, infrastructure, etc).
21. As such, failing to assess the Project in terms of its net social benefits under a CBA framework risks misallocating national resources, with purported regional or national benefits potentially being lower – and distributed more inequitably – than what could be achieved through more efficient and equitable use of resources (as might be identified using CBA).
22. I consider a full CBA of the Project to be feasible, and warranted given its scale, and identified adverse impacts (discussed further below).
23. A hypothetical example illustrates how relying on project impacts rather than project benefits can lead to a reduction in social welfare/wellbeing – i.e. negative project benefits, or net project disbenefits (either way, failing to achieve the FTAA’s purpose). Specifically, if two projects deliver exactly the same non-employment benefits, but one of them involves twice the employment level of the other:
- 23.1. EIA would suggest that the project with the higher employment level is to be preferred – but the other project is by assumption twice as labour-efficient, since it can deliver the same non-employment benefits with only half the required employees (also meaning that the extra employees required to deliver the less efficient project could be deployed elsewhere in the economy, and thereby generate even further benefits for the region or nation);
- 23.2. A CBA would prefer the project that delivers the given level of non-employment benefits with the lower required workforce, and lead to better overall economic outcomes – i.e. would deliver greater economic “benefits” as required for FTAA purposes, if not higher economic “impacts” (as measured by EIA).

### **3. Assessment of NZIER’s Economic Impact Analysis**

#### **3.1 Overview**

24. In this section I explain how the Analysis:

- 24.1. Applies EIA instead of CBA, and as such assesses the Project’s impacts, not its benefits;
- 24.2. Does not account for all relevant project costs, disbenefits, or adverse impacts – notably, material cumulative health impacts from air pollution, which are disproportionately borne by Māori – including Ngāti Kuku – in the Mount Manganui airshed;
- 24.3. Applies an inappropriate counterfactual – resulting in materially overstated Project impacts;
- 24.4. Mischaracterises competitive effects both between ports and also between ports and shipping lines;
- 24.5. Fails to provide sensitivity analyses, and is insufficiently transparent to test and validate its key assumptions and modelling choices, or even to interpret its key outputs;
- 24.6. Is merely illustrative, and neither a forecast nor prediction of the impacts that can be expected if the Project proceeds.

#### **3.2 NZIER Report Assesses Project’s Impacts, Not its Benefits**

25. The Analysis set out in the NZIER Report is EIA, not CBA. As discussed in Section 2, this means the Analysis assesses the Project’s impacts, not its benefits per se. In turn this means the Project’s assessed impacts do not directly address whether or not the Project produces significant regional or national benefits, which is the purpose of the FTAA.

#### **3.3 NZIER Report Does Not Account for All Relevant Project Costs, Disbenefits, or Adverse Impacts**

26. The Analysis in the NZIER Report is incomplete, in that it does not fully account for all relevant Project costs, disbenefits, or adverse impacts.

- 26.1. Among others, the latter include highly material public health impacts of air pollution in the Mount Maunganui airshed attributable to port and port-related activities, as assessed in the Hales Report, in which public health expert Dr Hales assesses there to be five premature deaths per year due to certain types of air pollution attributable to port and port-related activities.<sup>7</sup>
27. Such health impacts are routinely monetised in CBAs by public agencies such as the Ministry of Transport and Waka Kotahi, using publicly-available metrics mandated by the Treasury:<sup>8</sup>
- 27.1. The Ministry of Transport currently applies a social cost of \$15.6m/person for premature deaths (in Jun-25\$).<sup>9</sup>
28. Applying this officially-mandated social cost of premature deaths to Dr Hales' assessment, I assess the annual social cost from such deaths relating to the certain types of air pollution from existing port and port-related activities to be \$78m/year in Jun-25\$:
- 28.1. The Analysis does not provide an assessment of the annualised impacts (let alone benefits) of the Project, but it is against such annualised figures that this \$78m annual social cost could be meaningfully compared in the Panel's s. 85 assessment.
29. I note that Dr Hales' assessment is for existing air pollution, and from both the port and port-related activities, rather than of incremental premature deaths that might be attributed to the Project expansion alone.
- 29.1. I believe this to be relevant due to the cumulative adverse effects of air pollution, which the Project may or may not worsen or ameliorate – while enabling larger ships may result in visits from more fuel-efficient ships (i.e. lower emissions per tonne-kilometre of freight movement), the increased frequency of visits by larger ships could result in greater overall emissions overall, which the NZIER Report does not address.
30. Furthermore, Ngāti Kuku have reported symptoms consistent with exposure to irritants exceeding air quality standards,<sup>10</sup> Māori and/or less affluent communities generally have a

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<sup>7</sup> Hales Report, at 62(b).

<sup>8</sup> <https://www.treasury.govt.nz/publications/guide/cbax-spreadsheet-model>.

<sup>9</sup> [https://www.transport.govt.nz/assets/Uploads/social\\_cost\\_of\\_road\\_crashes\\_and\\_injuries\\_2025\\_update\\_2022-2024\\_data.xlsx](https://www.transport.govt.nz/assets/Uploads/social_cost_of_road_crashes_and_injuries_2025_update_2022-2024_data.xlsx).

<sup>10</sup> Hales Report, at para 33.

greater prevalence of chronic health problems including those sensitive to air pollution exposure,<sup>11</sup> and Mount Maunganui has communities with high levels of socio-economic deprivation:<sup>12</sup>

30.1. Taken together, this means the premature death and other health impacts of port-related (due to induced air pollution arising from port activities) air pollution can be expected to be particularly concentrated in Māori or other deprived local communities that already experience disproportionate chronic disease burden (including burden related to air pollution);<sup>13</sup>

30.2. The Project will worsen this unless it can be demonstrated to materially reduce air pollution.

31. Since Dr Hales' assessment of premature deaths from port and port-related activities is annual, it is further pertinent to consider what the present value of the social cost of ongoing premature deaths from such activities:

31.1. As above, it is not possible on the information available to gauge whether the Project will worsen or ameliorate existing air pollution issues, so an agnostic assumption is to assume that Dr Hales' assessment of five premature deaths per year will persist over the consented life of the Project;

31.2. This assumption is conservative (i.e. understates true social costs of air pollution) to the extent that population growth, ageing or other demographic (e.g. deprivation) changes on the one hand, or increasing overall pollution due to larger and more frequent ships and associated increased port and port-related activity on the other, mean the number of premature deaths can be expected to rise over time;

31.3. Conversely, it is unduly pessimistic to the extent the reverse is true.

32. A standard metric for the social cost of premature deaths used by agencies such as Ministry of Transport, Waka Kotahi, and Treasury is the value of statistical life (**VSL**) for which the

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<sup>11</sup> Hales Report, at para 38.

<sup>12</sup> Hales Report, at para 39.

<sup>13</sup> Hales Report, at para 40.

latest available value provided by Ministry of Transport is \$15.6m/premature death in Jun-25\$:<sup>14</sup>

32.1. Applying that figures to Dr Hales' estimate of five premature deaths per year due to port and port-related activities implies an annual social cost of  $5 \times \$15.6\text{m} = \$78\text{m}/\text{year}$ .

33. I therefore assess the social costs of the cumulative and possibly incremental (i.e. due to the Project) air pollution effects of port and port-related activities to have a present value over the next 35 years of c. \$3.4 billion (applying Treasury's recommended social discount rate,<sup>15</sup> and assuming future population growth is the same as for the total population over 1991-2025, with premature deaths rising proportionately),<sup>16</sup> on the assumption that these emissions are not mitigated by the Project, and hence the Project gives rise to ongoing, cumulative premature deaths from port and port-related (i.e. port-induced) air pollution:

33.1. This adverse impact could in principle be compared with the present value of the Project's assessed impacts (if not benefits per se), but the Analysis only presents the aggregate impacts of the Project, not its present value.

34. It is standard economic practice, and economically appropriate, to convert benefits/impacts into their present value when they arise over time, since benefits received later are less socially valuable now than benefits received sooner. However, the Analysis does not present such figures, and instead presents only aggregated impacts (which provides a misleading impression of the Project's actual impacts, since it fails to discount later impacts to their present value).

35. This \$3.4 billion social cost figure is clearly material:

35.1. Attributing some of this social cost to premature Māori deaths in the Mount Maunganui airshed based just on relative population (and not relative health burden or deprivation) implies an annual cost to such Māori (including resident Ngāti Kuku) of c. \$14m/year, with a 35 year present value of c. \$610m

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<sup>14</sup> [https://www.transport.govt.nz/assets/Uploads/social\\_cost\\_of\\_road\\_crashes\\_and\\_injuries\\_2025\\_update\\_2022-2024\\_data.xlsx](https://www.transport.govt.nz/assets/Uploads/social_cost_of_road_crashes_and_injuries_2025_update_2022-2024_data.xlsx).

<sup>15</sup> <https://www.treasury.govt.nz/sites/default/files/2024-10/treasury-circular-2024-15.pdf>, at paras 13-16.

<sup>16</sup> <https://infoshare.stats.govt.nz/SelectVariables.aspx?pxID=67a0f487-d6ec-4935-ac16-742cd2ef8467>.

(assuming Māori population growth continues at the 1991-2025 rate, with premature deaths rising proportionately).<sup>17</sup>

36. To this social cost could be added other adverse impacts such as costs of increased disease burden from air pollution (short of premature death):

36.1. Such costs will extend to include the effects of chronic health burden on the affected communities' educational participation and attainment, employment participation and workforce outcomes, and hence to other life outcomes (including quality of housing, which itself affects health, educational and workforce outcomes) – all of which can serve to perpetuate and aggravate any pre-existing intergenerational disadvantage (as reflected in the relative social-economic burdens of local Māori identified by Dr Hales, and discussed further in Section 4.7, particularly in light of empirical evidence that nineteenth century land loss has resulted in inter-generational harms to Māori);<sup>18</sup>

36.2. They would also extend to any other burdens from the port and related activities, and the Project, in terms of cumulative or incremental noise pollution, light pollution, or visual disturbance, including through any increased heavy traffic movements related to increased ship visit frequency and greater overall freight movements (which also raises increased safety risks for locals sharing relevant transport routes).

37. Finally, it should be noted that Whareroa Marae is sited directly adjacent to Ballance Agri-Nutrient's fertiliser storage facility (until recently, factory), with that facility in turn in very close proximity to fuel storage tanks, as illustrated in Figure 3.1.

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<sup>17</sup> <https://infoshare.stats.govt.nz/SelectVariables.aspx?pxID=f782169b-9b3c-419e-b5f0-278c0d1f1c72>.

<sup>18</sup> Thom and Grimes, 2022, Land loss and the intergenerational transmission of wellbeing: The experience of iwi in Aotearoa New Zealand, <https://pubmed.ncbi.nlm.nih.gov/35180592/>.

Figure 3.1 – Proximity of Whareroa Marae (Red Pin) to Fertiliser and Fuel Storage Facilities



Source: Google Maps.

38. While the owners of these facilities will be operating to relevant safety standards and practices, the April 2026 “unprecedented” refinery fire at Geelong in Victoria,<sup>19</sup> and the AZF fertiliser factory explosion in Toulouse (France) in 2001 (killing 31 and injuring 2,500) as

<sup>19</sup> <https://www.rnz.co.nz/news/world/592511/uncertainty-over-fuel-supplies-after-major-fire-at-oil-refinery-in-geelong>. <sup>20</sup> These explosions, such as the devastating 2020 Beirut explosion (<https://www.rnz.co.nz/news/world/422847/beirut-blast-lebanon-in-mourning-after-massive-explosion>) involve ammonium nitrate or fertilisers based on ammonium nitrate (<https://www.gexcon.com/resources/blog/beirut-port-explosion-what-we-know-from-previous-explosions-caused-by-ammonium-nitrate/>). Historically Balance has manufactured and stored phosphate-based fertilisers rather than those based on ammonium nitrate. Since the company’s Tauranga facilities are now an import and storage facility only (<https://ballance.co.nz/our-business-and-history/manufacturing/end-of-manufacturing-mount-maunganui>), it remains to be seen whether nitrates-based fertilisers will be stored at those facilities. The company does supply ammonium nitrate based fertiliser across its network of sites (<https://ballance.co.nz/Fertiliser-Products/c/p/00000000000010093>).

well as other notable fertiliser storage facility explosions,<sup>20</sup> illustrate that extremely rare but catastrophic events can and do arise:<sup>21</sup>

38.1. Siting a fertiliser factory adjacent to fuel storage tanks as is the case in Tauranga potentially compounds risks, since a fuel storage fire could trigger an explosion at the fertiliser plant, especially if certain high-risk fertilisers (e.g. ammonium-nitrate based fertilisers) are imported and stored at the facility.<sup>22</sup>

39. The Analysis provides no assessment of any of these disbenefits or adverse impacts, including expected costs of possible low-probability but potentially catastrophic events.

### 3.4 NZIER Report Uses Inappropriate Counterfactual

40. A critical component of any economic analysis is the specification of an appropriate “counterfactual” – i.e. what happens if the Project/intervention of interest does not proceed:

40.1. The counterfactual is the alternative against which any project benefits/impacts are measured – a flawed counterfactual results in a flawed assessment of the Project/intervention benefits/impacts.

41. The Analysis bases its assessed impacts on an assumption that freight growth in the Port of Tauranga “hinterland” will grow strongly in the near term, but that due to emerging

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<sup>20</sup> These explosions, such as the devastating 2020 Beirut explosion (<https://www.rnz.co.nz/news/world/422847/beirut-blast-lebanon-in-mourning-after-massive-explosion>) involve ammonium nitrate or fertilisers based on ammonium nitrate (<https://www.gexcon.com/resources/blog/beirut-port-explosion-what-we-know-from-previous-explosions-caused-by-ammonium-nitrate/>). Historically Balance has manufactured and stored phosphate-based fertilisers rather than those based on ammonium nitrate. Since the company’s Tauranga facilities are now an import and storage facility only (<https://ballance.co.nz/our-business-and-history/manufacturing/end-of-manufacturing-mount-maunganui>), it remains to be seen whether nitrates-based fertilisers will be stored at those facilities. The company does supply ammonium nitrate based fertiliser across its network of sites (<https://ballance.co.nz/Fertiliser-Products/c/p/000000000000000010093>).

<sup>21</sup> <https://ouvry.com/en/history-the-azf-industrial-disaster-in-toulouse-in-2001/>.

