Under the Resource Management Act 1991 (**RMA**)

In the hearing of submissions and further submissions by Meridian Energy Limited on proposed Plan Changes 28 – 30 to the Mackenzie District Plan

Meridian Energy Limited

Submitter

Mackenzie District Council

Territorial Authority

Legal Submissions on behalf of Meridian Energy Limited

16 May 2025

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BACKGROUND & GENERAL POSITION

1. These submissions are made on behalf of Meridian Energy Limited (**Meridian**) in relation to the submissions and further submissions it made on proposed plan changes 28 to 30 (**PC28** and **PC30**) to the Mackenzie District Plan (the **Plan**).

2. In Meridian's submission, PC28 as proposed strikes an appropriate balance between development interests, hazard management, and reverse sensitivity considerations on nationally important renewable energy generation infrastructure, and appropriately either allows for or discourages proposals for development in areas within the Hydro Inundation Hazard Overlay.

3. The approach taken in PC28 is supported by:

    a. Part 2 of the RMA;

    b. The effects management framework in the RMA, including the definition of 'effects';

    c. higher order policy documents, including the National Policy Statement for Renewable Electricity Generation 2011 (**NPS REG**) and the Canterbury Regional Policy Statement (**CRPS**); and

    d. The Strategic Objectives of the Plan; and

    e. caselaw.

4. As further explained in Ms Ruston's and Mr Feierabend's evidence, the proposed form of PC30 does not adequately respond to the reverse sensitivity and risk issues which PC28 is intended to address. The part of the Special Purpose Airport Zone relating to Pūkaki Airport is wholly within the Hydro Inundation Hazard Overlay, and Meridian maintains that there should be specific reference to that risk made within the Special Purpose Airport Zone provisions. Meridian has significant concerns on PC30 relating to:

a. The lack of robust land use and subdivision controls within the Special Purpose Airport Zone as it relates to the Pūkaki Airport to manage reverse sensitivity effects on the Waitaki Power Scheme (**WPS**); and

b. The lack of clear development controls to manage the potential consequences of a dam or canal failure on people and structures within this zone.

5. These plan changes are of high importance to Meridian given the scale of its existing infrastructure in the district and the implications of reverse sensitivity impacts for its ongoing operation and management. The WPS is longstanding, nationally and regionally important infrastructure. It generates on average 18% of New Zealand's electricity, and up to 30% of the national requirement during periods of peak demand.

6. The operation of the WPS is a major and ongoing engineering enterprise and requires the management of complex hydrological and environmental factors, including reservoir inflows, river flows, reservoir levels, and ecological impacts. The scheme requires continuous supervision, maintenance and monitoring to ensure it operates efficiently and safely, and as required to meet Meridian's obligations as a responsible Dam Owner, the Building Act (Dam Safety Regulations) 2022, and resource consent conditions.[1] This was recognised and accepted by the Court through the PC13 process.[2]

7. The WPS is New Zealand's largest hydroelectricity scheme, and its operation is a major and ongoing engineering enterprise. It requires maintenance to ensure it continues to run efficiently and indeed to meet resource consent conditions. plays a significant role in New Zealand meeting its climate change targets and commitments.[3]

[1] Evidence of James Walker at [16]
[2] *High Country Rosehip Orchards Limited v Mackenzie District Council* [2011] NZEnvC 387 at [45]
[3] See the Evidence of Andrew Feierabend, from [24] onwards.

8. These submissions focus on two key legal matters from Meridian's perspective as a dam owner and operator:

   a. First, the risk of a reverse sensitivity effect on the WPS resulting from development within the Hydro Inundation Hazard Overlay; and

   b. How risk to people and property should be considered in this situation, noting that the likelihood of a dam or canal failure is very low, but that the consequences could be significant.

9. Meridian has filed the following briefs of evidence in support of its submissions, and calls the following witnesses:

   a. Ms Susan Ruston (Planning);

   b. Mr Andrew Feierabend (Company);

   c. Mr William Veale (Dam safety regulations); and

   d. Mr James Walker (Operational dam safety).

PLAN CHANGE 28

10. As noted in the s 42A Report prepared by Ms Megan Justice on PC28, and as supported by the evidence filed by Meridian, is essentially a continuation and extension of the approach introduced through Plan Change 13 (**PC13**).

11. PC13 introduced inundation hazard mapping and associated provisions to the Plan, but only in relation to the Rural Zone. PC28 extends the (now-called) Hydro Inundation Hazard Overlay to cover areas that were outside the legal scope of the PC13 process, but which are included in the composite inundation mapping which have been prepared in accordance with the New Zealand Society on Large Dams (**NZSOLD**) Guidelines.

