

**BEFORE THE WEST COAST REGIONAL COUNCIL AND BULLER
DISTRICT COUNCIL**

IN THE MATTER of the Resource
Management Act 1991

AND

IN THE MATTER of an application by
Meridian Energy Limited
for resource consents for
the Mokihinui Hydro
Project

**OPENING SUBMISSIONS OF COUNSEL FOR MERIDIAN ENERGY
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1. INTRODUCTION

- 1.1 Meridian Energy Limited ("Meridian") proposes to construct a dam and hydro power station on the Mokihinui River with an associated transmission line linking the power station to the National Grid. The Mokihinui is a free flowing river in a largely natural setting. The Mokihinui Hydro Proposal ("MHP") will introduce a relatively small (337ha) reservoir into the river system with a consequential inundation of lower slopes in the Gorge. There will be no change to the mean (90.4m³/s), median (45.6m³/s) and MALF (16m³/s) flows in the river downstream of the dam, and the MHP will be designed to make the very best use possible of the water available in the river to generate electricity while at the same time ensuring the health and functioning of the river is retained. Meridian does not undertake this project lightly but after investigating other options Meridian believes it is appropriate to do so. New Zealand and the West Coast need new renewable generation. Realistic options are few and far between.
- 1.2 In these opening submissions and the evidence which follows we will explain why the MHP is a project which must be built even though it means making some hard choices. Building a dam and transmission line will have effects. Meridian's case will explain why those effects are not inappropriate having regard to the benefits of renewable generation and the needs of the West Coast, and the top of the South Island for electricity generation. New Zealand has international obligations to play its part in reducing greenhouse gases which contribute to climate change. The MHP will play a role in meeting those obligations. We will also explain how the potential adverse effects of the proposal will be avoided, remedied or mitigated, so as to achieve the requirements of sustainable management.
- 1.3 There are some parties who will suggest to you that the concept of building a dam on a free-flowing river like the Mokihinui River is wrong. That may reflect the steadfast personal views of some people, but it is not what this hearing is about. This hearing is about assessing the effects (both positive and negative) of a detailed proposal against the

requirements of the Resource Management Act 1991 ("RMA"), the West Coast Regional Policy Statement and Plans and the Buller District Plan. Meridian will demonstrate that the RMA and the statutory plans on balance support a proposal like the MHP. They certainly do not establish a decision-making framework which opposes renewable energy development in circumstances where the energy is needed, and the potential adverse effects are carefully managed. When other relevant documents and government policy are considered it becomes clear that the MHP is a project which should be built. Ultimately, you are charged with determining whether sustainable management is better promoted with, or without the MHP. That is what section 5 of the RMA is all about. Section 5 states:

- (1) *The purpose of this Act is to promote the sustainable management of natural and physical resources.*
- (2) *In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while—*
 - (a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
 - (b) *Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
 - (c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

1.4 There are several points to be made about section 5:

- a. The purpose of the Act is to promote sustainable management. In our submission that means that on some occasions, such as what you are presented with here, a passive response is not enough. Meridian's case is that as local, regional and national communities we really need to do something about our electricity supply, and about climate change. It is not promoting sustainable management to simply sit back and allow our electricity supply to fall behind the needs of society. It is not promoting sustainable management to simply sit back and do nothing about climate change.
- b. Sustainable management is a complex concept, but the starting point is enablement. It is about enabling people and communities to provide for their social, economic and cultural wellbeing. The provision of secure, clean and affordable electricity goes to the

heart of this concept. As a nation, we need to generate electricity. It is the fuel of our economy and society. It allows us to live the way we choose to live.

- c. The "protective" aspects of the definition of sustainable management operate to require balanced decision making. The RMA does not mandate enablement at any cost, but nor does it require that enablement occur at no cost.
 - d. The decision you need to make as to whether sustainable management is better promoted with or without the MHP is to be guided by the matters listed in sections 6, 7 & 8, but not determined by those matters. Thus factors such as the effects of climate change (s7(i)), the benefits to be derived from the use and development of renewable energy (s7(i)), and the preservation of the natural character of the coastal environment and of rivers from inappropriate development (s6(a)) will be relevant to your determination, but must ultimately be considered subject to the overall requirement to make a decision which promotes sustainable management as that term is defined in section 5(2).
- 1.5 In our submission you will need to be vigilant in testing submitters as to whether they are asking you to make a balanced decision under section 5, or whether they are in fact suggesting that you should make your decision based upon consideration of a section 6 matter.
- 1.6 During this hearing you will hear evidence from Meridian and its consultants outlining:
- a. New Zealand's need to generate more electricity,
 - b. Why this energy needs to come from renewable resources,
 - c. Why we need to build more hydro generation for its own contribution, but also because of the unique role it plays within the broader electricity system,
 - d. The need for more generation in the upper South Island and in particular on the West Coast,

- e. The detailed investigations Meridian has undertaken in selecting the Mokihinui River for development, and why this particular dam and transmission route have been preferred,
- f. Potential effects of the MHP, and the methods that will be or have been adopted to avoid, remedy or mitigate those effects.

2. PROJECT DESCRIPTION

Summary

- 2.1 The MHP involves damming the Mokihinui River to create hydraulic head and a reservoir or lake to support a hydro power station. The project is fully described at section 3 of the AEE.
- 2.2 The principle components of the MHP are a dam located on the Mokihinui River approximately 3 kms upstream from the township of Seddonville and 11 kms upstream from the river mouth with an associated powerhouse and substation, a new lake of 337 ha surface area at RL100m upstream of the dam extending through the Gorge to just below the Mokihinui Forks Ecological Area, a new 28km single circuit 110kV transmission line to carry electricity from the power station to the existing Inangahua-Waimangaroa transmission line at Cedar Creek and a new substation at Cedar Creek. Each of these components is briefly discussed below. Detailed evidence will follow.

Dam Design

- 2.3 The key design criteria for the dam are set by:
 - a. The location of the dam site in a relatively confined gorge;
 - b. The (limited) storage the upstream lake will provide; and
 - c. The "flashy" nature of the Mokihinui River which means that the river is frequently at flows in excess of what can realistically be

used for generation. In addition, the natural seismic environment is factored in to ensure the dam remains safe under extreme and highly improbable earthquake scenarios.

- 2.4 While at this stage in the process final detailed design work has not been undertaken, you will hear extensive evidence as to the suitability of this site for a dam, the type of dam that will be built, the performance standards it will be designed to meet, and the dam's constructability. Expert evidence confirms that the chosen site, construction methods, and materials are all suitable, and there are no geotechnical or engineering reasons why the dam should not proceed.
- 2.5 Damwatch Services Limited ("Damwatch") (a company specialising in dam safety and engineering) has undertaken feasibility level engineering design work to identify all matters necessary to assess the dam for resource consenting purposes. A key consideration has been determining whether a dam can be safely built having regard to the seismicity of the area. To assess this, a very conservative approach has been taken. As Peter Amos from Damwatch will say in his evidence:

To put the earthquake return periods used for dams in perspective, the New Zealand Standards for building design AS/NZS1170 Structural Design Actions, sets the required Annual Exceedance Probability (AEP) for new buildings as 1 in 500 years. For important buildings in the community, such as hospitals, that are required to be functioning after an earthquake, the required AEP for design is 1 in 1,000 years up to 1 in 2,500 years, depending on the building's importance. This compares to the High PIC dam at MHP where the AEP is 1 in 10,000 years.

- 2.6 By way of example, many Wellington office buildings which are on, or close to a major active fault (Wellington Fault, an extension of the Alpine Fault) are designed only to withstand an earthquake with an AEP of 1 in 500 years. The MHP will be designed to withstand an earthquake with an AEP of 1 in 10,000 years.
- 2.7 As you will hear from the evidence, in accordance with standard practice for these types of large-scale projects final detailed design will be

completed when consents have been granted. The important point for you to satisfy yourselves about at this stage is that a dam which meets the very highest safety standards will be able to be constructed. In our submission the evidence you will hear clearly establishes this.

- 2.8 The dam itself will be an 85m high (above existing river bed level) plus foundations (in the order of 20m as the dam needs to be sitting on a bedrock foundation rather than on gravels) concrete gravity dam constructed from roller compacted concrete ("RCC"). The RCC construction process is described in the evidence of Mr Fleming. As you will hear from his evidence, most of the concrete will be batched on-site and it is important that the concrete is laid almost continuously over a 24 hour period. This avoids cost and delays associated with waterblasting preceding layers, and enhances the overall integrity of the structure. It also minimises the duration of the dam construction period, which is anticipated to be around three years. The consents granted must accommodate the 24 hour operations needed.
- 2.9 The typical dam section has a straight vertical upstream face and an inclined stepped downstream face. In the current preliminary design the spillway will be 77 m above existing river level, have a length of 120 m and discharge into a plunge pool downstream. The dam will be designed so that at higher inflows, when the lake is full, water will flow over the dam. It has an ogee crest which is the curved profile at the spillway crest and smoothes the water passing over the dam avoiding destructive erosion damage to the concrete. As you will hear from the evidence of Roddy Henderson, Meridian's consultant hydrologist, 15% of the time the MHP will have some spill flow. The ogee crest will be at a height of 100 m above mean sea level.
- 2.10 The lake formed behind the dam will be approximately 337 hectares and 14 kms long. The lake will have an operating range of 97 m to 100 m above mean sea level to allow flexibility in the generation output to match electricity demand, whilst still mimicking natural lake variation. This means that Meridian will have some ability to control the lake level within this 3m range with consequential effects on the flows in the river downstream of the dam. However, the relatively small range of 3m,

combined with the small surface area of the lake (which is a consequence of the narrowness of the gorge) means that this control is limited. The lake will rise above 100 m during floods at which time the water will be discharged via the spillway.

- 2.11 A boat launching ramp and jetty facilities will provide boat access to the lake for dam maintenance and safety inspections and a log management area will allow for the beaching and cutting of logs intercepted by the log boom.
- 2.12 Initial design and feasibility work has assumed that the power station will house three twin vertical shaft Francis turbines. The two main turbines will each have approximately 40 MW nominal rated output under a net head of 77 m and the smaller approximately 13 MW unit to primarily operate at minimum flow periods and at high flows when spilling.
- 2.13 While the detailed design of the generating plant has not yet been undertaken, under normal operation of the power station it is expected that the maximum generation flow will be approximately 120 m³/s or nominally 80MW. However, when inflows into the lake are greater than 120 m³/s or the power station would otherwise be spilling, the maximum generation flow will be approximately 150 m³/s and nominally 100 MW. The MHP will produce 360 to 410 GWh per annum of renewable generation; enough to meet the power needs of 45,000 to 51,000 average residential households. This is different from the application where it was stated the nominal installed capacity would be 65-85 MW. As part of the ongoing process to optimise the potential generation from MHP, Meridian has reviewed the opportunity to use the water that would otherwise be spilling over the dam to increase total station generation. Simply put, the opportunity to utilise the proposed smaller turbine (which is designed primarily to allow generation at times of low flow) at times of high flow as well, makes good sense. This alteration will have no environmental consequences, as the installed capacity does not affect the potential effects of the MHP on flow and related values. As Charlie Watts, Meridian's Project Manager will describe in his evidence, the increase in MW does not have any effect on the other aspects of the MHP and does not change the flows which will be experienced in the

river downstream of the dam. In terms of understanding the generation benefits of the MHP, the evidence you will hear, particularly that of Jim Truesdale, is conservative in that it does not assess future potential generation optimisation options.

- 2.14 The turbine units are fed by penstocks which source water from a screened intake and head gate below the spillway crest. The turbines will discharge to a single 100 m long tailrace. Bypass valves are proposed to ensure station discharge and downstream river flows are maintained if a station generation outage occurs.
- 2.15 In order to meet variable electricity demand Meridian will utilise the 3m operating range of the lake to provide for increases and decreases in generation flows. Under the proposed conditions Meridian will ensure the station discharge flow is not less than 16 m³/s, except when natural inflows are less than this. During these periods the station will be operated so that inflows and discharges are matched as closely as possible until an inflow of 16 m³/s or greater is reinstated. Inflows can be accurately measured by recording changes in lake levels while accounting for outflows. Meridian will ensure the generation discharge flow is not greater than 120 m³/s, except when inflows into the lake are in excess of 120 m³/s. In these situations (which equate on average to approximately 15% of the time) Meridian will be able to utilise additional installed generation capacity. During the whitebait season (1 September to 14 November) lake inflows and station discharges will be matched as closely as possible (except in the case of an emergency). The flow regime and ramping rates are described in the evidence of Mr Watts.
- 2.16 A 26 hectare staging area for dam and power station construction activities is located immediately downstream from the dam site on the true left bank of the Mokihinui River. This area will be cleared of vegetation, except for some buffer areas, so that the staging area can be established. The staging area will accommodate the aggregate extraction pit, stockpiling areas, production plant, buildings, settling ponds, diesel generators and office and parking areas.

- 2.17 The Mokihinui River will be diverted to the true left bank of the river during construction to permit foundation preparation. These construction details are described in the evidence of Ron Fleming and Cliff Tipler.
- 2.18 The power station output will be connected to the new single circuit 110 kV transmission line via the substation which will contain a single generator transformer near the power station. The single circuit 110 kV line will transmit power from the proposed power station to a new substation at Cedar Creek located between tower 46 and tower 47 on Transpower's Inangahua-Westport B line. This will allow the transmission line to connect into the existing Transpower lines. Transmission line termination gantries, switching, measuring and communications equipment will be located in the switchyard with the tallest structures being limited to 6 combined lighting and lightning rod poles up to 25 m high, and a communications pole up to 30 m high. Two 10 kV-33 kV transformers up to 5 m high will be located within the substation and will be fully banded. The substation control, communications and monitoring equipment and their associated power supplies will be accommodated within a building. This building will also contain a toilet and washroom. A car park will also be located within the building area.
- 2.19 The existing Cedar Creek Road will require repair between the Cedar Creek substation and Burnetts Face hairpin.
- 2.20 The transmission line will be approximately 28 km long and contain approximately 159 concrete or steel single pole structures with an additional 2.8 m steel extension on top to carry an earth wire. The AEE indicated approximately 152 poles. The change to approximately 159 poles reflects further design work undertaken since the application was lodged but is still an approximation and will not be confirmed until final design and pole placement have been finalised. The majority of the poles will be between 14 m and 20 m high, however, some 20 poles will be up to 50 m high to reduce the extent of vegetation clearance required. The consent application seeks approval to locate the transmission line within a 200 m wide corridor to allow flexibility for precise placement of poles to suit topographical variations and avoid environmental effects. It

is important that the consent allow for this flexibility in the final siting of poles as Meridian considers it important to retain the ability to micro-site poles in order to secure the best outcome.

- 2.21 The transmission corridor has been selected after detailed evaluation of a range of alternative routes which would link the power station to the National Grid. This evaluation process is discussed in the evidence of Ray Brown, Meridian's Transmission Manager. The selected route has been arrived at in consultation with the Department of Conservation and is considered the most direct transmission route with the least environmental impact. The choice of construction methods and materials will ensure that potential adverse effects associated with the transmission line are appropriately avoided or mitigated.
- 2.22 Consent is also being sought for the activities associated with construction of the MHP. The construction activities include; diversion of the Mokihinui River, construction of coffer dams to enable dewatering of the dam foundation; excavation, crushing and screening of gravel located within the staging area; transportation of off-site aggregate material to meet demand; transportation and storage of cement and pozzolan (a substitute for cement to reduce concrete heat generation and improve long term concrete performance); concrete batching plants and concrete conveyance; foundation preparation; RCC dam construction involving the placement of layers of compacted concrete; upgrading the Mokihinui/Seddonville Road from State Highway 67 through to the site, the Burke Creek crossing, access road to the dam crest and to the power station extending into the diversion channel area.
- 2.23 In some places the erection of the transmission line will involve the formation of tracks for vehicle access and the preparation of pole sites by either dug foundations or rock anchor foundations. To avoid or mitigate ecological effects a significant proportion of the transmission line will be constructed using helicopters.
- 2.24 Vegetation will be removed at pole sites and along access tracks for the transmission line as necessary and trimmed to provide clearance for

transmission lines. Vegetation clearance will also be necessary prior to inundation of the lake to clear trees between RL 92 m and RL 102 m. Tall canopy trees that extend above RL 92 and are located between RL 70 m and RL 92 m will also be removed. Vegetation within the staging area will be cleared at the commencement of site establishment.