<sup>22</sup> The 1995 Oklahoma City Bombing involved ammonium-nitrate based fertiliser being mixed with fuel oil. <https://www.okhistory.org/publications/enc/entry?entry=OK026>.<sup>23</sup> E.g. NZIER Report, at pp 17 and 26-27.

capacity constraints at Port of Tauranga, that growth will not be met unless the Project proceeds, and therefore results in significant economic opportunity costs.<sup>23</sup>

42. This counterfactual is based on demonstrably false assumptions. The relevant hinterland is already served by multiple ports, notably Ports of Auckland, with Port of Tauranga actively competing with Ports of Auckland to service freight demand in that hinterland:

42.1. This inter-port competition has long-been understood;<sup>24</sup>

42.2. The NZIER Report itself acknowledges that one possibility is that increased demand for freight movements could at least be partly addressed through inter-port substitution;<sup>25</sup>

42.3. Port of Tauranga even directly competes for Auckland-based freight in the heart of Auckland itself, via its ownership of Metroport located in Central Auckland; and

42.4. The inland port at Ruakura provides infrastructure for directing freight to and from both Port of Tauranga and Ports of Auckland.

43. Moreover, just as there is inter-port substitution between Port of Tauranga and Ports of Auckland, opportunities exist for at least some freight to shift between those two ports' hinterland and Northport in Whangārei – this is especially pertinent to addressing any need for growing shipping demand since the ability of the two more northern ports to take load off demand growth at Port of Tauranga means it is unlikely that freight growth will be unmet on a recurring and growing basis as the Analysis assumes:

43.1. This is particularly the case since Ports of Auckland has had its own expansion – including an ability to service larger vessels of the sort the Project seeks to serve – approved under the FTAA, meaning at least some of the freight growth in the relevant hinterland can now be expected to be served by Ports of Auckland; and

43.2. Also, capacity provided by the Northern Expressway roading extension under way in stages between Auckland and Whangareia, as well as the planned upgrade of rail

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<sup>23</sup> E.g. NZIER Report, at pp 17 and 26-27.

<sup>24</sup> For example, it is frequently referenced in a major 2012 PwC study on Upper North Island port requirements – <https://at.govt.nz/media/imported/3755/item-10v.pdf>.

<sup>25</sup> NZIER Report, at p. 19.

connections to Northport, means an increasing share of freight growth in the upper part of the relevant hinterland will be serviced by Northport.

44. Moreover, the Analysis imposes an unduly simplistic view of what would happen to unmet shipping demand, even assuming the Port of Tauranga capacity constraints are as binding as assumed (which, for the above reasons, they will not be):

44.1. In particular, if it transpired that freight growth could not be met on an ongoing and growing basis as the Analysis assumes, it is unlikely that the frustrated shippers would simply keep producing the same freight and (presumably) stockpile or discard it – instead, if shipping constraints proved so tight, they would either incur any higher costs required to ship their freight through alternative routes, or change their activities to rely less on having to ship freight;

44.2. In other words, even in the artificial worst case assumed in the Analysis, shippers would have options to change their activities in ways that would reduce the opportunity costs that the Analysis treats as beneficial impacts if avoided.

45. These effects are made worse by the Analysis' artificial choice of regional definitions – being greater Tauranga and “rest of New Zealand”. Since ports that compete with Port of Tauranga are located in actual regions that are artificially combined into hypothetical regions, this serves to mask any feasible allocation of freight growth between competing ports:

45.1. The fact that this artificial region definition was adopted to facilitate the use of CGE modelling for an EIA of the Project, even though it masks highly-pertinent inter-port competition, makes that modelling choice all the more questionable in the FTAA context, in which significant regional or national benefits need to be established.

46. In summary, the Analysis assumes a counterfactual that:

46.1. Unduly overstates the importance of capacity constraints at Port of Tauranga, especially given improving shipping capacity at Ports of Auckland and Northport (including via improved road/rail connections);

46.2. Assumes simplistic behaviour on the part of frustrated shippers should Port of Tauranga capacity constraints prove to be as telling as assumed;

- 46.3. Masks likely inter-port competition by adopting artificial definitions of “region” to enable the type of EIA adopted; and
- 46.4. As a result, materially inflates the avoided opportunity costs of potentially unmet freight demand, and hence also the Project’s claimed impacts.

### 3.5 NZIER Report Otherwise Mischaracterises Competition Effects

- 47. Among some of the claimed Project impacts claimed though not quantified in the Analysis are certain competitive benefits. While the possible benefits of inter-port competition are – for the reasons discussed above – understated in the Analysis, other competitive effects are overstated:<sup>26</sup>
  - 47.1. In particular, efficiencies that might be realised by shippers due to the Project, especially by operators of larger vessels, are predicted in the Analysis to result in lower freight rates.<sup>27</sup>
- 48. However, this is predicated explicitly on the shipping market being “competitive”, which it clearly has not been, and in future is not likely to become:
  - 48.1. Large global shipping companies enjoy significant market power by virtue of both the large fixed costs of vessels themselves (which creates a barrier to competitive entry) and the operation by shipping lines of explicit cartels, as well as alliances and other forms of coordination;
  - 48.2. Historically such coordination – indeed, even price-fixing of the sort normally prohibited and in some jurisdictions criminalised – has been tolerated by policymakers worldwide due to coordination and other efficiencies afforded by those arrangements;
  - 48.3. However, in recent times competition authorities have taken a dimmer view of such arrangements, for example with the European Commission rescinding exemptions

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<sup>26</sup> The author has a PhD in competition and regulation economics from Toulouse School of Economics (a globally-ranked top-3 research centre in this specialisation).

<sup>27</sup> NZIER Report, at p. 12.<sup>28</sup> Do et al. 2022, Impact of number of shipping lines on ports’ charges and profits: A game-theoretic model, *Naval Research Logistics*,

<https://onlinelibrary.wiley.com/doi/full/10.1002/nav.22092>.<sup>29</sup> NZIER Report, at p. iii.

for shipping lines from normal cartel prohibitions, on the basis that the harms of cartel-like behaviour are no longer justified by any associated efficiencies.

49. The fact that major shipping lines are increasingly using larger vessels indeed offers those lines cost-efficiencies in terms of lower shipping costs per tonne-km, but the significant market power enjoyed by such shipping lines does not guarantee that freight rates will reduce at all, and rather enables them to enjoy higher profits:

49.1. Indeed, the shift towards larger vessels will only increase the fixed costs of competitive entry into shipping, strengthening the market power of large shipping lines and alliances;

49.2. To make matters worse, inter-port competition can in fact also increase the bargaining power of major shipping lines vis-à-vis ports, and result in both reduced port profits and increased freight rates.<sup>28</sup>

50. The Analysis adopts an unduly simplistic view of inter-port and port-shipping line competition, with the result that it overstates possible benefits of the Project to shipping users, and fails to account for possible detriments of the Project to both ports and shippers:

50.1. These are pertinent Project disbenefits or adverse impacts which have not been accounted for in the Analysis.

### **3.6 NZIER Report Is Insufficiently Transparent**

51. The Analysis is insufficiently transparent to either test its assumptions and approach, or to translate the claimed Project impacts into annual figures over time (which is necessary to convert claimed impacts arising over time into their present value:

51.1. Such transparency is a matter of good modelling practice, since it clearly identifies both key assumptions, and how those assumptions affect key modelling outputs – both of which are essential for establishing the veracity of the analysis.

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<sup>28</sup> Do et al. 2022, Impact of number of shipping lines on ports' charges and profits: A game-theoretic model, *Naval Research Logistics*, <https://onlinelibrary.wiley.com/doi/full/10.1002/nav.22092>.<sup>29</sup> NZIER Report, at p. iii.

52. The NZIER Report's lack of transparency is only amplified by that report's reliance on assumptions and modelling contained in an earlier but unpublished 2023 report by NZIER:
- 52.1. If the latest NZIER Report is to be relied upon, it is necessary to understand how its key assumptions have been derived, and the modelling approach that applies those assumptions – neither of which has been possible given the limited details disclosed in the NZIER Report.
53. If the Analysis had been more transparent, I would have been in a position to compute the present value of the claimed Project impacts myself, however this has not been the case:
- 53.1. As such, I expect the Panel will not have been able to determine the present value of the Project's claimed impacts, given they arise over time, but have not been clearly detailed in annual terms.
54. Furthermore, no allowance has been made in the Analysis for claimed Project impacts benefitting non-New Zealanders (e.g. through any overseas shareholdings in POTL), or through incomes being paid to overseas workers that might be engaged in Project-related construction activities or to overseas equipment providers, whose none of whose wellbeing is the apparent focus of the FTAA's purpose.
55. The claimed impacts are therefore hard to interpret let alone verify, and the present value of impacts specific to New Zealanders cannot be ascertained.

### **3.7 NZIER Analysis is “Illustrative” Only – Not Prediction or Forecast as Required – And Applies Apparently Inappropriate Key Assumption**

56. A more fundamental issue with the Analysis is that it has been presented by NZIER itself as being “illustrative” only. For example, the NZIER Report:
- 56.1. States that it “illustrates the scale of benefits from the Project through estimates of the opportunity cost in 2033 of trade forgone if wharf extensions do not proceed” (i.e. the artificially proscribed counterfactual discussed above).<sup>29</sup> [emphasis added]

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<sup>29</sup> NZIER Report, at p. iii.

- 56.2. States that “[t]hese estimates illustrate rather than predict what will happen over the next 10 years.”<sup>30</sup> [emphasis added]
- 56.3. Caveats that the CGE modelling it reports “is not a forecast of what will happen.”<sup>31</sup> [emphasis added]
57. Yet “predictions” or “forecasts” are precisely what are required in the current context, not mere “illustrations” of notional or hypothetical scenarios. If mere scenarios were adequate for the Panel’s purposes, then why not some other notional or hypothetical scenario instead of the one presented?
- 57.1. In financial and economic modelling, particular stock is placed on “expected” outcomes, which in the usual statistical sense refers to a probability-weighted average of possible outcomes – not reliance on just one of many possible outcomes with an artificially-ascribed probability of one;
- 57.2. The NZIER Report makes it clear that the latter is what the Analysis has provided, rather than an “expected” outcome.
58. This is made worse by the Analysis also failing to provide sensitivity analyses showing how asserted impacts vary with changes in the values of key assumptions, as is good modelling practice. Nor does it present the results of alternative scenarios (with each scenario being described by a combination of input assumption values and modelling choices), which is also good modelling practice.
59. Finally, of particular note is that the Analysis rests on an assumption for future freight growth of 3.5% per annum over the relevant future period:<sup>32</sup>
- 59.1. This assumption value is not justified in the NZIER Report, but rather simply stated as being relevant without justification.
60. It is clear from Table 4 of the NZIER Report that freight volumes handled by Port of Tauranga have been essentially flat in the five years from 2020-2024, not growing by 3.5% per annum:

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<sup>30</sup> NZIER Report, at p. iv.

<sup>31</sup> NZIER Report, at p. 27.

<sup>32</sup> NZIER Report at pp 13, 14, 17 and 23.

- 60.1. Some of this non-existent growth can be attributed to the pandemic, but equally the near future is plagued with uncertainty due to the chilling global economic impacts of US tariffs (and other countries' counter-tariffs) and the major energy price shock and disruption to global shipping patterns arising from the Iran war;
- 60.2. The NZIER Report simply does not engage with factors such as these affecting the outlook for future freight growth, let alone justify the 3.5% year on year growth that the Analysis assumes and critically rests on.
61. This is highly material to both the relevance of any Port of Tauranga capacity constraints and the level of claimed Project impacts:
- 61.1. As shown in Table 5 of the NZIER Report, whether or not capacity constraints bind at Port of Tauranga hinges critically on the future freight growth rate assumed, with the resulting opportunity costs (which rest on the artificially proscribed counterfactual discussed above) being zero or negligible for growth rates less than the assumed 3.5% rate.
62. Those opportunity costs will be lower still (i.e. non-existent) if recent growth rates are maintained in the near future – or simply if any growth that does materialise can be handled with a reallocation of overall freight patterns between Port of Tauranga and its competing ports:
- 62.1. As such, the entire premise of the Project's asserted impacts hinges on whether or not this key growth rate assumption proves to be valid or not, with no justification offered for why it will be, and ample reason to suspect it won't.

### **3.8 Conclusions Regarding NZIER Economic Impact Analysis**

63. For the reasons discussed above, it is my opinion that the Analysis in the NZIER Report cannot be relied upon:
- 63.1. The Analysis provides an assessment of the Project's impacts rather than its benefits as required under the FTAA, does not assess critical Project costs, disbenefits, catastrophic risks, or other adverse impacts, and is insufficiently transparent to interpret let alone verify its claimed Project impacts;
- 63.2. Furthermore, the Analysis rests on an artificially proscribed counterfactual that mischaracterises the ability of competing ports to take up some or all of the freight

growth that is asserted will arise over the relevant future period, or for frustrated port users to change their activities if shipping constraints bind, which by themselves mean the claimed Project impacts are over-stated;

63.3. This overstatement is made worse through the Analysis' assumption of strong future freight growth which is not consistent with negligible recent freight growth, and is subject to significant near/medium-term economic and geopolitical uncertainties;

63.4. Finally, the Analysis is self-described as being illustrative, rather than a forecast or prediction of the Project's actual expected impacts. This alone makes its results unreliable for major decision-making purposes, and certainly the company's own directors and executives could face major legal consequences if they relied on a merely hypothetical scenario when making major decisions, as the Panel is being asked to do.

## **4. Required Compensation for Project's Adverse Cultural Impacts**

### **4.1 Overview**

64. In this section I:

64.1. Summarise relevant Project adverse cultural impacts;

64.2. Present a well-established general economic framework (the total economic value – or TEV – framework) differentiating market economy effects of the sort EIA often addresses from the wide range of other “economic” effects (if not market economic effects) that are economically important and relevant;

64.3. Explain how I map cultural adverse impacts to established economic concepts which enable me to assess compensation required for those impacts;

64.4. Apply this approach to assessing the compensation required for the Project's failure to recognise and provide for Ngāti Kuku relationships with their ancestral lands, waters, and taonga, specifically through its denial of the Hapū's rangatiratanga;

64.5. Further apply this approach to assessing the compensation required for the Project's further failure to recognise and provide for Ngāti Kuku's relationships with their ancestral lands, waters, and taonga, in this case by frustrating the Hapū's ability to

discharge cultural obligations such as kaitiakitanga, manaakitanga, and obligations to both ancestors and future generations;

- 64.6. Discuss flow-on impacts of the Project's adverse cultural impacts;
- 64.7. Propose further required compensation;
- 64.8. Compare my assessments of required compensation with other benchmarks – to gauge the reasonableness of the metrics I have applied; and
- 64.9. Compare my assessed compensation with the Applicant's proposed mitigation measures, and discuss the relevance and reasonableness of benchmarks used for that proposal.

