BEFORE INDEPENDENT COMMISSIONERS ON BEHALF OF THE WEST COAST REGIONAL COUNCIL AND THE BULLER DISTRICT COUNCIL

IN THE MATTER of Resource Consent Applications by Hydro Developments Limited

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LEGAL SUBMISSIONS ON BEHALF OF MERIDIAN ENERGY LIMITED

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1. Introduction

1.1 Meridian Energy Limited ("Meridian") is a state owned enterprise and New Zealand's largest electricity generator. Meridian is committed to sustainability and generating electricity from renewable sources and its hydro generation accounts for approximately 30% of New Zealand's electricity generating capacity.

1.2 Meridian has applied for resource consents for its own hydro development on the West Coast called the Mokihinui Hydro Proposal ("the MHP"). Generating capacity of the MHP will be between 80-100 MW with an energy output between 360-410 GWh per annum. The resource consent hearing concluded earlier this year and a decision is expected in the near future. Through the feasibility studies and planning for the MHP Meridian is aware of the need for increased electricity generation on the West Coast and the current transmission constraints for this area.

2. Summary of Meridian's Submission

2.1 Meridian supports others, such as HDL, seeking to generate renewable energy. The importance of renewable energy is recognised through its inclusion in section 7 of the RMA and Government policy. For example the provision of energy from HDL's project will assist in meeting the target of 90% renewable energy by 2025 (New Zealand Energy Strategy 2007) at the same time as providing much needed electricity for the West Coast community. Increased electricity supply on the West Coast in turn has many positive benefits for local businesses and provides security of supply. As an embedded generation proposal, there is no transmission conflict between HDL's proposal and the other hydro developments planned for the West Coast – Meridian's MHP and TrustPower's Arnold Scheme.

2.2 However there are still some aspects of HDL's proposal which are unclear and where the potential effects of the proposal cannot be ascertained. This means Meridian is not in a position to unequivocally support the applications.

2.3 There are four main reasons why Meridian considers this is the case:

a. There are gaps in the information supplied in the Assessment of Environmental Effects ("AEE") and in response to the section 92 requests;

b. There is a lack of evidence to support HDL's claimed generation capacity;

c. HDL has not fully considered the potential for cumulative visual effects.

d. Meridian does not understand how HDL's proposal relates to a competing proposal utilising the same resource which is being advanced by Solid Energy.

2.4 Meridian has sought opportunities through consultation (initiated by Meridian) to have these concerns addressed, but HDL is yet to provide Meridian with any detailed information.

3. Gaps in Information

3.1 Meridian identified in its written submission that there were gaps in the information supplied in the AEE and there was a consequent failure to support some of the claimed project benefits with robust evidence. It was hoped that the section 92 response would address remaining issues, however not all of the section 92 requests were fully addressed and I note that this concern is shared by the Council Officers in the section 42A report. The applicant has failed to address these matters at the hearing and this leaves Meridian unclear as to exactly what is proposed and exactly what the effects of the proposal will be.

3.2 Without a clear articulation of exactly what is proposed and a complete assessment of effects I submit the granting of consents may be premature. Meridian's concerns about uncertainty and lack of information relate to the safety and constructability of the reservoirs and scheme capacity. In this latter respect, Meridian is particularly concerned to understand the relationship between maximum generation volume, storage volume, and the timing and volume of spill. In addition to allowing scheme output to be understood, this information will also assist in understanding the environmental effects of the proposal.

3.3 Meridian fully appreciates that with large scale projects some aspects will not be finalised until detailed design is completed and after resource consents are obtained. Whilst some matters may be properly dealt with at the building consent stage, it is necessary that sufficient information is provided to you at this resource consenting stage so that you can make a decision on the basis of an understanding of exactly what is being proposed, what its effects will or may be, and how those effects (where they are adverse) will be avoided, remedied or mitigated and appropriate resource consent conditions imposed. Without this understanding I submit you cannot conclude that a proposal promotes sustainable management.

3.4 An example of this is the uncertainty in the hydrological information which has been supplied. As questioned in the section 92 request and again in the section 42A report, HDL has concentrated on mean values rather than peak events. It is the peak events which determine required capacity for reservoir storage. Without considering this information it is unclear whether the reservoirs will have sufficient capacity to contain these peak events and what the potential effects will be if they are not contained. Attached to these submissions as Appendix A is a report from Nigel Connell, an engineer from Damwatch. He has reviewed the HDL documentation and notes that a range of reservoir volumes have been considered for Mt Williams (up to 7Mm^3) and for Weka Creek (up to 3Mm^3). As Mr Connell notes, the

upper volumes of each reservoir require relatively large and expensive dams. If the economics of the scheme lead to HDL using smaller reservoirs which potentially could be smaller than the scenarios presented in the documentation, what will be the consequential impact on volumes and frequency of additional water spilling and entering the Ngakawau River? And consequent upon that, what will be the ecological effects of such release? Will they undermine some of the benefits claimed for the Scheme?

