

**IN THE MATTER** of the Resource Management Act 1991

**A N D**

**IN THE MATTER** of submissions and further submissions by **SOLID ENERGY NEW ZEALAND LIMITED** (Submitter No. 68) to the **MINISTER FOR THE ENVIRONMENT'S BOARD OF INQUIRY** on the Proposed National Policy Statement for Freshwater Management.

## **EVIDENCE OF MAREE JOCELYN DRURY**

### **1. INTRODUCTION**

#### ***Qualifications and experience***

- 1.1 My name is Maree Jocelyn Drury. I have over 17 year's professional experience in planning, science and resource management. I am a Senior Resource Management Consultant employed by Golder Associates (NZ) Limited (Golder), an environmental and ground engineering consulting firm.
- 1.2 I hold the qualifications of Bachelor of Science and Masters of Regional and Resource Planning (with distinction) from the University of Otago. I am a full member of the New Zealand Planning Institute and member of the Resource Management Law Association.
- 1.3 I have a broad range of experience. Throughout my professional experience, I have worked for Central, Regional and Local Government and in private consultancy on a wide range of projects and policy development processes in New Zealand and overseas. This has included writing Regional Policy

Statements, Regional Land and Water Plans, and Strategic Plans as well as preparing submissions on Regional and District Plans. I have also applied for resource consents and undertaken assessments of environmental effects on behalf of clients for the taking, use and damming of water, discharges to water and assessing the effects of discharges to water and land.

- 1.4 Such tasks have entailed assessing the implications and interrelationships associated with utilising a range of resources (i.e., land, air, water). These projects have generally involved technical and scientific input, which I have understood and then utilised within the planning framework (i.e., when seeking resource consents or when considering the implications of planning policy) under the Resource Management Act 1991 (RMA). Mining operations, such as Solid Energy New Zealand Limited's (Solid Energy), are an example of such projects. For this reason, I am familiar with the resource implications of mining operations, and how such operations need to be accommodated within the framework established by the RMA and the Proposed National Policy Statement on Freshwater Management.

### ***Scope of evidence***

- 1.5 I have prepared, on behalf of Solid Energy, submissions and further submissions on the Proposed National Policy Statement Freshwater Management. This document will be referred to as 'the Proposed NPS' throughout my evidence.
- 1.6 Solid Energy's submission and further submissions requested a number of changes to the Proposed NPS which sought to make it more understandable and workable. The requested changes aimed to provide equity and clarity for all water resource users within New Zealand. Given the detailed nature of the Solid Energy's submissions and further submissions, this evidence does not repeat all of the matters raised, instead it aims to focus on some key aspects of the Proposed NPS that I consider are unnecessary, confusing, overly complicated, unworkable or inconsistent with the RMA.
- 1.7 While the above approach has been taken, Solid Energy's submissions and further submissions identify a number of specific matters that it would be pertinent for the Board of Inquiry to consider. However, given the approach that has been adopted in relation to evidence, it can be assumed, if a matter is

not commented on specifically or generally within my evidence, then in relation to these matters, Solid Energy is willing to work within the planning framework that will be established by the Proposed NPS if these provisions do come into effect.

1.8 I have read the Proposed NPS Section 32 Evaluation, but I do not intend to discuss this in detail in the body of my evidence. However, I have made reference to the Section 32 Evaluation in my concluding statements.

1.9 As already stated my evidence will focus on the areas of the Proposed NPS which I consider to be unworkable and/or unnecessary, from a resource management and planning process perspective. I also outline the potential implications of the Proposed NPS on Solid Energy's operations. Therefore, my evidence will address:

- (i) The need for clarification and clear direction in the purpose, objectives and terminology used within the Proposed NPS.
- (ii) The planning considerations of what I have termed the main themes running through the Proposed NPS. Several themes (specifically those relating to the establishment of water quality standards and flows and management of groundwater and consumptive use) are also considered and discussed by Dr Ian Boothroyd and Mr Brett Sinclair in their evidence.

1.10 My evidence addresses the following matters:

- Section 2 provides an analysis of the purpose and relationships between the objectives and policies of the Proposed NPS.
- Section 3 addresses the first theme of my submission, namely the use of new or undefined terms within the Proposed NPS.
- Section 4 addresses the second theme of my submission, namely the establishment, use and implementation of water quality standards, environmental levels and flows for all water bodies, rather than the use of effects based assessments. This section of evidence also addresses the introduction of new terminology within the Proposed NPS, namely

the concept of Notable Values, Outstanding and Degraded Freshwater Resources.

- Section 5 addresses the third theme of my submission, namely requirements regarding consumptive and efficient use of water in the Proposed NPS.
- Section 6 addresses the proposal to require consent holders to monitor cumulative and integrated effects.
- Section 7 addresses the proposal to restrict existing consented activities.
- Section 8 addresses the lack of recognition in the Proposed NPS that the mitigation and remediation of effects can play in achieving sustainable management.
- Section 9 provides my assessment of the relationship between the Proposed National Environmental Standard on Ecological Flows and Water Levels (Proposed NES) and the Proposed NPS.
- Section 10 presents my concluding statements.

1.11 I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses (July 2006). This evidence is within my area of expertise, except where I state where I am relying on what I have been told by another person. I have not omitted to consider material facts known to me that might alter or detract from opinions that I express.

## **2. THE PURPOSE AND RELATIONSHIP BETWEEN THE OBJECTIVES AND POLICIES OF THE PROPOSED NPS**

### ***Purpose of the Proposed NPS***

2.1 The Proposed NPS establishes a national planning framework for management of Freshwater Resources. As such, the Proposed NPS places implementation responsibilities on consent authorities and for this reason it is essential that the purpose of the Proposed NPS provides clear direction and guidance. However,

I consider that the purpose of the Proposed NPS, as expressed on Page 2 of the Proposed NPS, is unclear.