3. THE MOKIHINUI RIVER

- 3.1 The applicant's AEE, and the evidence you will hear from the various independent experts engaged by Meridian to provide advice in relation to the MHP clearly demonstrate that the Mokihinui River is a good example of a free-flowing West Coast River in a largely natural setting. It is visually intact and has high natural character, although is not considered to be an outstanding natural feature or landscape in accordance with Section 6(b) of the RMA. The Mokihinui River has the aquatic plants and animals the experts would expect to see in a river of this type. While its relative inaccessibility and the range of other rivers in the region mean that its recreational use is not high, it does have recreational values.
- 3.2 Against that background, and notwithstanding the fact that the evidence demonstrates that there is nothing unique about the Mokihinui River in an ecological or landscape sense, in our submission it is proper for the Commissioners to understand why it is that Meridian is advancing a proposal on this river.
- 3.3 Providing a comprehensive answer to that question requires addressing matters at a number of levels including:
- a. The need for more generation capacity;
 - b. The desirability of geographically spread generation, and in particular new generation on the West Coast and the top of the South Island;
 - c. The need for renewable generation;
 - d. The need for hydro generation;

- e. What other options are there?
- 3.4 In our submission you will find the evidence of Andrew Robertson, Jim Truesdale, Nick Eldred and Charlie Watts on these matters to be compelling. It clearly leads to the conclusion that a hydro development on the Mokihinui River is appropriate and necessary, and will promote sustainable management.
- 3.5 Having established through the evidence that a hydro development on this river is appropriate, Mr Watts will explain the processes that led to the MHP being advanced as the best development option for this river.
- 3.6 The proposed dam site is located approximately 11 kilometres from the River mouth and approximately 3 km upstream and east of the settlement of Seddonville. The lake formed by the dam will comprise a finger lake stretching approximately 14 kilometres up to the Mokihinui Forks Ecological Area. The dam has been designed so that its crest and resulting impoundment water level will not reach into the Mokihinui Forks Ecological Area except in flood conditions. That is the situation which applies at present, and thus some inundation of the lower end of the Ecological Area cannot be inconsistent with the purpose for which the land is held. State Highway 67 (from Westport to Karamea) runs alongside a small section of the lower River on the true left bank before crossing the Mokihinui River and heading northwards. There is no road which follows the entire remainder of the River. Vehicle access to the river is not possible upstream of the bottom end of the gorge, and even foot access is made difficult by the poor quality of the existing walking track.
- 3.7 In assessing landscape and ecological values, the consultants engaged by Meridian have compared the Mokihinui with other rivers in the Buller area including the Buller River, Ngakawau River and Karamea River. These rivers have also been considered by others in the past for their hydro generation potential. One important distinction between these

other rivers in the Buller area is that the Mokihinui River has no elevated protected status. For example there is a Water Conservation Order¹ for the Buller River. The purpose of a Water Conservation Order is to recognise and sustain outstanding amenity and intrinsic values. The Order protects certain outstanding features and characteristics of not only the Buller but also other associated waters including sections of the Mangles River, Owen River, Gowan River and Maruia River. Clause 7 of the Order prevents any Regional Plan or consent authorising damming of the Buller or other listed waters. Damming the Buller River is simply unlawful. The Karamea River is within the Kahurangi National Park, and the Ngakawau Gorge within the Ngakawau Ecological Area. As Mr Eldred will explain, the protected status of other rivers in the area makes them impossible or unrealistic potential sites for hydro development.

- 3.8 The land upon which the dam, lake and power station will be built is administered by Land Information New Zealand as riverbed, the Department of Conservation as deemed stewardship land under section 62 of the Conservation Act 1987 and the Buller District Council as unformed road reserve. Deemed stewardship land is land deemed to be held for conservation purposes as if it was stewardship land. It has no special protection status. This is the "lowest" category of Crown land managed under the Conservation Act. It is land which the Minister has not declared to be held for conservation purposes pursuant to section 7(1) of the Conservation Act. That does not mean the land has no conservation values, but in our submission you should note that the land affected is not within the Kahurangi National Park. It is not subject to a Water Conservation Order. It is not an ecological area, scenic reserve, or in any way subject to an elevated level of protection. The draft West Coast Conservation Management Strategy ("draft CMS") does not identify that the Gorge requires special protection (although the draft CMS does identify an area in the South Branch as a biodiversity priority site – a point to which we will refer later) and neither does the Buller District Plan.

¹ Water Conservation (Buller River) Order 2001 SR 2001/139.

- 3.9 At this point we pause to note that the land in question does form part of a large area of land subject to a proposal by the Department of Conservation to create a conservation area to be known as the Kawatiri Heritage Park. Hearings were held on this proposal in 2007, and no decision has been made. In the event the area was included in such a park, Meridian understands the purpose of the Park would be to improve access to and understanding of the heritage resources of this part of the Buller District. The evidence you will hear from Cathryn Barr, Meridian's heritage consultant, is that the MHP will provide a catalyst to enhanced knowledge and experience of the area's heritage values, both through improved access and enhanced interpretation.
- 3.10 The transmission line crosses private land, Buller District Council road reserve, and Crown land administered by DoC and LINZ. Meridian is in the process of negotiating the necessary rights to allow the line to be constructed. These include:
- a. Agreements to grant transmission easements over private land and Crown land administered by LINZ (including land subject to mining rights in favour of Solid Energy Ltd). An agreement to grant a transmission easement has been signed by the owners of Rough and Tumble Lodge and the Mulhollands and Meridian is still in discussion with other owners;
 - b. A concession application for Crown land administered by the Department of Conservation;
 - c. Consultation with Buller District Council in respect of the road reserve. As an "electricity operator" under the Electricity Act 1992 Meridian is able to carry out line work on legal road, subject to notice requirements.
- 3.11 Although the dam itself will physically be located on the Mokihinui River, the "site" is in many senses much broader and encompasses the Mokihinui catchment, the Buller District, the West Coast Region, the South Island and in fact the whole of New Zealand. We say this because the commissioning of new electricity generation, particularly a renewable energy hydro project such as the MHP is nationally significant and has national as well as local benefits. As you will hear from

Meridian's witnesses, the MHP will assist in meeting projected West Coast electricity demand, will influence spot prices in the upper South Island, will assist the Government in meeting renewable energy targets and reducing carbon emissions in line with New Zealand's international commitments, and will provide security of supply and flexibility.

4. **CONSENTS APPLIED FOR**

- 4.1 Meridian has applied for a suite of resource consents from the West Coast Regional Council ("the Regional Council") and the Buller District Council ("the District Council"). A full list of these consents is set out in Chapter 2 of the AEE and described in the planning evidence of John Kyle. Meridian is applying for all necessary consents for the construction of the dam and transmission line (including vegetation clearance, river diversion works, aggregate production, earthworks and stockpiling activities and construction of access tracks and the powerhouse and substation), commissioning of the dam (which includes activities such as the damming of water and creation of a lake and the discharge of water from the dam) and ancillary activities such as road improvements necessary to accommodate the increased traffic and constructing a new Mokihinui track for access beside the river.
- 4.2 All land use consents are sought for an unlimited duration so that in accordance with section 123(b) RMA, once they are given effect to they will last in perpetuity. Discharge and water permits associated with the construction stage are sought for a 10 year term. The remaining discharge and water permits related to the ongoing operation of the dam are sought for a 35 year term. It is considered appropriate for a large-scale project such as this that a 10 year lapsing period be granted. This will provide time for items such as detailed design and final feasibility work to be undertaken, tendering of the construction contract, and mobilisation.
- 4.3 In addition to the resource consents being sought from the Councils, Meridian will also need to obtain the necessary authorisation from the Historic Places Trust (for destroying or modifying historic sites) and this

is referred to in the evidence of Meridian's archaeologist Cathryn Barr. The contractor will need to obtain any necessary Hazardous Substances approvals. Meridian has applied to Crown Minerals for a permit to mine aggregate which will be used in concrete production. Other approvals such as wildlife permits may also be required and any necessary approvals will be applied for once resource consents are obtained.

- 4.4 Meridian has applied to the Department of Conservation ("DoC") for concessions. This is to authorise the inundation of public conservation land, and construction of the staging area and transmission line across DoC land. This is a separate process governed by the Conservation Act 1987 and whilst both resource consents and a concession are required in order for the project to proceed, neither process is determinative of the other. As an alternative to a concession in relation to the dam and inundation area Meridian is investigating a land exchange proposal which would, if accepted by the Minister of Conservation, mean that the land administered by the Department of Conservation under the dam footprint and lake would become owned by Meridian in exchange for other land of equal or greater conservation value being added into the conservation estate. Meridian is still completing land evaluation and private negotiations with landowners prior to presenting a land exchange proposal to the Minister.
- 4.5 Once resource consents are obtained, Meridian will need to obtain building consents for the dam and other necessary structures. This is part of the detailed design process which you will hear Meridian's engineering witnesses refer to. The building consent process is described in the evidence of Mr Amos, and for the MHP will be managed by the Otago Regional Council which has a formal relationship with the West Coast Regional Council for this purpose.
- 4.6 There appears to be some confusion in the section 42A Report regarding the resource consent and building consent process. The Regional Council seems concerned that the final detailed design may have different effects from the feasibility design and the Regional Council seeks a resource condition requiring its approval of the detailed design. Detailed design will be submitted to the Regional Council as part of the

building consent process for assessment and approval against the Building Code. The approval of the detailed design is not a resource consent matter. If the detailed design of the dam was so different as to be outside the scope of the application sought, then Meridian would need to vary its resource consent. It is submitted that the application has been prepared so that adverse effects of the final detailed design will not vary significantly from those of the feasibility design.

- 4.7 An operating easement for the lake will be required from LINZ.

5. ACTIVITY STATUS

- 5.1 All the Regional Council consents are discretionary. All but one of the consents sought from the District Council are for discretionary activities.
- 5.2 The construction of the dam is a non-complying activity under the Buller District Plan as it exceeds the building height restriction and maximum floor area requirement.
- 5.3 In *Locke v Avon City Motor Lodge*² the Court considered that generally there is no scope for hybrid planning status and that where an activity involves consents with different activity statuses the more stringent planning status should apply. Even though *Locke* was decided some 35 years ago under the Town and Country Planning Act, it has been held that the reasoning in *Locke* continues to apply under the RMA³. In *South Park Corporation v Auckland City Council*⁴ the Environment Court reviewed the existing law relating to consent status and confirmed that the more stringent activity status should apply unless specific criteria

² (1973) 4 NZTPA 17

³ *Rudolf Steiner School v Auckland City Council* unreported, Environment Court, A081/96, Sheppard J, 19 September 1996

⁴ [2001] 8 NZRMA 350

could be satisfied. Meridian accepts that these criteria are not met in this case.

5.4 In this instance only one of the resource consents is non-complying. This is for the dam structure itself. This consent is fundamental to the entire proposal. Accordingly is it accepted that this is an appropriate case where the consents are "bundled" and the overall proposal treated as non-complying.

5.5 Accordingly the application should be assessed overall as a non-complying activity.

6. **RELEVANT STATUTORY PROVISIONS UNDER PART 6 OF THE ACT**

6.1 The relevant sections of the Act in Part 6 are as follows:

- a. Section 104D - this sets out the threshold test for non-complying activities and one of the limbs of this test must be satisfied before the activity can be considered under section 104.
- b. Section 104 provides the relevant matters to be considered.
- c. Section 104B applies to discretionary activities and non-complying activities.
- d. Sections 105 and 107 apply to the discharge of contaminants, in this case sediment, into the River.
- e. Section 108 relates to conditions.

6.2 Section 104B provides that after considering an application for a discretionary activity or a non-complying activity a consent authority may grant or refuse an application and may impose conditions under section 108.

6.3 Sections 105 and 107 provide as follows:

105 Matters relevant to certain applications

(1) *If an application is for a discharge permit or coastal permit to do something that would contravene section 15 or section 15B, the consent authority must, in addition to the matters in section 104(1), have regard to—*

(a) *the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*

(b) *the applicant's reasons for the proposed choice; and*

(c) *any possible alternative methods of discharge, including discharge into any other receiving environment.*

(2) *If an application is for a resource consent for a reclamation, the consent authority must, in addition to the matters in section 104(1), consider whether an esplanade reserve or esplanade strip is appropriate and, if so, impose a condition under section 108(2)(g) on the resource consent.*

107 Restriction on grant of certain discharge permits

(1) *Except as provided in subsection (2), a consent authority shall not grant a discharge permit [or a coastal permit to do something that would otherwise contravene section 15 or section 15A allowing—*

(a) *The discharge of a contaminant or water into water; or*

(b) *A discharge of a contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; or*

(ba) *The dumping in the coastal marine area from any ship, aircraft, or offshore installation of any waste or other matter that is a contaminant,—*

if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:

(c) *The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials:*

(d) *Any conspicuous change in the colour or visual clarity:*

(e) *Any emission of objectionable odour:*

(f) *The rendering of fresh water unsuitable for consumption by farm animals:*

(g) *Any significant adverse effects on aquatic life.*

(2) *A consent authority may grant a discharge permit or a coastal permit to do something that would otherwise contravene section 15 or section 15A that may allow any of the effects described in subsection (1) if it is satisfied—*

- (a) *That exceptional circumstances justify the granting of the permit; or*
- (b) *That the discharge is of a temporary nature; or*
- (c) *That the discharge is associated with necessary maintenance work—*

and that it is consistent with the purpose of this Act to do so.

(3) *In addition to any other conditions imposed under this Act, a discharge permit or coastal permit may include conditions requiring the holder of the permit to undertake such works in such stages throughout the term of the permit as will ensure that upon the expiry of the permit the holder can meet the requirements of subsection (1) and of any relevant regional rules.*

- 6.4 It is submitted that the discharge of contaminants to water will be temporary during the construction period. Given the location of the construction area, this is the most practicable location and option for discharge. I note that the discharge will be pre-treated and should not give rise to any of the effects listed in section 107(1)(c) to (g). This is outlined in the evidence of Cliff Tipler.
- 6.5 Section 108(2) prescribes the types of resource consent conditions which may be imposed, and I discuss Meridian's proposed conditions in more detail below.

Section 104D

- 6.6 Section 104D provides as follows:

(1) *Despite any decision made for the purpose of section 93 in relation to minor effects, a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either—*

(a) *the adverse effects of the activity on the environment (other than any effect to which section 104(3)(b) applies) will be minor; or*

(b) *the application is for an activity that will not be contrary to the objectives and policies of—*

(i) *the relevant plan, if there is a plan but no proposed plan in respect of the activity; or*

(ii) *the relevant proposed plan, if there is a proposed plan but no relevant plan in respect of the activity; or*

(iii) *both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.*

(2) *To avoid doubt, section 104(2) applies to the determination of an application for a non-complying activity.*

- 6.7 The Court of Appeal⁵ in *Dye v Auckland Regional Council* described paragraphs (a) and (b) as "gateways". An applicant needs to pass through one of the gateways (or "limbs") in order to proceed to section 104.

Adverse Effects No More Than Minor – Section 104D(1)(a)

- 6.8 The first gateway under paragraph (a) is whether the adverse effects on the environment are no more than minor. Any effects on people who have given their written approval are specifically excluded from this assessment and from any assessment under section 104 (section 104(3)(b)). The owners of Rough and Tumble Bush Lodge, which is located beside the Mokihinui River downstream of the proposed dam site, have given their written approval as have the Mulhollands who own a farm at Seddonville. Accordingly effects on Rough and Tumble Lodge and the Mulhollands cannot be considered under section 104D or section 104.
- 6.9 Although section 104D(1)(a) is only concerned with adverse effects of the MHP, "*it is appropriate to consider each adverse effect as mitigated*"⁶. Whether or not the effects on the environment are more than minor, is a question of fact and degree in each individual case. "Minor" means "*'petty', 'comparatively unimportant', 'relatively small or*

⁵ [2002] 1 NZLR 337 (CA)

⁶ *Stokes v Christchurch City Council* [1999] NZRMA 409 at paragraph 76 emphasis added

*unimportant. . . of little significance or consequence'*⁷ or "*de minimis or ... a remote possibility*"⁸.

- 6.10 It is open to you to decide after considering all the evidence that the effects are minor or less than minor and if you so decide then the proposal passes the first gateway test.

Not Contrary to the Objectives and Policies – Section 104D(1)(b)

- 6.11 We strongly submit that this proposal meets the second gateway test. As set out in the evidence of John Kyle the MHP is not contrary to the objectives and policies of the relevant plans.

