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**SUBMISSION ON THE TRANSPOWER NEW ZEALAND LIMITED NOTICES OF
REQUIREMENT**

AND APPLICATIONS FOR RESOURCE CONSENTS

This submission is made under Section 96 of the Resource Management Act 1991

To: Minister for the Environment
Freepost Grid Upgrade Submissions
PO Box 4405
Hamilton East
Hamilton 3247

or Email: tpcallin@mfe.govt.nz Fax: 04 439 7700

1. Name of Submitter:

Mighty River Power Limited

2. Contact Person:

Miles Rowe

3. Address for Service:

Mighty River Power Limited
PO Box 445
HAMILTON

Telephone: 07 857 0342 or 027 276 2532

Fax : 07 857 0177

Email: miles.rowe@mightyriver.co.nz

4. General Nature of Submission

Mighty River Power Limited is in support of all the Transpower New Zealand Limited Notices of Requirement and all Applications for Resource Consent for the proposed new Whakamaru to Auckland Transmission Line subject to the imposition of conditions to address the specific relief set out in this submission.

5. The Reasons for making the Submission

a. General

Mighty River Power Limited is a State Owned Enterprise that is involved in both electricity generation and retail supply. It is the fourth largest electricity generator in New Zealand. Mighty River Power owns and / or manages a diverse and expanding portfolio of generation assets throughout the North Island. Our portfolio includes the Waikato Hydro System, geothermal interests at Mokai, Rotokawa and Kawerau, the Southdown co-generation station in Auckland, and an active landfill gas generation programme.

Mighty River Power sells electricity and gas to more than 370,000 customers through its retail business Mercury Energy. Mighty River Power's metering business Metrix provides meters and meter-reading services to residential and commercial customers across Auckland, and to other electricity retailers.

b. The Strategic Requirements and Benefits of the North Island Grid Upgrade

Mighty River Power supports the need for new and improved transmission for New Zealand. Some of the strategic needs and benefits of the North Island Grid Upgrade are:

- The efficient transmission of electricity through the National Grid plays a vital role in the well-being of New Zealand, its people and the environment.
- By providing for the well-being of New Zealand society as a whole the purpose of the Resource Management Act (RMA) as set out in section 5 of that Act is achieved through an improved National Grid.
- The Grid upgrade is required to provide continuity of supply from a range of generation sources and to meet future demand for electricity.
- The Grid upgrade would assist to achieve the Government's objectives for a renewable energy future and to meet international climate change commitments.
- Renewable energy sources are nationally dispersed and a reliable transmission network is necessary to effectively utilise such energy sources.
- The Grid upgrade is consistent with the "Government Policy Statement on Electricity Governance" (GPS) dated October 2006, relating to the provision of electricity transmission services. In particular grid reliability needs to be maintained at a level required by residential, commercial and industrial users and the Government's economic development objectives.
- New Zealand has an aging transmission grid and significant investment is required to ensure robust transmission infrastructure and security of supply to customers.

- The Transmission Grid should be adequately resilient against the effects of low probability but high impact events having regard to the load that could be disrupted and the duration of any disruption. (GPS) This is particular relevant to supplying the Auckland region, the largest and fastest growing load centre on the National Grid, with least disruption between supply and demand points. Failures on the existing transmission system can have a significant adverse effect to New Zealand's economic environment.
- The Grid Upgrade has the advantage that it is future proofed against future electricity demand growth in the Upper North Island. The Grid Upgrade can be further upgraded from a 220kV line to a 400kV line.

c. Ministerial Direction for Call-In

The North Island Grid Upgrade is a proposal of national significance and Mighty River Power supports the reasons for the Ministerial call-in and the appointment of the Board of Inquiry to hear and decide the proposal. In particular the call-in procedures and Board of Inquiry appointment will ensure efficient processing and consistent decision-making for this proposal which involves multiple regions and districts.

d. Matters for Consideration by the Board of Inquiry

In considering the effects of allowing the designation and resource consents the Board of Inquiry must have particular regard to the matters set out in section 104 and section 171 of the RMA including:

- Any relevant provisions of a national policy statement, regional policy statement or proposed regional policy statement, plan or proposed plan.
- Whether adequate consideration has been given to **alternative** sites, routes or methods of undertaking the work (where the requiring authority does not have an interest in the land sufficient for undertaking the work) of allowing the designation.
- Whether the work and designation are **reasonably necessary** for achieving the objectives of the requiring authority for which the designation is sought.
- Any actual and potential effects (including positive effects) on the environment of allowing the resource consents.
- Any other matter considered reasonably necessary.

Some of these matters are elaborated upon further below. The positive effects are covered in part 5 (b) of this submission.

(i) Proposed National Policy Statement on Electricity Transmission

The Government has released the Proposed National Policy Statement on Electricity Transmission (NPS), which Mighty River Power Limited has submitted in support of. The NPS proposes that electricity transmission is recognised as a

matter of national significance by decision makers thereby elevating its status under the Resource Management Act 1991.

