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Dear Jo

RE: PEER REVIEW OF GREENBRIAR SUBMISSION ON PROPOSED GORE DISTRICT PLAN –
ECONOMIC EVIDENCE

Introduction

1. The following sets out my peer review of the economic evidence prepared by Mr Schoultz in support of the Greenbriar submission on the Proposed Gore District Plan (PDP). I have set out my qualifications and expertise in Appendix 1 of this letter. In preparing this peer review, I have read the following supplied documents:
 - i. The Greenbriar Submission (#128).
 - ii. The brief of planning evidence by Ms Justice, dated 8th July 2024.
 - iii. The brief of economic evidence by Mr Schoultz, dated 8th July 2024.
 - iv. The New Value Mine Extension Economic Impact Analysis Report prepared by Sense Partners, 12th February 2024.¹
2. Greenbriar are the owners of New Vale Coal who operate a lignite mine, located in Waimumu in Gore District. Greenbriar's submission seeks the addition of a New Vale Special Purpose Zone (and associated changes to other chapters) in the PDP, or

¹ It is understood that this report is appended to Greenbriar's resource consent application. While I have generally relied on Mr Schoultz's PDP evidence, it is clear that the evidence has been prepared from the earlier published report. While the evidence and reports are consistent, in some instances there is slightly more detail provided in the report, which I have also considered.

alternative relief that provides for the same regulatory outcomes (such as a Rural Zone precinct).

3. A key purpose of the bespoke provisions is to provide a more effective framework for assessing resource consent applications in the short-medium term that could expand the mining site, given that under current consents the resource able to be extracted from the site will likely be exhausted within the life of the PDP (indicatively 2034).
4. Planning evidence by Ms Justice identifies that in parallel with the PDP submission, Greenbriar are seeking a resource consent to extend the area where extraction can occur, “should its customers require coal while transitioning to renewable energy sources” (paragraph 12). Ms Justice confirms that the proposed extension would extend the operational life of the mine to 2038 (i.e. by 4 more years).
5. I am mindful that the core task of this peer review is to aid decision making (s42A recommendations) on the proposed amendments to the PDP, and not the resource consent application (although I understand that Greenbriar are seeking to achieve some efficiencies for the consent application via the PDP process). It is also my understanding that even with the proposed provisions, resource consent is still required to enable an extension of the mine and therefore I assume that positive and negative economic effects of that consent may still be assessed at that time. That said, the economic evidence of Mr Schoultz for the PDP submission is focussed on impacts of the mine expansion. This peer review necessarily responds to the scope addressed by Mr Schoultz, which equates the proposed Plan provisions with the enablement of a mine expansion (i.e., as if they are one in the same outcome).

NPS-HPL Context

6. The mine is on land classified as Land Use Capability (LUC) class 3 under the National Policy Statement on Highly Productive Land (NPS-HPL). This means that an expansion of activity has to meet the test of clause 3.9(2)(j)(iii) of the NPS-HPL. This is the core focus of the economic evidence.
7. Clause 3.9(2)(j) requires that the functional and operational need of an activity to occupy HPL is established. Coal is not a ubiquitous resource and mining can only occur where the resource is found. I consider that functional and operational need is

clearly established in this case, given that the site is an existing mine. As such, I do not consider that part of the test further.

8. The economic evidence in support of the Greenbriar submission seeks to provide an assessment of clause 3.9(2)(j)(iii) of the NPS-HPL, which is specifically targeted at larger commercial-scale mining extraction activities:²

iii mineral extraction that provides significant national public benefit that could not otherwise be achieved using resources within New Zealand.

9. There are two parts to an assessment under clause 3.9(2)(j)(iii). The first is determining a 'significant national public benefit'. The second is confirming that there are not alternative resources within New Zealand that could achieve that benefit. In paragraph 26, Mr Schoultz identifies that the NPS-HPL lacks guidance on how the first part of clause 3.9(2)(j)(iii) is to be applied/interpreted. I agree that the terms used are open to interpretation. Below I provide my interpretation of relevant terms used in clause 3.9(2)(j)(iii).