- 6.12 The task of considering whether a proposal is "not contrary" to the objectives and policies of a Plan has been described in the often quoted case *NZ Rail Limited v Marlborough District Council*⁹ where the High Court said:

The Tribunal correctly I think, with respect, accepted that that should not be restrictively defined and that it contemplated being opposed to in nature, different to or opposite. The Oxford English Dictionary in its definition of "contrary" refers also to repugnant and antagonistic. The consideration of this question starts from the point that the proposal is already a non-complying activity, but cannot, for that reason alone, be said to be contrary. "Contrary" therefore means something more than just non-complying.

- 6.13 In reaching your judgment under section 104D(1)(b) you must take into account all the features of the proposal and assess them against the relevant objectives and policies, having regard to the overall purpose

⁷ *Progressive Enterprises v North Shore City Council* [2006] NZRMA 72, at paragraph 62

⁸ *Westfield (New Zealand) Limited v North Shore City Council* [2005] 2 NZLR 597 at paragraph 108

⁹ [1994] NZRMA 70 at page 80 (HC)

and scheme of the relevant plan or plans¹⁰. If, as indicated by the Court of Appeal in *Arrigato Investments Ltd v Auckland Regional Council*¹¹ "a development can be designed and implemented so as to be consistent with them [the objectives and policies], it cannot be said to be contrary to them". An activity is contrary to objectives and policies where it is repugnant to, different to and opposite to these objectives and policies¹². There is only one judgement to be made, and it is against the objectives and policies of the relevant plan when considered as a whole. Section 104D(1)(b) does not allow for a deconstructionist approach whereby the proposal is assessed against individual objectives and policies, on the basis that if the proposal is contrary to any one of those objectives or policies it will fail the gateway test. That is simply not what the section says, and such a construction would predetermine the fundamental weighing of effects and plan provisions contemplated by section 104(1). It is also an unrealistic approach. Plans, by their very nature, contain multiple objectives and policies ranging over diverse topics. It is very common for a proposal to find some policy which is supportive, and some policy which is pulling in the opposite direction. The gateway test requires, first, an assessment as to whether when considered as a whole, the objectives and policies set out a clear path to guide future decision-making. If the answer is yes, then the question becomes one of deciding whether a particular proposal stands opposed to that clear path. In our submission such a decision should not be made lightly as it precludes detailed consideration under Section 104.

- 6.14 Section 104D(1)(b) refers to "the relevant plan". In a situation such as this where the consents have been bundled to be a non-complying activity overall, but the non-compliance relates only to one district rule, it is our submission that only the objectives and policies of the District Plan need to be considered.

¹⁰ *White v Waitaki District Council* unreported, Environment Court, C66/2006, McElrea J, Commissioners Rowan and Watson, 28 May 2006 at paragraph 62.

¹¹ [2002] 1 NZLR 323 at paragraph 24 (CA)

¹² *Tairua Marine Ltd v Waikato Regional Council* unreported, High Court, CIV 2005-485-1490, 29 June 2006, Asher J at paragraph 86.

- 6.15 The *Tairua Marine*¹³ case provides authority for that proposition. It involved an application for both regional and district consents. They were bundled and treated as a non-complying activity. When the Environment Court came to make its assessment under section 104D it only considered the provisions of the Proposed Regional Coastal Plan and the Transitional Coastal Plan as it was with the regional rules that the proposal failed to comply. The Court did not consider the objectives and policies of the District Plan. Based on this authority in our submission it is appropriate in the case of the MHP for you to only consider the objectives and policies of the District Plan, as it is only the dam structure itself which is a non-complying activity under the District Plan because a dam is classed as a "building" for the purposes of the Plan, and in this case exceeds the floor area and height limits for a discretionary activity. The objectives and policies of the Regional Plans will need to be considered under section 104, however, it is submitted that they are not relevant plans for the purposes of section 104D. Furthermore, it would seem academic to consider the objectives and policies of plans in respect of which all proposed activities are discretionary. This is because by definition a discretionary activity is contemplated as being an activity which can take place. We submit that the purpose of comparing a non-complying activity against the objectives and policies of a plan is to ensure that it is not repugnant to those objectives and policies given that it is an activity which is not contemplated by the Plan.
- 6.16 Assessing only the objectives and policies of the Buller District Plan for the purposes of section 104D(1)(b) also accords with the plain wording of the section which refers to the singular relevant plan, or in cases where an authority has more than one plan, to both proposed and operative plans. This can be distinguished from section 104(1)(b)(iv) which requires consideration of any relevant provisions of a (as opposed to the) plan or proposed plan.

¹³ Unreported, Environment Court, A108/05, Sheppard J, Commissioners Catchpole and Edmonds, 1 July 2005

6.17 However, adopting a conservative approach, Mr Kyle has assessed the activities against the objectives and policies of the District Plan and the Regional Plans and has concluded the proposal is not contrary to the objectives and policies of any plan.

6.18 Policy 5.4.1B of the Proposed Regional Water Management Plan states:

To take into account the benefits from the use and development of renewable energy, including the social and economic benefits.

6.19 The explanation to this policy states:

This Policy recognises that renewable energy developments can provide significant community benefits, both locally and nationally as recognised in section 7(j). Where renewable energy developments provide significant community benefits (locally and nationally), it may be sufficient to mitigate or remedy unavoidable effects.

6.20 Policy 5.4.1B and its explanation are beyond challenge. In our submission this policy is very significant within the context of this application. This significance arises because it is a strong policy focused directly on renewable energy use and development. The latin maxim "generalia specialibus non derogant" has been applied in plan interpretation cases under the RMA¹⁴. This is translated to mean that specific provisions (in this case policies) should override and be interpreted to have more weight than general provisions.

6.21 In our submission this provides strong, positive direction, particularly in light of the accompanying explanation, which resolves what could otherwise be an apparent tension between various objectives and policies in both the RPS and PRWMP. It is clear that in the regional context of this plan the Regional Council has decided that the regional and national benefits of renewable energy development may prevail over other environmental effects, even to the extent that some adverse effects

¹⁴ *Caltex Oil (NZ) Ltd v North Shore City Council* unreported, Environment Court, A1/93, 21 January 1993, Kenderdine J, Commissioners Dodd and McIntyre.

may be unavoidable. We note that this policy must be considered to be consistent with the RPS.

6.22 Policy 5.4.1B sits within a proposed regional water plan. There can be no doubt in that context that the renewable energy development for the West Coast contemplated by the policy is hydro development. We submit on that basis, and given the evidence you will hear about the lack of alternative renewable options on the West Coast of a scale to make a significant regional let alone national contribution, the MHP falls squarely within the contemplation of Policy 5.4.1B. This is a policy which supports large-scale hydro development on the West Coast, and even goes as far as acknowledging that such development may be accompanied by unavoidable adverse effects.

6.23 Therefore we submit the MHP is not contrary to the objectives and policies of the relevant plans and passes the second gateway test. You have jurisdiction to consider and grant the consents applied for. You are therefore required to consider the proposal under section 104. We note that the non-compliance with the District Plan is technical in nature and is caused by the fact that definition of "building" in the Plan is very wide and encompasses any permanent or temporary structure (subject to only minor exceptions). Were a dam not within the Plan's definition of "building" the need to assess the proposal as a non-complying activity would not arise.

7. **ASSESSMENT**

Section 104

7.1 Under section 104(1)(a) the effects of the activity on the environment must be considered. Effect is defined under section 3 RMA to include (unless the context requires otherwise):

(a) *Any positive or adverse effect; and*

(b) *Any temporary or permanent effect; and*

- (c) *Any past, present, or future effect; and*
- (d) *Any cumulative effect which arises over time or in combination with other effects—*
regardless of the scale, intensity, duration, or frequency of the effect, and also includes—
- (e) *Any potential effect of high probability; and*
- (f) *Any potential effect of low probability which has a high potential impact.*

Positive Effects

7.2 Unlike the assessment under section 104D discussed above, this assessment requires you to consider both positive and adverse effects to assist in reaching a broad balanced overall view. As you will hear from Meridian's witnesses the positive effects of the MHP are numerous and significant. They occur at a range of scales from local to national. They relate not just to electricity generation and economic activity, but also to ecological, recreational, heritage and social values. The positive effects include:

- a. Provision of electricity;
- b. A renewable energy source which is consistent with Government policy;
- c. Contributing to meeting emissions targets, New Zealand's international obligations, and combating climate change;
- d. Recreational benefits;
- e. A predator control programme in the South Branch of the Mokihinui River, in an area identified by the Department of Conservation in its draft CMS as a priority site for biodiversity management; and
- f. Social and economic benefits.

7.3 It is submitted that the greatest benefit, and Meridian's reason for doing the MHP, is the electricity that will be generated from the MHP. This is set out in the evidence of Meridian's witnesses Andrew Robertson, Tim Fraser and energy consultant Jim Truesdale. Importantly the MHP will provide greater security of supply for the West Coast and the upper

South Island. Currently the West Coast needs to import energy from other areas, particularly the Waitaki Valley, and this results in transmission losses as the energy is carried over many kilometres and means that the West Coast is not self-sufficient. Therefore the West Coast is more susceptible to power outages and incurs higher electricity prices. As is explained in the evidence of Mr Truesdale, it is anticipated that the MHP will reduce the wholesale spot price on the West Coast. This in turn is likely to lead to reduced retail electricity prices.

7.4 As the MHP is a source of renewable energy a further benefit which is of national significance is that it helps New Zealand achieve its national target of having 90% renewable energy by 2025¹⁵. Over the life of the project the MHP reduces the need for some greenhouse gas to be emitted in producing electricity and enables equivalent thermal generation to be displaced or deferred.

7.5 The New Zealand Energy Strategy 2007 ("NZES") states in the Introduction on page 8:

New Zealand, like the rest of the world, faces two major energy challenges. The first is to respond to the risks of climate change by reducing the greenhouse gases caused by the production and use of energy. The second is to deliver clean, secure, affordable energy while treating the environment responsibly.

7.6 Section 4.6.14 of the NZES discusses the role of renewable electricity generation and states:

To maximise the contribution of cost-effective renewable energy resources while safeguarding our environment.

4.6.1 Electricity

New Zealand is in the fortunate position of being able to produce large amounts of zero or low emissions electricity from renewable sources such as geothermal, wind and hydro. Our renewable energy resources are plentiful and cheap by world standards. In

¹⁵ New Zealand Energy Strategy 2007.

the future, wave and tidal electricity generation are also expected to become economically viable.

It is in New Zealand's longer-term economic and environmental interests to meet increases in demand through an economic mix of renewable energy sources that will meet our security objectives. It is easier for New Zealand to commit to a low emissions electricity system than almost any other country. In this strategy, the government is introducing a target for 90 per cent of electricity being generated from renewable sources by 2025.

This is a challenging target but, given our wealth of natural energy resources, is considered achievable without imposing significant additional costs on the electricity sector. The resultant generation mix should ensure New Zealand's energy system is well placed to prosper in a low carbon economy. To achieve this outcome, a very high rate of investment in new renewable generation, lower utilisation of existing fossil fuel plant and decommissioning of older fossil fuel plant is required.

Where fossil fuel generation is needed to maintain security of supply, priority should be given to using the lowest emissions fuel available.

Increasing the proportion of renewable electricity will help us cut emissions of carbon dioxide (CO₂). However, renewable electricity generation can have a larger visible effect on the local environment than fossil fuel electricity generation plants. As an example, some people believe wind farms have more impact on the environment than gas-fired thermal plants of equivalent output.

We need to balance the climate change benefits of increasing renewable electricity against the potential impact on the local environment. We will support this balancing act by giving consent authorities guidance on the various trade-offs involved. It is important that the public continues to have confidence that the system and processes are fair and robust.

There is likely to be enough geothermal, wind and hydro energy to meet New Zealand's electricity demand for the next 20 years or so, while still meeting appropriate environmental standards. If marine generation, deep (hot-rock) geothermal or solar photovoltaic generation become economically viable within that time, New Zealand would be able to use predominantly renewable electricity sources for even longer.

- 7.7 In our submission the MHP is entirely consistent with the NZES. While the NZES is not a formal RMA document, you should consider it pursuant to section 104(1)(c) as an "other matter....relevant, and reasonably necessary to determine the application". Tim Fraser's evidence will discuss the NZES and other national regulatory and policy documents in more detail.

- 7.8 As you will no doubt be aware, Trustpower is proposing to construct a 46MW hydro scheme on the Arnold River known as the Arnold Valley Scheme. This is at the consenting stage, however no decision has yet been issued and Meridian is not in a position to say whether the Arnold Valley Scheme will go ahead even if consent is granted. Even if it is constructed, there are too many unknown factors (such as the total energy the Arnold Valley Scheme would provide, and how often it would perform at peak levels) which prevent Meridian from undertaking a detailed analysis of the implications of having both the MHP and the Arnold Valley Scheme generating electricity. Meridian has therefore proceeded to model and understand the implications of both projects on the basis of a maximum generation scenario from both the MHP and the Arnold Valley Scheme (combined with light load demand on the West Coast). As you will hear from the evidence of Mr Truesdale, even in this scenario the benefits of both projects can be fully realised. In other words the MHP does not cease to become a "good fit" for the West Coast and the top of the South Island if the Arnold Valley Scheme is constructed.
- 7.9 Rob Greenaway presents evidence of the recreational values of the Mokihinui area. In his evidence he outlines how the creation of the lake will diversify the recreational opportunities available to the community and visitors to the area. The diversity of recreational opportunities offered (such as boating activities on the lake and greater access for fishing and tramping/walking) will have flow on opportunities for commercial operators in the area. The new recreational opportunities will be different from those that exist in the Gorge at present. That does not make them inferior (or for that matter better). What is clear however is that the new opportunities will be more accessible and available to a larger group of potential participants than the current opportunities. Some of the submissions from recreational users of the Mokihinui point to the Gorge as part of a wider opportunity within the Buller area, particularly so far as whitewater kayaking is concerned. In the Buller River Water Conservation Order hearing¹⁶ it was argued that another

¹⁶ *Re Draft National Water Conservation Order for Buller River* (Unreported, Planning Tribunal, C23/96, 31 May 1996, Skelton J)

river, the Matiri River, should be protected because, while it was arguably not outstanding on its own, it was a component part of a larger kayaking resource (in that case all the rivers of the Buller system) and was therefore outstanding. The Planning Tribunal rejected that argument. We submit a similar approach is being taken here. In reality the Buller area is blessed with a wealth of whitewater kayaking opportunities. Some of those are recognised as being nationally outstanding and are protected. The Mokihinui River is not one of them. The whitewater opportunity in the Gorge which is going to be lost is able to be substituted by other runs in the area.

- 7.10 As set out in the evidence of Meridian's terrestrial ecologist Dr Ruth Bartlett, Meridian proposes a predator control programme in the Mokihinui Forks Ecological Area. This is partly to offset adverse effects on native fauna due to loss of native habitat, however, it will bring benefits for a multitude of species and will overall have a positive effect on the area.
- 7.11 The evidence of Richard Little for Meridian outlines a proposed enhancement of the track along the Mokihinui River and the opportunity to create a multi-use (walk and bike) route to be known as "The Old Ghost Road". This route will be an approximate 3-4 day walk and will begin near Seddonville following the Mokihinui River up the Gorge to the Forks and up the South Branch before traversing across the range and down the Lyell River to Lyell. This will provide improved back country access and will be of an appropriate grade that it is suitable for families. It has the potential to bring recreation business opportunities to those in the area and the potential for events to be held. The Old Ghost Road will also have a heritage component and will have an associated benefit of "sharing the story" with those using the track. The implementation of "The Old Ghost Road" is not part of the MHP since it relies on third party involvement. However, the reinstatement and improvement of the existing poor access to the Forks is part of the MHP and that alone will deliver material heritage appreciation and recreational benefits. The potential for a larger "Old Ghost Road" experience is a very real example of the opportunities that can flow from the presence of the MHP in the area.

7.12 There are a number of social and economic effects which will flow on from the MHP. Construction of the MHP infrastructure such as communications and roading improvements will be made and these will remain after the MHP is constructed and will continue to benefit the community. As explained in the social impact evidence of James Baines, the construction of the MHP will provide for direct employment with an estimated workforce of 310 and related employment opportunities for businesses providing services for the construction workforce or providing goods for the actual construction of the MHP. No decision has been made at this stage about the housing of construction workers. For the purposes of this consent round it has been assumed that workers will be located in Westport or other existing settlements, and the assessment of effects, particularly traffic movements, has proceeded on this basis. Therefore if dedicated workers' accommodation is considered desirable and this is not a permitted activity, Meridian or the MHP construction contractor will need to make a further application to the Buller District Council for a landuse consent. It is expected that for many of the workforce this would be likely to take the form of single workers' accommodation.