## 4.2 Summary of Adverse Cultural Impacts

- 65. I have relied on the Ngāti Kuku CIS of the Project's cultural impacts, together with the evidence prepared by Ngāti Kuku and Whareroa Marae for this proposal.
- 66. In my assessment of the compensation required for these impacts I place particular reliance on Tables 1 and 2 of that CIS, which identify key high-level cultural impacts of the Project and required responses that imply a failure to recognise and provide for the Hapū's relationships and values, specifically due to the Project (and associated port and port-related ongoing and cumulative activities) causing:
  - 66.1. An inability of the Hapū to exercise rangatiratanga, including exclusion from decision-making and governance (i.e. of existing and proposed port facilities located on Ngāti Kuku's traditional whenua and moana, over which the Hapū asserts its customary rights and interests);
  - 66.2. Compromised ability of the Hapū to exercise kaitiakitanga, and associated loss of access and intergenerational connection to mahinga kai, as well as loss of knowledge tradition, cultural tradition (which I interpret to include traditions such as manaakitanga), and kaimoana to sustain whānau;
  - 66.3. A loss of access and ancestral lands, over which the Hapū seeks outright ownership (including via legislation);

- 66.4. Adverse health impacts to Hapū members, and harms to Te Awanui and associated habitats; and
- 66.5. Historical and ongoing economic harms, including the Hapū's non-participation in the development benefits of the port's current and future facilities and operations, despite their value crucially depending on access to the Hapū's traditional whenua and moana.
67. In the following sections I map these cultural impacts to economic concepts that then enable those cultural impacts to be assessed in economic terms – i.e. to establish the level of compensation that is required to address those impacts.

### 4.3 General Economic Framework for Recognising Non-Market Impacts

68. Before mapping the cultural impacts summarised above to economic concepts, I first set out established economic frameworks for assessing values beyond those which might be described as arising in the “market economy”, since a great deal of economic activity does not take place in markets, and its value is not adequately captured by market concepts such as prices, profits, incomes or GDP.
69. In particular, the Project can be expected to have a range of “non-market” (foregone) benefits and costs, which the Analysis has not explicitly accounted for. Unlike market-based values, which relate to things (like commodities, or labour) that are traded in markets and which can be valued by reference to market prices, non-market goods or services are not traded in markets:
- 69.1. This does not mean non-market goods or services are unimportant (publicly-provided health or education services are a prominent example), but rather that their value is often overlooked or only partially acknowledged (if at all) because it is not possible to use market prices to estimate their value;
- 69.2. Such non-market costs/benefits are typically not immaterial just because they lack market prices – according to a prominent study assessing non-market values of New Zealand's land-based ecosystems, those non-market values can be at least as great as their market values.<sup>33</sup>

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<sup>33</sup> Patterson and Cole, 2013, '*Total Economic Value' of New Zealand's Land-Based Ecosystems and their Services*.

70. A framework commonly used by economists to characterise the full range of both market and non-market values is the so-called Total Economic Value (TEV) framework:<sup>34</sup>
- 70.1. For example, the TEV framework can be used to characterise the full range of values that can be attached to things like natural resources;<sup>35</sup>
- 70.2. Relatedly, economists have developed an extensive range of sophisticated non-market valuation (NMV) techniques to objectively estimate people's subjective non-market values.
71. A 2018 Treasury discussion paper applies the TEV framework to the valuation of natural capital (i.e. minerals, energy resources, land, soil, water, trees, plants and wildlife),<sup>36</sup> stating that the “general framework has been recognised for the past 30 years”.<sup>37</sup>
72. In short, the TEV framework recognises that the value attaching to any given resource (e.g. harbours, or the coastal environment) is not confined to the value that can be realised in a market exchange of that resource or the commercial produce it can sustain, but can either:
- 72.1. Sustain a range of co-existing and additive other values (e.g. social, environmental or cultural values), even if market prices do not exist to directly quantify those other values; or
- 72.2. Conflict with those other values – e.g. creating non-market opportunity costs.
73. While there are numerous variants of the TEV framework applied in practice,<sup>38</sup> Figure 4.1 illustrates one such variant, based on a prominent study assessing TEV for New Zealand's land-based ecosystems.<sup>39</sup> Importantly, the Analysis:

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<sup>34</sup> A survey of the TEV literature is provided in NZIER, 2018, *What's the Use of Non-Use Values?*

<sup>35</sup> It is also increasingly being used to assess cultural value. For a survey, see Allan et al., 2013, *Value and Culture*, Motu Working Paper 13-09.

<sup>36</sup> van Zyl and Au, 2018, *The Start of a Conversation on the Value of New Zealand's Natural Capital*, Treasury Discussion Paper 18/03.

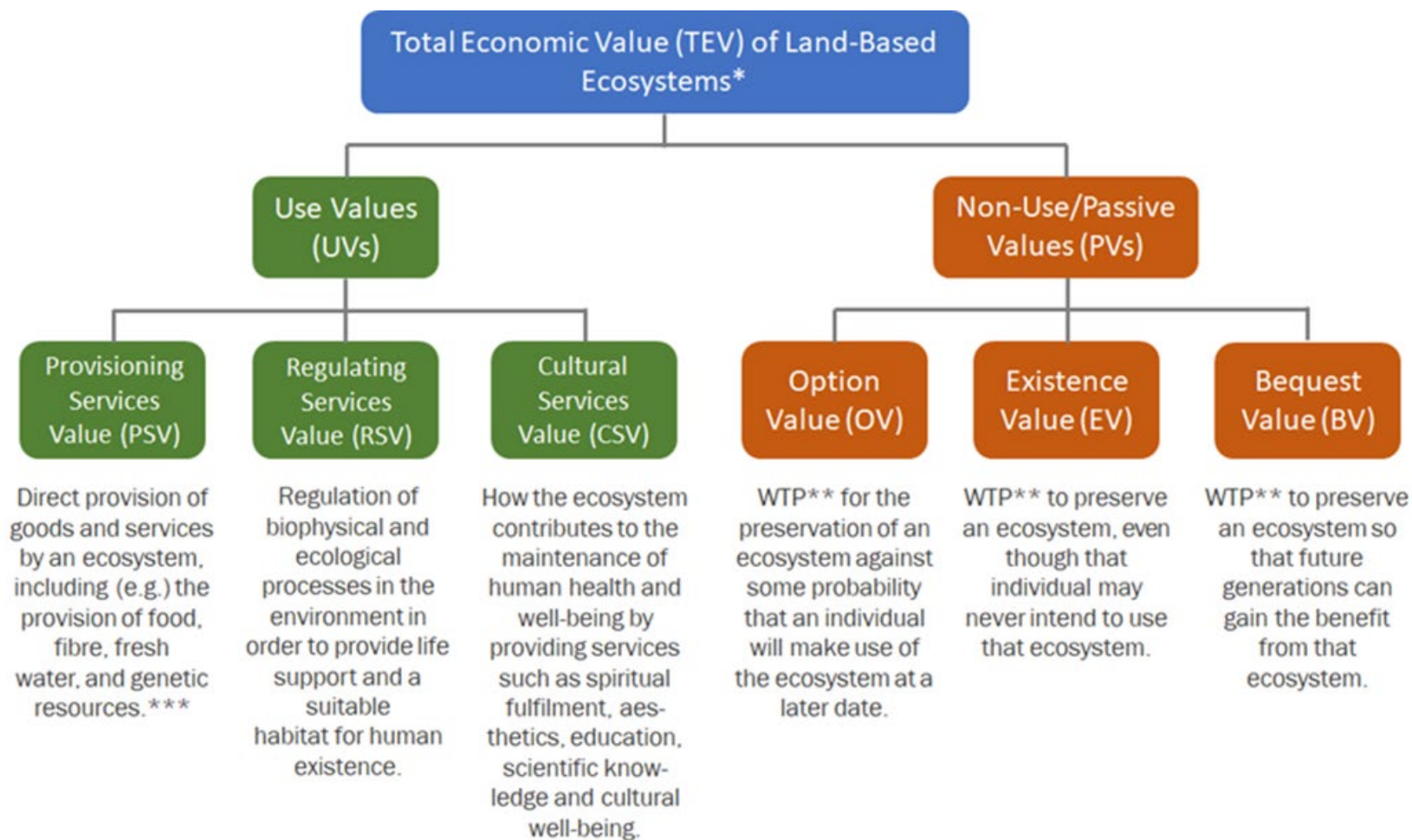
<sup>37</sup> van Zyl and Au, 2018, *The Start of a Conversation on the Value of New Zealand's Natural Capital*, Treasury Discussion Paper 18/03, at p. 7.

<sup>38</sup> For multiple examples, see van Zyl and Au, 2018, *The Start of a Conversation on the Value of New Zealand's Natural Capital*, Treasury Discussion Paper 18/03, Appendix 1, at pp 36-39.

<sup>39</sup> Patterson and Cole, 2013, *'Total Economic Value' of New Zealand's Land-Based Ecosystems and their Services*.

- 73.1. Considers only benefits relating to what Figure 4.1 characterises as just a subset of use value relating to the Project resources, namely provisioning services value;
  - 73.2. Does not consider the benefits – or in this case, possible foregone benefits (i.e. opportunity costs) – relating to other use values (regulating services value, and cultural value), or non-use values (option, bequest and existence values).
74. An obvious illustration of these distinctions in the present case is kaimoana:
- 74.1. Commercial fishing value is typically captured in market-based measures such as GDP – hence it will typically be adequately captured in measures of provisioning services value (i.e. the leftmost green box in Figure 4.1);
  - 74.2. Conversely, recreational fishing and customary fishing, are economically important to many communities (e.g. for own consumption, sharing with guests, etc) but because they do not involve market exchanges, their clear economic value is overlooked in market-based measures such as GDP.

Figure 4.1 – Total Economic Value (TEV) Framework as Applied to New Zealand’s Land-Based Ecosystems by Patterson and Cole 2013



Notes: \* based on Patterson and Cole 2013, at pp 499-500. \*\* WTP = willingness to pay. \*\*\* Usually measured in gross domestic product (GDP), but some PSVs are not because they involve no market exchange (e.g. collecting firewood for one’s own use).

Source: Author’s adaptation of Patterson and Cole 2013.

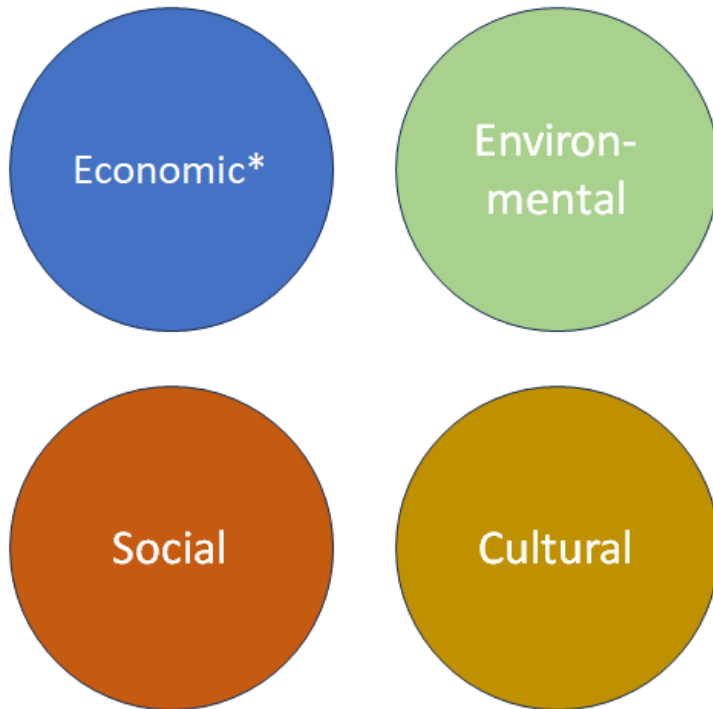
75. Indeed, non-commercial fishing generates value that falls under the heading of regulating services value (e.g. the ability of Hapū members to feed their whanau using kaimoana) or cultural services value (e.g. the ability of the Hapū to exercise cultural practices such as providing food to guests) – i.e. the rightmost two lower green boxes in Figure 4.1:
- 75.1. However, because these particular use values do not involve market transactions, their economic value is not captured in standard measures of economic output (e.g. GDP).
76. While these use values are tangible, even if not well-measured, Figure 4.1 points to other relevant but often even more-overlooked values – particularly in the cultural context. Specifically, it highlights non-use (“passive”) values such as option, bequest and existence values – the dark orange boxes in the figure:
- 76.1. Given its intergenerational kaitiaki obligations, the Hapū can be expected to value the mere ongoing existence of kaimoana (existence value), and their ability to pass on access to kaimoana to future generations (bequest value);
- 76.2. Likewise, even if the Hapū does not wish to access kaimoana presently (e.g. due to relevant kaimoana being depleted and needing to regenerate), it can be expected to value the option to resume accessing such kaimoana in the future, e.g. should it recover sufficiently – i.e. option value.
77. In practice, many non-market benefits can only be monetised approximately. Equally, however, it is impossible to say with precision what future freight growth rates will be in the currently uncertain global economic environment, so a high level of approximation is already inherent in the Analysis’ assessment of the Project’s market-related impacts:
- 77.1. This is not to suggest that modelling should be abandoned – rather that it be applied as thoroughly and robustly as it can be, highlighting the implications of key areas of uncertainty for modelled results – e.g. performing sensitivity analyses on key input assumptions;
- 77.2. That would then better support any remaining subjective trade-offs that need to be made, while avoiding the need for subjective trade-offs wherever possible.
78. As discussed in Section 2, doing so assists rather than substitutes for the Panel in making its proportionality assessment of Project benefits and adverse impacts. Doing so systematically and transparently also means that any double-counting of Project costs, disbenefits and other adverse impacts can be avoided.