Public Benefit:

10. Coal is an input to other manufacturing processes. As such, I consider that interpretation of 'public benefit' in clause 3.9(2)(j)(iii) must account for the wider economic benefits achieved by the use of the resource and not simply the direct benefits of the extraction of the resource. This requires consideration of the downstream supply chain of coal extraction rather than the more typical upstream supply chain economic impacts of particular activities.³ These downstream benefits are often referred to as facilitated economic effects.
11. The 'public' aspect of the benefit, as I understand it, means providing goods (or services) for community or social benefit (and not just shareholder benefit). Communities include workers and businesses. Therefore, supporting the operation of other domestic businesses, which in turn sustain employment and incomes, can be considered a public benefit.

National Significance:

12. Establishing that the public benefit is of national significance is, according to the NPS-HPL Implementation Guidance, an "intentionally high" test that recognises that

² Refer NPS-HPL Guide to Implementation, 2023, page 31.

³ Often referred to as direct, indirect and induced economic impacts.

some commercial-scale mining can result in the permanent loss of HPL. Aggregate extraction needs only to provide for a significant regional public benefit. The Guidance notes that “the degree to which land is able to be restored to support land-based primary production is a relevant consideration”, but it does not go as far as suggesting that less weight should be given to the national test.

13. I consider that national significance could be interpreted as either geographically significant (i.e. covering a significant area of the country), significant in quantum relative to a national total, relating to a significant economic sector, or affecting a nationally significant issue.

Climate Commission Report and Demand for New Value Coal

14. Mr Schoultz makes a number of references to the Climate Change Commission Report 2021, and in particular the target to phase out coal use in the food processing sector by 2040. While I have not carried out an extensive review of the Climate Change Commission report, there are some key points in the section⁴ referenced by Mr Schoultz that are relevant to the assumptions made in the economic evidence.

- i. Some coal boilers in the food processing sector are already being replaced with woody biomass or electrical boilers.
- ii. The Commission expects a steady, but reasonably rapid, rate of conversion to be on track to eliminate coal use for food processing before 2040. This timeframe is expected to avoid significant risks to continuity of production.
- iii. Coal use would decline at around 1.4 PJ per year to 2030 – the equivalent of converting one to two very large dairy processing plants away from coal each year or converting a larger number of smaller plants.
- iv. Biomass from forestry and wood processing residues are a low-cost fuel switching opportunity, particularly in regions with significant forestry (which Southland qualifies as).⁵ Supply chains would need to be established.
- v. Only high temperature process heat is more challenging to decarbonise and continued use of coal in these sectors is assumed through to 2040. However,

⁴ Section 7.5 Industry and heat in the demonstration path (paragraphs 64-72) and Section 22.1.2.

⁵ The Otago and Southland wood supply region has the second largest area of exotic commercial forest in New Zealand (source: <https://www.mpi.govt.nz/dmsdocument/55996/direct>)

both the meat processing⁶ and dairy processing⁷ sectors are classified as users of low-medium process heat, so this statement does not apply to them.

15. The following figure summarised the Climate Commission's projected national level energy use in the food processing sector to 2035.