Adverse Effects

7.13 These positive effects naturally need to be balanced against potential adverse effects. In summary the potential adverse effects are:

- a. Effects on the fisheries (eels, trout, whitebait and other native fish);
- b. Effects on periphyton and invertebrates;
- c. Effects on water quality and hydraulics;
- d. Effects on archaeological and historic sites;
- e. Effects on terrestrial ecology;
- f. Landscape effects;
- g. Traffic, noise and construction effects;
- h. Social and recreational effects; and
- i. Effects on river and coastal erosion.

- 7.14 As we have said earlier in these submissions Meridian has not undertaken the MHP lightly. It has invested considerable time and expense in employing experts in their various fields to investigate possible effects and recommend methods to avoid, remedy and mitigate potential adverse effects. Meridian has engaged consultants to undertake considerable research on the river itself, including analysis of the water quality, effects on sediment budget, aquatic ecology and recreational use of the river (in particular by fishermen and rafters/kayakers), terrestrial ecology, historic heritage and landscape of the area, noise, traffic and construction effects and social impacts.

Fisheries

- 7.15 The dam will have an adverse effect on the migration of some native fish species, and longfin eel and koaro in particular. The anticipated effects, and the methods to be used to mitigate those effects to a level which is acceptable, are detailed in the AEE and in the evidence of Dr Jellyman and Mr Bonnett. The effects of the dam on native fish will be subject to ongoing monitoring and active management. It is proposed to implement a variety of measures including a trap and transfer system and screened intakes.
- 7.16 Similarly, the dam may have some effect on the brown trout fishery, although this is less certain. Nevertheless an extensive monitoring programme for trout (three years prior to scheme commissioning and seven years post-commissioning is proposed). The Aquatic Ecology Management Plan is also required to identify and detail methods for addressing adverse effects on trout abundance throughout the term of the consent.
- 7.17 In his evidence Mr Greenaway explains the importance of whitebaiting to the community as both a recreational and commercial activity. The lower Mokihinui River is a popular whitebait fishery. The community also benefits from the influx of whitebaiters and this is explained in Mr Baines'

evidence. There are three potential adverse effects on the whitebait fishery which require consideration. They are:

- a. Changes to the pattern of flows in the lower river as a result of flow fluctuations caused by the operation of the dam.
- b. Fish passage, particularly for koaro which is one of the major whitebait species in the Mokihinui whitebait catch.
- c. Erosion of the river bank in the area of the whitebait stands.

Each of these potential effects is either avoided by the design of the MHP, or can be mitigated so that it is not more than minor.

7.18 Potential effects on the whitebait fishery arising from changes to the pattern of flows in the lower river have been avoided by the requirement that during the whitebait season (1 September – 14 November) the dam is operated so that flows in the lower river match inflows into the reservoir as closely as practicable. This means that other than in emergency conditions the MHP will be operated as a run-of-river scheme with the lake level being held steady. Flows in the lower river where the whitebait shoal and where fishing occurs will essentially be the same (in terms of variability and overall volume) as occurs at present. The practicalities of operating the MHP so as to achieve this outcome are discussed in the evidence of Charlie Watts.

7.19 Koaro whitebait comprise the majority of the whitebait catch in the Mokihinui River. Unlike inanaga, which spawn in the lower reaches of rivers, koaro are "penetrators" and prefer to spawn in inland, higher altitude streams. The dam creates a blockage to upstream migration of koaro which will be mitigated by the trap and transfer system outlined in the evidence of Mr Bonnett such that successful spawning migration will still be possible and the effect on the whitebait fishery will be no more than minor. Downstream migration of koaro will not be adversely affected by the dam.

7.20 The dam will interrupt the transport of sediment down the river with the result that there is likely to be increased river bed and bank erosion/scour in the lower river. This is discussed in the evidence of Dr

Murray Hicks. It is not anticipated this will be a significant issue, but it will be monitored, and if it becomes a problem relatively simple localised in-river and bank engineering works can be placed to mitigate this effect so the whitebait fishery will not be affected.

- 7.21 As for koaro, the dam provides a block to the upstream migration of juvenile eels (elvers). Effective upstream migration of eels will be ensured by the same trap and transfer system.
- 7.22 Downstream migration of adult eels through a hydro station's turbines is a problem and because of the size of the fish and/or pressure changes within the water, is likely to result in adult eels being injured or killed. This effect needs to be avoided or mitigated to the extent reasonably practicable. In the case of the MHP this will be achieved by screening of the penstocks, upstream capture and release, and by the fact that for significant periods of time (particularly during floods and freshes, which are frequent in the Mokihinui River) large quantities of water will overtop the dam, thus avoiding the risk to eels. This is discussed in the evidence of Dr Jellyman.

Invertebrates and Periphyton

- 7.23 Periphyton and invertebrates can be seen as indicators of river and ecosystem health. It was important to assess the abundance and species diversity of periphyton and invertebrates and then predict what effect the MHP would have on them. As stated earlier the Mokihinui has low nutrient levels, high average flow, high water quality and is a natural river typical of the West Coast. Therefore it should be no surprise that the species and taxa present and levels of abundance are that expected of a low-nutrient, high average flow, high water quality river on the West Coast. As you will hear from the evidence of Dr Kilroy and Mr Suren the Mokihinui communities are not distinctive:
- a. There were no unique taxa found;
 - b. There were no significant differences between the Mokihinui communities and those from other rivers in the northern South Island area or the South Island as a whole.

- 7.24 The change from a riverine habitat to a lake habitat will have an effect on the communities along this section, however this will not result in net loss of these community types or the loss of any unique taxa. These taxa and community types are found elsewhere. Therefore viewed on a broader Mokihinui catchment basis the adverse effect is no more than minor. There is potential for adverse effects to arise during the construction process, primarily from sediment discharges to the river. However these potential adverse effects will be temporary (ie restricted to the construction period) and can be avoided, remedied and mitigated through implementing best practice methods during the construction period, and these are referred to in the proposed conditions of consent and Construction Management Plan. As Dr Kilroy and Mr Suren state in their evidence, periphyton and invertebrates are adapted to the floods that occur on this river and the creation of a larger varial zone will have no more than a minor effect.

Water quality

- 7.25 The Mokihinui River has been assessed as having good water quality with high clarity and low levels of nitrogen and phosphorous. Dr Spigel has predicted that the lake will contain low to intermediate nutrient concentration and overall will have good water quality. The lake will be deep and narrow and will become stratified. The inundation area will not be completely cleared of trees before the lake fills and only trees around the perimeter of the lake will be felled. The decaying vegetation in the filled lake uses oxygen and this leads to oxygen depletion or anoxic water in the bottom layer (ie 25 to 35 m deep) over the first four to five summers. There is a small chance that anoxic water could be discharged downstream, however Dr Spigel recommends methods to avoid or mitigate this, and the effect can be avoided.
- 7.26 Mr Jowett undertook an instream habitat survey and developed a model to determine the relationship between flow and habitat for fish and invertebrates that live in the lower Mokihinui River. Using that model he has determined that a minimum flow of 16m³/s will maintain near maximum habitat for native fish, many invertebrate species, food production and adult and yearling brown trout. Daily flow fluctuations will to some extent reduce benthic invertebrate habitat and food production

but will not have a significant effect on native fish or trout habitat because these species are mobile. The flow-on effects on trout of reduced invertebrate production will likely be moderated by the availability of other food sources, and a slight improvement in production as a result of a decrease in sediment transport.

- 7.27 Dr Goring has assessed the tidal hydraulics of the Mokihinui River, river mouth and lagoon. He concludes that the hydraulics of the river mouth and lagoon are driven by the tides. There will be some changes in the day to day tidal hydraulics, however the overall effect of hydro generation will be minor, and generally positive from an ecological perspective.

Archaeological Effects

- 7.28 Given the mining that occurred on the West Coast in the early 19th century, one would assume that there would be an abundance of registered archeological and historic sites around the Mokihinui River. However the irony is that it is only when a development is proposed that resources are invested in locating and documenting historic heritage. It was not until such investigations were undertaken for the MHP that historic heritage has been discovered and archaeological sites have been registered with the Historic Places Trust. For example the historic mining settlement of Seatonville had been heard of but its location was unknown. Through her work for Meridian Ms Barr has now been able to document its location.
- 7.29 The MHP will result in some heritage sites being modified or destroyed and Meridian will need to obtain an Authority from the Historic Places Trust before this occurs. However as you will hear from the evidence of Ms Barr, the overall effect on historic heritage will be positive. This is because the MHP proposal includes the relocation and interpretation of some historic heritage, and provides an important opportunity to locate, document and understand historic sites. Increased knowledge will aid in the interpretation of other sites in the area and the West Coast as a whole. Furthermore, there are other more accessible and better preserved examples of mining activities on the West Coast.

Terrestrial Ecology

7.30 Dr Bartlett presents evidence on the indigenous fauna and flora. Some nationally threatened fauna were found in the MHP area; however, no species had a distribution which was restricted to the MHP area. Although the habitat of some *Powelliphanta* snails is restricted to the Mokihinui catchment, the inundation area represents less than 5% of the habitat of *P.I. unicolorata* and less than 1% of the habitat of *P.I. ruforadiata*. A small blue duck population (5-7 birds) lives in the Gorge area. While the existing habitat will be lost, the reality is that this small population is not sustainable. This population already suffers predation and flooding effects and this has led to the current low population numbers. Meridian will mitigate or offset potential adverse effects on this habitat and population through a predator control programme for the Mokihinui South Branch area which will benefit not just the blue duck and *Powelliphanta* but other species as well. Potential effects on the construction of the transmission line are localised and can be mitigated through choosing appropriate sites for poles and carefully locating tracks. This will be done in consultation with DoC as landowner of sensitive areas, and with guidance from consultant ecologists and heritage experts as appropriate. In addition the use of appropriate construction methods (including helicopter access in sensitive areas) will provide additional protection for important ecological and heritage values.

7.31 Much like the results of the aquatic ecology studies, the indigenous terrestrial fauna and flora is indicative of unmodified, West Coast bush. Indigenous vegetation will be lost through inundation to form the lake, construction of the staging area and construction of the transmission line. However it is important to remember that none of this flora is endemic to these places. The West Coast is fortunate in that indigenous vegetation such as this is prolific. Viewed on a small scale the loss of some 300 ha sounds significant. But we submit that when viewed over the Mokihinui catchment, Buller area or West Coast region as a whole the actual loss is small. Furthermore, once the dam is constructed the construction staging area will be rehabilitated and the loss of vegetation from this area will be temporary. The predator control programme will

also improve the health of flora – as the health of the indigenous fauna improves the overall ecosystem will improve.

- 7.32 Dr Bartlett explains some of the approaches used for determining whether a site is "significant" in terms of section 6(c). Different methods of assessment have been proposed by experts in this field, and applying the criteria is "easier said than done". Dr Bartlett concludes that the transmission line will cross areas which are significant, and on balance considers that the inundation area just crosses the line of being classified as significant. However it is important to remember her point that based on the significance criteria there would be many areas on the West Coast which are classed as significant. It is also important to remember that just because a site is categorised as significant under section 6(c) does not preclude development. The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna is only one matter to be weighed along with all the other matters in Part II in achieving sustainable development. Equally, the determination that an area is not "significant" under section 6(c) does not mean that adverse effects are unimportant.

Landscape

- 7.33 The existing landscape and related natural character values of the Mokihinui River (and in particular the Gorge area), and the effects of the proposed dam, power station and lake on those values are discussed in the evidence of Peter Rough. The existing landscape and natural character values of the area the transmission line crosses together with the effects of the proposed transmission line, substation and communications mast are discussed in the evidence of Andrew Craig. In assessing the potential landscape effects both Mr Rough and Mr Craig highlight the importance of context. It is important to have regard to how the dam, the lake and the transmission line will fit within the context of the surrounding landscape.
- 7.34 The landscape in which the dam will be built is dynamic and undergoing continual change. The Mokihinui River itself is subject to frequent

turbulent flood flows and has high flow variability. Looking at the wider district context, whilst the Mokihinui Gorge has high natural character and visual amenity, it is by no means unique. Mr Rough concludes there are other landscape units in the district which share the landforms, indigenous vegetation, land use, heritage and physical features of the Mokihinui catchment. Although most lakes on the West Coast are circular as opposed to 'ribbon-like', lakes themselves are a natural feature and there a number of them on the West Coast. Similarly, from the few vantage points available downstream, the solid face of the dam will in both scale and context, appear as a feature not entirely at odds with the nearby boulders, rock outcrops and escarpment.

- 7.35 In relation to the Mokihinui Gorge Mr Rough concludes that it:
- a. Has a high level of visual intactness and visual amenity
 - b. Has a high level of natural character
 - c. Is an important contributor to the wider landscape
 - d. Does not stand out in any pre-eminent way and is therefore not an outstanding natural feature or landscape in accordance with section 6(b).
- 7.36 The dam itself is a monolithic structure, but this is not entirely at odds with the boulders, escarpments and rock outcrops that are found on the West Coast. Visibility of the dam (and the associated power station) is minimal due to its position in the Gorge, shading from the mountainsides, screening by foreground vegetation and landform, and the lack of public areas from which the dam can be clearly seen. In the context of the surrounding landscape and steep sides of the Gorge and mountains, the dam is a relatively small structure.
- 7.37 The greatest visual effects will occur during the construction period. However once constructed the dam appearance will gradually change over time and it will assume some natural character. Truescape has prepared a series of 'life-size', high quality photo-simulations. Because of the narrow sinuous nature of the lake, a maximum distance of 2 km of surface water will be visible from any point on the lake.

- 7.38 The construction of the dam and replacement of the river with a lake will result in a change in character of the water, and the area covered by water will be enlarged (although as noted previously from no point will the full extent of the lake be visible). The natural character and pattern of the landform will remain the same, and this will ensure that natural character is maintained. Flow fluctuations downstream of the dam are natural and the visual effects under the influence of the MHP are in keeping with what happens naturally. The landscape character and visual amenity of the entire watercourse will not be adversely affected.
- 7.39 Overall Mr Rough considers that the dam and resultant lake will have benign landscape effects. In his evidence Mr Rough refers to the fact that change is not necessarily a bad thing and does not necessarily mean that there is a loss of landscape values or amenity. The resultant lake will retain natural character and provide amenity for users.
- 7.40 As described in the evidence of Mr Brown and Mr Craig, the proposed transmission line route results from a combination of operational necessity (for example the communications mast must be elevated with a clear line of sight and close to a road), and attention to minimising or mitigating potential effects on the landscape (for example Meridian has moved the transmission line further east to further avoid any potential effects on the Ngakawau Gorge and has avoided the most visually sensitive areas) and on heritage and ecological values. It also reflects consultation with landowners over whose land the route passes. From the Mokihinui dam site the proposed transmission corridor follows the true left bank of the Mokihinui River to intersect with the Charming Creek Road just south east of Seddonville. The line roughly follows the Charming Creek Road and then bears to the west of the Charming Creek walkway, running roughly parallel to it as far as the Ngakawau River. The corridor then crosses the Ngakawau River Gorge just east of its confluence with the Mangatini Stream. From the Ngakawau Gorge, the corridor runs along the Weka Creek Plateau, and then south across the Stockton Plateau to the upper Waimangaroa Valley. A substation will be built at Cedar Creek.

- 7.41 In considering the context of the transmission line, over its approximately 28 km distance it will pass through a variety of landscapes ranging from those at the natural end of the spectrum such as the southern part of the Stockton Plateau to more modified landscapes such as the remainder of the Stockton Plateau which is heavily mined and has an access road. The transmission line will affect naturalness and amenity where this is already high. In the modified landscapes, the transmission line will not be an unexpected feature and will be readily absorbed into the landscape. For example, there is already an existing line which supplies the Rough and Tumble Lodge and Mokihinui Preserve subdivision. Meridian will underground these existing wires to avoid cumulative effects of having a second line and the effect of the new transmission line in this area will generally be the same as the existing line. Where there is potential for adverse effects, the siting of the transmission line within the 200 m corridor can be used to avoid these potential effects.
- 7.42 In Mr Craig's opinion, overall the adverse effects of the proposed transmission line, switchyard and communications mast on the landscape are not more than minor or are otherwise avoided, remedied or mitigated to a point where adverse effects are less than minor. This is because the transmission line is not bulky and does not occlude the landscape. Most of the transmission line will be viewed against a landform (as opposed to intruding into the skyline) and this minimises potential effects. In many instances given the existing landscape and vegetation cover, views of the transmission line by the public will be restricted to glimpses.
- 7.43 The Charming Creek walkway is considered to be the most sensitive landscape affected by the proposed transmission line. The transmission line will not be visible from the Gorge vantage point of the Charming Creek walkway and whilst there will be glimpses of the transmission line from parts of the walkway, growth of the vegetation will lead to increased screening of the line. The Stockton Plateau is the most visually exposed area which the transmission line will cross. However given the location of the Plateau the transmission line will generally not be visible from public vantage points.

