



meridian

**A submission by Meridian Energy Limited on
Proposed amendments to the National Policy
Statement for Freshwater Management 2011 –
A discussion document**

4 February 2013

Summary

The most significant water management issue facing New Zealand is declining water quality, coupled with increasing agricultural intensification. It is important that the response to this challenge is effective and addresses the largely unregulated activities resulting in water quality deterioration. Meridian operates large-scale hydro generation facilities with extensive mitigation arrangements in place managing multiple values and interests. Meridian's hydro operations are undertaken in accordance with controls established to ensure that appropriate water quality and quantity parameters are met so that important values are maintained or enhanced. These controls have been established following intensive investigation by leading scientists, and have been tested and refined through various processes under the RMA (including both regional plan and resource consent processes). Meridian is eager to see a principled National Objectives Framework that addresses the problem of declining water quality, but does not transfer the costs of doing so to other parties, or has unintended adverse impacts on already regulated and validly authorised activities.

Maintaining or improving water quality, as required in the NPS, is an important part of ensuring sustainable management is achieved in New Zealand. Providing further guidance as to how this can be achieved, through amendments to the NPS, is a positive step forward. Any and all nationally-set standards (such as compulsory values and bottom lines) must however be justifiable at that level to ensure they do not lead to unintended consequences, or unnecessary restrictions. The proposed amendments to the NPS to assist in freshwater planning also need to be considered holistically, alongside other existing instruments and regimes, to ensure that water quality outcomes are not considered in isolation from other important aspects of overall sustainable management.

Meridian has nationally significant hydro generation assets in the Waitaki and Manapouri/Waiiau catchments that rely on utilising water in those catchments. Changes to the framework within which water resources are managed therefore need to be considered carefully, taking into account the electricity system and potential effects on the reliability of electricity supply. The current NPS/NOF process is intended to trigger a series of plan reviews and changes which affect all catchments, including the catchments within which Meridian's hydro assets are located, leading to risk that the generation value of these nationally significant generation assets will be eroded. Meridian therefore does not underestimate the significance of this process and the changes to the NPS, and formally requests the right to be heard in support of this submission.

The hydrologically modified Waitaki and Manapouri catchments are subject to existing, balanced, tailored and comprehensive catchment-specific arrangements that have been established in the national interest via recognised RMA processes. The existing arrangements promote sustainable management, and it is important that the implementation of the NOF does not upset these arrangements. These catchments warrant exclusion from the application of the NOF, and for reasons of certainty and efficiency these exceptions should be included in Appendix 3 now. The granting of an exception does not mean that no regulation is appropriate in these catchments; rather it recognises that the values in those catchments have already been identified, and existing regulation already seeks to balance how these are maintained. In addition, granting these two exceptions given their level of significance to the electricity generation network would better align with the NPS for Renewable Electricity Generation, while not undermining the underlying intentions of the NOF.

Role of hydro in New Zealand

Electricity is a necessity of modern life, and is critical to New Zealand's future growth and prosperity. Maintaining a secure and affordable electricity supply system, both regionally and nationally, is dependent on flexible and controllable generation technologies that are able to respond to continuously changing electricity demand. Generally speaking, in the New Zealand electricity system this flexibility is provided by hydro generation with storage.

Hydro generation, on average, currently provides around 60% of New Zealand's annual electricity supply. On a day to day basis, hydro power stations tend to be more controllable and more flexible than other generation technologies and therefore more able to respond to short term changes in market demand. On a seasonal basis, the availability of hydro energy supply can vary considerably depending on climatic conditions. Given the strong dependence on, and significant variability of, hydro inflows, energy storage within the New Zealand electricity supply system is particularly important. In particular, hydro storage lakes are a vital means of compensating for inflow variability, better matching supply to demand.

Meridian

Meridian Energy Limited (*Meridian*) is the largest generator of electricity in New Zealand, generating only from renewable resources, and producing approximately 30% of New Zealand's electricity, 90% of which is from hydro sources in two catchments.

Meridian operates New Zealand's largest hydro power station, the Manapouri Power Scheme, and operates six of the eight stations in Zealand's largest hydro scheme, the Waitaki Power Scheme.