12. It follows that the Lyford Lane Rural Lifestyle Zone, Pūkaki Airport and an area of Rural Lifestyle zoned land at Flanagan Lane are not currently identified in the planning maps as being subject to potential inundation in

the event of a canal failure. In these zones there are currently no provisions to address the risks associated with hydro inundation or reverse sensitivity impacts on the WPS.

CONTINUATION OF PLAN CHANGE 13

13. As Ms Justice has noted in her s 42A report, control of development under the district plan within the area identified as potentially subject to inundation from canal failure has been in place for some time. The inundation hazard mapping and associated provisions were introduced in the rural zone as part of Plan Change 13.

14. This plan change process is essentially a continuation of these existing measures, and an expansion to include areas that were outside the scope of the Plan Change 13 process. As Mr Feierabend notes in his evidence, the hazard inundation maps have been in the public domain since they were prepared as part of the Plan Change 13 process, and it is our understanding that the Council has been including that information in Land Information Memoranda requested via section 44A of the Local Government Official Information and Meetings Act 1987. It would be a perverse outcome if the planning framework failed to equally capture, and give visibility to, these risks.

15. Ms Justice notes in her s42A Report that the Council's review of the framework introduced through PC13 has confirmed that it has been working effectively.[4]

16. Further, as noted by Ms Justice, the existing provisions of the Plan and other changes currently being made to the Plan already impose restrictions on subdivision, visitor accommodation and residential activities. There may be a loss of development opportunity for the Flanagan Lane properties affected by the Hydro Inundation Hazard Overlay in visitor accommodation changing from a permitted to a non-complying activity,[5] but for all other activities that PC28 seeks to control,

[4] s42A Report, [267]
[5] S 42A report, [274]

there are existing constraints (either through operative provisions or other proposed plan changes to the operative plan) which would require a landowner to seek resource consents.

COST-BENEFIT ANALYSIS

17. Section 32 of the RMA requires a decision-maker to assess the costs and benefits of the anticipated environmental, economic, social, and cultural effects of a plan change.

18. The risks of imposing the land use controls recommended through PC28 are economic – that is they may impose an additional or different regulatory requirement to obtain resource consent for some proposed activities, at an associated cost, and could result in a lost development opportunity for others.[6] Meridian recognises that the proposed land use controls will, in some cases, prevent a property owner's plans to further intensify on a site.

19. However, the risks of 'not acting' (i.e. imposing lesser controls than those proposed, or allowing property-specific carve-outs) will be to both human life and property, and economic and regulatory risk to nationally significant, and longstanding renewable electricity generation infrastructure. As explained in Mr Feierabend's evidence, this infrastructure makes a significant contribution to New Zealand meeting its international climate change obligations and the projected increased demand for electricity into the future.[7]

20. It is also important to note that the *ad hoc* land use change resulting from 'not acting' would be near impossible to unpick. Given the existing use protection that the RMA provides under section 10, district plans are not easily able to direct a change in established land use where a risk is later identified as unacceptable, or to reduce reverse sensitivity effects that have started to come to bear. The complexity and expense of such processes is illustrated by the Matatā Awatarariki fanhead managed

[6] We note that the only development opportunity cost noted by the s42A author was in relation to Flanagan Lane. See [274] of Ms Justice's s42A report.
[7] Evidence of Andrew Feierabend at [24] onwards

retreat process, which has extinguished existing use rights on properties subject to high natural hazard risk. Achieving this involved an expensive voluntary managed retreat process, and a contested district and regional plan change, and took over 15 years.[8]

21. The better and more effective approach is to ensure that the planning framework *going forward* is fit for purpose.

22. It is Meridian's submission that it is both socially responsible and good planning practice for a district plan to signpost to incoming residents the potential hazard and development restriction that proximity to the WPS poses, and to then provide a method of controlling intensification of any further development by reference to that hazard and the potential reverse sensitivity effects on the WPS.

23. It is also relevant to the Panel's decision making that PC28 does not propose a blanket ban on any and all residential development within the Hydro Inundation Hazard Overlay – what is being promoted (and *continued*, in relation to the GRUZ) is a balanced approach which allows a landowner to have, for instance, one residential activity on a property as a permitted activity, and to bring evidence that further development than this is appropriate, where reverse sensitivity effects on the WPS can be avoided.

