

**Submission to the Commerce Select Committee**  
**relating to the**  
**Electricity Industry Reform**  
**Amendment Bill**

made by

**MainPower New Zealand Limited**

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Electricity Industry Reform Amendment Bill**

**1. BACKGROUND**

- 1.1 This submission is made by MainPower New Zealand Limited (**MainPower**).
- 1.2 We wish to appear before the Select Committee to speak to our submission.
- 1.3 We can be contacted through our barrister, Peter Castle of Barristers.Comm, who is contactable by telephone on (04) 914 1057, by facsimile on (04) 473 3179, email at [p.castle@barristerscomm.com](mailto:p.castle@barristerscomm.com). or alternatively direct to Todd Mead Commercial Manager, MainPower New Zealand Limited telephone (03) 311 8323, fax (03) 311 8331 email at [todd.mead@mainpower.co.nz](mailto:todd.mead@mainpower.co.nz)
- 1.4 We strongly support the policy and objectives underpinning the Electricity Industry Reform Amendment Bill (**Bill**) and submit that with some minor amendments on which we comment below, the Bill should be recommended to Parliament.

**2. EXECUTIVE SUMMARY**

**2.1 Definition of generation capacity disincentivises Renewable Generation**

MainPower submits that the use of nameplate capacity of generation for the purposes of the provisions permitting common management of lines business and generation, and the co ownership of lines and generation where electricity is to be sold within the owned network **will defeat the intention and purpose of the legislation by disincentivising the development of local renewable generation capacity.**

**2.2 Adoption of all aspects of Bill vital**

MainPower submits that it is vital the all aspects of the Bill (and not merely some) are adopted subject to the changes outlined in this submission.

**3. INTRODUCTION**

**3.1 History of MainPower**

MainPower is a trust owned distribution or lines company serving the North Canterbury and Kaikoura communities. It is the company that, under the 1992 reforms, succeeded to the assets of the North Canterbury Electric Power Board. The beneficiaries of the Trust which owns the shares in MainPower are the consumers in the district it serves. It is one of the largest organisations in the North Canterbury region and has 267 full and part-time employees.

Since 2000, MainPower's regional electricity demand has grown by over 6% per annum and is predicted to grow by 4% per annum for the foreseeable future. There is no electricity generated in the region in which MainPower operates and it has been investigating local renewable generation opportunities. It recently submitted applications for consent under the Resource Management Act for a wind farm on Mt Cass. Potentially this wind farm will have the capacity to generate up to 69 MW of electricity. MainPower's peak electrical demand in 2007 was 84 MW.

### **3.2 MainPower supports the reforms outlined in the Bill**

MainPower fully supports the policy encouraging local distributed generation which underpins the Bill. It also supports the policy encouraging investment in renewable generation. MainPower has a vision that the region's electricity usage will be supplied from renewable local generation.

In 2006 the Ministry of Economic Development released the Investment in Electricity Generation By Lines Companies Discussion paper. MainPower made submissions on that paper. We expressed the view that the amendments to the Electricity Industry Reform Act in 2001 and 2004 were soundly based, but too restrictive to achieve the objective of encouraging distributed generation. Accordingly we believe the policy principles behind those two amendments have not been able to be implemented and that the further reforms set out in the Bill are urgently needed to address electricity supply shortfall risks and more importantly encourage smaller scale renewable generation developments, thereby meeting more recent policy imperatives on renewable generation.

In 2007 when the Ministry of Economic Development called for submissions on the proposed Bill, MainPower again made submissions on aspects of the then

draft bill which it saw as giving rise to undesirable disincentives for renewable generation developments.

MainPower still believes that the Bill gives rise to some undesirable outcomes.

#### 4. USE OF NAMEPLATE CAPACITY IN SETTING THRESHOLDS

##### 4.1 Historical use of nameplate capacity as a measure for thresholds.

In the Electricity Industry Reform Act (**Act**), the basis for the measurement of the permitted generation is nameplate capacity. This is in essence the size or generation capacity of a generation plant. For example section 19(ga) of the Act provides that certain generation developed between the prescribed dates and in respect of which the output was "less than 12MW (determined by nameplate or nameplates)" is to be disregarded when determining whether cross involvements exist.

Likewise certain generation is currently permitted to be owned by a lines company if it is of a particular type (renewable or reserve) and below a certain size, designated as MW nameplate capacity.

##### 4.2 Adverse consequences of using the nameplate capacity basis for measurement

The difficulty with using nameplate capacity is that, while it appears to be providing a reasonable threshold, it seems to be assumed that the generation plant with that capacity can and will operate at 100% of that capacity. In reality it is unlikely to do so, and therefore the limit imposed by using the nameplate capacity is in real terms artificially low. MainPower notes that New Zealand's generation capacity is 8,900 MW, and that capacity generates 40,000 GWh. Therefore, across all generation, New Zealand has a capacity factor of 51%

MainPower submits that the definition of capacity for the purposes of the Bill should be changed to reflect **actual generated electricity**. This means the definition has to incorporate what is generally known the "**capacity factor**".

The capacity factor changes depending on the type of generation. **Wind generation typically has a capacity factor of 35%** because the wind does not blow all of the time. **Run of river hydro generation** likewise can have a **capacity factor of 50-**

**60%** because there is not always the amount of water in the river needed to draw at the rate required for generation at 100% capacity. Therefore these types of renewable generation in practice simply do not produce their nameplate capacity in electricity.

By contrast, a **gas fired generation plant** could have a **capacity factor** of **90%**.