The schemes are of enormous economic and strategic importance to New Zealand, given the importance of hydro power in New Zealand's electricity supply system.

The framework within which water resources are managed is critical not only to the management of Meridian's assets, but to the maintenance of a secure electricity supply.

General Comments on NPS

Meridian generally supports the changes proposed to the NPS, including the establishment of a National Objectives Framework (*NOF*) to assist with the setting of freshwater quality limits, insofar as it seeks to implement the recommendations of the Land and Water Forum (*LAWF*). In particular, the Framework should provide greater assistance when setting limits, as required under the current NPS, in catchments where such limits are not already set. The desirability of having water quality limits to protect environmental values where extensive and unregulated activity is having unacceptable adverse effects on the environment, is self evident. Meridian is concerned however that in an attempt to provide a degree of national consistency and simplicity, key recommendations of the *LAWF* in relation to hydrologically modified catchments have been overlooked, and catchments which have extensive catchment specific regulation arrangements in place will be disrupted in a manner that is counterproductive.

Changes to the NPS must be considered in the wider context within which they sit. The purpose of an NPS is to provide objectives and policies for matters of national significance that are relevant to

achieving the sustainable management purpose of the RMA. Not only, therefore, must the changes to the NPS ultimately assist in achieving the purpose of the Act, but they cannot be considered in isolation from other settled instruments and objectives such as the NPS for Renewable Electricity Generation, and government's target for 90% renewable energy by 2025.

Changes to the NPS ultimately must be about whether or not they are necessary to better achieve overall sustainable management of New Zealand's freshwater resource, taking into account the wider context within which this particular NPS sits, including the importance of freshwater for the generation of renewable energy. This is discussed further in the evidence of Ms Dawson.

Hydrological Modification & Regulation

As a result of the development and operation of the Manapouri & Waitaki Power Schemes over many decades, the catchments in which they are located have been subject to significant hydrological modification including the construction of canals and the consequential diversion of historical waterways; creation of new freshwater lakes for storage purposes; diversion of water across catchments; and alterations to the pre-existing water level and flow patterns in existing lakes and rivers. The more significant modifications are essentially irreversible. A full and comprehensive description of Meridian's hydro generation assets and the management of water within the schemes is provided in the evidence of Mr Cuthbert.

The generation assets within these catchments are subject to extensive resource management controls on the way they operate so as to ensure the appropriate balance between maximising generation flexibility and output while also maintaining and protecting other values in the catchments. These controls have been developed over decades via multiple legislative and planning processes involving Meridian and its predecessors, central and local government, iwi, and community stakeholders, and with the benefit of extensive scientific information from leading experts. The extensiveness of the legislative and planning regimes and controls relating to the Waitaki and Manapouri Power Schemes is set out in the evidence of Mr Cuthbert.

The effective management of these catchments to achieve multiple objectives including both efficient electricity generation and also maintenance and enhancement of ecological, cultural and community values is currently being achieved. The discussion document provides no basis upon which it could be concluded that these current regimes are inappropriate, and therefore there is no justification as to why non-catchment specific nationally standardised objectives should be applied over top of these regimes. Nor is it clear why LAWF's recommendations on this (hydrologically modified catchments) have been ignored. As noted by Ms Dawson, application of the national bottom lines to existing large-scale hydro-generation schemes does not seem to be addressing any identified nationally significant resource management issue. The potential impacts of the proposed bottom lines, and those that are mooted to be added in future, are discussed by Dr James.

If it is the working assumption that the NPS changes including the National Objectives Framework will not alter the existing arrangements in hydrologically modified catchments, that must be articulated clearly. Meridian has had advice from experts that the NOF could have material risk otherwise. For example, Dr James has identified that due to the periphyton bottom lines including didymo, application of this bottom line in parts of the Waitaki and Manapouri catchments could materially affect Meridian's operations, potentially compromising the values that the existing

regimes in these catchments also maintain¹. He also identifies that potential future attributes could have material risk.