- 2.2 In order to address this, the purpose of the Proposed NPS should be re-written as:

*“The purpose of this National Policy Statement is to state inter-related and integrated objectives and policies for the management of Freshwater Resources in order to promote sustainable management.”*

- 2.3 By implication, the fact that a National Policy Statement has been prepared in accordance with sections 45 and 46 of the RMA, illustrates that this is considered a matter of national significance and it has therefore been written to achieve the purpose of the RMA, namely to promote sustainable management. It is for this reason, that I suggest the change to the purpose of the Proposed NPS identified above.

### **Outstanding Freshwater Resources**

- 2.4 It is my opinion that there is a conflicting message contained within the objectives and policies of the Proposed NPS when compared with Part 2 of the RMA in relation to “Outstanding Freshwater Resources”. The nature of the conflict is assessed in the following paragraphs of my evidence.

- 2.5 Objective 1 of the Proposed NPS states:

*“To ensure that Freshwater Resources are managed in a way that enables the people and communities of New Zealand to provide for their social, economic and cultural well being, and their health and safety”.*

- 2.6 However, under Policy 1 of the Proposed NPS, “Outstanding Freshwater Resources” are effectively defined by way of “Notable Values” as follows:

*“Outstanding Freshwater Resources means those Freshwater Resources in a region whose Notable Values and /or Tangata Whenua Values and Interests are such as to require **that priority be given to protection** in order to achieve the purpose of the Act”*

- 2.7 Objective 1 and Policy 1, when read in conjunction, could be interpreted as establishing a protectionist decision making framework with respect to Outstanding Freshwater Resources.
- 2.8 Section 6 RMA provides for: the protection of the outstanding natural features and landscapes from inappropriate subdivision, use and development (6(b)); the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna section (6(c)); the protection of historic heritage (6(f)); and. recognised customary activities (6(g)). However, case law has determined that section 6, including section 6(b), of the RMA informs and gives meaning to the overriding purpose of sustainable management of resources as outlined in section 5 of the RMA [Auckland Volcanic Cones Soc Inc v Transit NZ 31/03/03, AP 123-SW02, 8 NZED 393, and Long Bay- Okura Great Park Society Inc v North Shore CC A 078/2008].
- 2.9 The current definitions of Outstanding Freshwater Resources and Notable Values contained within the Proposed NPS appear to elevate the protection provided by sections 6(b),(c),(f) and (g), including recreational values, to a higher level than provided for by the RMA.
- 2.10 I will illustrate by way of example. If an applicant seeks to divert water from an “Outstanding Freshwater Resource”, regardless of whether that resource was deemed outstanding for reasons of biophysical or socio- cultural “Notable Values”, or whether the diversion will have an adverse effect on the “Notable Value/s” for which it was deemed to be outstanding, priority is given to the protection of the freshwater resource. If, for example, the freshwater resource was deemed outstanding for the purposes of a recreational fishery, and the diversion of water can be shown, through the adoption of mitigation and remediation to not adversely affect the recreational fishery, then the diversion may be allowed when all matters outlined in sections 5(2) and 6 of the RMA are considered. However, the introduction of the statement “*that priority be given to protection*” in Policy 1 of the Proposed NPS implies something in addition to the balancing of sections 5 and 6 of the RMA which has been established through caselaw.
- 2.11 It is my opinion that the objectives, policies and methods to be expressed in statutory planning documents (e.g., regional policy statements and regional

plans) in accordance with Policy 1 of the Proposed NPS, would be best served by expressing a direction that:

- (i) there may be a higher degree of scrutiny (and higher thresholds and standards may need to be applied) when assessing land and water uses which have the potential to adversely effect Outstanding Freshwater Resources, and
- (ii) that the thresholds and standards applied to Outstanding Freshwater Resources will relate to the significance of the natural, physical and socio-cultural matters potentially affected, rather than expressing that priority be given to protection in the definition of Outstanding Freshwater Resources.

2.12 The scientific justification for my opinion on this matter will be discussed in the evidence of Dr Boothroyd.

2.13 Suggested alternative approaches to the identification of Outstanding Freshwater Resources and Notables Values, which will resolve the conflict inherent in the objectives and policies in relation to these matters, are contained in section 4 of my evidence.

### **Objective 3**

2.14 I will now discuss Objective 3 of the Proposed NPS, which states

*“To ensure the progressive enhancement of the overall quality of Freshwater Resources, including actions to ensure appropriate Freshwater Resources can reach or exceed a swimmable standard”.*

2.15 Apart from the issue of what is appropriate with respect to classifying Freshwater Resources (which I cover in Section 3 of my evidence), it is unclear whether Objective 3 applies to improving the water quality of all Freshwater Resources, or whether the intent is for a net gain in water quality nationally.

2.16 This objective does not recognise that the majority of degradation experienced by New Zealand’s Freshwater Resources is a result of diffuse source pollution and therefore in order to enhance the quality of all Freshwater Resources (to achieve a swimmable standard) it will be necessary to require extensive changes to land use throughout the country. Such changes may not be

commensurate with sustainable management, and may not be required for the majority of the values held for any individual freshwater resource.

- 2.17 Given the above, it is my opinion that Objective 3 needs to be changed to clarify whether it applies to the progressive enhancement of all Freshwater Resources, or a national net gain in the quality of Freshwater Resources. It is also my opinion that the reference to meeting a swimmable standard should be deleted and that consent authorities should be allowed to decide, in consultation with their communities, the relevant value(s) for which the overall quality of the freshwater resource is to be enhanced.

#### **Objective 4**

- 2.18 Apart from the use of the word “*inappropriate*” to convey management actions in relation to life supporting capacities and ecological values, which I will cover in section 3 of my evidence, it is my opinion that objective 4 needs to be focused on the adverse effects that can arise from activities, rather than from the activities themselves.

