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Freshwater submissions  
Ministry for the Environment  
P O Box 10362  
Wellington 6143

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Dear Sir / Madam

**RE: Action for healthy waterways**

The Independent Electricity Generators Association (IEGA) welcomes the opportunity to make submissions on the government's action plan for healthy freshwater waterways.

The IEGA comprises approximately 40 members who are either directly or indirectly associated with predominately small scale power schemes throughout New Zealand for the purpose of commercial electricity production.<sup>1</sup> IEGA members are small, entrepreneurial businesses, essentially the SME's of the electricity generation sector. Numerous of members' hydro generating plant have been in place for significant periods of time in remote locations with minimal impact on the local environment.

IEGA members are also submitting in their own right and the IEGA support these submissions. We also support the submission by the NZ Wind Energy Association (NZWEA).

**All electricity is the same and is an essential service**

The IEGA acknowledges the concept of Te Mana o te Wai. This refers to the essential value of water and the importance of first sustaining its integrity and health before providing for essential human health needs, such as drinking water.

In the context of today's society, how we live and our socio-economic well-being we suggest electricity is an essential service. We suggest the Government also believes this. A recent joint press release by Hon Dr Megan Woods, Minister of Energy & Resources, and the Fletcher Tabuteau, Under Secretary for Regional Economic Development, confirms this:

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<sup>1</sup> The Committee has signed off this submission on behalf of members

*“New Zealand First has long held a strong belief that electricity, an essential service, must be delivered to all New Zealanders at the most reasonable price that is consistent with the maintenance of a viable industry.”<sup>2</sup>*

Explicitly, electricity is required to ensure New Zealanders have access to essential human health needs such as drinking water. Electricity is used to pump or deliver drinking water to the majority of New Zealand’s population. New Zealanders would not have access to ‘an essential human health need’ if it was not for electricity.

Life without the activities enabled by electricity would be unbearable for the majority, eg heating and cooling, gaining access to information, communication, employment etc, etc. And as the Government works to decarbonise the economy and looks to encourage more people to move away from using fossil-fuel powered transportation, New Zealanders’ reliance on electricity will only increase. We may use it more efficiently but we will be using more of it.

***With the understanding that electricity is an essential service, the IEGA recommend providing for hydro electricity generation to be elevated in the overall framework for freshwater.***

***In the NPS-FM some hydro electricity should not be allowed an exceptions basis but all hydro electricity should be treated equally or equitably.***

This equal treatment approach would be entirely consistent with the National Policy Statement for Renewable Electricity Generation (sitting alongside the NPS-FM) which states

*“The contribution of renewable electricity generation, regardless of scale, towards addressing the effects of climate change plays a vital role in the wellbeing of New Zealand, its people and the environment.”*

## Matters of national significance

The matters of national significance to which this national policy statement applies are:

- a) the need to develop, operate, maintain and upgrade renewable electricity generation activities throughout New Zealand; and
- b) the benefits of renewable electricity generation.

## Objective

To recognise the national significance of renewable electricity generation activities by providing for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities, such that the proportion of New Zealand’s electricity generated from renewable energy sources increases to a level that meets or exceeds the New Zealand Government’s national target for renewable electricity generation.

Hydro-electricity generation is a renewable generation source that is enabled by the NPS-REG. The NPS-REG applies to existing generation as well as new generation investment proposals.

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<sup>2</sup> <https://www.beehive.govt.nz/release/government-levels-electricity-playing-field-consumers> 3 October 2019

## E2 Hydro-electricity resources

### POLICY E2

Regional policy statements and regional and district plans shall include objectives, policies, and methods (including rules within plans) to provide for the development, operation, maintenance, and upgrading of new and existing hydro-electricity generation activities to the extent applicable to the region or district.

Further, the NPS-REG specifically identifies small and community-scale renewable generation from any source, including hydro, as a nationally significant activity.

## F. Incorporating provisions for small and community-scale renewable electricity generation activities into regional policy statements and regional and district plans

### POLICY F

As part of giving effect to Policies E1 to E4, regional policy statements and regional and district plans shall include objectives, policies, and methods (including rules within plans) to provide for the development, operation, maintenance and upgrading of small and community-scale distributed renewable electricity generation from any renewable energy source to the extent applicable to the region or district.

The IEGA does not agree with the proposed exception approach to hydro electricity generation infrastructure in the draft NPS-FM. ***All existing hydro generation capacity has equal weight in the NPS-REG and must be placed on a consistent equal footing under the NPS-FM.***

Electricity generation operates in a competitive market for its output as well as investment in new generation capacity.