3.5 A further issue of uncertainty relates to the geotechnical information. Questions have been raised in the section 92 request and the Officer's Report about the absence of geotechnical information. As Mr Connell notes, roller compacted concrete ("RCC") dams are proposed at Mt Williams and Weka Creek. This is the same type of dam which is proposed for MHP and consequently Meridian (and Damwatch) have considerable knowledge as to the requirements for safe RCC construction. RCC dams require competent hard rock foundations. Because the geotechnical information on geology and geological hazards has not been provided it is unclear whether the site will be suitable for this type of dam. The type of dam that is constructed is not necessarily an item which can be left to the detailed design stage because the particular dam type dictates the dam break analysis, likely construction time and requirements. Therefore it is my submission that if RCC is to be used, HDL needs to provide adequate geotechnical information to confirm that this construction method will work. Alternatively if it is possible that alternative construction methods may be used, HDL needs to state what these alternatives might be, and an assessment of the effects of these alternative needs to be provided.

4. Claimed Generation

4.1 As I noted earlier in these submissions, one of the areas where there has been a lack of information is the scheme's potential generation capacity. The AEE claims the project will provide a continuous base

load of 25 MW and an annual output of approximately 240 GWh, and for shorter periods during and following heavy rainfall this could double (page 9). However Meridian is not aware of any evidence to support this claimed generation. None of the 13 modelled scenarios in the URS report (URS Ngakawau Restoration Project Scheme Modelling Report, February 2008, Appendix I to the AEE) gives a base power output of 25 MW and the highest base output, for scenario 13, is 18.8 MW. Given the uncertainties identified in the Officer's Report relating to the hydrology it is unclear what information HDL has used to support its claims of generating 25MW.

4.2 It is important that you know the real potential generation capacity for two reasons:

a. First, it allows you to assess the real potential benefits of the scheme. The economic benefits of having an additional 8.6 MW/75GWh (section 4.1.4 of the URS report) are much less than the economic benefits of having 25 MW/240 GWh. 240GWh is enough to power approximately 30,000 average households per annum whereas 75 GWh would only provide power for approximately 9,375 average households per annum. In deciding whether the proposal promotes sustainable management and therefore whether you should grant consent you need to weigh up a range of factors including the economic wellbeing of communities and sustaining the potential of resources to meet the reasonably foreseeable needs of future generations. I submit that if the information is not available to support the claimed generation capacity with robust evidence you cannot make this assessment.

b. Secondly, the generation capacity of the project may be important to knowing whether transmission requirements can be met. The electricity transmission network is complex and finely balanced. Ensuring there is electricity when you turn on the light switch involves Transpower, as owner and operator of the national grid, co-ordinating the sale and supply of electricity

from generators nationwide through competitive wholesale and retail markets to meet real time demand requirements. The lines network provides physical constraints on how much electricity can actually be sent along the different transmission routes. HDL appear to believe that the proposal is a stand alone project, however the reality of the matter is that everything in the electricity system is inter-connected to ensure supply meets demand whilst avoiding over or under supply.

4.3 To illustrate this second point in more detail, attached to these submissions as Appendix B is a report prepared by Ray Brown, Transmission Manager at Meridian. Mr Brown has read through the application and considered the transmission implications of HDL's proposal. The AEE says that HDL intends that its project will be embedded in the local network and again at page 24 of Mr Easther's evidence it says "*The SPHS has been designed to be embedded within the Buller Electricity distribution network*". This seems to be in contrast to Mr McSherry's evidence which assesses the project based on 30 MW and says that 12MW will be exported to the national grid (see paragraphs 3.1 and 7.3). Embedded generation is generation which is not connected directly to the grid and is embedded within distribution company networks or within consumer premises. Provided the upgrade replacement of the 33 kV lines occurs Mr Brown is of the opinion that the project can be embedded in local generation.