- 7.44 The communications mast is located within landscape which, although natural, is already modified. As the area is associated with a working mine, people will perceive it to be in keeping with the existing character of the area. The overall effects of the proposed communications mast will be minor.
- 7.45 The substation (including the switchyard) is located at the junction of Stockton and Denniston Plateaus and there is potential to affect views from Denniston Plateau. However the location of the substation in a valley near to existing pylons, the low bulk of the substation and the fact that views of it will be against a landform backdrop all aid in mitigating any potential effects so that they are insignificant.

Traffic/Noise/Construction

- 7.46 Whilst the ultimate construction programme will be determined by the contractor, for the purposes of the resource consent process engineers experienced in the construction process have predicted the likely construction process to be adopted and potential effects. It is estimated that construction could take approximately 3 years and during this time there will be potential effects associated with traffic movements, noise, dust and discharges to the river.
- 7.47 The construction of a hydro dam with foundations approximately 20 m below river level, with a dam crest rising to 85 m high, strong enough to impound a 337 ha lake is an impressive engineering exercise. Before construction can commence, let alone before the turbines begin generating power, it is necessary to clear a staging area on the true left bank of the river. This will ultimately house the aggregate extraction pit, stock piling areas, concrete production plant, site buildings, settling ponds, diesel generators and parking areas. The river will be diverted to the true left bank of the river whilst the dam foundations are excavated. Discharges of sediment to the river will occur immediately after construction of the cofferdam and diversion of flows through a bypass channel, discharges of treated stormwater and washwater from treatment ponds will also occur. After treatment, wastewater will be discharged to groundwater. Best practice measures during construction

of access tracks and the transmission line will avoid and mitigate potential discharges. Overall the potential effects of discharges to water will be no more than minor.

- 7.48 Dust will be generated from a variety of activities including processing of aggregate, manufacture of concrete, excavation and blasting, and vehicle movements on haul roads. As described in the evidence of Cliff Tipler dust effects will be confined to within 300m of the site and there are no potentially affected properties. Employing best practice measures for mitigating dust levels will reduce any potential effects to minimal levels.
- 7.49 Traffic will be generated by trucks bringing supplies to the staging area, and for transportation of the estimated peak work-force of 310. The roads from Westport to the dam site and access points for the transmission line currently have low volumes and although there will be an increase in the number of vehicles on the roads the network has capacity to absorb this increase. Meridian will upgrade sections of the road and residents will benefit from these upgrades long after construction is finished. The potential for adverse effects on the roading network is no more than minor.
- 7.50 In his evidence Dr Chiles concludes that by implementing good noise control practice, the construction noise will comply with the noise limits of the District Plan at the nearest affected residential properties. Such methods include maintaining good buffer distances, installation of sound insulating linings in workshops, selection of silent or silenced equipment and local screening or enclosures. With careful management and liaison with residents even one-off "impact" noises like blasting and implosive jointing will be acceptable.

Social and Recreational Effects

- 7.51 We have already touched on the potential social and recreational effects in describing the positive effects above. As we discuss further below, this demonstrates the way in which for some aspects of the proposal both positive and adverse impacts are possible and must be balanced.
- 7.52 The introduction of a large construction workforce, will have an impact on the local community. It submitted that this can be a double-edged sword. Local retailers and businesses can benefit from an increased population seeking accommodation and spending money on food, clothing and other items and this benefits these businesses and the entire community. However the influx of construction workers could cause adverse social impacts through potential for disorderly behaviour and social disruption, or demand on existing social infrastructure. Mr Baines concludes that overall the social impacts will be positive and enabling, and recommends measures to ensure these outcomes including ongoing consultation with the local community.
- 7.53 The change from a fast flowing river to a lake will displace some recreational activities such as white-water rafting and kayaking. However the creation of the lake itself will enhance opportunities for the public to access a lake and enjoy associated water-based activities. Mr Greenaway concludes that the net recreational effect of the MHP will be positive.

Coastal erosion

- 7.54 As Dr Hicks will explain in his evidence, coastal erosion is an existing natural hazard in the area of the Mokihinui embayment, and most notably at the Mokihinui settlement. Dr Hicks' investigations into the supply of sediment to the area, and the effect of wave action have concluded that for at least several decades the shoreline in the area of the settlement has been retreating at an average rate of 1 metre per year. He also concludes that without the MHP, the coast will continue to retreat at a similar average rate.

- 7.55 The Mokihinui settlement is presently partially protected from storm-surge by two artificial bunds formed of sandy-gravel piled up by earth moving machinery. The advice of Dr Hicks is that these bunds will do little in the long-term to check the ongoing erosion of the shoreline.
- 7.56 If nothing is done, then regardless of the MHP, the existing settlement will progressively be eroded as the sea encroaches.
- 7.57 The Mokihinui River presently contributes something like 8-15% of the beach-grade sediment supply to the coastline in this area. The construction of the proposed dam at the bottom of the Gorge will mean that about 90% of this current supply to the coast will be entrained in the reservoir. Dr Hicks conservatively predicts that the effect of this will be to accelerate the rate of coastal erosion around the Mokihinui settlement, particularly in the first few years, by up to an additional 2 metres per year. The influence of the MHP on erosion rates will diminish with time, and over a 100-year timescale is expected to make only a modest contribution to overall coastal erosion in the area.
- 7.58 Meridian engaged a coastal engineer, Mr Richard Reinen-Hamill, to advise on options to protect the Mokihinui settlement from the effects of coastal erosion. Mr Reinen-Hamill will describe these options in his evidence. The options he has identified do not attempt to discriminate as to the cause of the erosion. Essentially there are two types of options. One is the construction and ongoing maintenance of an engineered sea wall. The location and design of any such wall will determine the time period over which it will be effective, but the advice of Mr Reinen-Hamill is that realistic sea walls will provide protection for several decades, but not longer. The other type of option is "managed retreat" which accepts the inevitability of coastal erosion and mitigates the effect by relocating away from the affected area.
- 7.59 Meridian is actively engaged with the local community, represented by the informal Mokihinui Ratepayers' Association, to identify a solution which best meets the needs of the community, both as to outcome and

cost, and this process will be discussed by Mr Chris Evans in his evidence.

- 7.60 Given the fact that coastal erosion is an existing problem which the MHP will exacerbate Meridian acknowledges it has an obligation to mitigate the additional effects the MHP will cause. However, recognising that the presence of the MHP provides an opportunity for a long-term solution to the coastal erosion issue, Meridian has indicated to the local community a willingness to contribute more than its "fair share".
- 7.61 Discussions between Meridian and the local community have been productive and are ongoing. We anticipate that prior to the conclusion of this hearing a path forward will have been agreed, and we will be in a position to present to you a proposal which will give you certainty that the MHP-induced coastal erosion effects will be mitigated.
- 7.62 In summary, it is submitted that although there are some adverse effects, the positive effects of the MHP outweigh the adverse effects.

Section 104(1)

- 7.63 Section 104(1) refers to effects on the "*environment*". In *Arrigato v Auckland Regional Council*¹⁷ the Court of Appeal said that:

Assessments of the relevant environment and relevant effects are essentially factual matters not to be overlaid by refinements or rules of law.

- 7.64 In assessing the significance of the effects of the MHP it is important to do so within a realistic context of what it is that comprises the relevant "environment". It is submitted that it is appropriate in this case to regard the environment as at least the broader catchment within which the MHP is located, and in respect of some effects, the wider Buller District. For example, the Gorge currently provides habitat for various macroinvertebrates. Those animals are suited to a river environment.

¹⁷ [2002] 1 NZLR 323 (CA)

They will not survive in a lake environment, and in their place a different suite of macroinvertebrates suited to a lake environment will occur. The river-type macroinvertebrates are found elsewhere in the Mokihinui catchment, and are found widely within many other rivers. The scale at which the environment is viewed becomes important. If the scale is just the Gorge, the effect is significant, but at the catchment or wider scale the potential adverse effects are insignificant. A similar discussion could be had in relation to the existing whitewater kayaking/rafting opportunity in the gorge. Should that be considered in isolation, or within a wider context which recognises the overall kayaking resource in the Buller area?

- 7.65 Some guidance can be taken from the Environment Court in *Sampson v Waikato Regional Council*¹⁸. In that case consent was granted for flood control works on the Lower Waikato River. The applications were for¹⁹:
- a. *The Te Onetea control gate, which regulates flows between the Waikato River and the Te Onetea Stream which enters Lake Waikere;*
 - b. *The Lake Waikere control gate, which regulates flows between Lake Waikere and the Whangamarino wetland through the man-made Waikere canal; and*
 - c. *The Whangamarino control gate which regulates flows between the Waikato River and the Whangamarino River and wetland system.*

- 7.66 At paragraph 34 the Court concluded:

For present purposes we find that the "existing environment" is the Waikato River, its tributaries, streams, wetlands and the catchment configurations that all contribute to the river's hydrological and hydraulic components. This includes the stopbanks and main channel works that have been completed under the scheme.

¹⁸ Unreported, Environment Court, A178/2002, Whiting J, Commissioners Hackett and McIntyre, 2 September 2002.

¹⁹ At paragraph 14.

7.67 In our submission the relevant "environment" will vary with the nature of the effect being considered, and does not need to be the same for all effects. Thus the beneficial effect of electricity generation needs to be viewed at a regional, island, and even national level, while the construction effects of noise and light need to be viewed at a very local level. When viewed in this way you as Commissioners are able to see each effect (whether actual or potential) in its correct perspective. In doing so, the benefits of the MHP come into focus, and adverse effects, as mitigated, can be properly understood to be acceptable in this case.

Statutory Planning Documents

7.68 In accordance with section 104(1)(b) the relevant provisions of the following documents must be had regard to:

- (i) The National Policy Statement on Electricity Transmission 2008
- (ii) The New Zealand Coastal Policy Statement 1994
- (iii) The West Coast Regional Policy Statement
- (iv) The Proposed Regional Water Management Plan, the Proposed Regional Land and Riverbed Management Plan, the Regional Coastal Plan, the Regional Discharges to Land Plan and the Regional Air Quality Plan
- (v) The Buller District Plan.

7.69 Mr Kyle discusses in more detail the relevant provisions of these documents in his planning evidence and they are also discussed in the section 42A report. Earlier in these submissions I have highlighted Policy 5.4.1B Proposed Regional Water Management Plan as a key provision. While you need to consider these planning documents in detail, we submit you also need to stand back and consider them in the round, and alongside non-statutory documents like the NZES and the NZ Biodiversity Strategy. What are these documents saying about climate change, renewable energy, the supply of energy to the Buller District and West Coast, and the balancing of those things against local biodiversity

and other values? In our submission the documents you are required to have regard to provide clear direction. There is support for renewable energy development in this part of the country. Hydro is the viable option, and the MHP is the sensible project. Developed in the way Meridian proposes, with due care given to the effects of the MHP within this sensitive environment, the planning documents provide support for the granting of consents.

- 7.70 In addition to policy 5.4.1B of the Proposed Regional Water Management Plan discussed above we highlight Section 3.5.6 of the Buller District Plan which says:

3.5.6.1 There are no significant electricity generating plants in the District, although the potential for hydro-electric power schemes has been identified for a number of rivers in the Buller District and some preliminary investigations have been done. Significant hydro potential exists on the Ngakawau, Buller River tributaries, Whareatea, Ohikanui, Totara, Nile, Mokihinui and Waimangaroa Rivers, Mangatini Stream and Granity Creek. Some rivers, particularly the Ngakawau, have had detailed investigation of their capacity for hydro-electric power generation. The Council recognises that a number of these rivers have been identified for their high wild and scenic values, but is mindful of the need to promote energy independence and efficiency of energy supply in Buller District.

3.5.6.2. Other potential energy sources include use of the large coal reserves as fuel for a coal fired power station to produce thermal power generation. Geographical investigations and assessment reports have been done on possible sites. Potential for wind power generation has been considered, however, suitable sites appear to be limited due to wind patterns and existing technology. The development of any energy project will be closely related to national electricity demand, pricing policies and the structure of the energy generation and supply industry. Due to the constraints on energy development, alternative energy conservation and generation technologies and techniques may require greater consideration.

- 7.71 Although these are not issues, objectives or policies, it is submitted they do provide a key indication from the Buller District Council of the importance of establishing electricity generation on the West Coast with the aim of becoming energy independent. We note that the vast majority of the Buller District is administered by the Department of Conservation under the Conservation Act. DoC was an active participant in the First Schedule process leading to the District Plan becoming operative. This

begs the question – if energy independence and efficiency of supply are to be promoted in the Buller District, and DoC does not want the MHP to proceed, then which of the District's other rivers would DoC prefer to see developed?

Other Matters

7.72 Under section 104(1)(c) you can have regard to any other matters that you consider relevant and reasonably necessary to determine the application. We submit that central Government Policy, including the NZES and the New Zealand Energy Efficiency and Conservation Strategy are relevant matters that you should consider because they are the Government's top-level strategy for energy. The NZES contains some key provisions which we set out earlier in these submissions. The NZES is discussed in more detail in the evidence of Tim Fraser for Meridian. The NZES sets out the Government's vision for a sustainable, low emissions energy system and outlines the actions necessary to achieve it. One target in the NZES is that 90% of our electricity will be generated from renewable sources by 2025²⁰. The same target is repeated in the New Zealand Energy Efficiency and Conservation Strategy. This document was prepared under the Energy Efficiency and Conservation Act 2000.

7.73 In *EDS v Auckland Regional Council*²¹ the Court held that even though at that time New Zealand had not ratified the Kyoto Protocol, the Framework Convention on Climate Change and the Kyoto Protocol were relevant matters under section 104(1)(i) (now section 104(1)(c)) on the appeal of a consent to construct and operate a gas fired combined cycle power station. Since then, New Zealand has ratified the Kyoto Protocol and has incorporated it into domestic law by virtue of the Climate Change Response Act 2002. As discussed in the evidence of Mr Fraser, New Zealand must cap its greenhouse gas emissions or trade carbon

²⁰ Section 4.6.1, page 22.

²¹ [2002] 11 NZRMA 492 at paragraph 28.

credits. Generating electricity from the MHP displaces generation from the combustion of carbon based fuels and will help New Zealand meet ongoing emission targets. This is an extremely important national issue which in our submission needs to be factored into consideration of the relative weight to place on the benefits and adverse effects of the MHP.

7.74 It is also submitted the Ngai Tahu Eel Management Plan and the Ngai Tahu Pounamu Resource Management Plan are relevant matters. One of the objectives of the Ngai Tahu Eel Management Plan is iwi participation in the resource management process. As will be discussed in the evidence of Chris Evans for Meridian, consultation has been ongoing with the iwi. Pounamu is not known to be present in this immediate area, however Meridian recognises the policies in the Ngai Tahu Pounamu Resource Management Plan for accidental discovery and will implement them.

7.75 It is submitted that the New Zealand Biodiversity Strategy is relevant and we note that in *Clifford Bay Marine Farm v Marlborough District Council*²² the Court there accepted it as a relevant matter. Objective 1.1 aims to protect indigenous habitats and ecosystems and objective 2.1 aims for the protection and sustainable management of freshwater ecosystems. The evidence of the various terrestrial and aquatic ecologists engaged by Meridian to provide expert advice in relation to the MHP confirms that the project, including the proposed mitigation measures, will be consistent with the provisions of the New Zealand Biodiversity Strategy. The New Zealand Biodiversity Strategy is also relevant for its support of adaptive management, and this is discussed in more detail below. In addition, Meridian will call expert evidence from Mr Ned Norton, a NIWA freshwater ecologist, who will provide evaluative evidence on the overall biodiversity significance of the Mokihinui River having regard to the detailed ecological surveying and interpretation that has now been undertaken as part of the investigations for the MHP. This work has been done to ensure you have before you clear evidence of the actual biodiversity value of the Mokihinui River and a robust assessment of the

²² Unreported, Environment Court, C131/2003, Jackson J, 22 September 2003 at paragraph 13.

significance of those values. In our submission this information will be helpful to you when you come to assess the weight that should be given to submissions and evidence based on the tentative biodiversity significance accorded to the Mokihinui River in a discussion document issued some years ago by the Department of Conservation²³ as part of the Waters of National Importance programme. That document provisionally ranked the Mokihinui River as the seventh most important river in New Zealand for biodiversity. An issue of real concern to Meridian is the fact that some submitters have mistakenly proceeded on the basis that this provisional ranking, based on no actual biodiversity data, is accurate. The discussion document expressly states:

This discussion document was prepared specifically for the Waters Of National Importance sub-project of the Sustainable Development Programme of Action for Freshwater (or Water Programme of Action). It is a working draft that presents a proposed methodology and a preliminary list of candidate rivers of national importance based on their biodiversity values. This list needs to be furthered refined, firstly because some data quality and system problems could not be resolved within reporting timeframes; and secondly following the public consultation and peer review during 2005. The report does not define waters of regional or local importance, so should not be interpreted at those scales. The authors should be consulted prior to formal citation of, or reliance on, this report.