Further, hydro plant can be on waterways that feed into the catchments that are proposed to be exempt from national bottom line attributes. This means the small hydro generator faces costs to ensure at or above current state water quality. This high quality water will flow into low quality catchments where the hydro owner faces no additional environmental costs. In fact the small hydro owner could be helping the exempt hydro owner by diluting its poor quality water. ***Anything other than a level playing field is anti-competitive.***

In conclusion, an exceptions approach for the six large hydro catchments is anti-competitive, discriminatory and inequitable. All electricity is an essential service for human wellbeing and all plant generating electricity must be treated equally. Hydro generating plant delivering electricity to the people of Haast, a community that is not connected to New Zealand's power system, is just as important as it is to the people of Wellington.

### **Proposed solution to get renewable hydro electricity recognised in a policy**

The IEGA proposes the following solutions to ensure the benefits of hydro renewable generation are recognised by policy in the NPS-FM:

We consider that the best way to do this, without expanding the purpose of the NPS-FM, is to include a policy in clause 2.2 that expressly recognises the existing hydro electricity generation value in Appendix 1B.

As drafted, the direction setting policies of clause 2.2 of the draft NPS-FM do not make any express reference to the 'human contact' or 'threatened species' values (despite them being compulsory values) or to the 'other values' as may be set through the national objectives framework. The IEGA supports Trustpower's view that is incorrect because the detailed provisions that follow in the NPS-FM should be based on the foundation of the direction setting objectives and/or policies of Clause 2.2.

Accordingly, we seek the following addition to clause 2.2 to ensure that the value of hydro electricity generation is recognised (where it applies) consistent with the NPS-REG and Section 7(j) of the Act.

#### **Policy 2A**

*Freshwater is managed through a National Objectives Framework to recognise and provide for compulsory values and other values as may be applicable*

An alternative may be to integrate the above into existing Policy 2 as follows:

#### **Policy 2**

Freshwater is managed through a National Objectives Framework in order to:

- a) ensure that the health and wellbeing of waterbodies and freshwater ecosystems is maintained or improved; and
- b) recognise and provide for compulsory values and other values as may be applicable

Secondly, hydro generation must be recognised in the expected Environmental Outcomes 3.7 – by making the following amendments:

#### **3.7 Identifying values and environmental outcomes**

- (1) Every regional council must identify the values that apply to each FMU, as follows:
  - a) the compulsory values as set out in Appendix 1A:
  - b) any of the other values set out in Appendix 1B that apply:
  - c) any other value as the council considers, after consultation with its community and tangata whenua, applies.
- (2) For each FMU, or for individual waterbodies or freshwater ecosystems within an FMU, the regional council must describe the environmental outcomes that it wants to achieve for-
  - a) the value Ecosystem Health, and each of its components; and
  - b) the values Human Contact, and each of its components; and
  - c) the value[s] Mahinga kai or Tangata Whenua Value and] Threatened Species; and
  - d) ~~Any other~~ the values of Appendix 1B and any other components ~~the council identifies that apply~~.
  - e) any other values and any other components the council identifies

(2A) In describing the environmental outcomes in accordance with (2) above, every regional council shall have regard to the objective of this, and any other relevant, national policy statement.

### **Definitions**

Environmental outcome means an environmental outcome for an FMU, or for individual waterbody or freshwater ecosystems that is be achieved for the values identified in clause 3.7.

And thirdly, we recommend an expansion of the description of hydro electric power generation in Appendix 1B, namely:

#### **Hydro-electric power generation**

The freshwater management unit is either:

- The location of an existing hydro electric power generation scheme; and/or
- Suitable for hydro electric power generation because the water quality and quantity and the physical qualities of the freshwater management unit, including hydraulic gradient and flow rate, can provide for hydro-electric power generation.

There are 4 components that contribute to the hydro electric power generation value and it is necessary that all of them are managed. They are:

- The quality of the inflow to storage hydro lakes and reservoirs in terms of the low levels of anthropogenic contributions of sediment and forest debris.
- The characteristics of existing infrastructure and the ability of the infrastructure in terms of its capacity, reliability, output and operational flexibility to generate electricity.
- The recreational potential of storage lakes.
- Any concurrent environmental benefits of existing schemes in terms of maintaining any compulsory national value.

#### **Socio-economic impacts of any change in distributed hydro generation output**

Hydro generation infrastructure connected to local networks (distributed hydro generation) provides important reliability benefits for local communities – both people and businesses creating local employment.

