



National Centre for Climate – Energy Solutions

finding the energy to move New Zealand forward

Getting renewables right

How do you provide a reliable energy supply which meets people's needs out of diverse, variable renewable energy sources?

On a national scale, New Zealand's electricity system has a very high proportion of renewables and a long 'stringy' transmission system. This can lead to security-of-supply scares, and resulting high electricity prices, even when there is adequate thermal fuel capacity to bridge the gap. The question of how to stabilise the system is exceptionally complex and needs good science. Our research programme, *climate-related risks for energy supply and demand*, is providing some of the building blocks by, for example, understanding the effect of climate cycles on the hydro resource.

On a regional scale, this year we used our extensive climate and hydrometric databases to find locations in a region where wind generation can be sited to complement hydro, even though wind and rain generally coincide across the region as a whole.

On a local scale, NIWA's Māori Development Unit, Te Kūwaha, is working alongside the remote Māori communities of Waipoua (Northland) and Waihi (Lake Taupo). The project involves all partners learning together and from one another. Key features include needs assessments, resource monitoring, retrofitting for energy efficiency, installation of small-scale technologies (solar, wind, micro-hydro), and the establishment of systems to support these. The work is funded by the Foundation for Research, Science & Technology, with support from EECA. We are working with subcontractors EcoInnovations and Negawatt Resources Ltd.

*providing practical
solutions to energy
problems*

- renewable energy
- energy efficiency
- greenhouse gas reductions
- reducing the environmental effects of energy use
- energy for remote communities



CRL Energy joins National Centre

The National Centre for Climate-Energy Solutions has expanded into a joint enterprise between NIWA and CRL Energy, following NIWA's purchase of a 50% stake in CRL Energy in April 2006. The centre will provide one-stop access to both organisations' research, consulting, information, and resources on the intertwined issues of energy, climate, and emissions reduction.

www.niwascience.co.nz/ncces