4.4 Based on HDL's projected electricity generation outputs, Mr Brown has also considered the situation if the Arnold, MHP and HDL proposals all proceed. Unlike HDL's proposal both the Arnold and MHP offer regional and national benefits through the ability to provide electricity to the national grid. Mr Brown is of the opinion that if the HDL proposal is linked to the national grid (ie not embedded) significant upgrades would be required in order for all three proposed schemes to operate at peak output and transmit electricity out of the West Coast. In order to avoid potential adverse effects of *none* of the proposed schemes being able to export electricity, Meridian requests that a condition be imposed requiring that HDL's project is embedded. Meridian suggests the following general condition is inserted:

Electricity generated from the scheme shall be embedded in the local generation network and shall not be supplied to the national grid.

5. Cumulative Effects

5.1 HDL indicated in the section 92 response that they do not think it is necessary to consider cumulative effects if both the MHP and HDL projects proceed (ie the proposed spur line together with the MHP transmission line) because the MHP transmission line is not yet consented. HDL has now supplied Meridian with a map and brief assessment with the opinion that the HDL spur line *"does not increase the landscape effects*". This map is attached to Mr Brown's report and is Figure 17.3 of Mr Easther's evidence.

5.2 Meridian is pleased that HDL accepts the need to assess these cumulative effects. Whilst in a strictly legal sense there is no requirement to take into account the MHP transmission line, such a position ignores the potential reality of the situation and does not assist the Commissioners in the likely event that a decision is released on MHP before a decision is released on HDL's application. The MHP is a year ahead of the HDL application and it is likely that at some future point in time the MHP transmission line will form part of the receiving environment. At that point, it will become a non-negotiable requirement for the cumulative effects to be considered. In my submission the most prudent and helpful approach is the same as that adopted by Meridian for the MHP consent hearing in assessing the potential benefits and effects assuming Trustpower's Arnold Scheme proceeds. It is submitted that the potential cumulative effects associated with visual impacts should be considered as an “other relevant matter” under section 104(1)(c).

5.3 It is unclear from the brief paragraph supplied to Meridian whether HDL has consulted a landscape architect or other expert to assess the

cumulative effects. Page 40 of Mr Easther's evidence says "*Figure 17.3 shows quite clearly that cumulative effects will be minor and will be dominated by the combination of the Meridian line and the existing Solid Energy 33KV line*". I submit that Figure 17.3 does not assess or "show" cumulative effects as it only shows an approximate location of the lines. Meridian would like to see these statements supported by expert evidence, and an assessment of the potential effects for the proposed MHP transmission line. As Mr Brown says in his report a deviation from the proposed route or taller poles may be required and HDL does not seem to have acknowledged these likelihoods.

6. Competing Stockton Plateau Proposals

6.1 Meridian is aware of a separate hydro proposal being investigated on the Stockton Plateau by Solid Energy. Meridian understands the Solid Energy proposal would utilise the same water as the HDL proposal, such that only one of the two schemes could ever be built.

6.2 Meridian has discussed this with HDL, and has been advised by HDL that Solid Energy believes the HDL proposal is to be preferred but we are unsure of Solid Energy's position on this issue.

6.3 This creates a confusing situation which Meridian submits the Commissioners need to be clear about. In my submission, while the HDL proposal is ahead of the Solid Energy proposal in a legal priority sense, the HDL proposal cannot proceed without Solid Energy's agreement (as noted in the Solid Energy submission). Is that agreement going to be forthcoming and if it is, then why is Solid Energy pursuing its alternative scheme?

7. Conclusion

7.1 Meridian firmly supports new generation from renewable sources. Meridian also supports the view that additional (i.e. in addition to MHP and Arnold, as well as the other existing generation) West Coast generation is valuable. However Meridian feels that insufficient information has been provided by HDL to support the claimed generation benefits or to allow a thorough assessment of the potential effects of the proposal. HDL is not prepared to assess cumulative effects of both the MHP transmission line and the HDL proposed spur line which whilst not strictly a legal requirement, does represent the reality of the likely future environment.

7.2 Meridian submits that presently you do not have enough information before you to make a decision until further information is provided by HDL. In the event that a decision is made granting consents, Meridian request that a condition be inserted requiring the project to be embedded generation. That will avoid potential transmission constraints that might arise if HDL's project were linked to the National Grid in addition to MHP and the Arnold Scheme.

7.3 The Commissioners should seek clarity about the relationship between this proposal, and a separate proposal being provided by Solid Energy which would use the same resource. Both schemes cannot be built.

Dated this 3rd day of August 2009

S W Christensen/P E Walker

Counsel for Meridian Energy Limited