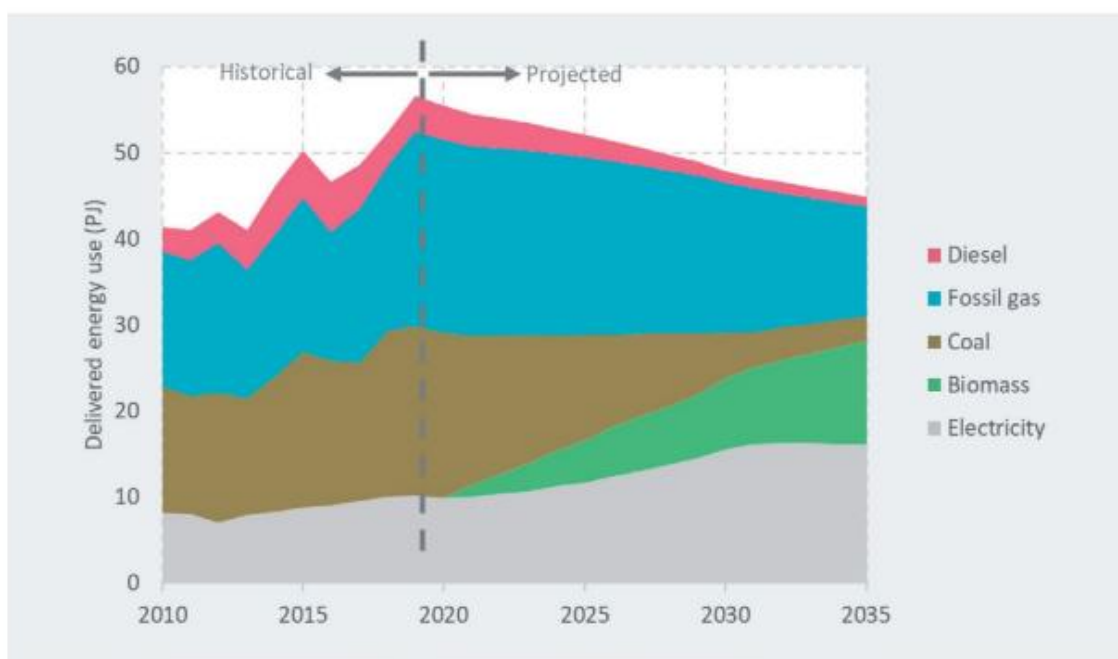


Figure 7.12: Food processing energy use in the demonstration path

Source: Commission analysis

16. Mr Schoultz's assessment acknowledges a phase out of coal in food processing by 2040, but otherwise assumes a constant level of demand⁸ for coal by New Vale's top 6 customers through to 2038 in his analysis (i.e., the extended life of the mine with the proposed extension). This demand outlook – used to justify the extension of the mine beyond an estimated 2034 end of life under current consents – seems contrary to the Climate Change Commission's projections of coal demand nationally (but in fact focussed on the South Island food processors where coal is the dominant energy source).

17. Mr Schoultz relies on a scenario where none of New Vale's existing customers switch to a renewable energy source prior to 2034, although elsewhere acknowledges that

⁶ <https://www.mbie.govt.nz/dmsdocument/5333-meat-and-meat-products-factsheet-process-heat-and-greenhouse-gas-emissions>

⁷ <https://www.mbie.govt.nz/assets/4805f01c9f/dairy-manufacturing-fact-sheet.pdf> and <https://www.mbie.govt.nz/dmsdocument/152-process-heat-current-state-fact-sheet-pdf>

⁸ Mr Schoultz's evidence, paragraph 24.

the proposed extension “could play a role in sustaining affordable access to energy while decarbonisation initiatives are implemented” (paragraph 70, my emphasis), rather than state that the extension *will* play a role (as the latter would require some certainty). I return to this in my overall findings.

18. While I consider it unlikely that demand for New Vale coal will stay the same over the next 10 years (and beyond),⁹ I do not have the benefit of direct communication with New Vale’s top 6 customers. However, on the basis that the assessment by Mr Schoultz is reliant on a constant demand assumption through to 2038 which does not in fact “align” with the planned phase out of coal use by 2040 as claimed by Mr Schoultz (paragraph 29b), this may be an area that warrants further information/evidence from the submitter (if not already provided).¹⁰

Loss of Productive Capacity of Land

19. I agree with the approach and discussion on the loss of sheep and beef farming from the proposed expansion area and agree that it is minor (in revenue terms) relative to the use of the land for mining (and associated land uses). The temporary nature of some of the lost farmland is a relevant consideration, and one specifically mentioned in the NPS-HPL guidance. I therefore agree that mining is a more efficient use of the land.