- 2.19 Hence, I recommend that Objective 4 needs to be amended as follows:

*“To ensure the life supporting capacity and ecological values of Freshwater Resources are recognised and protected from the adverse effects of:*

- (a) taking, use, damming and diversion of freshwater; and*
- (b) Land use Development; and*
- (c) Discharge of contaminants.”*

### **3. THE USE OF NEW OR UNDEFINED TERMINOLOGYS WITHIN THE CONTEXT OF THE PROPOSED NPS**

#### ***Introduction***

- 3.1 There are several undefined terms within the Proposed NPS, the use of which will place reliance on subjective value judgements, rather than scientifically based assessment.

#### ***Undefined Terms***

### **“Appropriate Freshwater Resources”**

- 3.2 The term “*Appropriate Freshwater Resources*”, is found in Objective 3 of the Proposed NPS, as follows”.

*“Objective 3: To ensure the progressive enhancement of the overall quality of Freshwater Resources, including actions to ensure appropriate Freshwater Resources can reach or exceed a swimmable standard.”*

- 3.3 The use of the term “appropriate” in the context of defining one freshwater resource over another, lacks specificity, is ambiguous and subject to misinterpretation. To be worthwhile Objective 3 would need to be put within the context of a resource management framework which currently it is not.
- 3.4 The term “appropriate” could be interpreted to mean those Freshwater Resources with “Notable Values” and/or “Outstanding Freshwater Resources” given that the Proposed NPS applies a hierarchy to Freshwater Resources by introducing the concept of outstanding and degraded and Notable Values, or it could also be interpreted to mean anything currently used for swimming.
- 3.5 Instead, regional councils could identify Freshwater Resources with swimmability as one of their Notable Values. In such cases, then Objective 3 could be reworded as follows:

*“To ensure the progressive enhancement of the overall quality of Freshwater Resources, including actions to ensure the protection of the quality of the freshwater resource for the purposes of contact recreation.”*

- 3.6 There may be other Freshwater Resources which are currently degraded but which the community value for contact recreation, in which case, Objective 3 could be expressed as:

*“To ensure the progressive enhancement of the overall quality of Freshwater Resources, including actions to ensure the enhancement of the quality of Freshwater Resources which are valued for contact recreation.”*

### **”Inappropriate”**

3.7 The term “inappropriate” is used in Objective 4, Policy 6 and in the definition of “Degraded Freshwater Resources”.

3.8 In all cases the use of the term lacks specificity and invites value judgements.

3.9 In Objective 4, and in the definition of Degraded Freshwater Resources, the term inappropriate is used to refer to human actions. For example:

*“Objective 4: To ensure the life supporting capacity and ecological values of Freshwater Resources are recognised and protected from inappropriate –*

- (a) taking, use, damming and diversion of water; and*
- (b) Land-use Development; and*
- (c) Discharges of contaminants.”*

3.10 It is my opinion that to avoid potentially litigious arguments about what is inappropriate within the context of the relationship between land development and water resources, and the protection of life supporting capacity and ecological values, the Proposed NPS should stay within the framework established by the RMA. That is, the Proposed NPS should manage effects of activities listed rather than the activities themselves.

3.11 It is the effects of activities that have the potential to disrupt life supporting capacities and ecological values, and if activities are designed to avoid, remedy or mitigate adverse effects, then the focus of the objective should be on the outcomes and impact of a proposed use rather than the use itself.

3.12 Hence, it is my opinion that Objective 4 should be amended as follows:

*“To ensure the life supporting capacity and ecological values of Freshwater Resources are recognised and protected from the adverse effects of –*

- (a) taking, use, damming or diverting of freshwater; and*
- (b) Land use Development; and*
- (c) discharges of contaminants.”*

3.13 The term “inappropriate” is also utilised in Policy 6 which states:

*“Without limiting Policies 1 to 3, this National Policy Statement will be achieved also through the inclusion, **unless inappropriate**, of*

*conditions on any relevant resource consents granted and recommendations on designations confirmed in respect of the following: (a) ..., (b) ..., (c) ..., (d) ..., (e) ... .”*

3.14 In Policy 6, the term “unless inappropriate” seems to imply a judgement can be made (by a consent officer presumably) with respect to whether conditions are placed on resource consents. This approach is potentially outside of the framework that normally guides decisions on resource consent conditions (i.e., the objectives and policies of the Proposed NPS and relevant regional or district plans and section 108 of the RMA).

3.15 Policy 6 would be clearer if it used the wording contained within section 108 of the RMA. Taking this approach, Policy 6 could be expressed as:

*“Without limiting Policies 1 to 3, this National Policy Statement will be achieved also through the inclusion, of conditions that the consent authority considers appropriate on any relevant resource consents granted and recommendations on designations confirmed in respect of the following: (a) ..., (b) ..., (c) ..., (d) ..., (e) ... .”*

3.16 In accepting this re-wording of Policy 6, it could be argued there is no need for Policy 6 as it only reiterates what consent authorities can already do under sections 108(1) or 108(2) of the RMA. On this basis I would recommend that Policy 6 be deleted.-

### **“excessive contamination”**

3.17 “Excessive contamination” is a subjective term when it is used outside of a framework of specific standards and values which require protection. The effects of contamination should be assessed within the context of the specific receiving environment, its values and its ecological resilience.

3.18 The term excessive contamination is used within Objective 7 which states:

*“To ensure that allocated fresh water is used efficiently particularly in terms of the following:*

- (a) avoiding wastage:*
- (b) avoiding excessive contamination:*
- (c) facilitating opportunities to increase benefits from the use of fresh water.”*

- 3.19 It is my opinion that objective 7 should be made more specific by replacing part (b) with the following:

*“(b) avoiding adverse instream effects.”*

as the reference to ‘excessive contamination’ is very specific and does not provide or include other effects that might arise due to the discharge or take of water.