Many small hydro generating plant have the ability to support the networks they connect to and run in “islanded mode”. If rules are introduced that require quality improvement for water bodies already of high quality then this will in some instances jeopardise the supply of electricity to communities.

The West Coast is an important example. Local hydro generation capacity supplies about 50% of demand on the West Coast. If restrictions are placed on the water take at Turnbull power station the lights will go out in Haast. The same can be said for Fox and Wahapo hydro power stations which often run islanded to supply Fox, Franz and South Westland.

The West coast is remote from the major hydro catchments and relies on two transmission routes to deliver electricity. During the ex-tropical cyclone Fehi event in February 2018 during loss of transmission connection Westpower (the distribution network company) used its 6 MW Amethyst hydro power station to black-start Hokitika's electricity supply after transmission to the region was lost. This enabled Westpower to restore power to about half its 12,000 customers.

Another example is distributed hydro generation in the Cromwell / Alexandra area supplies about 60% of demand and can supply electricity to local users when the area is disconnected from the transmission grid.

As well as impacting reliable supply of electricity to local communities, a reduction in electricity output from distributed hydro generating plant will impact wholesale electricity prices, with a flow-on to prices paid by consumers.

Wholesale spot prices can be highly volatile to small changes in generation output. A study of Upper South Island load control revealed an 110MWh increase in demand resulted in a 3.4% increase in the wholesale price while in a different trading period a 300MWh increase in demand resulted in an 87% increase in the wholesale price. A decrease in electricity supply will have the same impacts.

Any reduction in electricity output from hydro generating plant would:

- In the short-term be replaced by flexible fossil-fuelled generating plant that is:
  - 1) more expensive and would increase the cost of all electricity; and
  - 2) emits carbon, impacting the environment and achievement of our climate change targets.
- In the long-term reduce the amount of wind generation that the New Zealand electricity system can efficiently absorb. Hydro storage enables run-of-river hydro to operate when there is water and intermittent wind generation to operate when there is wind. The water is stored for use to generate electricity when there is lower rainfall or less/no wind.

Analysis of the complementarity of wind and hydro in the New Zealand electricity system in the early days of wind revealed the New Zealand system would be reliable using the flexibility of the total current hydro output to complement wind with wind at over 20% of total electricity output.

Further, wind technology is currently the lowest cost for new generation capacity. If our electricity system can not absorb the intermittent output from wind turbines due to reduced flexibility from hydro generation, more expensive generation will have to be built to meet growth in electricity demand – pushing up the cost of all electricity.

In conclusion, any reduction in output from distributed hydro generating resource will impact the reliability of electricity supply to local communities and activities creating employment. Further, electricity prices will increase if this reduction in output from distributed hydro generating plant is replaced by fossil-fuelled plant and if less wind generating capacity can be reliably connected to the system.

Any change in minimum flows for hydro generation will have socio-economic impacts. For IEGA members based in local communities, where a change to the flow regime impacts directly on the

financial viability of a hydro generating plant, as well as the reliability of supply to that community, the impact will be more pronounced. ***Any change to minimum flows must be science based (rather than some arbitrary minimum limit).***

The IEGA understands MfE are currently analysing the national and regional socio-economic analysis of the proposals. Interested stakeholders must have the opportunity to review and submit on any resulting reports before policy decisions are made.

We are aware of Trustpower's submission and the report by Sapere reviewing the Regulatory Impact Statement. Sapere conclude that:

The detail and depth of analysis of the options proposed by MfE with respect to the impact on hydro-electricity generation as a result of the proposed reforms is not commensurate with the magnitude of the challenges in the electricity sector and the size of the potential impacts. This is directly counter to The Treasury's guidance on RIA. There is no assessment or acknowledgment of the extent to which freshwater policy objectives and climate change objectives are in conflict – to what extent and where hydro-electricity generation infrastructure is contributing to freshwater quality problems and how potential national bottom lines will limit the operation of this infrastructure in dimensions relevant to energy security and therefore New Zealand's ability to meet government's climate change objectives. There is no evidence for the assumption that "balance" between the objectives is achieved by the differential treatment of the six largest hydro-electricity generation schemes.

### **Setting of target attributes at or above the current state**

IEGA members are concerned about the ambitious approach to always improve on the current state, even when that state could be high quality water – the 'at' or 'above' approach.

We acknowledge that New Zealand can not stand still or be prepared to maintain current poor water quality. It will require a significant effort to improve monitoring, apply scientific evidence and make changes to maintain and improve areas of poor water quality. We suggest the focus at this stage should be entirely on areas of poor water quality – to ensure there is sufficient capacity and capability to make improvements in the near term.