Direct and Indirect Economic Impacts (Benefits)

20. Mr Schoultz has relied on data provided by Greenbriar on current annual expenditure, revenue and employment (2023). This information is used to identify the contribution of the New Value mine on Gore District GDP and employment. In summary, direct employment is 39 jobs and direct value added (akin to GDP) is estimated at \$7.4m. This equates to an estimated 0.7% contribution to district GDP in 2023.
21. Mr Schoultz then estimates a further 25 jobs indirectly supported by expenditure on inputs to mine operations (namely equipment and supplies) valued at \$5.8m. In paragraph 41, Mr Schoultz explains that a large share of expenditure is related to large machinery and equipment imported to New Zealand by “local suppliers”. I note only that purchasing large machinery and equipment may not be typical

⁹ Information provided already indicates that extraction has reduced from past peak demand.

¹⁰ For example, confirmation on whether the end of life of current consents (2034) accounts for continued reductions in demand, or 2023 demand held constant (and if so, the likelihood of this).

expenditure every year. It is not known if the \$5.8m (or 25 equivalent jobs) is a representative value or not.¹¹

22. Mr Schoultz attributes indirect employment (25 jobs) to Gore District based firms (paragraph 41). Combining indicative indirect and direct employment, this gave a total of 64 jobs sustained annually in the Gore District. This is calculated as 1.12% of the circa 5,700 jobs in the district.
23. In paragraph 30–31, Mr Schoultz attributes the above 0.7% GDP contribution and 1.12% employment contribution to the Gore District economy as:
 - i. “a material contribution” (paragraph 43); and
 - ii. one perspective of delivering a “significant national public benefit” (paragraph 30–31).
24. I disagree. Notwithstanding that Gore District has experienced only slow employment growth in recent years, this annual direct and indirect contribution is minor in the context of Gore District and immaterial in the context of New Zealand. Therefore, I do not consider that these local direct and indirect economic effects satisfy the test of clause 3.9(2)(j)(iii) of the NPS–HPL.
25. That said, these positive local economic effects, including the above average wages paid by the New Vale mine, are all relevant to the overall economic benefits of the submission on the PDP (setting aside the NPS–HPL test) and can be relied on for the purpose of a section 32 evaluation of the proposed rezoning.

Facilitated Economic Effects (Wider Benefits)

26. Mr Schoultz begins this discussion by examining the minor role of mining (in the context of regional GDP) relative to the more significant role of Manufacturing (within which New Vale’s 5 largest customers operate). He provides three charts, for GDP (\$bn) a (%) for Southland Region, Canterbury Region and Otago Region. I note that the percentages do not sum to 100% for any of the charts (as I would expect), and it would appear the percentages for Otago Region are the Canterbury Region percentages and are therefore inaccurate.

¹¹ I accept that servicing of machinery is likely to be a regular and ongoing component of operational expenditure that supports some external employment, but the approach used by Mr Schoultz to estimate indirect employment is tied specifically to what appears to be a single years’ worth of expenditure.