***“swimmable”, “swimmable standard” and “swimmability”***

- 3.20 The term “swimmable” is used in the preamble to the Proposed NPS, the term “swimmable standard” is used in Objective 3 and the term “swimmability” in Policy 4.
- 3.21 In Objective 3, the term “swimmable standard” is used to define a level of water quality, and in Policy 4 “swimmability” is presented as a value to the community, while contact recreation and swimming are listed in the Notable Values definition.
- 3.22 It is my opinion that the terms “swimmable”, “swimmable standard” and “swimmability” should be deleted from the Proposed NPS as they do not add anything to the policy framework that cannot be achieved by referring to the Class CR of Schedule 3 of the RMA, and associated guidance documents that have been written on this matter by the Ministry for the Environment. Schedule 3 has already been tested through various policy and plan development processes and therefore provides a basis for future effects assessments that the terms swimmable, swimmable standard, and swimmability do not.
- 3.23 It is also my opinion that the term contact recreation should be used, where relevant, within the Proposed NPS, rather than “swimmable”, “swimmable standard” or “swimmability”. The use of this term will make it clear that Objective 3, Policy 4 and the relevant parts of the definition of Notable Values, refer to surface water and not groundwater. The current wording of Objective 3, infers that groundwater is also required to meet a swimmable standard. This is not logical. In addition, it does not recognise that significant natural variations in water quality arise in parts of New Zealand due to the natural underlying geological factors including chemistry and temperature (e.g., geothermal waters) and that this natural perturbation may make it impossible to

meet a swimmable standard, that is, if people were able to access this resource to swim.

### **“industry good practice”**

3.24 The term “industry good practice” is used in:

- Policy 2 when referring to regional plans including rules for the efficient consumptive use of freshwater, and when including conditions on discharge permits.
- Policy 3 with respect to rules on land use and subdivision.
- Policy 5 with respect to planning and land use development.
- Policy 6 with respect to conditions on resource consents.

3.25 Although the principle of requiring industry good practice is supported, the manner in which this would be managed, in terms of who would be responsible for ascertaining what is current industry good practice, and how plans and consent conditions would be reviewed to accommodate changes to industry good practice, is unclear. Also not defined is: the relationship between industry good practice and industry best practice; what happens if an industry has not itemised what is good practice?; the robustness, review, and scientific justification as to what is within industry good practice or best practice guidelines?; and, how these may be applied under differing site conditions?

3.26 As a consequence of the above questions, it is my opinion that the term “industry good practice” and its associated application, need to be more clearly defined within the Proposed NPS.

## **4. THE ESTABLISHMENT, USE AND IMPLEMENTATION OF WATER QUALITY STANDARDS, ENVIRONMENTAL LEVELS AND FLOWS FOR ALL WATER BODIES AND THE INTRODUCTION OF THE CONCEPT OF NOTABLE VALUES, OUTSTANDING AND DEGRADED FRESHWATER RESOURCES**

### ***Introduction***

- 4.1 Policies 1 and 2 of the Proposed NPS require regional councils to amend regional policy statements and regional plans in order to set Freshwater Quality Standards and Environmental Levels and Flows for all Freshwater Resources. They are also required to identify Notable Values (including potential values) of Outstanding and Degraded Freshwater Resources. My concerns associated with these concepts and their use are detailed below.

***Water Quality Standards, Environmental Levels and Flows***

- 4.2 In practice, the region wide establishment of Freshwater Quality Standards, Environmental Flows and Levels, may, without extensive time and resources, result in categories which are very broad, based on insufficient data, (or take a long time to collect sufficient data, especially with respect to environmental levels and flows in surface and groundwater), are inherently conservative and fail to recognise local variation, to the extent they are of little resource management value.
- 4.3 Applying a standards framework overlooks the ability to protect the values of the water resources through a mixture of design, remediation and mitigation mechanisms. It utilises a very blunt instrument to address a complex and often site-specific issue. As a consequence the “bluntness” of this policy mechanism will potentially make consenting some of Solid Energy’s (and other parties) activities more difficult and time consuming due to the time spent supporting or disputing the relevance of a standard for any given site, rather than focusing on the findings of an effects assessment.
- 4.4 Issues associated with developing standards, as well as other mechanisms which have been successfully employed to protect the biophysical and socio-cultural values of Freshwater Resources, are outlined in Solid Energy’s submission and are discussed in the evidence of Dr Boothroyd.
- 4.5 Establishing Freshwater Quality Standards, Environmental Flows and Levels for groundwater can be highly uncertain. The quality of groundwater most often reflects the chemistry of the surrounding geology, as well as any anthropogenic activity. These complexities and hence difficulties in applying Policy 1 and 2 of the Proposed NPS to groundwater are discussed in the evidence of Mr Sinclair.
- 4.6 The Proposed NPS refers to the establishment of Environmental Flows as opposed to Ecological Flows. As noted by the Ministry for the Environment in

the Proposed NES, and in Solid Energy's submission on this matter, the establishment of environmental flows may be of little use in many streams and rivers for which there is inadequate flow data. For this reason, it is my opinion that the Proposed NPS should make their establishment optional and also allow for the use of other mitigation and remediation methods to be implemented in order to protect Notable Values.

4.7 The statements below from the Proposed NES illustrate this point:

- Section 2.4 of the Proposed NES (MfE, 2008) states: *“There is little to gain from setting a complex environmental flow and water level in a river system with little or no flow- or water use monitoring. In systems where there is a possibility of storage and likely capacity to take water at high river flows, or there is potential for one off – or on-stream storage, a more complex regime is warranted”.*
- Section 2.6 of the Proposed NES (MfE, 2008) states: *“Councils have noted the difficulty of determining ecological and environmental flows where there are minimal data (on water flows and ecological values) especially in areas with many small streams”.*

4.8 The setting of an environmental flow and water level may be reliant on the estimation of standard measures such as the Mean Annual Low Flow (MALF) in streams and rivers, water levels in lakes and wetlands and recharge to groundwater aquifers. The accurate estimation of these variables is difficult and relies on the interpretation of flow, water level and climate data where available. In situations where available data is limited, the estimation of these measures for flow and water level can become very complex.