In the first instance, Meridian considers that it is appropriate, and consistent with the recommendations of LAWF, to exclude the application of the NOF to the hydrologically modified Waitaki and Manapouri catchments. The justification for this is that the extensive existing regimes do not need to be subject to the proposed NOF; put simply there is not an issue with the current arrangements that requires intervention at a national level. This would better achieve Objective CA1(b) by more appropriately recognising the regional and local circumstances of the Waitaki and Manapouri catchments.

Meridian therefore seek:

- **The inclusion of the Waitaki and Manapouri catchments in Appendix 3; and**
- **The deletion of Policy CA2(c), and its replacement with the following policy:**

Policy CAX

By freshwater management units included within Appendix 3 being excepted from the application of Policy CA1 and CA2, in recognition that these units have already been subject to a comprehensive process for establishing their values and formulating freshwater objectives that accord with these values. These units will still be subject to the other provisions of this NPS.

Meridian considers it important to note that providing an exception for these freshwater management units does not mean that limits for the attributes identified in the NOF would not be applied in these catchments; rather it enables consideration of a range of options as the starting point in catchments where a different limit might be, on balance, more appropriate, when taking into account its hydrological modification and the overall requirements of sustainable management.

Exceptions

It may be that the provision for exceptions in Appendix 3 of the NOF, for freshwater management units affected by significant existing infrastructure, is intended to implement LAWF's recommendations around hydrologically modified catchments. However, Meridian considers there to be several issues with the exceptions proposal in its current form. These are expanded on in the evidence of Ms Dawson, but can be summarised as follows:

- **Timing** - The proposal not to include exceptions in the current NPS amendment will result in planning processes having to give effect to the NPS in its amended form, ahead of exceptions having been considered or implemented. This is certain to occur in the Waitaki catchment, with water quality planning already scheduled and underway.
- **Certainty** – The proposed NPS provides no certainty or guidance on what infrastructure is likely to be included in Appendix 3. The criteria included in the discussion document are not binding, nor are they considered appropriate.

¹ It is noted that the specific concerns relating to didymo raised by Dr James could be addressed, as he outlines, by didymo being treated differently in the NOF. However this would not address the underlying principle behind Meridian's concerns about the application of the NOF to hydrologically modified catchments.

To address the issue of timing, Meridian's submission is that the whole hydrologically modified Waitaki and Manapouri catchments should be excluded from the application of the NOF immediately, rather than waiting for some future process against criteria that are not even in the draft NPS. As presently proposed, the failure to include Meridian's hydro catchments in Appendix 3 now (pending consideration for inclusion at some uncertain time in the future) will mean that in the interim the bottom lines **will** apply to catchments where they clearly should not apply. This will lead to unnecessary confusion for regional councils and other stakeholders as regional plan reviews are considered. This confusion is entirely unnecessary and can be removed by including the Waitaki and Manapouri catchments in Appendix 3 now. Inclusion as exceptions now will not frustrate the purpose of the proposed amendments and development of the NOF. Rather, it will avoid confusion and allow the regional councils to continue to manage the catchments in an integrated way, having regard to the specific interests of all stakeholders.

To address the issue of certainty, and to provide consistency in the application of exceptions, a new policy should be provided to clearly articulate the circumstances or criteria for exceptions so that it is clear what infrastructure is likely to be included in future. For the reasons outlined in this submission and evidence, it is submitted that it is clear that the Manapouri and Waitaki catchments should be included in Appendix 3 now. The new policy sought, as outlined below, would therefore assist in identifying other freshwater management units that may appropriately be included in Appendix 3 either now or in the future as the discussion document is deficient in this regard and has no status following implementation of the amended NPS and NOF:

Policy CAXX

By Appendix 3 including any freshwater management unit within which there is nationally significant hydroelectricity generation infrastructure, which makes a significant contribution to:

1. the average annual production of electricity;
2. national electricity security of supply; and
3. the achievement of government renewable energy targets.

This takes into account that the infrastructure:

- a) has resulted in a high level of hydrological modification, which in turn has modified the environment;
- b) enables economic benefits that are regionally or nationally significant;
- c) is subject to an existing freshwater management regime including mitigation measures for adverse effects, that have been established through participatory public processes and that the benefits deriving from the regime may be lost through the application of the national bottom lines or other minimum acceptable states in Appendix 2.