27. I agree that the Manufacturing sector (which includes food processors) plays a significant role in the GDP of Southland and Canterbury Regions (and relative to the GDP contribution of the Mining Sector). However, I disagree that “a similar pattern is repeated across Otago” (paragraph 54) as Figure 4 shows that Manufacturing is only marginally more important than mining, and not one of the key economic sectors of that region.
28. Further analysis then shows that meat and dairy processing accounts for a substantial share of total Manufacturing sector employment (2022) in each region – ranging from around 20% to 51%. However, with respect to Otago Region, a 30% (approx.) share of a relatively small Manufacturing sector does not make New Vale’s market in that region a significant one.
29. Having considered the total size of the meat and dairy processing industries in Southland, Otago and Canterbury (in terms of estimated GDP and employment), Mr Schoultz then estimates the share of that economic activities that is facilitated by New Vale mine (in the form of the energy source for process heat). Paragraph 60 states that New Vale has an estimated 85% market share of coal supply in Southland Region. The evidence does not clarify the coal supply market share in Otago and Canterbury, rather the market share of their customers in those regions in the meat and dairy processing sectors (i.e., 38% and 11%). It is the customer’s market share of the meat and dairy processing sectors in each region that Mr Schoultz uses to apportion the GDP and employment in those sectors that is facilitated by New Vale mine.
30. In paragraph 62, the combined results show that New Vale’s 5 key customers contribute “up to \$499m in annual GDP and up to 4,980 jobs”. This is in 2022 or 2023 dollar and employment terms. By my estimates, 81% of this facilitated economic effect occurs in Southland Region, with only 11% in Otago Region and 8% in Canterbury Region. The facilitated effect in Otago and Canterbury is therefore only modest, but it is significant in Southland Region.
31. Mr Schoultz appropriately states that “New Vale plays a role in enabling economic activity” (emphasis added). It is important not to overstate this facilitated effect as the evidence only quantifies the total economic role of New Vale’s customers, not New Vale’s pro-rata contribution to that GDP and employment. Paragraph 103 of Mr Schoultz’s evidence states that in 2020, energy costs accounted for around 2% of the total value of inputs to the meat and dairy processing sectors.

32. A limitation Mr Schoultz's evidence is that it focusses only on the current economic contribution that New Vale mine supports in the lower South Island (but mainly Southland). The rezoning request seeks to extend the life of the mine by 4 years, out to 2038. The value of the mine expansion will therefore be felt between 2034 and 2038. Facilitating \$499m of annual economic activity today, has a net present value of between \$240m and \$280m per annum if applied in 2035–2038 (and using a 5% discount rate). The total present value of that facilitated effect over those four future years combined is therefore around \$1,035m rather than nearly \$2,000m implied by Mr Schoultz.

Assessment of Alternatives

33. Mr Schoultz provides a helpful explanation of alternative sources of coal by location, the properties of those mined coal resources and the constraints of some alternative coal resources to meet New Value customer demands. Generally, I consider that the assessment of coal alternatives to be thorough and robust.
34. Overall, Mr Schoultz concludes that Southland and Otago customers would resort to imported coal as this would be cheaper than the West Coast coal alternative (but still around a 118% increase in energy costs), while there would be no difference in cost for Canterbury customers to source West Coast coal compared with imported coal. Again, the cost for Canterbury customers would be substantially higher than using the New Vale lignite coal source.
35. Importantly, according to Mr Schoultz, these costs would only apply after 2034 when the New Vale mine reaches end of life (under current extraction consents). It is also uncertain how many of New Vale's customers will be still using coal by 2034 in my view. As stated, above, Mr Schoultz assumes that they could all be relying on New Vale lignite up to 2038 (if the rezoning/expansion is approved).

Impact of higher energy costs (use of alternatives)

36. Mr Schoultz uses the StatisticsNZ input-output tables (2020) to understand the role of energy costs as a share of total inputs to production in the meat and dairy processing sectors. He calculates that energy costs account for a minor 1.6% and 2.0% of input costs (2020) for the meat and dairy processing sectors respectively. This is likely to be the national average and may be skewed by the greatest share of the industry being in the North Island where there is a high dependence currently on natural gas for process heat.