4.9 In situations where there is no or limited data, current users and applicants may be required to wait while the data is collected, or collect data themselves to justify a proposed environmental flow and water level. New Zealand has a highly variable climate and geology which results in significant fluctuations in flows, water levels and recharge rates. In order to accurately account for such fluctuations data may need to be collected for many months or years, which could result in delays and additional costs for water users. Solid Energy is often working within waterways where there are no other nearby water users, where water is a plentiful resources and where the ecology and hydrology has

been modified due to historic mining or changes to the surrounding land use (particularly pastoral land use). Given the nature of these activities, a regional quality standard or flow limit is unlikely to be needed or to assist management of such resources as existing freshwater quality may be significantly lower than desired standards and therefore quality standards may reflect unrealistic outcomes for any given water body and may restrict opportunities to enhance ecological values elsewhere. In such situations the objectives of the Proposed NPS are more likely to be achieved through remediation projects which enhance the current values present in the area.

4.10 For the above reasons, it is my opinion that Policy 1(a) and (c) should be amended as set out in the following commentary:

- State in the Proposed NPS that changes to regional policy statements in accordance with Policy 1(a) include that priority for establishing Freshwater Quality Standards, Environmental Flows and Water Levels shall be given to outstanding and/or high use Freshwater Resources, where conflicts in use are known to occur.
- The setting, in regional plans, of Freshwater Quality Standards, Environmental Flows and Water Levels must be within the context of the relative stream type (i.e., lowland stream, soft-bottom stream etc.), stream classification, natural variation in Freshwater Resource quality and quantity (especially in groundwater quality) and surrounding land use.
- Recognise that it is not always necessary to establish Environmental Flows and Water Levels. Circumstances when other low flow limits may be practical, while serving to protect in stream values include:
  - Short-term water abstractions;
  - Where design and mitigation can be employed to protect in stream values;
  - Where flow data is not available and site specific investigations have shown that in stream values can be protected; and
  - Where the stream has low value and it is agreed that other forms of mitigation (i.e., enhancement of a separate catchment, environmental bonds etc.) are appropriate.

- If Freshwater Quality Standards, Environmental Flows and Levels are to be established regionally then water resources should be classified according to both their physical characteristics and their relative significance. For example, use the results of the Nationally Significant Waterways Programme to ascertain where flow limits and quality standards may be justified.
- Amend the definition for Environmental Flows and Water Levels to read as follows:

“Environmental Flows and Water Levels” means a quantity of water (expressed in a regional rule) to be achieved in a Freshwater Resource, to prevent the over allocation of water for Consumptive Use, which is necessary for the purposes of protecting, maintaining, and enhancing or restoring Notable Values of the relevant Freshwater Resource.”

- Amend the definition of Freshwater Quality Standards to read as follows:

“Freshwater Quality Standard” means a quality of water (expressed in a regional rule) to be achieved in a Freshwater Resource, which reflects the ecological, human use and surrounding land use characteristics of that Freshwater Resource and will prevent further degradation of water quality and maintain the life supporting capacity of the Freshwater Resource

### **The concept of Notable Values, Outstanding and Degraded Freshwater Resources**

4.11 Policy 1 (b) introduces the concept of Notable Values and the identification and categorisation of Freshwater Resources as outstanding or degraded. This concept is then carried into Policy 2 and 4 of the Proposed NPS. Some of the issues associated with the concept of Outstanding Freshwater Resources have already been discussed in section 2 of my evidence. In this section I will focus on issues I consider will hinder the workability of Policy 1, 2 and 4 as a consequence of the introduction of the Notable Values concept, and

categorisation of Freshwater Resources as currently defined and applied in the Proposed NPS.

- 4.12 The definitions of Notable Values, Outstanding and Degraded Freshwater Resources are shown in Appendix 1 of my evidence.
- 4.13 The means by which Notable Values (including potential values), outstanding and degraded Freshwater Resources are identified will need to be scientifically robust and defensible, if the desired outcome is the classification of waterways for the purposes of management. It appears this classification will then be used through the planning and consenting frameworks to assess the impacts of use of these Freshwater Resources with respect to the identified Notable Values.
- 4.14 However, it is my opinion that the proposed identification of Notable Values (as currently defined) is flawed. This is because, under the definition of Notable Values, a freshwater resource can have Notable Values for any one of three reasons, (a) scientific, ecological and biodiversity values, (b) cultural values (c) recreational (including contact recreational; e.g., swimming) values. These values are not always inclusive of each other.
- 4.15 To illustrate, if a waterway is “notable” for only one of the possible three categories, and that Notable Value is not necessarily commensurate with sustaining another Notable Value, then would the priority for protection (outstanding freshwater resource) of that value be justified?
- 4.16 For example, if a freshwater resource was classified as outstanding due to its cultural values (eel fishery for example) and a discharge was shown to not affect the cultural values, but to potentially have an adverse effect on recreational values, would the application still be processed as if it were for an outstanding freshwater resource, and would management thresholds applicable to an outstanding freshwater resource still apply?.
- 4.17 In the definition of Outstanding Freshwater Resources, the phrasing “*Notable Values and/or Tangata Whenua Values and Interests are such...*” does not provide an intensity or scale to the Notable Value, and hence this becomes a highly subjective assessment of values which would be very difficult to justify through the consent or court process.