REVERSE SENSITIVITY

24. It is well-settled that a "reverse sensitivity" effect is an effect on the environment,[9] with the term referring to the effects resulting from the existence of sensitive activities on other activities in their vicinity, particularly by leading to restraints in the carrying on of those other activities.[10] For instance, the concept recognises the legal vulnerability of an established activity to complaint from a new 'sensitive' land use,[11] or to

[8] See *Awatarariki Residents Incorporated v Bay of Plenty Regional Council & Whakatane District Council* [2020] NZEnvC 215
[9] *Winstone Aggregates v Auckland Regional Council*, A049/2002
[10] *Auckland Regional Council v Auckland City Council*, A0 10/97, per Judge Sheppard
[11] *Affco New Zealand Ltd v Napier City Council* EnvC W082/2004 at [29]

stricter regulatory or operational requirements as a result of that new land use.[12]

25. Decision makers are directed by the NPS-REG to make particular reference to reverse sensitivity considerations in the context of renewable electricity generation. Policy D of the NPS-REG directs that:

> *Decision-makers shall, to the extent reasonably possible, manage activities to avoid reverse sensitivity effects on consented and on existing renewable electricity generation activities.*

26. Policy B of the NPS-REG also requires a decision maker to have particular regard to the following relevant matters:

a. maintenance of the generation output of existing renewable electricity generation activities can require protection of the assets, operational capacity and continued availability of the renewable energy resource; and

b. even minor reductions in the generation output of existing renewable electricity generation activities can cumulatively have significant adverse effects on national, regional and local renewable electricity generation output.

27. Section 75(3) of the RMA requires that a district plan must give effect to any National Policy Statement, which the Supreme Court has told us means 'to implement'.[13] As the Court of Appeal has more recently affirmed, this is a strong directive, creating a firm obligation on those subject to it.[14] The oft-cited *Clevedon Cares* decision usefully explains this obligation as follows:[15]

> the change in the test from "not inconsistent with" to "must give effect to" is significant. The former test ["not inconsistent with"]

[12] Ibid
[13] *Environmental Defence Society Inc v New Zealand King Salmon Co Ltd* [2014] NZSC 38, [2014] 1 NZLR 593 [King Salmon] at [77].
[14] *Muaūpoko Tribal Authority Inc v Minister for the Environment* [2023] NZCA 641 at [25], citing *Clevedon Cares Inc v Manukau City Council [2010] NZEnvC 211* at [51]
[15] *Clevedon Cares Inc v Manukau City Council* [2010] NZEnvC 211 at [50]

> allowed a degree of neutrality. A plan change that did not offend the superior planning instrument could be acceptable. The current test ["give effect to"] requires a positive implementation of the superior instrument.

28. Although there is some scope for a local authority to apply a national policy statement in a manner that best reflects its relevance to the regional or district level circumstances, *King Salmon* tells us that this scope is not infinite, and that the requirement to "give effect to" (the NZCPS in that instance) was intended to constrain decision-makers. In the Waitaki district, given the long standing presence and importance of the WPS, it is Meridian's submission that a planning response such as PC28 is required in order to give effect to the NPS-REG.

29. The significance of the potential reverse sensitivity effect is set out in the evidence of Mr Veale and Mr Walker. Meridian is satisfied that the provisions of PC28 recognise and seek to avoid reverse sensitivity effects on the WPS, and properly give effect to Policy D of the NPS-REG.

30. A particular aspect of the reverse sensitivity risk here is that it is not an effective solution in relation to dam safety that the new 'sensitive land use' agrees to 'opt out' or waive rights of complaint. Increased requirements for monitoring and surveillance, and the potential for expensive structural upgrades, will follow automatically from more people living within the Hydro Inundation Hazard Overlay (in an increased PIC or PAR. An individual's personal appetite for risk is not relevant under the Dam Safety Regulations or the NZSOLD Guidelines.

31. In this regard, dams have a parallel with other land uses which pose a safety hazard (e.g. bulk fuel or explosives storage) rather than an amenity effect (e.g frost fans at vineyards). It is also relevant, especially in the context of the discussion on the 'likelihood' of canal or dam failure, that these reverse sensitivity effects arise regardless of the level of likelihood; they are a response to the existence of the *hazard* rather than the risk. Given the 'standards-based' approach that dam safety regulation takes in New Zealand and internationally, increased or stricter requirements on a dam owner or operator are dictated by the size of the dam, the reservoir

impounded, and to factors such as the Population At Risk and Potential for Loss of Life should failure occur.

32. As the evidence presented on behalf of Meridian shows, the reverse sensitivity risk to the WPS from *ad hoc,* unconstrained development is significant, and warrants the planning measures proposed in PC28. Equally, Meridian is concerned that the measures in PC30 do not go far enough to address the reverse sensitivity risk. The issues and solutions are explained in full in Ms Ruston's planning evidence, and Meridian seeks the relief outlined there.