37. Nonetheless, Mr Schoultz estimates that the cost of imported coal would increase this average to 3.5% and 4.5% of input costs respectively. If savings cannot be made elsewhere, these added energy costs may be able to be passed on to customers, else they would need to come out of profit margins which Mr Schoultz identifies are already relatively low in percentage terms.
38. There is nothing in Mr Schoultz's evidence that suggests that the price rise makes meat or dairy processing unfeasible/uneconomic (and that they would need to close). Mr Schoultz considers that "over time, these sectors may adapt to this cost rise by reducing investment, lowering employment, and passing costs back to farmers" (paragraph 106). While such outcomes would constitute negative economic effects (relative to the status quo), they are likely only minor when considered in context.
39. I would note that in the absence of any expansion of New Vale mine, existing customers would have a reasonably long time to plan for the cost increase (i.e. from 2034), if in fact they have not already converted to renewable energy sources by then. If 2040 is adopted as the last year in which coal is used for process heat in the sector, then the duration of the higher coal costs (up to 6 years) is also relevant in terms of how sustainable coal cost increases may or may not be to the food processing sector.
40. What may also be interesting (and is not covered by the evidence) is how woody biomass fuels may compare in price relative to lignite coal and imported coal. If relatively higher fuel costs are inevitable if CO₂ emissions are to be reduced, then the industry will need to adapt to slightly higher energy costs regardless. However, if those woody biomass costs are lower or the same as the cost of the lignite coal or imported coal, one would expect the industry to transition away from coal in (or before) 2034 when the consented lignite resource is exhausted in order to save money. Only if the woody biomass cost is greater than imported coal, may some processors continue using coal for a bit longer and resort to imported coal for that period.
41. The Climate Change Commission report indicates that woody biomass is a low cost alternative. As such, the potential positive economic effects (cost savings) of expanding New Vale mine to allow for four more years of lignite coal use (at current demand levels), and avoiding using more expensive imported or West Coast coal, are highly uncertain.

Report conclusions

42. In terms of general economic costs and benefits of the proposed rezoning (which enables an expansion of the mine that would prolong its operational life), Mr Schoultz identifies a range of economic benefits including sustaining above average income employment directly and indirectly in Gore District, contributing to Gore's GDP, and helping to support (facilitate) economic activity in the meat and dairy processing sectors (i.e. those businesses that currently use New Vale lignite coal) – primarily in Southland Region, and to a lesser extent in Otago and Canterbury Region.
43. The economic costs relate to a net loss of productive land (post mine remediation) which is considered minor.
44. In terms of the test of clause 3.9(2)(j)(iii) of the NPS-HPL – which is the primary purpose of the evidence – Mr Schoultz concludes from his assessment that New Value provides a “significant national public benefit” that likely cannot be provided using resources within New Zealand (paragraph 115).

Overall Findings of Peer Review

45. Mr Schoultz's conclusions are all predicated on an assessment scenario that:
- i. Is highly focussed on current demand/use of New Vale lignite,
 - ii. Assumes no transition by any of New Vale's processing customers to renewable energy sources before 2038,
 - iii. Assumes that coal is the only alternative resource to New Vale lignite for processing customers.¹²
 - iv. Assumes that the sector cannot easily absorb a price rise in energy costs between 2034 and 2038 without net adverse economic consequences.
 - v. Expresses benefits in today's terms and not the present value of future benefits that are limited to between 2034-2038.
46. Overall, this assessment scenario is akin to the worst case outcome (or conversely the best case outcome for New Vale Coal).

¹² I.e. woody biomass is not tested as an alternative resource. I am not certain if the NPS-HPL clause 3.9(2)(j)(iii) should be interpreted as being limited to an alternative mineral resource.