- 4.18 Again, in the definition of Degraded Freshwater Resources the phrasing “*Notable Values have been so degraded...*” does not provide intensity or scale to the Notable Value, and hence this becomes a highly subjective assessment of values. It is my opinion that the level of degradation would best be assessed in terms of the life supporting capacity of the freshwater resource, relative to the surrounding land use, and the values of the catchment as a whole.
- 4.19 The requirement to give priority to the enhancement and restoration of a degraded stream for example, although a worthy purpose, may be ineffective if that degradation is due to diffuse source pollution attributable to the surrounding land use or the intensive urbanisation of the catchment, unless there are substantial changes made to the way in which activities are undertaken on the land. For example, when considering degraded lowland streams (urban or rural) there may need to be some degree of scale assigned to the level of degradation in order to ascertain those which have the potential to have the habitat, water quality and biodiversity improved, and those streams which, without significant changes to established land use or upgrades to established infrastructure, enhancement and restoration will be ineffective. In such cases other mechanisms such as the use of biodiversity offsets may contribute net gains to biodiversity and achieve the purpose of the RMA while allowing for the social and economic benefits of the established resource use.
- 4.20 Hence, in my opinion, the identification of Notable Values, Outstanding and Degraded Freshwater Resources should either: be deleted, in favour of relying on significance assessments, as significance has been tested in case law and are understood [Minister of Conservation v Western Bay of Plenty DC A071/01 NZED 732 and Mighty River Power Ltd v Waikato RC A146/01, 7 NZED 117].
- 4.21 Alternatively, if the identification of Notable Values, Outstanding and Degraded Freshwater Resources is retained, then it is my opinion that the following amendments need to be made:
- When identifying Notable Values:
    - i) Resource Users must be thoroughly consulted;
    - ii) Baseline assessments must be scientifically robust and publicly available;

- iii) Trigger levels should be set which define and clarify the scientific, ecological and biodiversity values relative to the surrounding land use, life supporting capacity, and rarity;
  - iv) Cultural values should be defined relative to other sites and should reflect cultural importance;
  - v) Recreational values should be considered relative to scarcity and use; and
  - vi) Consider separating the biophysical (scientific, ecological and biodiversity values) from the socio cultural values (cultural recreational values) when considering Notable Values within a freshwater resource. This will mean the effect on any one of the Notable Values can be addressed (through consent conditions, remediation or mitigation for example) without requiring a standard or performance or limits commensurate with giving priority to protection of those Notable Values not affected.
- When identifying Outstanding Freshwater Resources:
    - i) Apply baseline assessments and trigger values; and
    - ii) Allow for use of an Outstanding Freshwater Resource when the values deemed “outstanding” are not adversely affected or the effects are minor.
  - Amend definition of Outstanding Freshwater Resources to reflect that a quantifiable and justifiable scientific process will be applied to the identification and measurement of the scientific, ecological, biodiversity, cultural, recreational values, and Tangata Whenua values and interests present within a Freshwater Resource which combine to make that Freshwater Resource outstanding.
  - When identifying Degraded Freshwater Resources:
    - (i) Allow for use of the resource while maintaining its life supporting capacity; and
    - (ii) The level of enhancement and restoration undertaken should be commensurate with the future likely, values of the resource given the land use context in which it is located.
  - Amend the definition of degraded Freshwater Resources to include a scale to the level of degradation which the Proposed NPS asserts

requires enhancement and restoration to achieve the purpose of the RMA. This may best be done by utilisation of life supporting capacity measures and relative to the surrounding land use, and the values of the catchment as a whole.

## **5. CONSUMPTIVE AND EFFICIENT USE OF WATER**

- 5.1 Policy 2(c)(i) establishes processes whereby water permits for consumptive use are to include conditions for the efficient consumptive use of freshwater including providing for industry good practice and technology to achieve efficient use.
- 5.2 Solid Energy takes groundwater for a variety of purposes, including the uncontrolled abstraction of groundwater due to changes to the hydrological regime as a consequence of mining into and beneath coal seams (i.e., mine dewatering).
- 5.3 Solid Energy takes groundwater by pumping water out of a mine site (mine dewatering). The amount of the take, which is currently specified in consents as a maximum volume and instantaneous take, or a limit and pump rate, is generally limited by the necessity to ensure water levels within the mine are kept under control for safety and economic reasons. The groundwater takes, which constitute one component of the inflows to an opencast mine and generally make up the entire inflow to an underground mine, are by definition consumptive takes. Defining efficiency with respect to a groundwater take is problematic. In effect, groundwater flowing into a mine must be pumped out irrespective of the actual flow rate. This requirement is not generally subject to change. Dewatering of areas around opencast pits in order to ensure pit wall stability is generally undertaken to affect the smallest area possible in order to minimise costs. Fundamentally, mining operations focus on efficiency for economic reasons, which includes minimising the volumes of water required to be abstracted and treated at a mine site. The technical aspects of mine dewatering and the efficient use of groundwater will be addressed in the evidence of Mr Sinclair.
- 5.4 For these reasons maintaining the effects-based management regime of the RMA where the effects are assessed on a site-specific basis, and are managed

using industry good practice, is a far more specific and potentially sustainable means of managing groundwater impacted by mining than meeting a limit and efficiency regime imposed at a regional level.

5.5 It needs to be acknowledged in the Proposed NPS that groundwater takes associated with mining operations are unusual and do not typically affect other potential water users. In addition, the takes are necessary to ensure that mining operations can continue safely and economically. Hence, it is my opinion that:

- Policy 2(c)(i) should be amended to exclude the requirement for the efficient consumptive use of freshwater when the water take consists of pumping groundwater out of an opencast or underground mine for the purpose of mine dewatering. The site-specific resource consent process, for managing the effects of groundwater takes due to mining, should be maintained.

5.6 Policy 2 (c)(ii) states that water permits for the consumptive use of freshwater may include conditions for, the return of freshwater to Freshwater Resources, to advance efficient use.

5.7 However, where freshwater is returned to a different water body from which it was taken, (e.g., groundwater to surface water or surface water to a different tributary due to stream diversions) the surface or groundwater taken may be of a lower water quality standard than the receiving water body or have natural contaminants such as high iron, boron, manganese or calcium (e.g., from limestone). Under such circumstances a high level of treatment may be required to remove the contaminants, in order to meet water quality standards in the receiving water body.

5.8 If the actual or potential effects of returning freshwater to a freshwater resource with a different water quality standard have been assessed and found to be minor then meeting specific water quality standards may be unnecessary from an effects-based stand point.