- 7.76 We understand the public consultation and peer review processes referred to in this disclaimer never took place.
- 7.77 As the evidence will show, that provisional ranking is simply not tenable in light of the work which has now been done to establish the actual (as opposed to theoretical) biodiversity values in the river. Mr Norton's assessment considers the biodiversity of the relevant part of the Mokihinui River under two headings, first the presence of unique or special taxa and secondly the river ecosystems and habitats present. As

²³ Chadderton et al, 2004

you will hear from Mr Norton there are no unique or special taxa or taxa restricted to this region which would be affected if the MHP proceeds. In terms of the second aspect, Mr Norton uses the River Environment Classification (REC) system which categorises different river ecosystems across varying levels of scale by overlaying such matters as topography, climate and geology. Based on Mr Norton's assessment, which utilises the most up to date biological data for the Mokihinui River, and assesses the habitat characteristics of the affected area at the finest level of detail possible within New Zealand's REC system, the MHP will not result in a significant loss of any particular type of river ecosystem. Thus the MHP can proceed with minimal effect on biodiversity values.

7.78 Another "other matter" is environmental compensation. In *JF Investments Limited v Queenstown Lakes District Council*²⁴ the Court defined what it meant by the term "environmental compensation":

Since the term 'environmental compensation' is not used in the Act we should first define what we mean by it. The concept arises in this way: an applicant for a resource consent may choose or be required to avoid or mitigate or, occasionally, to remedy the adverse effects of a proposal. Or the applicant may volunteer to remedy or mitigate adverse effects of other activities. The offer may be fungible, that is of the same kind as the values or resources being lost, or different; it may be to remedy or mitigate adverse effects on-site or off-site. We define as 'environmental compensation' any action (work, services or restrictive covenants) to avoid, remedy or mitigate adverse effects of activities on the relevant area, landscape or environment as compensation for the unavoided and unmitigated adverse effects of the activity for which consent is being sought. We also note that land may be offered by the applicant to ensure that the work is carried out, services performed or restrictions complied with. The corollary of the definition is that normal conditions to avoid, remedy or mitigate the adverse effects of the activity for which consent is sought do not supply environmental compensation.

7.79 The Court held that environmental compensation (offered as off-site work or services or a covenant) will often be relevant and reasonably

²⁴ Unreported, Environment Court, C48/06, Jackson J, Commissioners Manning and McConachy, 27 April 2006 at paragraph 8.

necessary under section 104(1)(i) if it meets the following guidelines (at paragraph 42):

(1) it should preferably be of the same kind and scale as work on-site or should remedy effects caused at least in part by activities on-site;

(2) it should be as close as possible to the site (with a principle of benefit diminishing with distance) so that it is in the same area, landscape or environment as the proposed activity;

(3) it must be effective; usually there should be conditions (a condition precedent or a bond) to ensure that it is completed or supplied;

(4) there should have been public consultation or at least the opportunity for public participation in the process by which the environmental compensation is set;

(5) it should be transparent in that it is assessed under a standard methodology, preferably one that is specified under a regional or district plan or other public document.

7.80 It is submitted that the predator control programme offered by Meridian meets this criteria. The predator control programme will be described in the evidence of Dr Bartlett and will effectively mitigate and remedy the loss of habitat and will lead to a net conservation benefit by improving the overall ecosystem. The proposed area is in the Mokihinui South Branch which is within the same catchment as the MHP site and encompasses approximately 10,000 hectares. The programme would be consistent with the objectives and policies of DoC's draft CMS as the area has been targeted as a priority site for biodiversity management. Through the development of the CMS and this public resource consent process there is the opportunity for public participation on the MHP proposal and the predator control programme as one aspect of that proposal. Within the section 42A report there are a number of comments which seem to suggest that the predator control and habitat enhancement proposed are somehow either not mitigation, or are of less value than would be some other form of mitigation/compensation. In our submission what is being proposed or offered is significant and given it is intended to take place in the same catchment and designed to target the same animals and plants as are affected by the MHP, we submit it can be considered direct mitigation. Alternatively, if it is not mitigation, then it

is clearly compensation in the sense set out by the Environment Court in *J F Investments* for "unavoidable, unmitigated adverse effects".

8. PART II

8.1 Before discussing the factors under Part II of the RMA, the following matters are highlighted:

- a. As we outlined in our introduction, none of the factors in section 6 or 7 is a trump card. They are simply factors which are to be considered against all other relevant factors in deciding if the purpose of sustainable management will be met by granting consent. As the High Court said in the *New Zealand Rail* decision at page 85:

It [section 6(a)] is, however, only one of the matters of national importance, and indeed other matters have to be taken into account. It is certainly not the case that preservation of the natural character is to be achieved at all costs. The achievement which is to be promoted is sustainable management and questions of national importance, national value and benefit, and national needs, must all play their part in the overall consideration and decision.

- b. Secondly, we are not here to decide if the Mokihinui River is worthy of some form of protection. Meridian agrees that the Mokihinui has high natural character and supports a healthy ecology. That is why Meridian has designed its proposal to offer protection to existing values and has proposed conditions which will mitigate potential effects. As we outlined earlier, the only ultimate determination you have to make is whether sustainable management is better promoted with or without the MHP. There are other processes under the RMA and Conservation Act that could have been used if it was considered that the river should not be available for development, and in the context of a district and region where these other processes have been successfully and extensively used, we submit you should place weight on the fact that the affected river and adjacent land are not subject to any special protection.

- 8.2 As discussed earlier, the consideration of matters identified and relevant to section 6, 7 and 8 RMA must be balanced so as to give effect to sustainable management²⁵. The MHP will allow people and communities at local, regional and national levels to provide for their:
- a. economic wellbeing through employment and business opportunities and the security of supply and advantages that come with increased electricity generation on the West Coast and the top of the South Island, together with assisting in meeting New Zealand's domestic and international obligations.
 - b. social wellbeing that arises from security of electricity supply and the recreational and amenity advantages that will arise as a result of improved access to the area and the provision of a new lake environment.
 - c. cultural wellbeing is in our submission not a significant issue in this case, but in any event is provided for through ongoing consultation with local Maori regarding the MHP.
 - d. health and safety. Traffic, noise and construction management plans will mitigate potential adverse health and safety effects. Road and communication improvements will provide benefits for the local community and visitors to the area even once construction is finished. The provision of electricity also provides for the health and safety of people and their communities.
- 8.3 The MHP is a renewable form of generation. Water that is used to generate electricity is not "taken" and this is a sustainable form of electricity generation. The life-supporting capacity of air, water, soil and ecosystems is safe-guarded. The evidence of Dr Kilroy, Mr Suren and Mr Norton explains that although habitat will change from a river habitat to a lacustrine habitat, the MHP can be managed without a loss of biodiversity from the catchment.
- 8.4 Meridian's witnesses have suggested methods to avoid, remedy or mitigate adverse effects on the environment and these are explained in

²⁵ *NZ Rail* see page 85.

their evidence, and are reflected in the proposed conditions of consent, and where appropriate in draft management plans.

Section 6

8.5 Section 6 lists the matters of national importance which must be recognised and provided for. We now propose to address each one in turn.

6(a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

8.6 A definition of "natural character" which was developed by a consultative group for the Ministry for the Environment and cited with approval by the Environment Court²⁶ is:

Natural character is the term used to describe the natural elements of all coastal environments. The degree or level within an area depends on:

- 1 The extent to which natural elements, patterns and processes occur;*
- 2 The nature, and extent of modifications to the ecosystems and landscape/seascape;*
- 3 The highest degree of natural character (greatest naturalness) occurs where there is less modification;*
- 4 The effect of different types of modification upon natural character varies with context and may be perceived differently by different parts of the community" (paragraph 26).*

²⁶ *Kuku Mara Partnership v MDC* (unreported, Environment Court, W037/05, 27 April 2005, Thompson J and Commissioners Howie and Mills) at paragraph 26 and *Pigeon Bay Aquaculture Limited v Canterbury Regional Council* (unreported, Environment Court, C179/03, 17 June 2004, Jackson and Commissioner Howie

- 8.7 The protection of ecosystems and ecological processes is implicit in section 6(a) (*Gill v Rotorua DC*²⁷). This level of protection is in addition to the explicit recognition of ecosystems under section 7(d).
- 8.8 It is important to note that section 6(a) is limited in its application to rivers and their "margins". The term "margin" refers to the ecological or physical space relating to the land/water interface. For a lake this is approximately the upper limit of wave action²⁸. We submit that for a river this would include the riparian zone. It would be reasonable to expect that any change to this margin would be a change to the existing natural character of the river. For example in *NZ Shipping Federation of New Zealand v Marlborough District Council*²⁹ it was considered that any change in beach shape, form or make-up as a result of wave action caused by boats is a change to the existing natural character of the coastal environment.
- 8.9 When considering what "protection" requires it was accepted by the Court of Appeal in *EDS v Mangonui County*³⁰ that "protection" is not as strong a word as prevention or prohibition and that it simply means keeping safe from injury. It is certainly not synonymous with absolute preservation.
- 8.10 The issue of "appropriate development" was touched on by the Court in *JF Investments*³¹ where after quoting from *NZ Rail* the Court said:

So the decisions show that at least in the cases of the coastal environment and outstanding natural landscapes (and the same would apply to historic heritage) there is no absolute protection for those nationally important matters; rather there is protection in

²⁷ [1993] NZRMA 604

²⁸ *Upper Clutha Environmental Society Incorporated v Queenstown Lakes DC* C012/98.

²⁹ Unreported, Environment Court, W038/06, Kenderdine J, Commissioners Howie and Mills, 29 May 2006.

³⁰ [1989] 3 NZLR 257 at 262.

³¹ At paragraph 26.

each case from 'inappropriate' use and development. That implies there may be use and development which is appropriate.

8.11 In *Crooks v Invercargill City Council*³² the Court accepted that a proposed quarry site contained locally and regionally important hard rock deposits and that there was a need for sources of aggregate to meet Transit's requirements. The Court held that quarrying was "*an appropriate development in the coastal environment because such an activity can only occur where the mineral exists and because the natural character of the environment will not be compromised*".³³ Accordingly we submit that as a hydro scheme can only take place on a river and inevitably involves altering the natural character to some extent, the questions simply become whether the development is necessary at all, and whether there are better alternative locations. If the answers to the questions are that the development is necessary (in the sense that hydro development in this part of the country will promote sustainable management) and there is no better location, then in our submission the proposal must not be "inappropriate" for the purpose of section 6 (a). The evidence of Mr Robertson, Mr Truesdale, Mr Fraser and Dr Renwick will establish that such development is necessary. The evidence of Mr Eldred and Mr Watts will clearly establish that other alternative sites were investigated and that this site on the Mokihinui River is the most suitable and realistic site on a West Coast river for a significant and meaningful hydro electric scheme.

8.12 In discussing section 6(a) in *New Zealand Rail v Marlborough District Council* the High Court said at page 85:

"The protection of them", in its terms means and refers to the coastal environment, wetlands, lakes, rivers and their margins, the items listed, but the protection is part of the preservation of the natural character. It is not protection of the things in themselves but in so far as they have a natural character. The national importance of preserving or protecting these things is to achieve and to promote sustainable management.

³² Unreported, Environment Court, C081/97, Skelton J, Commissioners Grigg and Kerr, 8 August 1997.

³³ At page 102.

- 8.13 The High Court in *NZ Rail* also comments on the use of the word "inappropriate" and said:

It [inappropriateness] is, however, only one of the matters of national importance, and indeed other matters have to be taken into account. It is certainly not the case that preservation of the natural character is to be achieved at all costs.

- 8.14 It is accepted that the change from a riverine environment to a lacustrine environment will result in a change in natural character. However the lake environment will still possess natural character, with the lake level fluctuations mimicking natural fluctuations, and with all of the naturally occurring plants and animals in the Mokihinui catchment still existing in their natural context. It is submitted that the MHP is therefore an appropriate development and thus satisfies section 6(a). We submit that within the context of the West Coast, with its many highly natural rivers, Policy 5.4.1B of the PRWMP needs to be taken seriously. The large-scale hydro development contemplated by that policy will simply not be attainable without some adverse effect on natural character.

6(b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:

- 8.15 As discussed in the planning evidence of John Kyle, and in the evidence of Meridian's landscape expert Peter Rough, the Buller District Plan does not identify outstanding natural features or landscapes. It is also the case that unlike other areas in Buller District which are recognised for their "outstandingness" via special protection status under the National Parks or Conservation Acts, or via a water conservation order, the Mokihinui River has no special recognition or protection as an outstanding natural feature or landscape. Notwithstanding this Mr Rough has assessed whether the Mokihinui contains outstanding natural features or landscapes.

8.16 The leading decision on section 6(b) remains the first of the series of Queenstown landscape decisions, *Wakatipu Environmental Society Incorporated v Queenstown Lakes District Council*³⁴.

8.17 This decision identifies the refined criteria (based on those identified in *Pigeon Bay Aquaculture Limited v Canterbury Regional Council*³⁵) for assessing the significance of a landscape. These criteria include but are not limited to:

The natural science factors – the geological, topographical, ecological, and dynamic components of the landscape;

Its aesthetic values, including memorability and naturalness;

Its expressiveness (legibility) – how obviously the landscape demonstrates the formative processes leading to it;

Transient values – occasional presence of wildlife or its values at certain times of the day or year;

Whether the values are shared and recognised;

Its value to tangata whenua;

Its historical association.

8.18 These criteria are widely accepted as providing an appropriate basis for assessing landscape significance.

8.19 "Features" is not defined in the RMA, however it is accepted that the Gorge and the River could be considered as "features" within the broader landscape.

8.20 In *Munro v Waitaki District Council*³⁶ the Environment Court held that a landscape may be magnificent, without being outstanding. In that case

³⁴ [2000] NZRMA 59 at paragraph 80.

³⁵ [1999] NZRMA 209.

³⁶ Unreported, Environment Court, C098/97, Jackson J, Commissioners Dart and Catchpole, 25 September 1997.

the Court undertook a comparative exercise to decide if the landscape was outstanding. The Court noted that if it compared the Lake Aviemore landscape with the landscape that opens up to visitors at Omarama, the Lindis Pass, Lake Pukaki or Ohau Basin then the Lake Aviemore landscape was clearly not outstanding.

8.21 In the present case, whilst the Mokihinui Gorge and River could be described as "magnificent", it is submitted that it too would not be described as outstanding when compared with the neighbouring Ngakawau Gorge, Buller Gorge and rivers. In our submission it is important to assess significance on a comparative basis.

8.22 As Mr Rough concludes, while the Gorge has natural and ecological values, it is approaching but not achieving outstanding status. In the context of the transmission line route, Mr Craig concludes that the Stockton Plateau is not an outstanding natural landscape. Even if this is not accepted, we refer to our discussion above that the MHP is an appropriate development.

6(c) *The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*

8.23 In her evidence Dr Bartlett discusses the accepted criteria for assessing significance having regard to the provisions in the Buller District Plan, and in the scientific literature. She concludes that in respect of terrestrial ecological values the project area just qualifies as significant under section 6(c) due to the presence of threatened fauna species. However she also finds that no species is confined to the project area and all of the threatened species found within the area which will be inundated are distributed outside the Gorge area. Based on Dr Bartlett's conclusion that the area contains significant values it is necessary to consider whether protection will be achieved if the MHP proceeds. While the inundation of this area means the vegetation and terrestrial ecology habitat within the footprint of the dam and inundation area is lost, it must be borne in mind that the vegetation and habitat types affected are well represented in protected areas outside of the influence of the MHP.