The NPS may be amended by the Minister for the Environment following the hearing of submissions and recommendations by the Board of Inquiry. It is anticipated when approved and issued that the NPS will underline the importance of considering the national benefits of this project and ensure that national benefits are appropriately weighed against local environmental effects.

Weight should be given to the NPS to ensure that the benefits of operating and developing the network of pylons, conductors (power wires) and substations across the country are recognised and given priority when decisions are being made about any local effects.

(ii) Alternative Options

Transpower and the Electricity Commission have both reviewed the Grid Upgrade Project extensively to determine whether there are suitable alternatives to the investment. These reviews have been consulted on widely with industry and interested parties. As part of this investigation, the potential for transmission alternatives (whereby localised electricity generation substitutes for an expansion of the capacity of the transmission grid) were explored. It was concluded that there are no viable generation or transmission alternatives that could be relied on to substitute for Transpower's proposed Grid Upgrade. Any potential transmission alternatives would not substitute for, or result in a permanent removal of the need for, the grid upgrade. Mighty River Power agrees with the conclusions and that adequate consideration has been given to alternatives.

(iii) Designation Being Reasonably Necessary

Continued improvement of our aging transmission grid is required to ensure New Zealand has a robust transmission infrastructure and security of electricity supply to consumers. As noted above there are no viable and long term alternatives to this Designation for the North Island Grid Upgrade.

(iv) Other Relevant Matters

Other relevant matters the Board should give regard to are:

- Considerations under Part II of the Resource Management Act 1991, including:
 - Section 7(e) – the efficient use and development of natural and physical resources. The National Grid is a physical resource and as such the entire network must be used and developed efficiently to meet the on-going energy demands of a growing economy.
 - Section 7(j) – The benefits to be derived from the use and development of renewable energy. Section 7(j) is particularly relevant from the perspective of resilient and strong transmission grid to meet the Government's objectives for a renewable energy future.

- The efficient transmission of electricity plays a vital role in the well-being of New Zealand, its people and communities. It is therefore of utmost importance when considering the effects on the environment that due regard be given to any positive effects of the proposal and that these be weighted appropriately against other matters of national importance or any local adverse effects. Some of the strategic requirements and benefits of the proposal were explored in part 5 (b) of this submission.
- The Government Policy Statement for Electricity Governance, including the need for transmission improvements.

e. Specific Issues Relevant to Mighty River Power Limited

(i) Waikato River Crossings

The proposed transmission corridor crosses the Waikato River at three locations, including over operating easements held by Mighty River Power, and the Electricity Generation Core Site at Arapuni, as described below:

- Downstream of Whakamaru Hydro Station between proposed towers 427 & 428, passing over the Whakamaru operating easement. The proposed towers are not located within the operating easement.
- Downstream of Arapuni Hydro Station between proposed towers 320 & 321, passing over Arapuni operating easement and the Arapuni Electricity Generation Core Site. The proposed towers are not located within the operating easement or core land.
- Across Lake Karapiro between proposed towers 291 and 291A, passing over the Karapiro operating easement. The proposed towers are not located within the operating easement.

The Arapuni core site is land required by Mighty River Power for operation of the Arapuni Power Station and associated activities.

The Notices of Requirement must recognise Mighty River Power's legal entitlements over the operating easements and Arapuni Electricity Generation Core Site land and its ability to operate the Waikato Hydro System on an enduring basis.

(ii) Whakamaru Substation

The proposed Whakamaru North Substation is located close to Mighty River Power's operations associated with the Whakamaru Hydro Station and the resulting noise emissions from proposed substation may adversely affect compliance of Mighty River Power's Whakamaru operations with the Taupo District Plan noise emission standard.

Noise sources from the Whakamaru operations include the powerhouse, tailrace, the powerhouse transformers and the Whakamaru local transformers. The local

transformers (T8 and T9) are located approximately 150m from the existing Transpower Substation.

The noise performance standards relating to the Whakamaru Electricity Generation Core Site are contained in rules and maps in the Proposed Taupo District Plan. These rules contain a "Noise Control Boundary" at which point noise levels are required to meet 40 dBA L_{eq} and 75 dBA L_{max} . In most cases the Noise Control Boundary is the Whakamaru Electricity Generation Core Site boundary, except in the area downstream of the powerhouse (north of the existing Transpower switchyard) where the Noise Control Boundary extends beyond the Electricity Generation Core Site boundary and includes part of the area occupied by the proposed Whakamaru North Substation.

Transpower propose that a 40 dBA L_{eq} noise level be met at all locations beyond the proposed Whakamaru North Substation site boundary. However, the proposed substation site boundary and the proposed transformer noise envelope overlaps with the Taupo District Plan Whakamaru Noise Control Boundary. The resulting effect from cumulative noise sources is that Mighty River Power may fail to comply with the Proposed Taupo District Plan noise performance standard for Electricity Generation Core Sites.