It is also necessary to amend the definition of freshwater management units as follows, given that those in Appendix 3 will be determined by the Government not by a regional council:

***“Freshwater management unit”** is the water body, multiple water bodies or any part of a water body determined by the regional council or in Appendix 3 as the appropriate spatial scale for setting freshwater objectives and limits and for freshwater accounting and management.”*

The following consequential amendments will also need to be made the title of Appendix 3 and its corresponding note (if the note is retained in the final version):

APPENDIX 3: Freshwater management units eligible for exceptions under Policy CA2(c)X [new amendment]

[Note: Appendix 3 ~~will list~~ freshwater management units eligible for exceptions under Policy CA2(c)X. Further freshwater management units would be added to this list following further public consultation and an amendment to the National Policy Statement, and in accordance with Policy CAXX. The freshwater management units on the list ~~will be~~ are those affected by significant existing infrastructure, such as hydroelectricity generation or drinking water dams. Policy CA2(c) and this appendix are subject to consultation through section 4.5 of the discussion document]

It is Meridian's view that the implementation of this policy would not lead to inclusion of a large number of exceptions, and as such, its application would not undermine the NOF as a whole. For example, if exceptions were only given to those catchments with hydro generation schemes that make up more than 90% of average annual production of all hydro generation schemes, only five catchments would be excepted - the Waitaki, Manapouri, Waikato, Clutha and Tongariro power schemes². At the same time these limited exceptions would ensure alignment of this NPS with the NPS for Renewable Electricity Generation.

Meridian notes that its submission that the Manapouri and Waitaki catchments should be included in Appendix 3 now is at odds with the way the discussion document approaches Appendix 3. Page 28 of the discussion document states unequivocally that "No water bodies will be added to appendix 3 in this amendment of the NPS-FM. There will be further consultation on the specifics of what is included in appendix 3 before the NPS-FM is amended to include them, possibly in 2016-2017". There are several comments to be made in relation to this issue:

- Whatever amendments are made to the NPS-FM, they should be the most appropriate changes having regard to both the issues involved and the overarching sustainable management purpose of the RMA
- It is inappropriate and an error of law for the question as to whether or not there should be an Appendix 3, and whether or not it should be populated now or in the future to be pre-determined. How can it be determined that Appendix 3 should be left blank at this stage when submissions have not been considered?
- Meridian submits that there are compelling reasons relating to timing and certainty which dictate that inclusion of the Manapouri and Waitaki catchments in Appendix 3 now is the most appropriate course to follow
- Inclusion of these nationally important highly modified catchments in Appendix 3 now will not undermine the approach of the proposed reforms – an approach which Meridian generally supports

² Calculated from Figure 8 in *Concept Consulting: Evaluation of potential electricity sector outcomes from revised minimum flow regimes on selected rivers. Prepared for the Ministry for the Environment, Version 1.1, 19 July 2013*. Downloaded from www.mfe.govt.nz.

If despite this, the Manapouri and Waitaki catchments are not included in Appendix 3 now, then pending completion of the process to consider inclusion of these catchments within Appendix 3, Environment Canterbury and Environment Southland should be directed through transitional provisions that the NOF is not to be applied to these catchments in the interim. This alternative would allow the Government time to consult on and include these catchments within Appendix 3 as part of the planned review of the NPS in 2016.

Water Quantity

The proposed NOF, at face value and in the explanation in the discussion document, appears to address only water quality matters, and all of the impact assessment (cost/benefit) is based on water quality. The changes to the NPS however, such as the proposed amendments to Policy B1, the logic behind the changes and good integrated management means that plans have to deal with water quality and quantity. Many of the values for which freshwater objectives must be set, are ultimately affected by water quantity. While the NOF does not propose a compulsory value for water quantity, it is important to note the following:

- As outlined by Ms Dawson, the changes to Policy B1 mean that not only freshwater quality limits, but also environmental flows and/or limits must be set to achieve the attribute state identified in relation to the freshwater objectives established. This means implementation of the NOF **will** affect flow regimes. Changes to existing flow regimes in the Waitaki and Manapouri catchments (if they are not exempt from the NOF's application) will have significant impacts on hydro generation.
- It is anticipated that the NOF will be further populated over time. Caution needs to be had to including 'standardised' water quantity limits, as the diversity of water bodies means that a one-size-fits-all approach is very unlikely to be appropriate. A number of concerns were raised in relation to this when the proposed National Environmental Standard on Ecological Flows and Water Levels was consulted on.
- Additional attributes may be sought by other parties that relate to flows, and are not appropriately applied at a national level. For example, MCI will be affected by flows, and therefore its inclusions as a compulsory attribute would be a back-door introduction of nationally-applied flow-quantity standards. Inclusion of the natural form and character aspects of te mana o te wai are also likely to relate to water quantity as well as quality, for example a desire for 'natural flows' to be reinstated.
- Regulating water quantity may be used as a means of achieving freshwater quality objectives, and would be a situation where the cost of adverse impacts is transferred to a party that has not caused the adverse water quality. That would be an unprincipled and unwarranted approach. In the case of the Waitaki and Manapouri catchments it is only Meridian that is able to deliver altered flows in much of the catchments. Therefore, to the extent that meeting a bottom line for water quality requires, for example, a flushing flow, this might only be achievable by requiring Meridian to manage the water it stores for generation in a sub-optimal way.

The potentially significant economic impact of altered power generation outcomes arising from altered minimum flows on rivers used for electricity generation is highlighted in the Concept

Consulting report³. This shows that introducing standards for alternate minimum flows - either directly, or indirectly through related attributes, or as a method for achieving water quality outcomes – will impose material costs on the electricity system. This would have consequential impacts on consumers' electricity costs.

The above demonstrates the need for:

- a) hydrologically modified catchments with existing water quantity limits to be excepted from the NOF to avoid material costs on the electricity system;
- b) caution before adding any additional attributes; and
- c) ensuring a principled approach that does not transfer costs from one group of users or sector to another.

Compulsory Bottom Lines

Meridian supports the approach taken to only include bottom lines where the science is certain, well-agreed, and justifiably applied at a national level.

Meridian has noted comments by some parties that further bottom lines should be included in this iteration of the NOF. Extreme caution needs to be taken before adding further attributes. Firstly given that it is currently proposed to amend the NPS without using the full Board of Inquiry process, there is no opportunity for parties to comment on any additional attributes that are sought to be added, making determination of their consequences and appropriateness much more difficult. Indeed Meridian submits that the inclusion of additional attributes without giving parties which might be affected by those inclusions an opportunity to submit and be heard on those matters would be contrary to natural justice. Secondly, there seems to be a misunderstanding that if attributes are not made compulsory they will not form part of councils' objective and limit-setting planning processes. Meridian notes that the proposed NPS is quite clear that councils are required to determine what additional attributes are appropriate in particular catchments for each value and formulate a freshwater objective relating to that attribute.

Meridian understands that some parties may submit that additional values (and attributes) should be made compulsory, such as contact recreation (swimmability). Meridian does not consider this to be appropriate. This is not to say that contact recreation (for example) is not a value worthy of protection in many catchments, but that it is not a value that applies to all freshwater management units nationwide. Again, parties appear to consider that if the value is not compulsory, catchments will not be managed for it, which is incorrect.

Collaborative planning processes

It is clear that the proposed NPS changes are intended to sit alongside changes to plan-making currently contemplated by the government, namely to establish a collaborative planning process as an alternative to the current Schedule 1 process. However the details of the collaborative planning process are not currently being consulted on alongside the present NPS amendment consultation.

³ *Concept Consulting: Evaluation of potential electricity sector outcomes from revised minimum flow regimes on selected rivers. Prepared for the Ministry for the Environment, Version 1.1, 19 July 2013.* Downloaded from www.mfe.govt.nz.