Further, the mitigation proposed by way of the predator control programme in the South Branch will more than offset any losses as a result of the creation of the lake.

- 8.24 In the case of the transmission line, the ability to carefully site individual poles to avoid sensitive areas, combined with the use of helicopters for access where appropriate and construction methods designed to limit the potential for adverse effects, mean that areas of significant indigenous vegetation and/or significant habitat will be protected.
- 8.25 In the case of the indigenous aquatic flora and fauna in our submission the evidence indicates these are not significant. There are no unusual animals or plants present in the river, and in any event no animal or plant will have its viability in the catchment threatened by the presence of the MHP.

6(d) *The maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:*

- 8.26 As will be described in the evidence of Mr Greenaway the present access along the Mokihinui Gorge is poor and in fact scientists such as Dr Bartlett comment on the difficulties in obtaining access to the true right side of the River for sampling. As Mr Greenaway's evidence suggests the access to the Gorge and the north and south branches of the Mokihinui is presently restricted to a select few who can endure the current track or who are sufficiently motivated to secure helicopter access to the upper River for fishing or kayaking. It is submitted that the MHP will significantly enhance access *for the public* through the reinstatement of a good quality walking track which will enable relatively easy access to the Forks. As Mr Little describes, if the MHP goes ahead Meridian is committed to providing assistance for "The Old Ghost Road" walking and biking track from Mokihinui to Lyell. If this development proceeds it will see a new, improved track which will run alongside the lake from the dam site to the Forks Hut area and then up the South Branch, and down the Lyell River to Lyell. This will be a multi-day tramp or bike ride and will enhance public access not just to the lake, but will

also significantly enhance public access opportunities to the South Branch of the Mokihinui and the Lyell River as well.

6(e) *The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.*

8.27 Chris Evans from Meridian has been involved in the consultation undertaken with Ngati Waewae and will discuss this consultation process in his evidence. Ngati Waewae has prepared a cultural impact assessment and based on this Meridian is confident that the MHP will not unacceptably affect the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga.

6(f) *the protection of historic heritage from inappropriate subdivision, use, and development.*

8.28 "Historic heritage" is defined in section 2 RMA as:

historic heritage—

(a) means those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, deriving from any of the following qualities:

(i) archaeological:

(ii) architectural:

(iii) cultural:

(iv) historic:

(v) scientific:

(vi) technological; and

(b) includes—

(i) historic sites, structures, places, and areas; and

(ii) archaeological sites; and

(iii) sites of significance to Maori, including wahi tapu; and

(iv) surroundings associated with the natural and physical resources.

8.29 In her evidence Ms Barr will describe the historic heritage of the area. The whole Buller area has a rich mining heritage, and the Mokihinui is no exception, although it is significant to note that until Meridian investigated the area in the last couple of years there were no recorded historic sites in the area affected by the MHP. In our submission you should place some weight on this fact. The existing heritage values of the Mokihinui could be described as "latent" values. They are not accessible, visible, or interpreted. Put simply, if they were truly significant they would not be in their current state. The MHP will positively change that. Some historic areas are located within the area which will be inundated by the lake. Ms Barr recommends that to mitigate the potential adverse effect of losing this material, historic sites can be recorded and where possible material relocated to appropriate areas. While the sites in the Mokihinui Gorge have some heritage value, and there will be some loss associated with inevitable destruction as a result of inundation, heritage values overall in the area will be enhanced by the presence of the MHP.

6(g) *the protection of recognised customary activities.*

8.30 Meridian is not aware of any recognised customary activities affected by the MHP.

Section 7

8.31 Section 7 lists other matters to which particular regard must be had. We have grouped these matters and address them below:

8.32 It is of particular relevance within the context of section 7 that the MHP is a renewable energy proposal. Renewable energy is defined in the RMA as "*energy produced from solar, wind, hydro, geothermal, biomass, tidal, wave, and ocean current sources*". There are many benefits to be derived from the use of renewable energy. As discussed in *Genesis Power Limited v Franklin District Council*³⁷ these include security of

³⁷ [2005] NZRMA 541.

supply, reduction in greenhouse gas emissions, reduction in dependence on the national grid, reduction of transmission losses, reliability, development benefits and contribution to the renewable energy target. These benefits are all relevant in the context of the MHP. In his evidence Mr Truesdale also explains how the reliability of electricity generated from hydro allows New Zealand to expand its portfolio of wind energy which is by nature more intermittent.

8.33 Two of the matters you must have regard to under section 7 are:

(i) the effects of climate change;

(j) the benefits to be derived from the use and development of renewable energy.

We propose to discuss some recent cases which have considered renewable energy projects as these matters set out the relevant considerations under Part II, and in particular the relevant section 7 matters. We also note again the explanation to Policy 5.4.1B in the PRWMP which makes direct reference to section 7(j). The matters raised in sections 7(i) and (j) are also reflected in the NZES. The introduction to the NZES on page 8 states:

"New Zealand, like the rest of the world, faces two major energy challenges. The first is to respond to the risks of climate change by reducing the greenhouse gases caused by reducing the greenhouse gases caused by the production and use of energy. The second is to deliver clean, secure, affordable energy while treating the environment responsibly."

8.34 In the *Genesis* decision Genesis appealed the Council's decision to decline an application to construct, operate and use a wind farm with 19 turbines on the Awhitu Peninsula. Key issues related to adverse visual effects, impact on tangata whenua and adverse effects on horses. This case, which concerned a renewable energy development, provides a salient reminder of the overall assessment you are required to undertake under section 5 of the RMA in determining whether or not the MHP promotes sustainable management.

8.35 The Court stated in paragraphs 51 to 53:

[51] The proper application of section 5 involves an overall broad judgment of whether or not a proposal promotes the sustainable management of natural and physical resources. Such a judgment allows for a comparison of conflicting considerations and the scale or degree of them, and their relative significance in the final outcome.

[52] In North Shore City Council v Auckland Regional Council, the Environment Court held that where, on some issues, a proposal is found to promote one or more of the aspects of sustainable management, and on others is found to attain in part, or to attain fully, one or more of the aspects described in subsections 5(a), (b), or (c), it would be wrong to conclude that the latter overrides the former with no judgment of scale or proportion.

[53] The remaining sections in Part II, subsequent to section 5, inform and assist the purpose of the Act. We may accord such weight as we think fit to any competing consideration under Part II, bearing in mind the purpose of the Act. These subsequent sections must not be allowed to obscure the sustainable management purpose of the Act. Rather, they should be approached as factors in the overall balancing exercise to be conducted by the court.

8.36 The Court cited with approval from *NZ Rail*, and we have referred to this case earlier in these submissions.

8.37 In *Genesis* the Court also neatly summarised the positive effects of the wind proposal before it, including the benefits of renewable energy generally. That discussion (at pages 15-18 of the decision) is helpful in the context of the MHP, and includes reference to:

- a. The essential nature of electricity;
- b. The need for a diverse generation base;
- c. The fact that more thermal generation will have adverse effects, including contributing to climate change and depleting fossil fuels;
- d. The fact that New Zealand is pursuing renewable energy options as a matter of national energy policy set in accordance with relevant legislation;

- e. Wind is a source of renewable energy which is best able to be utilised only in certain locations;
- f. The benefits of reducing dependence on the national grid, and in reducing transmission losses;
- g. Reliability;
- h. Development benefits; and
- i. Contribution to the renewable energy target.

8.38 *Unison Networks Limited v Hastings District Council*³⁸ concerned an application for 15 turbines being Stage 1 of a proposed wind farm at the Titiokura Saddle between the Te Waka Range and Maungaharuru in northern Hawkes Bay. The appeals on Stage 1 were based on effects on landscape and visual amenity. In considering section 7 matters, the Court noted that the production of energy from a non-polluting and renewable source must contribute to the quality of the environment in a broad sense under section 7(f). The Court also noted that fossil fuels are a finite resource and the proposal would be likely to slow the rate of use of that resource under section 7(g). The Court noted that the use of renewable energy is a government policy. The Court referred to the *Genesis* decision and then summarised at paragraph 79:

[79] Given those views, can we say that the proposed developments, or either of them, are appropriate in the s 6(b) sense? We have the clear view that the answer is Yes. The generation of a substantial output of electricity from a perpetually renewable source which emits no pollution, particularly in the form of greenhouse gases, is of such national importance and benefit that it clearly outweighs such site-specific adverse effects as there will be.

8.39 Stage 1 of this windfarm is 45 MW, and the Court's comments about national importance are highly relevant in the case of MHP where the proposal is around twice the size of the Unison proposal. We note in particular the reference to section 6(b) and observe that in *Unison* the Court made it clear that the benefits of the use and development of

³⁸ Unreported, Environment Court, W058/2006, 17 July 2006, Thompson J and Commissioners Howie & Edmonds.

renewable energy can be such that they outweigh the requirement to protect outstanding features and landscapes. We would submit that the same logic must also apply to section 6(a) such that renewable energy development can be "appropriate" development even when there are adverse effects on natural character.

8.40 *Outstanding Landscapes Protection Society Incorporated v Hastings District Council*³⁹ was an application by Unison Networks Limited for stage 2 of its proposed wind farm. Stage 2 was for 37 turbines. The Council had granted consent and the Outstanding Landscape Protection Society opposed the application in particular because of Te Waka being regarded as an outstanding natural landscape and/or natural feature.

8.41 The proposal was considered to be significant on a national scale and even more significant on the regional scale as it would contribute 20% of the electricity demand in Hawkes Bay and Gisborne. At paragraph 34 of its decision the Court said:

Achieving a balance between regional electricity consumption and regional generation from renewable resources is a worthy target and one that eases some pressures on the transmission system and the losses that are incurred. It also internalises the environmental effects – the region suffers the effects but gains the benefits.

8.42 In considering section 7(j) and the benefits from the use and development of renewable energy, the Court referred to a statement of agreed issues prepared by the parties which recorded increases in electricity demands, obligations under the Kyoto Protocol and the National Energy Efficiency and Conservation Strategy. The Court went on to conclude at paragraph 102, in evaluating sections 7 factors, that the factors of effects of climate change and the benefits of the use of renewable energy will almost certainly always fall on the side of

³⁹ Unreported, Environment Court, W24/07, 13 April 2007, Thompson J and Commissioners Howie and Edmonds

operating a wind farm, and it is submitted that the same can be said of a hydro generation proposal such as the MHP.

- 8.43 In this case it was considered that the adverse effects on cultural and landscape were too great. The Court said at paragraph 116 *"Important as the issues of climate change and the use of renewable sources of energy unquestionably are, they cannot dominate all other values"*. In assessing section 5, it was found that although the proposal would help enable people and communities to provide for the economic wellbeing and health and safety, it would not provide for their cultural and possibly social wellbeing. Ultimately the Court concluded that it should decline consent. We understand that a revised proposal which presumably addresses the adverse effects referred to above is presently before the Environment Court. This suggests that in that case there existed the opportunity to further avoid or mitigate adverse effects while still achieving the positive benefits of the development.
- 8.44 *Meridian Energy Limited v Wellington City Council*⁴⁰ concerned Meridian's Project West Wind, a wind farm near Makara, west of Wellington. At paragraph 400 of its decision after referring to section 7(i) and (j) the Court said that *"these two last section 7 factors are, in our view, very powerful. They represent some key issues to be weighed against the adverse effects on the local environment"*.
- 8.45 The Court noted at paragraph 456 the need to assess how much of an environmental cost the local environment needed to bear, taking into account the benefits for the wider environment. There were concerns about the location of some of the turbines in relation to nearby houses, however, the Court concluded at paragraph 459, *"In our judgement however, the benefits we gain from the project in terms of the promotion of sustainable management of natural and physical resources in terms of section 5, as informed by section 6 and section 7 factors we have reviewed, outweigh those concerns in respect of the great majority of*

⁴⁰ Unreported, Environment Court, W031/07, 14 May 2007, Kenderine J, Thompson J, Commissioners Howie and McConachy.

turbines". The Court granted consent but imposed conditions requiring some of the turbines to be relocated.

8.46 *Alexandra District Flood Action Society Incorporated v Otago Regional Council*⁴¹ was an appeal against the granting of consents to "renew" the permits for Contact Energy Limited's hydro schemes on the Clutha River system at Lake Hawea, Roxburgh and Clyde. One of the principle concerns was silting and resultant flooding in Alexandra and the Court acknowledged that the dam structures were already in place and therefore the granting of water permits was inevitable although the operating conditions were not (at paragraph 141). The application was decided as the law applied before the Resource Management Act 2003 and the 2004 Act. However the Court still considered that climate change could be considered under section 104(1)(i) (now section 104(1)(c)) (at paragraph 153).

8.47 In considering sustainable management, the Court said at paragraph 142 that "*hydro-electric energy generation is a sustainable process, and thus at first sight promotes the purpose of the Act*". This case was decided under the law prior to the amendment of the RMA to include sections 7(i) and (j).

8.48 Climate change is defined in the RMA as:

climate change means a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods

8.49 Dr Renwick will give evidence on the scientific evidential basis for climate change. This provides an evidential basis which supports the reality of climate change and its effects. This provides an evidential basis which supports the need for positive action through the building of renewable energy developments such as the MHP.

⁴¹ Unreported, Environment Court C102/2005, 20 July 2005, Jackson J, Commissioners Oliver and Grigg.

8.50 As will be discussed in the evidence of Mr Fraser, the generation of electricity from the MHP displaces generation from other carbon emitting sources of energy. Therefore in having regard to the effects of climate change, it is submitted that the granting of consent for the MHP will assist in meeting New Zealand's commitment to reducing greenhouse emissions and thereby reducing the effects of climate change. As discussed above this has been widely accepted in cases dealing with renewable energy.

8.51 It is clear from the decisions discussed above that in assessing and applying the purpose of the Act the Court will consider the relevant section 6 and section 7 factors. Considerable weight will be placed on the use of renewable fuel such as hydro and wind for electricity generation, and the national and regional benefits of a proposal will be weighed against the costs or adverse effects, but with due weight being given to the national and regional interest in projects of this nature proceeding. In the case of the MHP we would add that further weight should be placed on section 7(i) and (j) given the lack of alternative renewable generation options in this part of the country.

Other Section 7 Matters

8.52 The other matters under section 7 are as follows:

- (a) *Kaitiakitanga:*
- (aa) *The ethic of stewardship:*
- (b) *The efficient use and development of natural and physical resources:*
- (ba) *the efficiency of the end use of energy:*
- (c) *The maintenance and enhancement of amenity values:*
- (d) *Intrinsic values of ecosystems:*
- ((f) *Maintenance and enhancement of the quality of the environment:*
- (g) *Any finite characteristics of natural and physical resources:*

- 8.53 In terms of section 7(a), and as discussed above, consultation with Ngati Waewae is ongoing and would continue throughout the life of the project if the necessary approvals are granted.
- 8.54 As is evident from the cases discussed above, renewable energy projects such as the MHP are an efficient use of the natural and physical resources in terms of section 7(b). The MHP allows water to be used for generating electricity whilst still providing the necessary water for recreation and ecosystems. It is a non-consumptive and non-exclusive use and in that regard is inherently efficient. As Mr Watts will explain in his evidence, Meridian will continue to work to ensure that the MHP is optimised so that the very best use possible is made of the water available for generation. That is an example of efficiency. We submit the Panel needs to be careful not to view section 7(b) as requiring some sort of comprehensive comparative analysis of all other potential electricity generation options. While some consideration of relative efficiency is inherent in considerations such as ensuring a balanced generation portfolio, and proximity of new generation to existing transmission infrastructure and demand, care needs to be taken not to allow these considerations to take on a life of their own. Specifically, the evidence will satisfy you that the MHP is not competing with other proposals. It complements existing and likely new generation. Further, you should not speculate about what other proposals might come forward in the future, and what their contribution might be. That would be an error as it presupposes a future "environment" which we have no certainty about. We submit that the correct approach is to consider the efficiency of the MHP on its own merits, and having regard to the existing generation environment. Having said that, Meridian is aware of the possibility of TrustPower's Arnold scheme being consented and constructed. Mr Truesdale's evidence will show that even under the most conservative assumptions (maximum generation from both MHP and Arnold, and low West Coast demand) the MHP will still operate efficiently and effectively to supply electricity to the West Coast and the National Grid.
- 8.55 The evidence of Mr Truesdale refers to the fact that electricity transmission losses increase in proportion to the distance between the point of generation and the point of consumption. The provision of

electricity from the MHP to the West Coast and upper South Island will reduce transmission losses and will therefore enable a more efficient use of energy than if it continues to be transmitted long distances. This same argument was accepted by the Environment Court in the *Genesis* decision as meeting section 7(ba).