#### 4.4 Mapping Cultural Impacts to Economic Equivalents

79. Having set out a general framework for categorising different types of economic value including but going beyond just “market-based” value, I wish to further explain how the standard “economic, social, cultural and environmental” demarcations often used for planning (e.g. RMA) purposes is somewhat artificial, and when assessing cultural impacts, potentially misleading.
80. Specifically, Panel (a) in Figure 4.2 depicts this common demarcation, while Panel (b) shows how it can instead be re-framed to recognise that economics is fundamentally concerned with social welfare/wellbeing, not just the “market economy” (albeit that is a key focus of economics, and a non-exclusive contributor to social welfare/wellbeing). As such, social, cultural and environmental domains can be considered as embedding with “economics” more generally (as the TEV framework above illustrates), alongside and overlapping with the “market economy”.

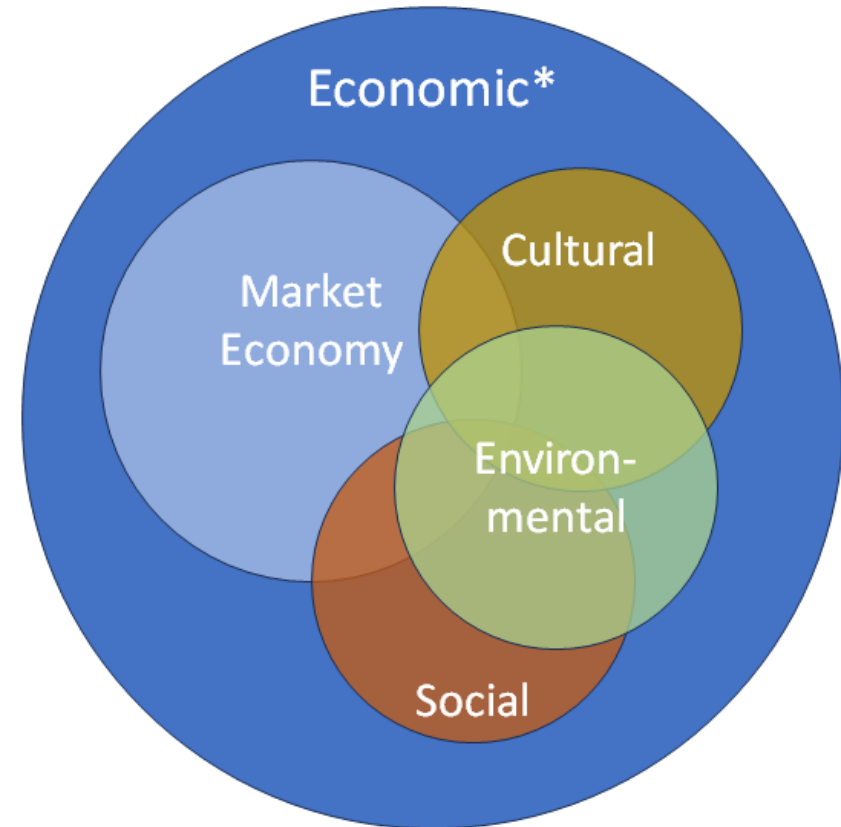
Figure 4.2 – Standard and Re-Framed Economic Demarcations

(a) “Economic” in Narrow/  
Compartmentalised Sense  
(e.g. “market economy” only – with or  
without overlaps with other domains)



\* Market values/prices – e.g. profits, wages, GDP, asset prices, etc.

(b) “Economic” in Broad/Comprehensive Sense  
(e.g. Total Economic Value Framework)



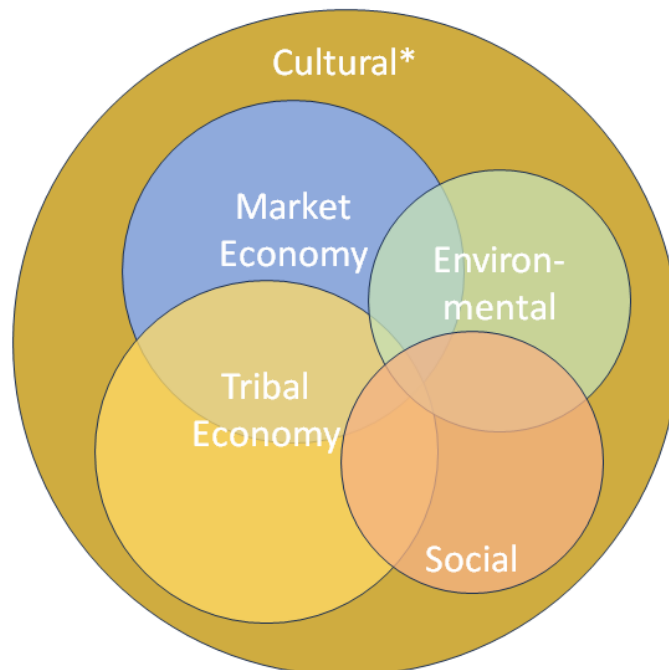
\* Market values/prices (market economy), plus Non-market values (non-market economy)

Source: The author.

81. However, even this reframing can be inadequate for the purposes of characterising cultural values and impact. This is because just as economics can be regarded as an all-encompassing lens through which to characterise different classes of market and non-market values, so too can culture.
82. Figure 4.3 illustrates such a re-framing with culture providing a lens through which to understand values from other domains (whether they be the market economy, non-market economy, environment, or social values). It illustrates how all of these other domains can be characterised in terms of cultural values such as rangatiratanga, kaitiakitanga, and manaakitanga (etc).

*Figure 4.3 – Re-Framing “Economic” Values in Cultural Terms*

“Cultural” in Broad Sense  
(e.g. Te Ao Māori Lens/Mātauranga Māori)

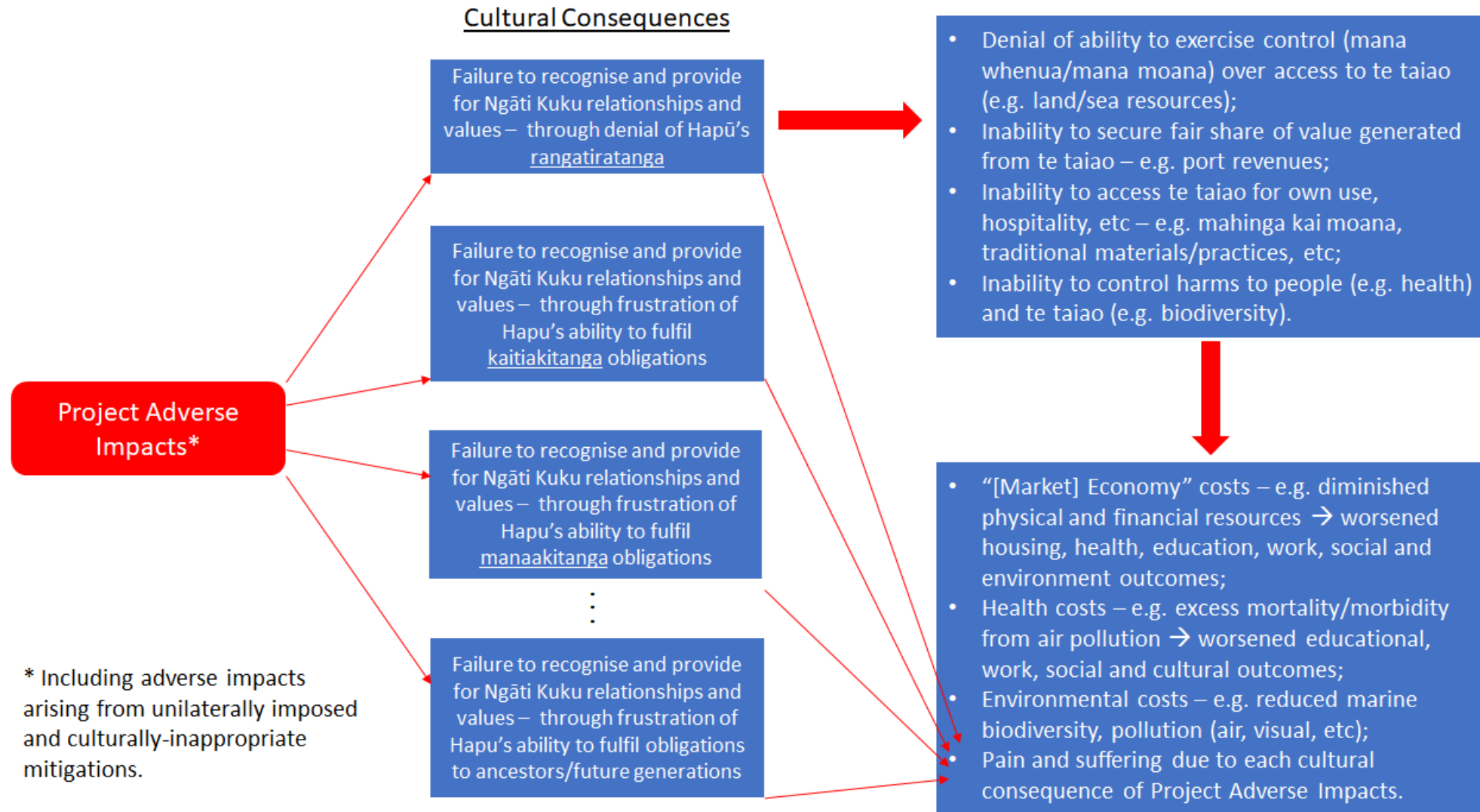


\* Seeing all domains in terms of rangatiratanga, kaitiakitanga, manaakitanga, etc.

Source: The author.

83. With these foundations in mind, I can now more directly map the cultural impacts described in the Ngāti Kuku CIS (as summarised in Section 4.2 above) to economic concepts that are in turn amenable to being characterised and valued using standard economic approaches. This is illustrated in Figure 4.4, which captures the Project’s adverse cultural impacts in terms described in the Ngāti Kuku CIS, but then translates them into more conventional economic concepts.

Figure 4.4 – Mapping Cultural Impacts to Standard Economic Concepts



Source: The author.

84. As can be seen from the figure, a key cultural impact of the Project is the failure to recognise and provide for Ngāti Kuku's relationships and values including their rangatiratanga – i.e. the Hapū's customary rights and obligations regarding the marine and coastal environment, and adjacent lands, involved in current and proposed port and port-related activities:
- 84.1. Of itself, this gives rise to significant economic costs in terms of the Hapū's inability to enjoy market values from port and port-related activities (e.g. a share in the revenues generated by those activities – as explained further and assessed using multiple practical benchmarks in Section 4.5 below);
- 84.2. In turn, that inability will translate into other economic costs, such as to do with housing, health, education, work, social and environment outcomes – e.g. due to lack of resources for each, and interactions between each – e.g. housing and health impacts on educational and workforce outcomes.
85. As noted in the figure, to the adverse cultural impacts arising from the Project itself could be added the adverse impacts of proposed mitigation measures that fail to substantively recognise and provide for Ngāti Kuku's relationships and values, and in effect seek to unilaterally impose culturally-inappropriate mitigations or compensation – i.e. which give rise to their own harms.
86. There are further economic costs associated with the Project's frustration of the Hapū's ability to fulfil cultural obligations such as kaitiakitanga and manaakitanga, and obligations to ancestors (to be good custodians of intergenerational taonga passed to the current generation) as well as future generations (to ensure future generations also have access to taonga currently enjoyed by the current generation):
- 86.1. In economic terms these frustrations of cultural obligations map to obviously measurable costs such as health and environmental costs;
- 86.2. More generally, they map to the harms experienced by Hapū members themselves due to their failure to be able to discharge their intergeneration cultural obligations – as explained further and assessed using multiple practical benchmarks in Section 4.6 below).
87. In the following sections I assess the compensation required for these adverse cultural impacts using available economic benchmarks and approaches, both for the specific categories of impact described above, and also for certain other categories.

#### 4.5 Compensation Required for Failure to Recognise and Provide for Ngāti Kuku Relationships with their Ancestral Lands, Waters, Sites, Wāhi Tapu and Taonga – Through Denial of Ngāti Kuku’s Rangatiratanga

88. In assessing the question of direct compensation, the Ngāti Kuku CIS provides relevant context, in which the Hapū’s Rangatira, Taiaho Hori Ngata, in 1885 addressed the then Minister for Māori Affairs, describing the ancestral fishing grounds of Ngāti Kuku, including Te Maere, Onake, Te Rona, and Te Karaka, and the enduring mana held over these areas. and stating:<sup>40</sup>

“...Now, with regard to the land below high water mark immediately in front of where I live, I consider that is part and parcel of my own land ... part of my own garden. From time immemorial I have had this land, and had authority over all the food in the sea. Te Maere was a fishing ground of mine. Onake, that is a place from which I have from time immemorial obtained pipis. The Rona is another pipi-bed. Te Karaka is another place. I am now speaking of the fishing grounds inside the Tauranga Harbour....My mana over these places has never been taken away. I have always held authority over these fishing places and preserved them; and no tribe is allowed to come here and fish without my consent being given.

“But now, in consequence of the work of the Europeans that all the land below high-water mark belongs to the Queen, people have trampled upon our ancient Māori customs and are constantly coming here whenever they like to fish. I ask that our Māori custom shall not be set aside in this manner, and that our authority over these fishing-grounds may be upheld. The whole of this inland sea has been subdivided by our ancestors, and each portion belongs to a proper owner, and the whole of the rights within the Tauranga Harbour have been apportioned among our own different people; and so, with the fishing grounds outside the heads: those are only small spots. I am speaking of the fishing grounds where hapuku and tarakihi are caught. Those grounds have been handed down to us by our ancestors. This Māori custom of ours is well established, and none of the inland tribes would dare go and fish on those places without obtaining the consent of the owners. I am not making this complaint out of any selfish desire to keep all the fishing grounds for myself; I am only striving to regain the authority which I inherited from my ancestors...” [emphasis added]

89. The Ngāti Kuku CIS goes on to emphasise that:<sup>41</sup>

“This account is critical in illustrating the depth of Ngāti Kuku’s ancestral relationship with the moana, the recognition of mana moana by other iwi and hapū, and the early impact of colonial

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<sup>40</sup> Ngāti Kuku CIS, at p. 2.