(iii) Mangakino Geothermal Power Station

The proposed transmission corridor passes through the exploration area for the Mangakino geothermal system. The boundary of the geothermal system is shown on attached Map 7.9.1.2 of the Geothermal Variation to the Waikato Regional Plan (19 November 2006 version). This involves the structures and works approximately between proposed transmission towers 404 to 420.

The proposed transmission towers and cables over this area have the potential to obstruct (or partially obstruct) the utilisation and development of a renewable energy resource. The benefits to be derived from the use and development of renewable energy are a matter to be given particular regard under section 7(j) of the RMA.

Mighty River Power has an interest in the Mangakino geothermal system for potential renewable energy (geothermal) development, and holds resource consents authorising exploration drilling over the geothermal system. As it currently stands, the proposed transmission corridor should not interfere with the existing drilling consent and well sites.

If the geothermal exploration proves to be successful, the transmission lines may present constraints on the efficient utilisation of the geothermal resource, including the effects associated with: the siting of a geothermal power station; transmissions lines from a geothermal power station (which may need to swing under the Transpower transmission lines); the location and orientation of steam pipes under or parallel to the transmission lines; potential steam corrosion on

transmission structures; and ground movement or subsidence from geothermal fluid abstraction.

6. Decisions sought from the Board of Inquiry

- a. To confirm the designations and grant the resource consents required for the proposal.
- b. To impose conditions on the Notices of Requirement and designations that address the specific issues of concern to Mighty River Power, including:

Waikato River Crossings

- (i) The Requiring Authority shall undertake all works or activities, including the erection of structures, in a manner that provides for the continued operation of the Waikato Hydro System in accordance resource consents held by Mighty River Power (issued by Waikato Regional Council, commencing on 12 April 2006, and numbered 105226 to 105240, inclusive) and any other legal authorisation required for its operation.
- (ii) All transmission structures, excluding overhead transmission cables, shall be located outside of the operating easement and Core Site in favour of Mighty River Power (as proposed between towers 291 to 291A, 320 to 321, and 427 to 428 and the across the Arapuni Electricity Generation Core Site between proposed towers 320 to 321).
- (iii) The Requiring Authority gives its consent under section 176(1) (b) of the RMA for any works or activities authorised by the resource consents and legal authorisations referred to in (i) above, or any replacement of those Consents, and agrees that Mighty River Power Limited will have no obligation to obtain any further written consent under that section to authorise such works or activities.

Whakamaru Substation

- (iv) To ensure compliance is achieved by activities within the Taupo District Plan Whakamaru Noise Control Boundary, any noise limits set for the Whakamaru substation shall either:
 - (a) Be increased to allow for the existing noise environment associated with the Whakamaru Electricity Generation Core Site; or
 - (b) That noise mitigation be undertaken to ensure that the cumulative emission of noise from the proposed Whakamaru North Substation and the Whakamaru Electricity Generation Core Site do not exceed the levels applying to the Noise Control Boundary for the Whakamaru Electricity Generation Core Site.

Mangakino Geothermal Site

- (v) Within the boundary of the Mangakino Geothermal System (between tower locations 404 and 425) the Requiring Authority shall construct, operate and maintain pylons, transmission lines and associated works in a manner that would enable Mighty River Power to undertake geothermal exploration and development of the Mangakino Geothermal System so that it is able to co-exist with the activities authorised under the Requirement.

7. **Mighty River Power wishes to be heard in support of this submission.**
8. If others make a similar submission, Mighty River Power will not consider presenting a joint submission with them at a hearing.



Rob Hunter
Manager – Environmental Strategy and Policy
for Mighty River Power Limited

Date: 5 October '07.

Copy to:

North Island Grid Upgrade Project
Transpower Freepost 182915
PO Box 1021
Wellington

or

Email: submissions@transpower.co.nz Fax 04 819 7624



File No: T09-01

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Minister for the Environment
Freepost Grid Upgrade Submissions
PO Box 4405
Hamilton East
HAMILTON 3247

Mighty River Power Limited
160 Peachgrove Road
Hamilton East
Hamilton 3216
PO Box 445
Hamilton 3240

Phone: +64 7 857 0199
Fax: +64 7 857 0192
www.mightyriverpower.co.nz

DDI: +64 7 857 0342

Dear Sir or Madam

Map for Submission by Mighty River Power

On Friday 5th October Mighty River Power lodged a submission (via email and hand delivered to the Environment Waikato office) to Transpower's North Island Grid Upgrade Project.

Section 5(e)(iii) of the submission referred to attached map 7.9.1.2 of the Geothermal Variation to the Waikato Regional Plan. This map was not attached to the submission and I enclose a copy of the relevant map to this letter. Please append this map to Mighty River Power's submission.

Yours faithfully

A handwritten signature in black ink, appearing to be 'Miles Rowe', written in a cursive style.

Miles Rowe

Environmental Advisor - Planning

cc: North Island Grid Upgrade
Transpower Freepost 182915
PO Box 1021
Wellington

