

## **EVIDENCE TO BOARD OF ENQUIRY: UPPER NORTH ISLAND GRID UPGRADE PROPOSAL**

Barbara and David Pronger  
Submitter Ref 1159  
26 February 2008

Our family has been resident in the Hora Hora and Whitehall districts of Waipa for two decades. We are deeply concerned about the environmental degradation that is likely to result to this area from the proposed pylons and transmission lines.

### **The transmission conundrum**

Because of the extreme elongation of the NZ transmission grid it is referred to as 'stringy'. High losses occur when electricity has to travel long distances between generation sites and main load centres. Peak load times are when losses are highest. Transmission and distribution losses also occur when the system is near its maximum capacity in terms of voltage. The common way of addressing this problem is by upgrading to a higher voltage.

### **The Merton Principle: An alternative to the pylons**

In October 2003, the London Borough of Merton introduced a policy that required new non-residential buildings to generate at least 10% of their energy needs from on-site renewable resources. This policy has since been followed by a number of other local authorities in the UK.

New Zealand is particularly well suited to local energy systems because of its abundant renewable energy sources. Local energy systems that can displace electricity generated from large centralised plants have the potential to deliver many public benefits. It is time for us in New Zealand to seriously consider how to realise these benefits and to introduce local energy systems into the marketplace.

## **The benefits of local energy systems**

Local energy is about

- Using energy resources that are not easily available for use by large electricity generating plants
- Generating and using energy efficiently
- Avoiding the environmental harm caused by large electricity generating plants and distribution networks

Local energy is not just about microgeneration. It includes heat-generation technologies, heat capture through building design, use of energy sources directly, energy efficiency measures and other technologies for providing services to homes and communities. For example, building design and performance measures, such as building orientation, passive solar design and insulation of the building fabric, can significantly improve energy efficiency for heating, cooling and lighting.

Producing energy at or near the point of use reduces losses associated with centralised energy systems. Context-specific design not only results in more efficient local energy systems, but also can change end users' attitudes and behaviours, leading to increased efficiency and conservation.

Local energy systems, because of their small-scale, locally sourced, renewable energy and high system efficiencies, reduce or eliminate many of the environmental impacts normally associated with energy projects.

Microgeneration projects are not without environmental impacts. However, in general, these can be regarded as relatively minor compared with the impacts of building and operating large electricity generating plants and distribution networks.

### **“It is easier to save it than to make it”**

The real value of a local energy system does not lie in its energy-generating role. It can act as a catalyst for change. A whole host of attitudinal and behavioural shifts seem to be fostered by

the presence of on-site microgeneration. Those who choose local energy systems have more control over their energy use, self-managing peak loads, for example. At a community level, local energy technologies can provide a tangible educational tool for understanding energy and climate change issues.

### **Conclusion: Choosing our future**

Changes brought about by urbanisation are strong and persuasive. All too easily we can focus on a single issue or purpose. To try to prevent economically or socially essential development may well be counter-productive but directing it in ways that will do the least harm is not.

Introducing local energy systems has the potential to remove the need for contentious and expensive upgrades to centralised energy systems. Their use can reduce the amount of power needed to be transmitted and so can extend the life of existing transmission assets.

Most New Zealanders enjoy too quick and easy access to electricity. Ironically, the standard 'gross domestic product' (GDP) measuring stick of economic success totals up the value of production and consumption without considering the sustainability of the process. We seriously need to think again about how we generate and distribute electricity and how we use it on our farms and in our homes, offices, schools and communities.

Barbara and David Pronger