<sup>41</sup> Ngāti Kuku CIS, at p. 2.

interference on customary rights, which remains a live grievance today. Taiaho's assertion of mana whenua and mana moana was not metaphorical, it was based on lived, inherited authority grounded in generations of occupation and usage." [emphasis added]

90. Likewise, in a Statement of Evidence on behalf of Ngāti Kuku by Mr Joel Ngatuere dated 30 April 2026 (**Joel Ngatuere Evidence**) it is stated that "Ngāti Kuku has been excluded from the ability to develop and benefit from economic activities that would otherwise be available if control and access to land and water had been retained."<sup>42</sup> [emphasis added]
91. It is clear from these passages that Ngāti Kuku regards its relationships and values over the whenua and moana now used for the port and port-related activities, and to be used if the Project proceeds, in terms of inherited and still-asserted customary authority to control access to and use of those resources.
92. Rangatiratanga has also been framed in these terms in a (Māori) law and economics analysis co-authored by myself and Māori Professor of law, Professor Jacinta Ruru, of how customary Māori rights and interests – in the case of freshwater and geothermal resources – translates into modern economic concepts (**Ruru/Meade Report**):<sup>43</sup>
- 92.1. Indeed, while conventional notions of ownership convey the exercise of control over access to and use of the resource or asset that is owned, the Ruru/Meade Report notes that the Waitangi Tribunal has equated tino rangatiratanga with more than ownership;<sup>44</sup>
- 92.2. Either way, rangatiratanga can be associated with an ability to exercise control over access to and use of relevant resources.<sup>45</sup>
93. Indeed, in the Ruru/Meade Report, this is plainly stated:
- "Central to all these notions [i.e. rangatiratanga, tino rangatiratanga and mana whakahaere] is the idea of Māori having an ability to decide – i.e. exercise some measure of control – in some relevant domain, with that ability to decide protected in te Tiriti."<sup>46</sup>

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<sup>42</sup> Joel Ngatuere Evidence, at para 180.

<sup>43</sup> <https://environment.govt.nz/assets/publications/Te-Mana-o-te-Wai-Maori-Rights-and-Interests-in-Freshwater-Bodies.pdf>.

<sup>44</sup> Ruru/Meade Report, at para 63.

<sup>45</sup> Ruru/Meade Report, at paras 92,

<sup>46</sup> Ruru/Meade Report, at para 93.

“Implicit in this ability to decide, as protected in te Tiriti, is the ability of Māori to exercise choices over how such resources are used.”<sup>47</sup> [emphasis added]

94. An ability to control access to and use of critical resources is fundamental to how the benefits generated by the use of those resources is shared between the party controlling access to those resources and parties using those resources:

94.1. A bald example is Iran’s recent ability to control passage of oil tankers through the Strait of Hormuz (a physical bottleneck in a major part of the global oil supply chain) – Iran reportedly charged tanker owners a toll of US\$2m per passage, which for large tankers amounts to around US\$1/barrel of oil,<sup>48</sup> implying a 1% share of the value of the oil being transited at an oil price of US\$100/barrel.

95. Less extreme but pertinent examples abound, such as when developers of solar or wind electricity generation schemes negotiate with landowners (e.g. farmers with large amounts of suitable land, especially when well-located relative to electricity transmission infrastructure, reducing the costs of selling any power generated):<sup>49</sup>

95.1. Since landowners can refuse to allow the scheme to proceed – i.e. control access to and use of their particularly-suited resource (in a general sense, exercise “rangatiratanga” over their land) – this requires scheme developers to share some of their project’s financial returns with the landowner – i.e. paying them more than they would otherwise earn from their use of the land, since there would be no reason for the landowner to voluntarily agree with the scheme otherwise (except, perhaps, for extraordinarily altruistic motives);

95.2. Often this takes the form of a fixed rental per hectare, especially when the landowner is able to continue to at least partially use the land for their own activities (and hence enjoys both the added rental and existing land use returns) – e.g. continuing to graze sheep under solar panels or wind turbines;

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<sup>47</sup> Ruru/Meade Report, at para 94.

<sup>48</sup> <https://www.freightwaves.com/news/new-tolls-could-add-1-a-barrel-to-hormuz-oil>.

<sup>49</sup> The author was involved in commercial negotiations between a landowner and various power scheme developers, and has over 35 years’ experience in electricity sector research, advice, or transactional work, in New Zealand and internationally.

- 95.3. However, it often involves a combination of fixed rentals and a share of power scheme revenues, or simply a share of scheme revenues.
96. New Zealand precedents for such schemes include:
- 96.1. Wind farm leases in which the landowner received a share of electricity generation revenues ranging between 1.5-3.2%;<sup>50</sup>
- 96.2. A geothermal lease in which the landowner received a 2.4% share of electricity generation revenues;<sup>51</sup>
- 96.3. Solar farm leases in which the landowner is offered the greater of a fixed annual rental and 3.25% of electricity generation revenues;<sup>52</sup>
- 96.4. A hydroelectric lease in which the landowner received a 4% share of electricity generation revenues.<sup>53</sup>
97. In the case of the above hydro lease it could be expected that a higher revenue sharing rate was agreed relative to the three other precedents noted, since it is less likely to involve the landowner being able to continue other land-based activities at the site of the scheme. In the other three cases, however, either the footprint of the scheme is small (e.g. wind or geothermal generation) or is large but not precluding other land uses such as livestock grazing (e.g. solar generation), in which case the landowner can continue to generate non-scheme revenues in addition to any scheme-related revenue share.
98. The 4% hydro precedent is also notable because it is a very similar order of magnitude to the revenue sharing arrangement reported between the applicant in the Bendigo-Ophir gold mining fast-track process for a gold mine in Central Otago and the owners of the farmland that is to be mined in the project proceeds:

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<sup>50</sup> Waitangi Tribunal evidence prepared for the Crown by Reid, 2018, Market Value for Maraetai 2 Land Interest Only, Valuation Report prepared for Te Arawhiti and Crown Law, at pp 19-20.

<sup>51</sup> Waitangi Tribunal evidence prepared for the Crown by Reid, 2018, Market Value for Maraetai 2 Land Interest Only, Valuation Report prepared for Te Arawhiti and Crown Law, at pp 19-20.

<sup>52</sup> Personal communication with developer.

<sup>53</sup> Waitangi Tribunal evidence prepared for the Crown by Reid, 2018, Market Value for Maraetai 2 Land Interest Only, Valuation Report prepared for Te Arawhiti and Crown Law, at pp 19-20.

- 98.1. According to the applicant, the relevant landowners – who did not own the relevant gold mining right – were paid a premium of around \$18,000/ha for their land (almost six times the farmers’ existing land value) plus a royalty;
- 98.2. As an economic expert involved for a discretionary participant in that fast-track process, I was able to ascertain the projected revenues of the mining project, and calculated that the land value premium and stated royalty amounted to 4.3% of project revenues;
- 98.3. Like the 4% hydro revenue share noted above, this 4.3% revenue share also reflects a situation where the landowner is not able to continue using the relevant land – in this case because they sold it, and it will be heavily mined if the project proceeds.
99. By way of further such benchmarks:
- 99.1. UK wind farm leases offer landowners a revenue share of 5-6%;<sup>54</sup> and
- 99.2. US solar leases can offer landowners a revenue share of 2-5%.<sup>55</sup>
100. Royalties collected by governments/states provide other relevant benchmarks, with MBIE describing royalties collected by the New Zealand government as ensuring that “the Crown receives a fair financial return for the development of its minerals to the benefit of New Zealand”:<sup>56</sup> [emphasis added]:
- 100.1. Notably, this fair financial return is in the context of the royalty payer investing the capital required and bearing the costs and risks of the relevant venture – the Crown charges a royalty simply because it asserts ownership of, and exercises control over the right to access and use, the relevant resources (gold, petroleum, etc);
- 100.2. Royalty rates in New Zealand range from 1% of revenues (Tier 3 activities), to the greater of 2% of revenues or a specific profit share (whichever is greater; Tier 1 activities), up to 5% of revenues or a share of profits (in the case of petroleum resources);<sup>57</sup> and

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<sup>54</sup> <https://greenbusinessbarbados.com/what-do-wind-farms-pay-the-landowner-uk.html>.

<sup>55</sup> <https://www.smartenergyusa.com/blog/how-much-do-solar-companies-pay-to-lease-land/>.

<sup>56</sup> <https://www.nzpam.govt.nz/permits/minerals/fees-royalties>.

<sup>57</sup> <https://www.nzpam.govt.nz/permits/minerals/fees-royalties>.

- 100.3. In some jurisdictions, royalty rates can be even higher, with US geothermal royalties for example ranging from as low as 1.75-3.5% of revenues (Federal),<sup>58</sup> to as high as 16.67% (California),<sup>59</sup> with 10% not being unusual (e.g. Hawaii,<sup>60</sup> Washington State<sup>61</sup>).
101. The importance of fairly sharing project benefits with Māori landowners has been addressed by the Waitangi Tribunal. Specifically, when the Crown compulsorily acquired Māori-owned land on the Waikato River near Mangakino in the 1940s for hydroelectric power scheme development, it compensated the landowners only for the value of the land in its existing marginal agricultural use (with a small allowance for general betterment):<sup>62</sup>
- 101.1. Despite the land concerned being uniquely-suited to hydro power scheme development (i.e. including a river ravine uniquely suited to constructing a dam), the Crown had passed legislation precluding the landowner sharing in any of the national benefits arising from the power scheme's development (which at the time were expected to be significant, and have proven to be so over many decades – in relation to two major hydro power stations, Maraetai I, and Maraetai II);
- 101.2. The Waitangi Tribunal was critical of the Crown's failure to compensate the Māori landowners for the "unique qualities and hydro potential of [their] land", and recommended that they be so compensated.<sup>63</sup>
102. The Supreme Court of Canada has also found that when First Nations' lands are used for hydroelectric power schemes – but they have been denied an ability to share the benefits of that use – they should be compensated for the "lost opportunity to negotiate a surrender of their reserve land for the purposes of facilitating Canada's hydroelectricity project"<sup>64</sup>

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<sup>58</sup> <https://www.osti.gov/etdeweb/biblio/21552937>.

<sup>59</sup> <https://www.osti.gov/etdeweb/biblio/21552937>.

<sup>60</sup> <https://www.hnei.hawaii.edu/wp-content/uploads/Hawaii-Geothermal-Assessment-and-Roadmap.pdf>.

<sup>61</sup> [https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/geothermal/geothermal\\_resources\\_act\\_proposed\\_royalty\\_policy.pdf](https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/geothermal/geothermal_resources_act_proposed_royalty_policy.pdf).

<sup>62</sup> The author provided expert evidence for the applicant in that case.

<sup>63</sup> Waitangi Tribunal, 2010, Wai 863, Wairarapa ki Tararua Report, Vol. II, at pp 710-711 and 718: [https://forms.justice.govt.nz/search/Documents/WT/wt\\_DOC\\_68640217/Wairarapa%20ki%20Tararua%20Vol%20II.pdf](https://forms.justice.govt.nz/search/Documents/WT/wt_DOC_68640217/Wairarapa%20ki%20Tararua%20Vol%20II.pdf).

<sup>64</sup> <https://www.yorku.ca/osgoode/thecourt/2021/10/20/southwind-v-canada-assessing-equitable-compensation-for-taken-indigenous-land/>.

[emphasis added], and that the “value of the land for the purposes of hydroelectricity generation [should be considered] when determining compensation.”<sup>65</sup> [emphasis added]

103. I stressed “negotiate” in the above quote because it speaks to the relevant landowners being able to exercise control (cf rangatiratanga in Ngāti Kuku’s case) over whether or not the project using their lands can proceed (e.g. as opposed to a situation where compulsory acquisition legislation is used to deny the landowner an ability to capture a share of the benefits of the project requiring access to and use of their land):

103.1. If the landowner is able to negotiate with the scheme developer on an uncoerced and informed basis, then the scheme developer has to fairly share some of the project benefits with the landowner – supposing the landowner even consents to the project for any level of benefits sharing (which they may not if they consider that the overall benefits are outweighed by their subjectively-assessed costs – i.e. including non-market costs).

104. Canadian precedents for fair sharing between First Nations and (typically) mining companies over accessing minerals on First Nation lands illustrate how fair sharing of project returns (e.g. revenues) are often combined with other financial and non-financial features. Specifically, while First Nations do not have a formal veto right over such developments, their “inherent” (e.g. customary) rights are sufficiently recognised by mining companies and states that a combination of such features are often negotiated, and form the substance of so-called privately negotiated and legally enforceable Impact and Benefit Agreements (IBAs).<sup>66</sup> Such agreements seek to:

104.1. Address potentially adverse effects of the relevant activities; and

104.2. Ensure the First Nation groups benefit from activities using their lands.<sup>67</sup>

105. Key provisions of IBAs include:<sup>68</sup>

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<sup>65</sup> *Southwind v Canada*, [2019 FCA 171](#), at para 44.

<sup>66</sup> Kielland, 2015, Supporting Aboriginal participation in resource development: the role of impact and benefit agreements: <https://publications.gc.ca/site/eng/9.817163/publication.html>.

<sup>67</sup> Kielland, 2015, Supporting Aboriginal participation in resource development: the role of impact and benefit agreements: <https://publications.gc.ca/site/eng/9.817163/publication.html>, at p. 1.

<sup>68</sup> Kielland, 2015, Supporting Aboriginal participation in resource development: the role of impact and benefit agreements: <https://publications.gc.ca/site/eng/9.817163/publication.html>, at p. 3.

- 105.1. Environmental protection provisions – going beyond existing environmental laws and regulations (i.e. offering the relevant First Nations an ability to affect environmental outcomes over and above those provided by such laws and regulations);
- 105.2. Financial provisions – ensuring the relevant communities “receive economic benefits such as royalties, profit shares or fixed cash amounts, and equity interests”;
- 105.3. Employment provisions – e.g. training and preferential hiring;
- 105.4. Economic and business development provisions – e.g. capacity-building and preferential procurement opportunities; and
- 105.5. Social and cultural provisions – e.g. social programmes, community infrastructure, recreational activities.
106. In practice, IBAs typically combine elements of all of the above, and the financial provisions combine upfront and multiple ongoing fixed payments, ongoing revenue sharing (ad valorem royalties), profit-based royalties and/or free-carried equity interests, and even a share in states’ mineral tax revenues:<sup>69</sup>
- 106.1. Based on details of a survey of IBAs, I calculate the average ad valorem royalty (i.e. revenue share) to be 1.5%, to which are added up-front and ongoing fixed payments, plus any share of state’s minerals taxes, etc.
107. Similarly, Aboriginal groups in Australia have a “right to negotiate” (much weaker than a veto right, or acknowledged inherent/customary rights) with mining companies wishing to prospect and mine on their traditional lands under the federal Native Title Act 1993 – including in relation to mining infrastructure such as ports.<sup>70</sup> Such agreements can also include a range of financial and non-financial provisions, and on average include revenue shares of 0.9% (converting all financial provisions into a “royalty equivalent” value):<sup>71</sup>

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<sup>69</sup> Gunton et al., 2021, Getting a Fair Share: Designing Fiscal Regimes for Impact Benefit Agreements, <https://www.brandonu.ca/rdi/files/2019/11/PowerPoint-Presentation.pdf>, at pp 21-22.