EFFECTS OF LOW PROBABILITY BUT HIGH POTENTIAL IMPACT

33. The Environment Court has stated (including through the PC13 process itself) that "risk is the product of the probability of an effect and costs of its consequences".[16] While the RMA is not a 'no-risk' statute, the sustainable management purpose of the Act necessarily entails a forward looking process in which decision- makers are commonly requested to make decisions about future events. The existence of risk is a matter of judgment, not proof.[17]

34. In making a decision on this proposed plan change, the Panel must assess the risk of acting or not acting in establishing a framework for the management of risk where the consequences are very significant, but the likelihood of failure is very low. In practical terms, this analysis is only relevant here in relation to the areas where the hazard inundation framework does not currently exist (i.e. those areas which were outside the scope of PC13). The question is also more relevant to the hazard component of this analysis, rather than to the reverse sensitivity considerations on the WPS. As discussed more fully later in these submissions, the reverse sensitivity effect of unrestrained development is not of 'low probability' given it is driven by dam safety regulations, and would result regardless of the likelihood of dam or canal failure.

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[16] *Johns Road Horticulture Ltd v Christchurch City Council* [2011] NZEnvC 185, at [60]; *High Country Rosehip Orchards Limited v Mackenzie District Council* [2011] NZEnvC 387 at [115]
[17] *Francks v Canterbury Regional Council* [2005] NZRMA 97

35. As Mr Veale and Mr Walker outline in their evidence, the approach to dam safety management in New Zealand focuses on the potential consequences of dam failure, rather than the likelihood of failure.[18] Given the significant consequences that the failure of a Medium or High PIC dam might have, there can be no argument that these should be subject to stricter safety standards (that have a direct line of sight to those consequences) than for low or small dam structures, or structures where there is no 'Population At Risk'.

36. Similarly, the RMA includes effects of low likelihood but high potential impact within the definition of "effect" at s 3(f), and caselaw has confirmed that taking a 'precautionary approach' in the management of such effects will be open to decision makers where the consequences are serious and irreversible.[19] The Environment Court has noted that "[p]recise quantification of…risk is usually impossible. Far more likely are the qualitative assessments usually given to the Court."[20] Indeed, practitioners have cautioned against dealing in precise numerical probability under the RMA, on the basis that such quantification may give the decision-maker a false sense of accuracy when ascribing probability.[21]

37. Although very unlikely, the dam failure is still a 'real risk', rather than one that is unlikely by reason of it being *implausible* in fact (as was the case in *Shirley*). In our submission, is also relevant that the risk here relates to human life and safety rather than only to property.

38. *Orica Mining* is a useful touchstone for the appetite for risk under the RMA, although in that case it was a proposed *new* activity (an explosives depot) which presented a risk to an established community. Although the accepted expert evidence was that the likelihood was very low (quantified by one expert "one in 10 million per year" chance of explosion), the Court

[18] Evidence of William Veale at [17];
[19] *Shirley Primary School v Christchurch City Council* [1999] NZRMA 66
[20] *Clifford Bay Marine Farms Ltd v Marlborough District Council,* EnvC Christchurch C131/2003, 22 September 2003 at [64]
[21] *Scientific Uncertainty and Environmental Decision Making*, Mark Christensen and David Kirkpatrick (paper presented to the New Zealand Law Society Environmental Law Intensive Conference, November 2019) at [124]

nonetheless found that it was a real risk and declined consent on that basis.[22]

CONCLUSIONS

39. Meridian's key interest in engaging in this process is that the planning framework appropriately balances private development interests with hazard management and reverse sensitivity considerations, and in doing so gives effect to the NPS-REG.

40. Meridian considers that PC28 and PC30 (with amendments as sought by Meridian) represent a balanced and forward-looking approach, which is essentially a continuation and extension of the hazard inundation framework introduced through PC13. These plan changes are essential for capturing and managing the risks in areas outside the legal scope of the PC13 process.

41. The evidence presented by Ms Ruston and Mr Feierabend underscores the need for specific provision within the Special Purpose Airport Zone objective and policies to highlight the presence of the Hydro Inundation Hazard Overlay at Pūkaki Airport, and to tighten development controls to address the issues recognised via PC28.

42. These plan changes are important to ensure the avoidance of reverse sensitivity effects on WPS, and to minimise the risks associated with hydro inundation hazards. The planning framework must be fit for purpose to ensure the ongoing safe operation of the WPS and to meet New Zealand's climate change obligations.

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[22] *Orica Mining Services Limited v Franklin District Council* Environment Court, Wellington W 32-2009, 5 May 2009 at [29].