The map on page 47 of the consultation paper shows significant reductions in nutrients are required in areas near the Waitaki and Waikato catchments – catchments where the large hydro generators are exempt from meeting national bottom lines.

At the same time the focus for areas of high water quality should be that there must be no degradation (stay 'at' current state). In our view, this probably means that existing activities on these high quality waterways can continue in their current form (current flow).

### **Determination of current state**

We are aware of commentary from a number of independent water scientists who have advised that several years of monitoring data is required to achieve a good representation of the current state. That is consistent with the draft NPS-FM's own requirements for monitoring attributes states (as specified in Appendices 2A and 2B) which require multiple (generally 5) years of data.

It appears that regional councils are highly unlikely to have robust monitoring data for all 23 attributes allowing them to establish current state in a scientifically reliable and robust fashion.

That means that the current state, in some places and for some attributes (particularly Appendix 2B attributes,) will be estimated using 'best efforts'. Best efforts would be different for, and guarantee no consistency between, different regional councils or individual Council scientists. When robust monitoring is undertaken it may well reveal the state of an attribute to be quite different to the estimated current state despite nothing new or additional occurring in the catchment since current state was estimated.

Further:

- **There isn't an adequate process for a determination of current state:** Clause 3.9 refers to current state as being "determined" under clause 3.8. For a decision-making process it is very lax.
- **The process and estimation of current state doesn't provide for a satisfactory benchmark:** The NPS-FM acknowledges inherent uncertainty in the information it is proposed to address.
- **The consequence of the data doesn't change even if the underlying data is less reliable:** The consequences could extend to regulatory interventions which might include:
  - new rules in plans restricting or requiring reductions in takes and discharges;
  - declining applications for new takes or discharges;
  - declining applications for replacement consents, (or placing conditions on any consent granted for a new or replacement take or discharge); or
  - reviewing existing consents (under section 128 of the Act) and imposing new conditions.

In addition, the proposed NPS-FM does not provide for adequate certainty about the Council's likely approach to 'load to come' – that is when a consent is held for water take higher than the current take as the owner plans to install new equipment or refurbish the existing assets.

The IEGA supports Trustpower's proposed solutions to these problems, as follows:

- a. To require the setting of current state only in respect of attributes for which a regional council has a robust scientific record (as per the monitoring advice given in Tables 1-23 of Appendix 2A and 2B).
- b. For all other attributes the obligation should be to produce an estimate of the current state.
- c. An estimated state:
  - must not be used to establish a target attribute state for an Appendix 2A attribute under clause 3.9
  - may be the subject of an action plan
  - must be reviewed and confirmed as soon as there is a sufficient monitoring record.
- d. To require that the current state take into account consented, and likely to be implemented, activities where that would make a material difference to the current state.



- e. To require regional councils to consider “load to come” when setting the target attribute state (under clause 3.9 (6)) and the timeframes for setting attribute states (under clause 3.9(5)).

This might be achieved by the following amendments:

### 3.8 Identifying current attribute states

- (1) Every regional council must identify the current state of each attribute for the period 30 June 2020 to 1 July 2021 (noting that water quantity does not have attributes – see clause 3.11) as either:
  - a) the current measured state; or
  - b) the current estimated state
- (1A) Every regional council must identify:
  - a) the current measured state by using of scientifically robust data gathered in general conformance with the monitoring requirements of Schedule 2A and 2B;
  - b) the current estimated state using its best efforts based on the information that is available, including partial data, local knowledge, and information obtained from other sources.
- (2) The current state (whether it is measured or estimated):
  - a) must to the extent practicable, take in to account, the potential effect of activities that are the subject of a resource consent that have not been established or fully established at the time the assessment of current state is made and which, when established or fully established, would have a material effect on current state.
  - b) need not be a single measure but may take into account natural variability and sampling error.
- ~~(3) If a regional council does not have complete and scientifically robust data on which to establish the current state of an attribute, it must use its best efforts to identify a current state using the information that is available, including partial data, local knowledge, and information obtained from other sources.~~
- (3) Regional councils must review and replace estimated current states with measured current states as soon as practical, [and in no case later than 30 June 2025]

### 3.9 Setting target attribute states

- (1) In order to achieve the environmental outcomes described under clause 3.7, every regional council must set a target attribute state for every attribute, as at each relevant monitoring site.
- (2) Every target attribute state must-
  - a) for attributes relating to the value Human Contact, be above the current measured state of that attribute as determined under clause 3.8; and
  - b) for ~~all~~ other attributes identified in Appendix 2A, be at or above the current measured state of that attribute as determined under clause 3.8(1)(a).
  - c) for all other attributes be at or above the current state of the attribute as determined

under clause 3.8(1) or (2)

.....