<sup>70</sup> O’Faircheallaigh, 2016, Negotiations in the Indigenous World: Aboriginal Peoples and the Extractive Industry in Australia and Canada, at Chapter 5.

<sup>71</sup> Author’s own calculations, using data from Table 5.1 of O’Faircheallaigh, 2016, Negotiations in the Indigenous World: Aboriginal Peoples and the Extractive Industry in Australia and Canada.

- 107.1. As well as revenue sharing, negotiated agreements include other provisions such as employment and training, business development, cultural heritage protections, cultural heritage activities, processes and resources, and other non-financial provisions.<sup>72</sup>
108. These Canadian IBA and Australian negotiated agreement precedents highlight how agreements negotiated between indigenous groups and project developers commonly combine financial benefit sharing measures with other decision and (cultural) use rights, plus direct engagement in environmental monitoring and protection, among other things:
- 108.1. This implies there is in a sense a “sliding scale” in which financial benefit sharing might be reduced in exchange for other rights being acknowledged and agreed (though with financial benefit sharing typically not reduced to zero);
- 108.2. Conversely, it implies that required benefit sharing can be thought of in terms of an “all up” sharing rate – i.e. a sharing rate agreed in the absence of other non-financial rights; and
- 108.3. Likewise, there is an additional “sliding scale” under which ongoing benefit sharing is either capitalised and paid as an upfront amount, or converted from one type of ongoing benefit sharing (e.g. revenue or profit sharing) into another (e.g. a free allocation of shares – a “free carry” – in the relevant venture).
109. Figure 4.5 illustrates these possibilities, adding relevant revenue shares (assuming they are the relevant sharing basis) for the cases in which other rights are also enjoyed by the relevant indigenous group (left hand side of the figure), or not enjoyed with an all-up revenue share instead used (right hand side of the figure).
110. I understand that the Port and Ngāti Kuku have not reached any agreement on direct compensation. The Panel will therefore be required to assess and determine its own approach to direct compensation for Ngāti Kuku.
111. Based on this figure and the preceding discussion, **I recommend that a fair sharing rate for the Project would be an all-up share of Project incremental revenues (see further below) of**

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<sup>72</sup> Author’s own calculations, using data from Table 5.1 of O’Faircheallaigh, 2016, Negotiations in the Indigenous World: Aboriginal Peoples and the Extractive Industry in Australia and Canada.

**no less than 4-4.3%** – of the New Zealand hydro lease and gold mining fair sharing benchmarks discussed above:

**111.1. Compared to US and UK benchmarks for wind and solar generation schemes discussed above, this is conservative** because those schemes enable landowners to substantively continue existing land uses (e.g. livestock grazing) as well as earning generation revenues;

**111.2. This is also conservative relative to royalty rates in certain jurisdictions (e.g. US geothermal royalty rates discussed above).**

112. In the event that the Panel prefers a combination of revenue sharing and other measures (i.e. the left-hand side of Figure 4.5), I recommend a minimum share of Project incremental revenues of no less than 1%, combined with a range of substantive extra financial and non-financial provisions as indicated in the left-hand side of Figure 5.5:

112.1. Further work would be required to flesh out the details, and to confirm Ngāti Kuku's evaluation, of the non-revenue sharing provisions.

113. In other words, appropriate compensation for denial of the Hapu's rangatiratanga can be assessed in terms of fairly sharing benefits from the Project, which I conservatively assess based on relevant benchmarks to require a revenue share of 4-4.3% if revenue sharing is the only compensation measure:

113.1. Alternatively, it requires a combination of revenue sharing (of at least 1%) plus substantive other compensation components (as identified in the left-hand side of Figure 4.5).

114. **These figures are predicated on the Panel deciding to approve the project, in whole or part, and that the Panel does not require substantial reductions in the scale of what is proposed (avoidance). Any reduction in scale may affect gross revenue but is unlikely to change my recommended revenue fair shares.**

Figure 4.5 – Benchmark-Based Fair Sharing Rates (Revenue Shares) With (LHS) or Without (RHS) Other Rights



Source: The author, using New Zealand and international benchmarks as discussed in main text.

115. In my assessment above I referred to a fair sharing of the Project's incremental revenues:

115.1. This means the change in POTL's revenues as a consequence of the Project.

116. Setting aside the fact that it will be difficult in practice to cleanly disentangle future changes in POTL's revenues attributable to the Project and other causes, and further that the NZIER Report provides insufficient detail to accurately infer what the Project's incremental revenues might be, it is possible to provide an order of magnitude assessment of those incremental revenues:

116.1. Specifically, the NZIER Report states that the Project will result in an almost doubling of the port's container capacity,<sup>73</sup> and an assumed (though not justified) 5-8% increase in non-containerised tonnages;<sup>74</sup>

116.2. Based on historical container and non-container tonnages reported in NZIER Report Table 4, **I estimate that the weighted average capacity increase attributable to the Project will be a maximum of c. 55%;**

116.3. **Based on the port's 2025 revenue of \$464.7m (per its 2025 annual report), a 55% increase amounts to extra revenue – i.e. incremental Project revenue – of c. \$257m p.a.**

117. While this 55% increase is a maximum, and might only be realised over time, on the other hand the port's revenues will not remain the same over time, so for order of magnitude purposes this \$257m incremental figure is a reasonable starting point for gauging the likely order of magnitude of Project benefit fair sharing:

117.1. Specifically, **a 4-4.3% share of incremental revenues of \$257m/year amount to c. \$10-11m/year;**

117.2. Assuming these figures remain constant, **I assess 35 years of fairly shared Project incremental revenues to conservatively amount to \$117-128m treating those revenues as being commercial and hence discounted at Treasury's commercial discount rate, or \$250-275m using Treasury's social discount rates, recognising that**

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<sup>73</sup> NZIER Report, at p. i.

<sup>74</sup> NZIER Report, at p. 18.

such a sharing of revenues would be to substantively recognise Ngāti Kuku's rangatiratanga (which is a cultural rather than commercial matter).

**117.3. These figures represent my assessment based on New Zealand and international benchmarks of the all-up revenue share Ngāti Kuku requires as compensation for the Project's failure to recognise and provide for Ngāti Kuku's s6(e) relational values.**

118. For reference purposes, a 4-4.3% share of the Project's incremental revenues can be translated into a free carry shareholding (i.e. free allocation of shares) in POTL (though I understand this cannot be imposed via conditions – rather it could be a matter for negotiation between the parties should revenue sharing conditions be imposed). While these figures (like my \$10-11m/year assessment) should be confirmed using accurate financial data and modelling, I indicatively assess an equivalent free carry to amount to around c. 5.1-5.5% of the port's shares.

119. An inadequacy of the above assessment is that it **does not explicitly account for adverse cultural impacts suffered by the Hapū as a consequence of the port's status quo ongoing and cumulative operations:**

119.1. In particular, POTL's status quo future revenues (i.e. over and above incremental Project revenues) are only possible through the port's use of Ngāti Kuku's traditional whenua and moana, the dispossession of which has not been fully or fairly compensated to the Hapū;

119.2. This gives rise to an addition ongoing and cumulative adverse cultural impact that the Project fails to remedy, even though the Project is inseparable from its owner's other port activities – specifically, the Hapū's non-participation in a fair share of POTL's status quo future revenues;

119.3. Applying the same 4-4.3% revenue fair sharing rate applied above to the Project's incremental revenues to POTL's 2025 status quo revenues of \$464.7m, assuming that level of revenue is sustained in future (a matter that I recommend be further inquired into as part of any conditions), **adds an extra c. \$19-20m/year to the \$10-11m/year compensation figure above, which over 35 years has a present value of an extra c. \$221-233m (using Treasury's commercial discount rate) or c. \$476-501m (using Treasury's social discount rates, treating revenue sharing as achieving a cultural objective – i.e. recognising and providing for Ngāti Kuku relationships and values);**

- 119.4. This amount would be **in addition to compensation based on a fair sharing of the Project's incremental revenues** (i.e. \$10-11m/year, or \$117-128m to \$250-275m in present value terms, depending on choice of discount rate).
120. Finally, in passing, I note that the Hapū will have suffered historical adverse impacts as a consequence of POTL not fairly sharing revenues historically generated using Ngāti Kuku whenua and moana. I understand that the Panel is not able to award compensation for such historical impacts (just compensation for future cultural adverse impacts – as addressed above). However, for reference purposes, and to provide a sense of relativity between compensation for historical and ongoing/cumulative/future impacts, I note that when I normally assess historical impacts of this sort:
- 120.1. I would start with the value of historical adverse impacts – e.g. annual foregone revenue fair shares since the Port commenced operation;
- 120.2. Convert those historical values to their current value, usually by compounding past monetary losses at a conservative compounding rate (e.g. to reflect lost opportunity to generate additional returns from those foregone historical amounts, or if more socially beneficial to the recipient, consuming some or all of those historical losses and returns).
121. As such, the 4-4.3% fair sharing rate could also be applied to the port's historical revenues, to recognise the historical denial of Ngāti Kuku's rangatiratanga, including by failing to have fairly shared historical port revenues with the Hapū – a loss that remains outstanding and continues to grow:
- 121.1. To illustrate the potential scale of doing so, using port revenues for 2021-2025 provided in the port's 2025 annual report, and compounding historical amounts conservatively at government bond rates to reflect investment opportunity cost, **a 4% share of just those five years' of past port revenues amounts to a present value of \$86m;**
- 121.2. Clearly a much larger sum would result by including the present value of foregone revenue fair shares in years preceding 2021.

#### 4.6 Compensation Required for Failure to Recognise and Provide for Ngāti Kuku Relationships with their Ancestral Lands, Waters, Sites, Wāhi Tapu and Taonga – Through Frustration of Ngāti Kuku’s Ability to Discharge Cultural Obligations

122. Building on the framing set out in Section 4.4 (especially Figure 4.4), I further characterise the denial of Ngāti Kuku’s rangatiratanga/authority, and frustration of the Hapū’s ability to discharge its various cultural obligations – again, in economic terms – as:

122.1. “[Market] Economy” costs – e.g. diminished physical and financial resources, hence worsened housing, health, education, work, social and environment outcomes;

122.2. Health costs – e.g. excess mortality/morbidity from air pollution, hence worsened educational, work, social and cultural outcomes;

122.3. Environmental costs – e.g. reduced marine biodiversity, pollution (air, noise, light, visual, etc);

122.4. Risks of extreme hazards – e.g. fuel storage fires, fertiliser warehouse fire or explosion.

123. To each of these direct costs, in economic terms I would also add the pain and suffering experienced by the Hapū relating to each of the Project’s adverse cultural impacts, which pain and suffering (or close equivalent), like adverse health costs, is routinely monetised in CBAs by public agencies such as the Ministry of Transport and Waka Kotahi using publicly-available metrics mandated by the Treasury, and also compensated in awards such as those made by the Human Rights Review Tribunal (HRRT).

124. Re the latter, a report I co-authored for Te Puni Kōkiri/Ministry of Māori Development on the economic value of better recognising and protecting Māori taonga, framed the economic cost of frustrating the ability of Māori to exercise kaitiakitanga obligations in the following terms:<sup>75</sup>

“While there are many facets of the nexus of kaitiakitanga and dimensions of wellbeing for Māori, one facet is the benefit experienced by Māori being better able to realise cultural values. This aspect can be tied to the economic concept of utility,

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<sup>75</sup> Roskrige et al., 2022, Understanding the Economic Value of Māori Taonga: A Scoping Study, report for Te Puni Kōkiri, November: <https://www.tpk.govt.nz/documents/download/documents-2849-A/Te%20Au%20Rangahau%20Maori%20Business%20Research%20Nov%202022.pdf>, at pp 51-52.

which has techniques well tested outside of Māori contexts that could be useful in estimating the impacts of the recommendations. This is not to say utility is the only or greatest driver of expressing kaitiaki for Māori, but it is one aspect that has close parallels in existing economic techniques. The recommendations relating to kaitiaki at one level can be described as the ‘resolution of pain’ – specifically, the pain of not having been able to discharge kaitiaki obligations in line with the shared ethic, with adverse impacts on taonga, as well as past, present and future generations.

“Akerlof and Kranton (2005, p. 9) undertook seminal research into the relationship between utility and realisation of values during their investigation of cadet training at the West Point military academy in the U.S., in this context they identified:

The goal of West Point is to change the identity of the cadets, so they will think of themselves, above all else, as officers in the U.S. army. *They will feel bad about themselves – they will lose utility – if they fall short of the ideals of such an officer.’*

“The themes arising from this research have parallels to the realisation of kaitiaki of Māori taonga – responsible to past, present, and future generations for the care and protection of those taonga. Drawing on this analogy, kaitiaki might be said to ‘feel bad about themselves’, i.e., to ‘lose utility’ (economists might also say ‘suffer disutility’), if they are unable to realise cultural ideals of stewardship.

“This naturally points to the use of non-market valuation techniques applied in specialisations like health economics to value the resolution or avoidance of types of illness causing commensurate (emotional/psychological/spiritual/physical) ‘pain’.” [emphases added]

125. Cultural evidence on behalf of Ngāti Kuku provides a direct illustration of such notions. Specifically, Mr Joel Ngatuere states that adverse cultural impacts (in this case, due to loss of a culturally important view shaft) give rise to “deep distress ... akin to the death of a loved one.”<sup>76</sup>
126. I therefore assess the compensation required to address the Project’s – and existing port’s – cumulative and ongoing frustration of Ngāti Kuku’s ability to exercise kaitiakitanga and other cultural obligations (e.g. manaakitanga, obligations towards ancestors and future

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<sup>76</sup> Joel Ngatuere Evidence, at para 78.

generations, etc) by reference to standard non-market value metrics applied to compensate “pain and suffering”:

126.1. Specifically, I base the required compensation amount on metrics used by Ministry of Transport and other agencies as the social cost of “minor injury”, defined to be an injury that “causes discomfort or pain to the person injured”,<sup>77</sup> which is generic enough to encapsulate the sort of pain and suffering of Ngāti Kuku due to the Project – and existing port activities, cumulatively – frustrating the exercise of the Hapū’s kaitiaki and other cultural obligations (as detailed in the Ngāti Kuku CIS).