47. Breaking down the assessment, I do not consider that the local economic benefits of employment and GDP directly and indirectly sustained by New Value mine's operation (even if projected to the period of 2034-2038) constitute a significant national public benefit, but they make a very minor contribution to total benefits once *potential* facilitated economic effects are accounted for.
48. Meeting the test of clause 3.9(2)(j)(iii) therefore comes down to whether the potential future facilitated effects on the meat/dairy processing sector is a significant national public benefit that can't be achieved with other resources available within New Zealand. In this regard, I am somewhat hesitant to agree outright, but can conditionally agree that the test may be passed (as set out below). I have taken into account a lack of guidance on exactly how the assessment should be conducted.
49. Based on the scenario that has been assessed, I consider that the test may be satisfied. This is on the basis of facilitating economic activity within three regions (albeit most significantly within Southland Region) is geographically significant. I also consider that the meat and dairy processing sectors are significant for New Zealand's economy and so *potentially* supporting a portion of that sector is nationally significant. By *potentially* supporting a large number of jobs in the processing sector, the proposal qualifies as a public benefit. The proposed expansion therefore *potentially* provides a significant national public benefit if a number of key assumptions play out.
50. I do have concerns that the scenario that has been assessed may not be a realistic one. Southland region is a significant forestry area where woody biomass alternatives can be locally produced and there would be a market for that product in the form of food processors (including those currently supplied by New Vale Coal). As such, I consider that it is likely that supply chains for that new industry could be developed by 2034, which would eliminate (or largely eliminate) the need to expand the New Value mine (based on current justifications).
51. A disbenefit of ensuring a further four years of lignite coal supply between the years of 2034 and 2038 is that it may delay the commercial viability of woody biomass production in Southland and the transition of some of New Vale's processing customers (and the environmental benefits that would come from that alternate heat source).

52. Ultimately, the demand for lignite coal after 2043 is uncertain. Setting aside the resource consent application by Greenbriar, the proposed plan provisions provide a clearer regulatory pathway for expanding the mine in the future, **but they do not dictate that the coal in that expansion area will be extracted in the future.** That will only occur if there is demand that makes that future extraction feasible.
53. On that basis, and because the proposed plan provisions may help minimise risks for New Vale's existing customers as they plan for a transition away from coal for process heat, then I think the opportunity benefit arising from accepting the proposed provision in the PDP is worthwhile from an economic perspective.
54. Setting aside the NPS-HPL, while the economic evidence does not delve into the costs associated with CO2 emissions of coal use, based on the economic costs and benefits that *are* discussed, I consider that the future local benefits of the proposed rezoning (or precinct approach as supported by the s42A officer) would outweigh the likely future local economic costs. This supports the proposal from a pure economic efficiency perspective within the Gore District.

Should you have any questions about this peer review, please don't hesitate to contact me.

Kind regards

Natalie Hampson

Director

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Appendix A – Qualifications and Experience

55. My full name is Natalie Dianne Hampson. I am a Director at Savvy Consulting Limited and was previously a director at Market Economics Limited from mid-2019 to the end of October 2023. I hold a Master of Science degree in Geography from the University of Auckland (first class honours).
56. I have worked in the field of economics for over 20 years for commercial and public sector clients, with a particular focus on economic assessment within the framework of the Resource Management Act 1991 (RMA). Since 2001, I have specialised in studies relating to land use analysis, assessment of demand and markets, the form and function of urban economies and growth, policy analysis, and evaluation of economic outcomes and effects, including costs and benefits.
57. My policy experience includes involvement in the development of a number of national level policies, environmental standards and regulations. Specifically, I prepared (or played a key contributing role in) the cost benefit analysis of the proposed National Policy Statement for Highly Productive Land 2022 (NPS-HPL), National Policy Statement for Indigenous Biodiversity 2023, National Environmental Standards for Freshwater (Wetlands amendments), National Environmental Standards for Plantation Forestry, and the Stock Control Regulations (low slope land amendments). I also contributed to the guidance on section 32A of the RMA (methods for assessing economic costs and benefits).
58. I have provided economic assessment, including expert evidence, across a wide range of economic sectors including (but not limited to) the housing, retail, commercial, industrial, aquaculture, major events, forestry, airport, seaport, education, freight, film, liquor licensing, and tourism sectors.
59. In my role as an economic expert, I provide evidence very regularly in council hearings and in the Environment Court. I have also presented evidence before the High Court and Alcohol Regulatory Licensing Authority.