5.9 Given the above matters, it is my opinion that Policy 2(c)(i) and (ii) need to be amended. The nature of the proposed amendments is identified below.

5.10 Amend Policy 2(c)(i) as follows:

*“Require that all water permits for the Consumptive Use of fresh water granted after the date of commencement of this NPS (other than the abstraction of water inflows to a mine for the purpose of mine dewatering), include conditions for the efficient Consumptive Use of fresh water, including as a minimum, providing for the use of industry good practice and technology to achieve efficient use.”*

5.11 Also, in relation to Policy 2(c)(i):

- Maintain consenting and AEE processes to estimate the appropriate limits on the amount of groundwater that may be abstracted, and to understand the groundwater hydrology relative to the mining site and scale of the activity.
- Ensure consultation with resource users on proposed Freshwater Quality Standards and Environmental Flows and Levels.

5.12 In relation to Policy 2(c)(ii):

- Recognise that the return of freshwater to Freshwater Resources while meeting Freshwater Quality Standards and Environmental Levels and Flows may not be feasible or possible in situations when natural perturbations, contaminants or surrounding land use means the receiving water body’s quality is higher than the abstracted water quality.

5.13 Amend Policy 2(c)(ii) as follows:

*“Require that all water permits for the Consumptive Use of fresh water granted after the date of commencement of this NPS (except in those cases where the receiving Freshwater Resources water quality is higher than the abstracted Freshwater Resources water quality), include conditions for, where appropriate, the return of freshwater to Freshwater Resources, in order to achieve the requirements of paragraph (a) of this Policy.”*

## **6. CONDITIONS AND MONITORING REQUIREMENTS FOR SUSTAINABLE MANAGEMENT, INTEGRATED MANAGEMENT, CUMULATIVE AND INTEGRATED EFFECTS**

- 6.1 Policies 2(c)(iii)(b) and (c) require, or appear to require, the monitoring of sustainable and integrated management at the individual (industry site) and cumulatively amongst many Freshwater Resource users. I am unsure how these policies will be achieved. I do not consider that it is an individual consent holders responsibility to monitor and report on cumulative sustainable and integrated management practice that may involve the monitoring of a whole catchment or other areas outside of their operations and hence activities beyond their control.
- 6.2 A consent holder has no control over the demands and use of freshwater other than through their own operations (and submission to policy amendments). Hence it is considered that a consent holder could not comply with a resource consent condition that includes a requirement to sustainably manage cumulative demands on freshwater.
- 6.3 Resource consent conditions established under section 108(1) of the RMA must pass the “fair and reasonable test” and it is my opinion that given the size of some catchments, and the number of discharges into the catchment, it may not be fair to require individual consent holders to monitor the sustainable or integrated management of the cumulative effects of all discharges in the catchment.
- 6.4 In my opinion, the regional council would be the only body able to do this through their decisions on the discharge permits they grant within a catchment, and perhaps through the utilisation of economic instruments.
- 6.5 For the above reasons, it is my opinion that Policy 2(c)(iii)(b) and (c), with respect to conditions for the cumulative sustainable management of demands on freshwater and integrated management of effects, should be removed. Proposed changes, to a number of the Proposed NPS’s policies, which reflect this amendment are contained in the following paragraphs of my evidence
- 6.6 In relation to Policy 2(c)(iii)(b):

- Recognise that in complying with consent conditions, Solid Energy is only able to influence the sustainable management of its own demands on freshwater, where it is in control of the discharge.

6.7 In relation to Policy 2(c)(iii)(c):

- Recognise, in relation to consent conditions, that although Solid Energy may implement land use controls to reduce overland flow and control site practices to prevent the contamination of water bodies, complete integrated management of the effects of land use development can only be achieved on a catchment wide scale.
- Amend to direct regional councils that consent conditions are only able to cover activities over which the consent holder has influence. Hence, consent holders can only implement land use controls to reduce overland flow and control site practices to prevent the contamination of water bodies within their operational area. This requires recognition that complete integrated management of the effects of land use development can only be achieved on a catchment wide scale.

6.8 In relation to Policy 2(c)(iv):

- Monitoring and reporting rules in regional plans should only require consent holders to monitor and report on their own operations.
- Amend Policy 2 (c) (iv) to direct regional councils that conditions in resource consents on the monitoring and reporting on matters relating to paragraph (b) of Policy 3 should only require consent holders to monitor and report on their own operations.

6.9 In addition, Policy 6 also establishes conditions and reporting requirements, but is unclear and ambiguous, and requires clarification of the following matters:

- (i) That Policy 6, in referring to “*conditions on any relevant resource consents granted and recommendations on designations confirmed*” applies to resource consents granted after the Proposed NPS comes into effect, and not currently held consents.
- (ii) That Policy 6(c) and (d), in referring to the monitoring of sustainable management (individual and cumulative) and integrated management

respectively, require that resource consent holders are required to monitor the specific effects of their activity on Freshwater Resources only.

6.10 Therefore, in relation to Policy 6:

- Amend to clarify that it applies to current resource consents granted and designations confirmed after the date of the commencement of the Proposed NPS.

- Rewrite Policy 6 as follows:

*“Without limiting Policies 1 to 3, this National Policy Statement will be achieved also through the inclusion, ~~unless inappropriate~~, of conditions on any relevant resource consents granted and recommendations on designations confirmed after the date of the commencement of this National Policy Statement . in respect of the following: (a) ..., (b) ..., (c) ..., (d) ..., (e) ... .”*

- Amend Policy (6)(c) to direct regional councils and territorial authorities that consent and requiring authorities can only influence the sustainable management of their own demands on freshwater, and in circumstances where they are able to control the discharge or take.
- Amend Policy (6)(d) to direct regional councils and territorial local authorities that consent and designation holders can only implement integrated management of the effects of land use, and control site practices to prevent the contamination of water bodies, within their operational area.
- Amend Policy 6(e) to direct territorial local authorities that conditions in resource consents on the monitoring and reporting on matters relating to paragraphs (a) to (d) of Policy 6, should only require consent holders to monitor and report on their own operations.