127. In per-person and per-event terms, the relevant metric is \$85,819 in Jun-25\$:

127.1. Following NZIER (2023),<sup>78</sup> for conservatism I treat this metric as a capitalised sum, convert it into an annualised equivalent (over 40 years, at an additionally conservative discount rate of 5%, which is greater than Treasury’s social discount rates) of c. \$5,000/adult/year, and apply this metric to Ngāti Kuku adults only;

127.2. While I do not have an accurate estimate of the Ngāti Kuku population, I understand that the iwi the Hapū mainly affiliates to is Ngāi Te Rangī, whose 2023 Census population was 22,047,<sup>79</sup> which in 2025 terms (based on movements in the overall Māori population),<sup>80</sup> is 22,558;

127.3. I am advised by Ngāti Kuku that the Hapū is one of nine hapū affiliating mainly with Ngāi Te Rangī,<sup>81</sup> so for want of better information I estimate the 2025 Ngāti Kuku population (all ages) to be one ninth of the Ngāi Te Rangī population, i.e. c. 2,500;

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<sup>77</sup> <https://www.transport.govt.nz/assets/Social-cost-of-road-crashes-and-injuries-methodology-and-user-guide.pdf>.

<sup>78</sup> NZIER, 2023, The value of safety improvements, NZIER Insight 107-2023: <https://www.nzier.org.nz/hubfs/Public%20Publications/Insights/NZIER%20Insight%20107%20Value%20of%20safety%20improvements.pdf>, at p. 10.

<sup>79</sup> <https://tewhata.io/ngai-te-rangi/social/people/demographics/#population>.

<sup>80</sup> <https://infoshare.stats.govt.nz/SelectVariables.aspx?pxID=f782169b-9b3c-419e-b5f0-278c0d1f1c72>.

<sup>81</sup> Personal communication, Awhina Ngatuere.

- 127.4. Based on 2023 Census demographic data for Ngāi Te Rangī,<sup>82</sup> 30.4% of the iwi's population is 15 years old or younger, so I estimate the adult Ngāti Kuku population in 2025 to be 1,740;
- 127.5. Applying my annualised pain and suffering metric of \$5,000/adult/year to this adult population implies **annual required compensation to the Hapū of c. \$8.7m/year, with a present value over 35 years at Treasury's social discount rates of \$217m.**
128. For a sense of perspective on my assumed \$5,000/adult/year metric, I note that the Human Rights Review Tribunal (HRRT) often makes awards for similar types of harm, all of which in my view provide pertinent benchmarks for assessing Ngāti Kuku's cultural harms, namely damages for:
- 128.1. Emotional harm or significant emotional harm – cf the “deep distress ... akin to the death of a loved one” referred to above<sup>83</sup>;
- 128.2. Injury to feelings; and
- 128.3. Humiliation, loss of dignity, and injury to feelings.
129. Using data on HRRT awards for Mar-12 to Nov-22,<sup>84</sup> I calculate that the average awards for each of the above heads of damages are c. \$26,000, \$51,000, and %50,000 respectively:
- 129.1. Once again, following NZIER (2023) and for conservatism treating these as capital sums and annualising them (though over 5 years only rather than 40 years, treating them as addressing shorter-term harms than those covered by the Ministry of Transport minor injury metric, and further applying a conservative 5% discount rate), the annualised amounts of each of these metrics is c. \$6,000, c. \$12,000, and c. \$12,000 respectively (i.e. per person, per year);
- 129.2. These figures suggest my assumed \$5,000/adult/year metric for compensating pain and suffering due to the Project and port's frustration of Ngāti Kuku adults discharging their cultural obligations is of an appropriate order of magnitude.

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<sup>82</sup> <https://tewhata.io/ngai-te-rangi/social/people/demographics/#population>.

<sup>83</sup> Joel Ngatuere Evidence, at para 78.

<sup>84</sup> <https://www.justice.govt.nz/tribunals/human-rights/damages-and-costs-awarded/>.

130. For a further sense of perspective on this metric, I also consider the Ministry of Justice's 2023 Compensation Guidelines for Wrongful Conviction and Imprisonment.<sup>85</sup> Those guidelines include a base annual rate of \$150,000 per year of wrongful conviction and imprisonment, including compensation for the following non-pecuniary losses:

130.1. Loss of liberty;

130.2. Loss of reputation;

130.3. Loss or interruption of family or other personal relationships – cf Mr Joel Ngatuere's evidence regarding how "place" is an integral part of Ngāti Kuku identity, and hence that the Hapu's separation from its traditional whenua and moana relating to the port and port-related activities interrupts Hapū's relationship to "place", with associated loss of identity;<sup>86</sup>

130.4. Loss or interruption of school or study opportunities; and

130.5. Mental or emotional harm – cf Mr Joel Ngatuere's evidence regarding the stress suffered by Hapū members as a consequence of the Project and port's adverse cultural impacts.<sup>87</sup>

131. Loss of liberty is not pertinent here, and assuming that represents half of the base figure of \$150,000/year, that implies a remaining \$75,000/year to allocate among the other heads of loss. Arguably the cumulative cultural impacts of the port and port-related activities can be said to have caused a loss or interruption of school or study opportunities for at least some Hapū members, for example due to the adverse health impacts of air pollution arising from port and port-related activities (as discussed in Section 3.3 above). However, for the sake of conservatism, I suppose that head of loss is not directly pertinent. Conversely, I suppose for benchmarking purposes that the remaining heads of loss are pertinent to the Hapū's cultural impacts:

131.1. Loss of reputation – e.g. the harm to the Hapū's mana due to the frustration of its ability to discharge cultural obligations;

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<sup>85</sup> <https://www.justice.govt.nz/justice-sector-policy/constitutional-issues-and-human-rights/miscarriages-of-justice/compensation-for-wrongful-conviction-and-detention/>.

<sup>86</sup> Joel Ngatuere Evidence, at paras 39, 78-70, and 84.

<sup>87</sup> Joel Ngatuere Evidence, at para 122.

- 131.2. Loss or interruption of family or other personal relationships – e.g. due to the Hapū's loss of rangatiratanga over its traditional whenua and moana, including members' inability to access and use traditional food and materials due to both physical access issues but also due to degradation of natural resources due to port and port-related activities, causing the loss of traditional practices and connections between people and place; and
- 131.3. Mental or emotional harm – e.g. akin to the “pain and suffering” characterisation made above of the frustration of the Hapū's ability to discharge its cultural obligations.
132. Assuming the remaining \$75,000/year base amount accounts in equal measure to each of the remaining heads of loss (other than loss of liberty), this implies an average allowance of \$18,750/year for each head of loss:
- 132.1. For any one head of loss this \$18,750/year figure is clearly much higher than the \$5,000/adult/year figure I assumed above;
- 132.2. Combining the relevant three remaining heads of loss would imply annual compensation of \$56,250, which is clearly substantially greater than the \$5,000/adult/year metric I assumed.
133. Based on these alternative benchmarks for losses akin to pain and suffering (i.e. HRRT damages awards and Ministry of Justice compensation guidelines for non-pecuniary losses), I consider my assumed \$5,000/adult/year loss metric for compensating Ngāti Kuku's cultural impacts arising from the Project and port's (cumulative) frustration of the Hapū's ability to discharge its cultural obligations to be a reasonable order of magnitude, and potentially conservative:
- 133.1. As such, my estimate of an annual compensation amount of \$8.7m, with a 35 year present value of \$217m, is also conservative.
134. In conclusion, I **assess required compensation for the frustration of Ngāti Kuku's ability to fulfil kaitiakitanga, manaakitanga and other cultural obligations (including obligations to ancestors who bequeathed international taonga and customary rights to current Hapū members, and to future Hapū members to whom current members have a duty to pass on intergenerational taonga and customary rights) to be in the order of c. \$8.7m/year currently (at a conservative \$5,000/adult Hapū member/year), with a present value over 35 years of**

**\$217m** – to the extent Ngāti Kuku do not consider other compensation components to have already adequately addressed these impacts.

#### **4.7 Flow-On Impacts of Adverse Cultural Impacts**

135. I do not attempt to quantify likely flow-on impacts on adverse cultural impacts relating to the Project (incrementally) and existing port and port-related activities (cumulatively), but seek to characterise them in qualitative terms:

135.1. Whether or not the Project’s adverse cultural impacts are large or small in isolation, it is necessary to consider their cumulative impacts in the context of existing port and port-related activities historically causing harms to Ngāti Kuku;

135.2. This is most pronounced in relation to accumulated health impacts, but also in relation to inter-generational harms more broadly (which are referred to in the cultural evidence of Mr Joel Ngatuere).<sup>88</sup>

136. An important mechanism by which the Project’s harms could prove to be disproportionately detrimental to the Hapū is in terms of how adverse health impacts and sustained economic and cultural marginalisation separately perpetuate disadvantages arising from historical Treaty breaches:

136.1. These notably include confiscations of the vast majority of Ngāti Kuku lands, which by themselves represent a substantial “economic shock” in terms of access to resources to sustain Hapū members, and to enable the Hapū to participate in socio-economic development alongside those who gained access to Ngāti Kuku lands at less than full cost (and of course the trauma of loss of life and injuries sustained in military conflicts with settler government forces);

136.2. They also include subsequent land losses such as those arising from compulsory acquisitions of Hapū whenua to enable the construction of important Tauranga infrastructures such as the port, airport, and harbour crossing, which once again involved third parties benefitting from accessing Hapū whenua and moana, without the Hapū fairly sharing in those benefits.

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<sup>88</sup> Joel Ngatuere Evidence, at paras 26-60, including impacts on Tamariki (e.g. para 43) as well as on kaumātua (e.g. para 44).

137. The resulting economic marginalisation of the Hapū by themselves will have caused inter-generational harms, with Hapū ancestors forced to engage with the settler economy as labourers, having lost most of their capital resources, but without the human capital (i.e. health and education) to do so on equal terms:

137.1. This implies a reduced ability to pass on physical and financial capital to later generations, and also relatively less human capital than those who enjoyed better access to all such “capitals”.

138. However, these harms will only have been worsened due to the health burden (and premature mortality) suffered by Hapū members as a consequence of port and port-related air pollution:

138.1. Health and education are recognised pillars of economic development, so deficits in either can constrain such development, including across generations;

138.2. In turn, poor housing contributes to worsened health and education outcomes, providing another pathway via which historical economic marginalisation can have inter-generational effects – e.g. due to confiscations and/or disproportionate and inadequately-compensated compulsory acquisitions reducing the Hapū’s ability to invest in quality housing (as detailed in Dr O’Malley’s historical report for Ngāti Kuku in this process).<sup>89</sup>

139. Just as significantly, the denial of the Hapū’s rangatiratanga, in terms of the historical denial of any fair sharing of the benefits generated by the port and port-related activities derived from former Hapū whenua and moana, means that current Hapū members have not had access to the benefits of past social (including human capital), cultural, environmental (including in customary sources of food and materials) and (market) economic investments that past Hapū members would have been able to make had they enjoyed such a fair sharing of benefits:

139.1. Instead, those benefits have been captured by others, with adverse impacts of the port and port-related activities falling disproportionately on the Hapū.

140. These represent significant flow-on and cumulative adverse cultural impacts of the Project and port.

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<sup>89</sup> O’Malley Report, at paras 146, 150, and 153.

## 4.8 Other Required Compensation

141. Other required compensation includes compensation to Ngāti Kuku for cumulative and likely future (due to the Project) harms to te taiao, kaimoana, sources of traditional materials and cultural practices involving the relevant areas of whenua and moana:

141.1. To the extent the Hapū does not consider the above fair sharing and compensation measures to address the cumulative impact of the port and port-related activities, and incremental effects of the Project, as being adequate.

142. Moreover, compensation is required for excess health and premature death burden suffered by the Hapū due to the cumulative effects of existing port and port-related activities, which effects could be exacerbated by the Project:

142.1. This goes beyond simply the Applicant's proposed (inadequate) funding for a longitudinal health/wellbeing assessment study, with a need to address existing excess health burden and premature deaths (and their flow-on impacts on educational, work, social and cultural outcomes), and a commitment to address any further such effects arising due to the Project;

142.2. This could, in practical terms, include fully funded and maintained insurance policies to indemnify Hapū members against incremental health costs and costs of premature death due to pollution associated with the port and port-related activities, as well as against loss of property, health or life in the event of catastrophic events such as fuel storage fire, or fertiliser warehouse fire or explosion, associated with port or port-related activities.

## 4.9 Assessing Reasonableness of Assessed Required Compensation by Comparison with Other Benchmarks

143. In preceding sections I partially assessed Ngāti Kuku's required compensation, from two main heads of adverse cultural impacts arising due to the Project (incrementally) and port and port-related activities (cumulatively), including:

143.1. \$10-11m/year (with a 35 year present value of \$117-128m or \$250-275m subject to choice of discount rate), based on a fair sharing of the Project's incremental revenues, to compensate for denial of the Hapu's rangatiratanga in relation to the Project;

- 143.2. A further \$8.7m/year (with a 35 year present value of \$217m), to compensate for the Project's (incremental) and port's (cumulative) frustration of the Hapū's ability to discharge its cultural obligations (kaitiakitanga, etc).
144. To these measures I added further compensation based on ongoing and cumulative adverse cultural impacts in relation to POTL's status quo activities, which I assessed to add an extra c. \$19-20m/year to the \$10-11m/year compensation figure above, which over 35 years has a present value of an extra c. \$221-233m or c. \$476-501m (subject to discount rate applied).
145. Aside from the latter, the above compensation measures, which are only partial, in aggregate come to c. \$19m/year currently, which over a 35 year consent life indicatively has a present value of c. \$335-475m (assuming the relevant harms and compensation measures remain constant real terms, not allowing for Hapū population growth, and applying Treasury's social discount rate of 2% for 30 years then 1.5% for frustration of kaitiakitanga (etc), or either those rates or Treasury's commercial discount rate of 8% for revenue sharing – since revenue sharing is to recognise rangatiratanga, a cultural consideration, even if it relates to commercial returns).
146. By way of comparison, the \$19m likely minimum annual required compensation identified above is significantly less than the likely incremental annual ground lease rental that the Hapū would be entitled to enjoy if the Applicant had been required to lease the relevant whenua and moana required for the Project, which could be as high as \$32m/year:
- 146.1. I reach this figure by pro-rating the \$1.5 billion unimproved value of port land in the company's 2025 annual report by the company's Tauranga land area (190 ha) relative to its total land area (250 ha);
- 146.2. I then apply a conservative 5% net rental rate to the resulting \$1.154 billion unimproved land value, which compares with 4.75-6% 2025 net rental rates for Tauranga industrial land;<sup>90</sup>
- 146.3. I then further pro-rate the resulting annual ground lease rental by the 55% Project incremental revenue estimated in Section 4.5, assuming the Project's incremental returns are ultimately captured in land values, i.e. implying an incremental ground lease rental of  $5\% \times \$1.154 \text{ billion} \times 55\% = \text{c. } \$32\text{m/year}$ ;

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<sup>90</sup> <https://www.cbre.co.nz/insights/figures/february-2025-new-zealand-regional-figures-report-tauranga>.