- (6) When setting target attribute states and timeframes for achieving target attribute states, regional councils must-
- a) have regard to the following:
    - i) the foreseeable impacts of climate change;
    - ii) the long-term vision set under clause 3.2;
    - iii) the environmental outcomes set under clause 3.7(2);
    - iv) the connections between waterbodies, including any additional contaminant load anticipated to reach a monitoring point in the future without further human influence;
    - v) the connection of waterbodies to coastal water; and
  - b) use the best information available at the time; and
  - c) not delay making decisions because of uncertainty about the quality or quantity of the information; and
  - d) take into account results or information from freshwater accounting systems; and
  - e) consider the requirements of all other national directions.

### **Attributes**

We understand science and monitoring experts have concerns with how a number of attributes are monitored and whether they are all fit for purpose. In many cases the suite of attributes is too ambitious and/or in respect of some proposed attributes, premature (because the merits and workability of some of the newer and more novel attributes are have not been fully tested).

Based on that advice we seek the following:

- a) Table 2 – Periphyton (Trophic state) Rivers. This should apply to wadeable rivers and streams in the same way that, for example, Table 14 (Macroinvertebrates) applies specifically to wadeable streams and rivers
- b) That the following tables be removed: Table 5, 6, 10, 14, 15, 16, 17, 18, 19, 20, 21, 22.

### **Fish passage**

Retrofitting of fish passages to existing schemes where a fish passage has not to date been required by the resource consenting process will likely be impractical and impose significant costs on small hydro generators.

Robust scientific evidence should be the basis of any decision that retrofitting of fish passages is required.

## **Timeframes**

It is critical that enough time is allowed so that implementation of this key focus for government is not set up to fail.

The IEGA agrees with others that the timeframes associated with implementing the draft NPS-FM are too short. Furthermore, we believe that getting robust plans in place that fully implement the draft NPS-FM by 2025 will be extremely challenging.

Enough time must be provided to ensure that the best science is utilised, that meaningful consultation takes place and that change is implemented at a pace and cost that can be afforded, and that capacity and capability allows.

We are anxious about any Councils resorting to a 'best guess' approach due to tight timeframes. This will likely lead to a conservative approach being implemented, which could, in turn, potentially unduly restrict activities and operations. Poor information may be relied on to make decisions or poor decisions may be made.

The task of investigating the current state of the environment in every catchment, and then setting goals for improvement and limits to achieve them (not to mention methods to allocate resources where catchments are overallocated), all in consultation with communities, should not be underestimated.

The IEGA acknowledges the government's desire to see improvements in water quality. However, the degree of urgency to bring about changes introduces a significant risk that attribute states are not set at the right level to achieve adequate environmental outcomes, or that the social and economic consequences of the associated limits are not fully understood with significant implications or unintended consequences.

## **Other comments**

### *Increased compliance costs for small businesses*

The proposals include an improvement in reporting on water use. The devil will be in the detail. An increase in compliance imposts must be balanced against the environmental and water quality gains – a pragmatic approach would be desirable especially in areas where water quality is high.

### *Role of Regional Authorities*

The proposed NPS-FM leaves Regional Councils with a substantial ongoing workload and significant discretion about how the government's directions in the NPS-FM are applied.

This perpetuates the IEGA's concerns that some members are dealing with multiple territorial authorities with different approaches and requirements as they have generating plant, with essentially the same characteristics, located in different regions of New Zealand.

The IEGA queries if the Regional Authorities have the capacity and capability to meet the Government's expectations with respect to every freshwater waterway. Again, we suggest a near term focus on improving poor quality waterways first.

## Conclusion

The IEGA recommends the NPS-FM and NES-F be amended to provide clear, meaningful and strongly directive policies recognising that all hydro flexibility needs to be preserved. We strongly recommend the NPS-FM amendment be amended to recognise the national significance of small hydro generation schemes throughout New Zealand which are critical to meeting New Zealand's climate change targets as well as our renewable energy targets (in the same way that the NPS-REG recognises them as of national significance). These local hydro generation plant are critical to the socio-economic wellbeing of local communities by providing the essential service of electricity.

The IEGA would welcome the opportunity to discuss this submission with you in more detail.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Warren McNabb', is positioned above the typed name.

**Warren McNabb**  
Chair