- 8.56 In assessing the likely cost of the project Meridian has weighed and considered a number of variables. All indications suggest that the MHP is within the likely cost range for new generation developments which means the MHP is a highly attractive proposal. As Mr Robertson says in his evidence Meridian is a developer with a track record of sensitive and skilful development and world-class asset management and operation. Meridian is not asking "if" the MHP can be built but "how soon" it can be built once consents and approvals are obtained. The MHP is not a fanciful project. Meridian's intention is to build the MHP and begin generating electricity from it as soon as possible. It is therefore efficient to grant the necessary consents to Meridian knowing they will be used to build a hydro power scheme.
- 8.57 Amenity values as discussed in section 7(c) are defined in section 2 RMA as "*those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes*". The MHP will provide for maintenance and enhancement of amenity values through measures such as the newly created lake, the proposed whitebait regime which will avoid adverse effects on whitebaiters, enhanced access to the Gorge, and enhancement of the heritage assets of the area. The existing whitewater amenity of the Gorge will disappear, but this needs to be seen within the wider district context which comprises other, more highly regarded rivers and whitewater recreation opportunities.
- 8.58 It is submitted that the intrinsic values of ecosystems (section 7(d)) may be affected at a very localised level through part of the riverine habitat changing to a lacustrine habitat, and to a smaller extent through changes to the downstream flows. However these effects should not be accorded undue weight in your overall evaluation because as is explained in the

evidence of Meridian's witnesses such as Dr Kilroy and Mr Suren, the effects are localised. The plants and animals likely to be affected are represented elsewhere in the area, and no species currently represented in the Mokihinui will be threatened with local (let alone regional or national) extinction as a result of the MHP.

8.59 As discussed in the *Genesis* decision, the generation of electricity allows New Zealanders to maintain and enhance the quality of their environment (section 7(f)). The localised environmental effects are fully traversed in the evidence, together with the measures to avoid, remedy or mitigate those effects as appropriate.

8.60 In *JF Investments* the Court said at paragraph 27:

If adverse effects on the environment can be justified as providing a net benefit because they are in the national interest, then adverse effects offset by a net conservation benefit added by enhancement, or the remedying of other adverse effects on the relevant environment, landscape or area must logically be justifiable also. They are certainly relevant under both section 5(2)(c) and section 7 of the RMA.

8.61 Accordingly the net benefit produced by the predator control programme is an enhancement to the environment which can be considered under section 7(f).

Section 8

8.62 Section 8 RMA says:

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

8.63 One of the relevant principles of the Treaty of Waitangi is consultation. Meridian has actively consulted with Ngati Waewae. It is submitted that granting consent is consistent with section 8.

Summary on Part II

- 8.64 As we indicated at the outset, there are a number of competing considerations to be weighed in respect of this proposal, but ultimately you need to determine whether sustainable management is better promoted with or without the MHP.
- 8.65 It is our submission that the MHP does achieve the purpose of the RMA, the promotion of sustainable management. Meridian accepts that a project like this has actual and potential adverse effects. By design of the project, and through appropriate conditions these effects are appropriately avoided or mitigated. We submit that when undertaking the balancing exercise under section 5, any residual adverse effects are significantly outweighed by the creation of renewable energy from the MHP. This is not only in line with Government policy concerning renewable energy and climate change, but is supported by the regional and district planning framework, is supported by the decisions of the Environment Court which discuss the important role of renewable energy development, and will provide valuable security of supply to the West Coast and the upper South Island.
- 8.66 As you will hear in the evidence of Meridian's witnesses, Meridian has not proceeded with this proposal lightly. Meridian has identified a need for electricity on the West Coast, and a need for this electricity to be from a renewable source. Meridian has then identified hydro as the only viable renewable option and proceeded to identify the Mokihinui River and the proposed site as the best option. The MHP itself and the proposed flow regime have been designed to avoid and mitigate any potential adverse effects on terrestrial and aquatic ecology, and on recreational values such as the whitebait fishery. There are residual effects on factors such as natural character and the whitewater amenity associated with a free-flowing river in the Gorge. The scale and significance of those effects, when weighed against the benefits of the project, are not sufficient to over-ride the presumption in favour of renewable energy development.

9. SUBMISSIONS AND SECTION 42A REPORT

- 9.1 Excluding late submissions 250 submissions were received by the Regional Council and 166 submissions were received by the Buller District Council. Those submissions include strong support for the project from the people of the West Coast. That support is also reflected in an independent survey of West Coast people commissioned by Meridian. Nick Eldred discusses this in his evidence. We do not propose to traverse the matters raised in each submission. Some key themes can be drawn from the submissions relating to potential adverse effects on heritage values, ecology, whitebait and the location of the MHP. We have touched on these issues in our earlier discussion and Meridian's witnesses will address matters raised by submissions in their evidence. Further discussion of submitters concerns can be addressed in Meridian's right of reply.
- 9.2 Matters raised by the Officers' Report are also covered in the evidence of the relevant witnesses. As a general comment we accept that the Report is comprehensive and thoughtful. The writers do not make a recommendation as to what ultimate decision you should make. It may be that they will be in a position to do so once they have heard all the submissions and evidence. In our submission the current recommendation places insufficient weight on the benefits of the MHP, particularly in light of national, regional and district policy which strongly supports renewable energy development. We also submit the Report overstates some adverse effects such as historic heritage and downstream risk to people and property. You need to form your own view on these matters on the totality of the information you will have at the conclusion of the hearing. We also note that the Report writers have not yet had the benefit of hearing the evidence, and it may be that their opinions and conclusions will change as they have the opportunity to consider this additional material.
- 9.3 The Officers' Report also suggests that it might be appropriate to use bonds to secure compliance with consent conditions. We can signal now that given the nature of Meridian, and the company's track record, Meridian considers the setting of bonds to be unnecessary and

inappropriate. Further the nature of major electricity generation infrastructure is relevant. On the day that construction is finished and the turbines are turned on for the first time, the MHP will only then commence generating electricity, and will continue to do so with very little new impact for many, many years. Meridian has an enormous incentive to comply with the requirements of its consents so that it can first recover the costs of constructing the MHP and second, derive a positive return from its investment. This scenario can be contrasted with an activity like mining where the economic value of the activity ends when the earthworks are completed. In the latter situation, other than reputation, there may be little incentive for a consent holder to continue to meet their consent obligations. In those cases a bond can be valuable "insurance" for a consent authority. That is not the case with the MHP.

- 9.4 As you consider the submissions of other participants in the process, you will be required to determine what weight to put on each submission. That determination is assisted by understanding where the burden of proof lies. The burden of proof and its constituents, the legal burden and the evidentiary burden are sometimes used interchangeably. The legal burden is the statutory or common law prescription of what a party must prove to win their case. The standard of proof is the standard to which the evidentiary burden must be satisfied ie in establishing a fact beyond reasonable doubt (in a criminal context) or on the balance of probabilities (in a civil or resource management context).
- 9.5 In this case Meridian as applicant has a legal burden of proof to make out its case, i.e. Meridian must satisfy you on the balance of probabilities that one of the threshold tests in section 104D is met and must also establish to the same standard that granting consent will meet the purpose of sustainable management⁴². However, there is also a swinging evidential burden of proof in that any party who raises an issue, has an evidential burden to establish that issue or fact. For example, as applicant Meridian must establish that the risk of dam failure is acceptably low. In his evidence Mr Amos describes the Failure Modes

⁴² *Shirley Primary School v Telecom Mobile* [1999] NZRMA 66 at paragraphs 122 and 125.

Assessment, which is a formal process whereby experts work out the possible ways the dam could fail, and then assess the likelihood of that happening. The failure modes all require multiple consecutive failures of both materials and systems and have been assessed as having between a one in one thousand million and one in ten million chance of occurring. Mr Amos compares this against other assessed risks to put the assessed probabilities of occurrence into perspective. The conclusion is that the probability of a dam failure is very very low, and is well within the range of risks that society considers entirely acceptable. Provided you are satisfied with this evidence the burden then swings onto a submitter to put forward evidence to establish that Mr Amos' evidence or conclusions are incorrect.

- 9.6 The Court in *Shirley* held that there was no one standard of proof as such, and that it is a matter of evaluative judgement for the decision maker under section 104. What is clear however, is that parties who raise an issue need to have some evidence of probative value if their submission or opinion is to be given any weight. It is never enough to simply assert a proposition without a sensible evidential foundation.

10. **CONSENT CONDITIONS**

- 10.1 Meridian prepared a set of draft consent conditions and these were provided to the Councils prior to the hearing. The Section 42A Report writers have provided comments on these conditions, and these are contained in Appendix 3 to the Report. Those comments are in the process of being considered, and a revised set of conditions will be tabled through Meridian's planning witness John Kyle. Those revised conditions will incorporate the comments and suggestions of the various experts who are advising Meridian on this project. The consent conditions refer to management plans and draft management plans for various aspects of the MHP are being prepared. These will be produced and discussed in the evidence of the relevant witnesses for Meridian. Several of the management plans proposed by Meridian anticipate adaptive management, particularly in relation to ecological effects and river/coastal sedimentation and erosion issues. These areas are

complex, and Meridian has taken the best possible expert advice on the likely effects of the MHP. That advice includes the need for close monitoring and flexibility in response depending on the precise nature and significance of any effects. We submit this is the most appropriate way to deal with complex effects within dynamic systems.

- 10.2 Adaptive management is defined in the New Zealand Biodiversity Strategy (February 2000) as follows:

An experimental approach to management, or "structured learning by doing". It is based on developing dynamic models that attempt to make predictions or hypothesis about the impacts of alternative management policies. Management learning then proceeds by systematic testing of these models, rather than by random trial and error. Adaptive management is most useful when large complex ecological systems are being managed and management decisions cannot wait for final research results.

- 10.3 The Biodiversity Strategy supports adaptive management as a tool. Objective 9.4 of the Biodiversity Strategy is to ensure that reporting of indigenous biodiversity informs biodiversity management and research as a key part of an adaptive management approach.

- 10.4 This definition was adopted in *Golden Bay Marine Farmers v Tasman District Council*⁴³, a decision dealing with appeals on the aquaculture provisions of the Proposed Tasman Resource Management Plan. In that case the Court accepted the submissions of one of the parties that *"the need for disclosure in a transparent way, of any discoveries about the ecosystem or changing information so that the TDC can ensure steps are taken before significant adverse effects eventuate, is an important benchmark of adaptive management"*.

- 10.5 The evidence of witnesses in the *Golden Bay* case stressed a need for the adaptive management approach to include elements such as baseline surveys, a need for extensive monitoring and guidelines; and

⁴³ Unreported, Environment Court, W19/2003, 27 March 2003, Kenderdine J, Commissioner Rowan and Mills at paragraph 407.

monitoring over time which will allow trigger levels to be set and the management regime refined accordingly (at paragraph 406).

10.6 In *Kuku Mara Partnership v Marlborough District Council*⁴⁴ the adaptive management proposed for the marine farm included elements such as a comprehensive management plan prior to exercising consent detailing how the consent is to be exercised; baseline assessments would be taken once consent is granted; and opportunities for review.

10.7 Adaptive management was also discussed by the Environment Court in *Clifford Bay Marine Farms Ltd v Marlborough District Council*⁴⁵ where the Court made the following comments about what conditions must achieve in order to apply adaptive management:

*[118] The applicant has proposed conditions of consent which involve staged development and monitoring. To this extent they have acknowledged at least the possibility that effects may follow which require avoidance, remedying or mitigation. The case must therefore turn on whether the conditions proposed, in particular the monitoring regime and adaptive management strategy **can first detect and secondly, remedy any effects that might arise before they become irreversible.** (emphasis added).*

10.8 And the Court concluded more specifically that consent could be granted on the following cautious basis:

*[157] The two options open to us are to decline consent, or to grant it in **such a way that if any adverse effects on the use Hectors dolphin make of the habitat arise, they are limited, and measures to reverse them speedily can be implemented.** The probability of undetected adverse effects of significance occurring unrelated to, and unaccompanied by, other existing adverse effects are of sufficiently low probability that they should not lead us to decline the application altogether.*

⁴⁴ Unreported, Environment Court, W025/02, 16 July 2002, Kenderdine J, Commissioners Mills and McConachy at paragraph 21.

⁴⁵ Unreported, Environment Court, C131/03, 22 September 2003, Jackson J, Commissioners Manning and Watson.

*[158] However our concerns are such that we considered whether we should limit the proposal to Stage I, and to a term no longer than enabled the consent authority to ensure the expeditious removal of the farm if adverse effects were detected. In deciding ultimately to grant consent beyond Stage I we place **heavy reliance** on condition 11, the review condition, to limit the expansion, and **cut back the extent of the development** should the research required by the consent suggest that this is necessary.*

- 10.9 In *Oruawharo Marae Trust v Auckland Regional Council*⁴⁶ the Court noted that the ability to review conditions under section 128 RMA is an important aspect of adaptive management (see paragraph 92). Similarly the Court noted that monitoring and review were important aspects to give effect to the precautionary principle (at paragraph 143). It is also important to note that the one of the witnesses in that case reminded the Court of the challenge to differentiate cause and effect in a dynamic system subject to constant change (at paragraph 83).
- 10.10 Summarising the case law discussed above, in any case where an adaptive management approach is to be taken the following are desirable:
- a. The resource consent conditions should specify the basic requirement for monitoring (i.e. how often to survey, the sites to be monitored, methods of recording), enforceable objectives for the management plan, and the adverse effect triggers that will then necessitate adaptive management actions. These should then be followed through into the management plan. This is because it is the resource consent condition itself which is enforceable and must be complied with.
 - b. The purpose of the management plan is to explain the resource consent conditions i.e. how they will be complied with. In order to meet the targets set out in the resource consent conditions the consent holder may need to change the way it acts in order to achieve compliance i.e. they must be capable of adapting their management.

⁴⁶ Unreported, Environment Court, A083/06, 23 June 2006, Newhook J, Commissioners Dunlop and Manning.

- c. An adaptive management regime needs to ensure that the regime can first detect, and second remedy or mitigate any effect that might arise where it is considered essential for sustainable management for this to occur. This will require baseline surveys to begin shortly after consent is granted and this information should be made available to the consent authority that then has the ability to review the conditions.
- d. The fact that monitoring may show a different effect from that predicted is not fatal to an adaptive management approach. The key is to consider what the available suite of adaptations comprises. In a case where no possible adaptation can avoid an effect, the decision-maker needs to be satisfied that the effect is being remedied, mitigated or compensated for on a reasonable basis.

10.11 The consent conditions Meridian will propose together with the suggested management plan regime, satisfies these requirements.

11. CONCLUSION

11.1 In our submission consents should be granted for the MHP because the evidence will satisfy you that:

- a. New Zealand needs more electricity generation. Electricity fuels our economy and is essential to our way of life. As our population and economy grow, we will consume more electricity. Energy conservation alone is not enough.
- b. New generation should be from renewable sources where possible. This is Government policy. It is supported by the RMA and relevant planning documents. It is built upon our understanding of national and global sustainability. Climate change and its economic, social and ecological consequences are a reality, and demand a responsible and considered response. The MHP is one such response.

- c. The RMA contains no preference for one type of renewable generation source over another. In any event, hydro is the only realistic medium-large scale option on the West Coast, and is supported by regional and district policy.
- d. Regional generation is important for efficiency, security of supply, and cost. More generation on the West Coast and the top of the South Island has significant regional and national value.
- e. Given the lack of regional alternatives to hydro, and severe restrictions on the range of rivers available for development on the West Coast, the Mokihinui is a sound option for development.
- f. The Mokihinui River has values as a river, but none that are so overwhelming such that they dictate the project should not proceed. As caselaw and policy make clear, in circumstances such as this, the benefits of renewable electricity generation need to be secured even when some adverse effects cannot be avoided.
- g. The MHP has been designed so that to the greatest extent possible adverse effects are avoided, and where they cannot be avoided they are carefully and extensively mitigated.
- h. Meridian has an exemplary record of environmental performance as it goes about its business of adding value to our society and nation through the provision of clean reliable electricity. Meridian can be relied upon to build a project on this river which the Buller District, West Coast Region, and New Zealand can be proud of.

DATED this 25th day of August 2008



Stephen Christensen/Philippa Jones
Counsel for Meridian Energy Limited