146.4. To this should be added  $5\% \times \$1.154 \text{ billion} = \$57.7\text{m/year}$  in respect of adverse cultural impacts relating to POTL's ongoing and cumulative status quo activities (as opposed to incremental Project impacts), which exceeds the extra \$19-20m/year I assessed as a fair sharing of status quo port revenues.

147. Is also significantly less than the incremental annual rental the Hapū would enjoy if the Applicant was required to enter into a 50:50 ownership and co-management arrangement in respect of the Project – like that agreed between Tauranga City Council and Otamataha Trust (representing the mana whenua interests of Ngāi Tamarawaho and Ngāti Tapu) in 2010,<sup>91</sup> but given effect to in 2021, in relation to reclaimed land at Dive Crescent just south of Sulphur Point, due to ownership of that land having never been legalised – which could be as high as \$25m/year:

147.1. I reach this figure by again using 2025 annual report data for the port, but now using a 2025 improved land value of \$1.154 billion pro-rated unimproved land value (Tauranga only) plus \$453.5m wharves and hardstanding and \$228m harbour improvements, implying a Tauranga improved land value of \$1.835 billion; and

147.2. Applying the same conservative 5% net rental rate and 55% assumed incremental land value impact of the Project as above, but now assuming only a half share (as in the Otamataha agreement) to arrive at an incremental annual rental of  $5\% \times \$1.835 \text{ billion} \times 55\% \times 50\% = \$25\text{m/year}$ ;

147.3. To this should be added  $5\% \times \$1.835 \text{ billion} \times 50\% = \$45.9\text{m/year}$  in respect of adverse cultural impacts relating to POTL's ongoing and cumulative status quo activities (as opposed to incremental Project impacts), which also exceeds the extra \$19-20m/year I assessed as a fair sharing of status quo port revenues.

148. While both of these incremental comparator calculations are highly indicative, they each result in annual figures greater than my assessed \$19m/year for incremental Project required compensation:

148.1. On this basis I consider my \$19m/year annual compensation figure to be reasonable relative to these benchmarks.

149. My comparator calculations for POTL's future ongoing and cumulative status quo activities are not as indicative (since they do not rely on an assessment of how the Project affects

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<sup>91</sup> <https://www.tauranga.govt.nz/news-and-events/newsletters/artmid/1424/articleid/6436>.

status quo revenues or land values), so they strongly indicate that my assessed extra compensation for those activities is reasonable (even conservative).

#### **4.10 Comparing Required Compensation with Proposed Mitigation Measures, and Assessing Benchmarks Used for Proposed Measures**

150. The above partial compensation measures of c. \$19m/year currently (with a present value of c. \$335-475m) based on Project incremental revenues compares with:

150.1. The Applicant's proposed compensation measures which in aggregate terms amount to \$6.1m in total,<sup>92</sup> and only \$5.3m in total once mitigation measures that are paid over time are converted to their present value (using Treasury's social discount rates as above);

150.2. In other words, on an annual basis, the required compensation is likely to be at least 3.6 times that being proposed in total, and in present value terms the required compensation is likely to be around 63-90 times that being proposed;

150.3. Once c. \$19-20m/year compensation is added for POTL's ongoing and cumulative status quo activities the gap between required and proposed compensation will be even greater still, even before allowing for the present value over 35 years of that added compensation.

151. In my opinion the proposed "cultural mitigation" package is fundamentally mischaracterised.:

151.1. It is framed as recognition of tangata whenua relationships with Te Awanui, but in substance it offers process not power, monitoring not control, and small discretionary funds without any share in the economic value being generated from the continued use and expansion of Ngāti Kuku lands, foreshore and seabed.

152. The conditions acknowledge that Te Awanui/Tauranga Harbour is a taonga and that iwi/hapū have a deep-rooted relationship with it, but the operative mechanisms reduce that relationship to invitations, feedback, ceremonies, monitoring, and advisory participation. The SPDAG is only an advisory forum: it can provide feedback, liaise, monitor, recommend and administer limited funds, but it has no approval rights, veto rights, co-governance rights,

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<sup>92</sup> Draft Condition.

operational control, environmental decision rights, or entitlement to participate in port revenues:

152.1. POTL retains the decision-making power; and

152.2. Even where SPDAG feedback is required on plans, POTL need only “take into account” that feedback and explain why it is not adopted.

153. The annual strategic meeting proposal is especially weak. POTL presents it as involving iwi and hapū in long-term strategic planning, but the condition merely requires POTL to invite SPDAG to an annual meeting with the CEO and Chair. There are no information rights beyond what POTL chooses to share, no agenda-setting rights, no voting rights, no reserved matters, no dispute mechanism, no board representation, and no obligation to obtain agreement before further strategic decisions affecting Ngāti Kuku whenua, Whareroa Marae, Te Awanui, or the coastal marine area.

154. The monetary package is also structurally inadequate. The headline figure is said to exceed \$6 million over the life of the Project, but the main payments are one-off, spread across many iwi/hapū entities, and are largely restricted to restoration, reports, scholarships, pou, monitoring, audits, and marae infrastructure.

155. The specific Whareroa Marae component is \$1 million upfront plus only \$25,000 per year, CPI-adjusted:

155.1. These figures have not been justified, and are not only arbitrary, but also clearly only minor in relation to the overall compensation I assess is required by Ngāti Kuku;

155.2. Certainly, for a 35-year consent authorising a major expansion of POTL’s activities, that is not a fair economic sharing arrangement relative to the fair sharing benchmarks I identify in Section 4.5, and at most represents a modest grants package.

156. The package appears to be particularly deficient because the affected interest is not merely cultural in the narrow “heritage” sense. Ngāti Kuku’s claim is that they have been dispossessed of the very land, foreshore and seabed from which the port derives its locational monopoly and expansion value, and that Whareroa Marae now bears disproportionate cumulative industrial, health, noise, access, kaimoana and environmental burdens:

- 156.1. In that context, mitigation should not be limited to cultural monitoring and symbolic recognition;
- 156.2. A remedy would need to address lost fair sharing of economic rents, ongoing health and environmental costs, and future bargaining rights over expansion into areas subject to unresolved customary claims, which the proposed measures do not do.
157. The Impacts MoC explains how the various elements of the Draft Conditions were arrived at, and in particular what they were benchmarked against.<sup>93</sup> In my opinion those benchmarks are inapt because:
- 157.1. They are mitigation payments from different factual, legal and commercial contexts (which the Impacts MoC acknowledges).<sup>94</sup> They say nothing about what would be necessary where the most affected hapū says the port is operating on improperly alienated hapū land and foreshore/seabed, where cumulative health and cultural burdens are concentrated at Whareroa;
- 157.2. The comparators used do not benchmark against the value of the right being granted. The relevant economic comparator is not “what was paid in some other consent”; it is the incremental value to POTL of the Stella Passage expansion, and the fair share that would likely be negotiated if Ngāti Kuku could exercise effective rangatiratanga (e.g. if CMT to the relevant areas had already been awarded). Compared with my estimated \$19m/year required compensation (35 year present value of \$213m), the proposed \$6.1 million package in total over 35 years is relatively immaterial (and even more so once compensation for POTL’s ongoing and cumulative activities is added – i.e. a further \$19-20m/year);
- 157.3. The earlier POTL packages relied upon are self-referential and path-dependent. They reflect what POTL (or other Ports) previously paid under prior consenting settings, not what is appropriate under this Project’s facts, the FTAA framework, and the cumulative burden on Ngāti Kuku and Whareroa Marae of the cumulative cultural impacts of the port and port-related activities, and the incremental impacts of the Project.

158. Additional problematic features of the proposed mitigation measures are:

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<sup>93</sup> Impacts MoC, at paras 41-42.

<sup>94</sup> Impacts MoC, at para 43.

158.1. They are being offered unilaterally, with the clear expectation that the Panel will embed them in consent conditions despite not being accepted by affected iwi and hapū. That alone is telling: if the most affected parties are unwilling to accept the package as adequate mitigation, it is strong evidence that it does not in fact address the cultural effects;

158.2. They fail to differentiate degrees of association and associated rights/responsibilities of different iwi and hapū in the affected areas, and force those iwi and hapū to resolve how any of the proposed mitigations might be shared or applied (save for some specific measures directed at Whareroa Marae, albeit inadequately based on my assessed required compensation) – which of itself is a denial of Ngāti Kuku’s rangatiratanga in particular, and risks causing additional cultural harms by being divisive and creating tensions among the affected iwi and hapū (which additional harms I have not attempted to quantify).

159. POTL’s proposal treats Ngāti Kuku and other tangata whenua as stakeholders to be consulted with and compensated at the margins only, rather than as substantive rights-holders whose land, harbour relationship and customary marine interests are central to the economic value of the proposed port expansion:

159.1. A more credible mitigation framework would include Ngāti Kuku-specific arrangements, long-term health and environmental redress, and a revenue-, rent-, royalty- or equity-linked participation mechanism tied to the value generated by the expansion and ongoing port use of the affected land and coastal area.

## 5. Conclusions

160. In conclusion, it is my opinion that:

160.1. The FTAA requires a clear assessment of whether the Project delivers net benefits to New Zealand’s social welfare once all costs, disbenefits, and adverse impacts are accounted for. In economic terms, this necessitates a cost-benefit analysis (CBA), rather than an economic impact assessment (EIA).

160.2. The NZIER Report provides an EIA and is therefore not fit for purpose under the FTAA framework. It measures economic activity rather than welfare, includes costs as benefits, omits significant adverse impacts, and relies on unrealistic assumptions and counterfactuals. The results are presented as “illustrative” only, lack

transparency, and materially overstate the project's economic contribution. Accordingly, the claimed impacts (let alone benefits) are not robustly established.

160.3. Critically, the analysis excludes major costs, including substantial public health impacts from air pollution associated with port activities. These are estimated at approximately \$78 million per annum (present value of approximately \$3.4 billion over 35 years), with disproportionate impacts on Ngāti Kuku and the Mount Maunganui community. Environmental degradation, catastrophic risk, and cultural impacts are also not assessed.

160.4. A central economic issue is the Project's failure to recognise and provide for Ngāti Kuku relationships with their ancestral lands, waters, and taonga, including through its denial of the Hapū's rangatiratanga. In economic terms, this denial results in the inability of Ngāti Kuku to exercise meaningful control over the access to and use of resources for cultural and economic purposes, and to secure a fair share of the benefits generated from them. This represents a significant adverse impact requiring direct compensation, which I assess by reference to established fair sharing benchmarks.

160.5. In particular, the absence of fair sharing of project returns means Ngāti Kuku do not participate in the economic upside of activities occurring on, or dependent upon, their ancestral whenua and moana.

160.6. Relatedly, the Project further fails to recognise and provide for Ngāti Kuku's relationships with their ancestral lands, waters, and taonga, by frustrating the Hapū's ability to discharge cultural obligations such as kaitiakitanga, manaakitanga, and obligations to both ancestors and future generations. In economic terms, this gives rise to a range of costs, including environmental degradation, reduced access to customary resources, diminished wellbeing, and significant health impacts. Importantly, it also gives rise to non-market costs in the form of pain and suffering associated with the inability to discharge such cultural obligations. These represent significant additional adverse impacts of the Project requiring direct compensation, which I assess by reference to established metrics for compensating such non-market harms.

160.7. These aggregated cultural impacts materially reduce the project's net benefits and, if unaddressed, may outweigh any claimed economic gains. If the Project proceeds, they represent substantial uncompensated cultural adverse impacts.

160.8. Hence, if the Project proceeds, I recommend direct compensation that is indicatively at least \$19 million per annum (35 year present value of \$335–475 million), including \$10-11m/year fair revenue sharing of incremental Project revenues assuming a fair sharing rate based on relevant benchmarks of 4-4.3%, plus a further \$8.7m/year compensation for the adverse impacts of the Hapu's ability to discharge cultural obligations being frustrated (assuming the required compensation is \$5,000/adult/year based on a variety of relevant compensation metrics).

160.9. The above figures are compensation for the Project treating its adverse impacts as being independent of cultural adverse impacts relating to POTL's overall future activities. However, since POTL's existing activities give rise to ongoing and cumulative adverse impacts that the Project adds to but fails to address, this gives rise to an additional failure to recognise and provide for Ngāti Kuku's relationships with their ancestral lands, waters, and taonga:

160.9.1. Applying my assessed revenue fair sharing rate of 4-4.3% to POTL's overall revenues – not just the Project's incremental revenues – assuming that level of revenue is sustained in future, adds an extra c. \$19-20m/year to the \$10-11m/year compensation figure above, which over 35 years has a present value of an extra \$221-233m (using Treasury's commercial discount rate) or c. \$476-501m (using Treasury's social discount rates, treating revenue sharing as achieving a cultural objective – i.e. recognising and providing for Ngāti Kuku relationships and values).

160.10. These compensation amounts – even just annually – are materially greater than the applicant's proposed mitigation package of \$6.1 million in total over 35 years (which has a 35 year present value of \$5.3m).

160.11. Overall, the project's claimed benefits are not credibly demonstrated, while its adverse impacts – particularly those affecting Ngāti Kuku – are substantial and under-assessed. On the available evidence, it is unlikely that the project delivers net regional or national benefits as required under the FTAA.

161. My evidence does not assess or make recommendations in relation to adverse impacts to other mana whenua groups.

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