The impacts of the final shape of any collaborative planning process have potentially far-reaching consequences when combined with the NOF proposals. For example, the composition of any collaborative group, the powers provided to them, and limitations on independent evaluation and checks and balances of appeals, will all impact on the robustness of the process for determining appropriate attribute levels, management options, potential exceptions and ultimately the regulatory regime contained in the planning provisions that are set. The likelihood that appeals will be limited on what will increasingly be more locally-focussed processes emphasise the importance of ensuring the NPS changes appropriately recognise and provide for national values.

Meridian therefore seek that caution is exercised in the drafting and evaluation of the NPS, as risk and ambiguity in it will be compounded or amplified in the new collaborative process.

Values

Meridian notes that the national values and uses for fresh water (in Appendix 1) are similar to the list of values in the current preamble to the NPS. Meridian generally supports these.

However it is not clear why 'Mahi māra/cultivation' and 'Food security', which is not in the current preamble have been included. This appears to 'double count' the value of water, given that the **use** of freshwater for sustenance (for stock to drink) and for economic or commercial development (including irrigation) are already included, which are ultimately the values of water that relate to food security/cultivation.

Meridian considers that this value is already fairly covered by other values, is not sufficiently justified in its own right and should be excluded. In the alternate, should this value be retained, Meridian considers that the additional value of '*Electricity security of supply*' should similarly be included. This is because in the same way that the use of water for stock and irrigation contributes to food and fibre production, the use of water for hydro electric power generation contributes to the security of electricity supply, which is of national importance.

Meridian fully supports the inclusion of 'Hydro electric power generation' as a national value and use relating to Āu Putea/economic or commercial development. However, the following wording is sought as it better articulates the value and distinguishes between existing value, and potential value:

"Hydro electric power generation - The freshwater management unit (including in combination with other units) has physical qualities that are suitable for power generation as required to provide a reliable and secure supply of electricity where either:

The physical qualities, including the continued availability of water (levels, flow and allocation), for existing power generation are retained, maintaining the potential generation output, or

The physical qualities, including hydraulic gradient, volume of water, and flow rate, required for new power generation would be retained, and water storage for power generation may also be possible"

In addition, the definition does not include power generation from renewable geothermal water and energy or water used for thermal power stations. While not applicable to Meridian's assets, Meridian have no concerns with the definition being extended to include these.

Ambiguity

Meridian notes that very little in the proposed amendments appears to provide greater clarity or transparency about what is meant by the requirement under Objective A2 to maintain or improve overall quality of fresh water within a region. It is only in instances where a compulsory bottom line is not met that it is clear that this *aspect* of water quality must be improved to at least the bottom line. It is however not clear how attributes or attribute states levels relate to 'water quality' (if at all) and how freshwater management units relate to overall region-wide quality. It may be intended that it is up to regional councils to determine how attributes or attribute states relate to overall water quality, and to allow for unders and overs within a region overall; however, this should be clarified.

For example, where a river has current nitrate toxicity and periphyton levels of a 'B' attribute state, does maintaining or improving overall water quality within a region require that the river is managed so that those attributes remain in the 'B' attribute state; or could nitrate toxicity be set within the 'C' attribute state, and periphyton improved to an 'A' attribute state (through controls other than nitrate reduction)? In addition, it is unclear how differences in attribute states would be dealt within a freshwater management unit. For example, if periphyton was within the 'A' attribute state in parts of the unit and 'B' in others, could the freshwater objective be set at the B level, allowing for increased periphyton in some parts of the unit?

NPS Review Process

The discussion document indicates that the intention is to utilise the "alternative" process to change the NPS under section 46A(1)(b) of the RMA. Given the significance of the changes, and the potential for these to result in material changes to the way Meridian operates its hydro assets and possibly a loss in generation output if the NOF process is applied to the Waitaki and Manapouri catchments, Meridian formally requests that it be given the opportunity to:

- a) Review and provide further submissions in response to the submissions of other parties, where those submissions are relevant to Meridian's interests; and
- b) Appear before the person(s) responsible for providing the final recommendations to the Minister to talk to our submission.

The significance of the proposed changes to the NPS, and the potential for these to have flow-on effects into regional plans in a way that affects Meridian's and others interests is such that these opportunities are needed to ensure the requirements of natural justice are met.

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