## **7. PROPOSAL TO RESTRICT EXISTING CONSENTED ACTIVITIES**

- 7.1 Policy 1(g) appears to extend the powers of regional councils to halt or reduce consumptive uses, issue flow shortage directives and require flow sharing, for the purposes of sustaining Notable Values and non consumptive Tangata Whenua Values and Interests, in times of low flow.
- 7.2 This policy appears to place greater value on all Notable Values (which includes recreational use) and non-consumptive Tangata Whenua Values and Interests above any consumptive use, regardless of whether the short term effect could be mitigated, whether the scientific, ecological and biodiversity values present have resilience to the particular flow or drought condition experienced, and what the local community may value most highly at the time of the water shortage.
- 7.3 As there are already provisions in the RMA to restrict takes during low flow, under section 329, it is unclear whether Policy 1(g) purports to extend these powers and therefore is even necessary.
- 7.4 For this reason, it is my opinion that Policy 1(g) needs to be:
- Amended to direct regional councils and territorial authorities that consumptive uses can be maintained during times of low flow, when it can be shown that in stream values can still be sustained and the effects on non consumptive uses are no more than minor.

## **8. LACK OF RECOGNITION IN THE PROPOSED NPS TO THE BENEFITS OF MITIGATION AND REMEDIATION IN PROMOTING SUSTAINABLE MANAGEMENT**

- 8.1 By choosing to follow a path of establishing freshwater quality standards and environmental limits and flows, rather than relying on site specific effects assessments, the NPS is ignoring the very real and worthwhile functions of mitigation and remediation, as well as the benefits of utilising other tools such as biodiversity offsets to promote sustainable management.

## **9. RELATIONSHIP BETWEEN THE PROPOSED NATIONAL ENVIRONMENTAL STANDARD ON ECOLOGICAL FLOWS AND FRESHWATER MANAGEMENT UNDER THE PROPOSED NPS**

9.1 There are several areas of inconsistency and conflict in the overlap between the Proposed NES and the Proposed NPS. They are:

- Where dams are constructed on surface water bodies, and there is the ability to mitigate during periods of low flow, it is unclear how Policy 1(g), which restricts existing takes to sustain Notable Values, will be applied.
- Solid Energy submitted on the Proposed NES that there should be no flow limits or levels set on passive groundwater abstractions, and no environmental flow limits established under the Proposed NPS. The term passive groundwater abstraction referred to the abstraction of groundwater flowing into an opencast or underground mine for the purposes of mine dewatering. Rather consent authorities should rely on the information provided in the consent application documentation, including the Assessment of Effects on the Environment (AEE), in relation to the best means of avoiding, remedying or mitigation any adverse effects associated with mine dewatering.
- The application of water quality standards and environmental flows in the Proposed NPS for wetlands, and their relationship to the Proposed NES requirement that there shall be no change in water levels in wetlands, are areas of potential conflict.
- Expanding on my third point above, namely the application and relationship between ecological flows as set in the Proposed NES and environmental flows under the Proposed NPS. In the Proposed NPS the introduction of the socio- cultural dimensions in an environmental flow calculation allows for changes to the ecological flow in relation to identified Notable Values. In my opinion the ecological flow needs to be maintained as it has been set to reflect the ecological requirements, with no consideration to social and cultural matters. This matter needs to be resolved in the Proposed NPS.

- It is not clear to me what the planning process will be when considering the renewal of minimum flows and limits set through the consent process, in relation to ecological flows as proposed in the Proposed NES and environmental flows in the Proposed NPS, for both outstanding and degraded water bodies. In my opinion, where a minimum flow has been set through the consenting process it has been assessed in an AEE, and all matters outlined in Schedule 4 of the RMA have been considered. The consent was then granted in accordance with section 5(2) of the RMA, and hence the social and cultural aspects of the activity on those matters have been considered. For this reason, in my opinion, the minimum flow ascertained through the consent process should remain in force.

9.2 The issues raised above, in part, reflect confusion as to whether there is a hierarchy between ecological and minimum flows set through consent limits, and how they will be assessed when consents are renewed, Proposed NES ecological limits, and Proposed NPS's environmental flows. This matter needs to be resolved in the Proposed NPS.

## 10. CONCLUSION

10.1 In my evidence above I have:

- Suggested terms that should be deleted.
- Outlined areas of conflict and confusion within the Proposed NPS and between the Proposed NPS and Proposed NES.
- Suggested changes to the wording of policies to make them easier to understand, implement and in order to be able to measure their effectiveness.
- Outlined potential difficulties in applying water quality standards and environmental flows across a region to all water bodies.
- Queried the ability to require the efficient use of water in all circumstances.

- Also queried the requirement for consent holders to monitor cumulative effects as well as whether, integrated and sustainable management is being achieved.

10.2 All of the above opinions have been expressed in order to ensure clarity and workability to the Proposed NPS is achieved. This in turn will assist in meeting the purpose of the Proposed NPS, namely to promote sustainable management of New Zealand's Freshwater Resources.

10.3 However, I emphasise my opinion that the objectives of the Proposed NPS could be achieved by utilising current planning processes. In support of my opinion several of the options considered in the Section 32 Evaluation of the Proposed NPS, namely:

Enhancement of the status quo

Ministerial call in for major water projects

Best practice guidance

are able to, collectively or individually, achieve the objectives of the NPS. MfE could involve themselves more actively in the review of Regional Policy Statements, Regional and District Plans, and advocate through that review mechanism:

(i) MfE's analysis of the state of New Zealand's Freshwater Resources

(ii) the options currently available to councils in the RMA which will assist in improving the quality of New Zealand Freshwater Resources.

It would be appropriate for MfE to provide or update best practice guidance documents on freshwater management mechanisms under the RMA in time for plan review processes.

**MAREE DRURY**

**3 JUNE 2009**