This means that a 10 MW wind farm will generally, under normal circumstances, only produce 30.7 GWh per annum of actual electricity whereas a 10 MW gas fired plant will generally, under normal circumstances, produce 78.8 GWh per annum

Therefore if one is looking to develop distributed generation, the capacity definition which applies to that generation, in this case nameplate capacity, actually encourages the development of non renewable generation because generally non renewable generation has a much higher capacity factor. Therefore, renewable generation can be disadvantaged by the use of the nameplate definition of capacity. Thus a lines company is disincentivised from developing renewable generation and incentivised to develop non renewable generation.

#### **4.3 Significance of capacity definition in relation to specific provisions**

The use of nameplate capacity is relevant, in MainPower's submission, to two distinct provisions in the Bill: Clause 8 which enacts a new section 17C. Section 17C (2) does adopt a 100% capacity factor, but the 100MW cap 17C (2)c(b) does not and the clause is therefore internally inconsistent as well as being too limiting having regard to renewable generation capacity factors, and clause 24(2) which relates to the arms length rules and their application to co-managed lines business and locally connected generation.

#### **Clause 8**

This clause enacts a new section 17C which provides for a breach of the Act to occur when the "connected customers selling cap" is breached. It defines how the "connected customers selling cap" is calculated. In turn this requires the calculation of the amount of "connected generation".

In relation to the selling cap, a capacity factor of 100% has been used. MainPower submits that this is appropriate. However, clause 17C(2)c(b) does not and simply adopts the name plate capacity.

The net result is that a lines company will be better off under the legislation if it builds non renewable generation as it has a higher capacity factor, and one which is much closer to the assumed 100%, than it would be if it developed renewable generation.

For the reasons already explained, this disadvantages renewable generation and therefore the policy of encouraging renewable distributed generation is not being implemented by these provisions of the Bill.

MainPower submits that for this reason and for the sake of internal consistency within the section, the current 100 MW capacity limit proposed for section 17C(2)c(b) should be changed from the nameplate capacity to generated electricity by specifying that the limit is 100 MW at a capacity factor of 100%.

We do note that the information requirements enacted by the Bill will enable this to be verified and monitored.

#### **Clause 24(2)**

This clause enacts a new paragraph 9 of the Schedule containing the "arms length rules"

Under this provision in the Bill, a lines company can own generation and have the same managers manage both businesses if the generation owned by that company is less than 30 MW determined according to nameplate capacity.

As already discussed, this in reality means that the amount of permitted generation that is able to be developed may be either too small to be economically viable, in which case the policy of encouraging distributed generation is not being achieved, or non renewable generation is going to be more economic thus defeating the desired renewable generation objectives of the Bill.

As a result, MainPower submits that the policy objectives are not implemented and MainPower is concerned that this Bill, like the two prior amendments, will not achieve

the objectives of encouraging the development of local renewable distributed generation.

The following represents an example of the adverse effect a nameplate capacity based threshold definition in the context of the co management of the lines business and the generation under the arms length rules will have on the development of local renewable generation by a lines company.

A wind project of 30MW with a capacity factor of 35% would expect to generate 92 GWh of electricity per annum, and therefore earn approximately \$6.4m per annum in gross revenue (assuming a wholesale electricity price of 7 c/kWh). The employment of a full-time Manager over and above repayment of debt, operations and maintenance costs and other operational overhead costs would render this project uneconomic for the foreseeable future given expected electricity prices.

By comparison, a 30 MW gas fired generation plant operating at 90% capacity would expect to generate 236.5 GWh per annum resulting in revenue of \$16.6m per annum.

MainPower believes that the better threshold measurement base should be actual electricity generated and sold.

#### **4.4 False Nameplates**

Although we have no knowledge of this occurring it is submitted that in continuing to use nameplate capacity as the definition point for thresholds, the Bill may in fact be encouraging a practice of specified nameplate capacity being considerably lower than the actual capacity of the plant.

This will be very difficult to detect and necessarily very difficult to police.

### **5. MAINPOWER'S SOLUTION**

#### **5.1 Generation limit at a 100% capacity factor**

MainPower submits that the more appropriate measure for the purposes of the Bill is the nominal electricity generated assuming a 100% capacity factor.

Thus, in the context of section 17C(2)c(b), the maximum amount of generation permitted to be connected to local customers would be 100 MW nameplate

capacity at 100% capacity factor resulting in an ownership limit of 876 GWh of electricity generated and sold per annum.

For the purposes of the arms length rules application to common management of a lines business and generation, the limit should, based on the 30 MW nameplate capacity at 100% capacity factor and therefore be 262.8 GWh of electricity generated per annum.

Therefore the legislation should specify capacity as the number of MWhrs or GWh per annum per MW of nameplate capacity assuming a 100% capacity factor, rather than the current "nameplate" capacity.

If this methodology is adopted all forms of generation renewable and non renewable will be treated (and affected) equally.

The result will be that there is no disincentive to develop renewable generation, and local generation by lines companies will be encouraged.

As a result the policy objectives of the Bill will be achieved

We do point out that at the time of the passing of the Act and the two previous amendments, the Act had a narrower definition of "renewable generation", and it was not then Government policy to promote renewable generation to the extent that it now is. This explains why the analysis MainPower has undertaken in the context of renewable generation, was not relevant when the Act and the two amendments were originally considered.

The Bill amends Section 4 of the Act. The new section 4(1) (c) states that the object of the Act will be to better ensure that "barriers to new investment in generation from renewable energy sources are limited"

In MainPower's submission, unless the qualifying generation cap reflects a 100% capacity factor, that objective will not be able to be achieved.

## **5.2 Adoption of all measures in the Bill**

MainPower submits that it will be very important that the measures outlined in the Bill, with the amendment suggested above, are adopted in full.

The reality of the previous amendments is that they have not had the desired consequences, and MainPower is concerned that if the full measures are not adopted, this Bill will likewise be unsuccessful in achieving its objectives

**MainPower New Zealand Limited**

29 February 2008