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# **The Renewable Energy and Energy Efficiency Potential of Waitakere City**

A thesis presented in partial fulfilment of the requirements for the degree

of

Masters of Technology  
in  
Energy Management

at Massey University,  
New Zealand.

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2005



## Abstract

Electricity restrictions and blackouts have occurred in Waitakere City in the past and are likely to occur again in the future unless the city can become more self reliant by meeting, at least in part, the increasing energy requirements for what is one of the fastest growing cities in New Zealand. In this study the potentials for energy conservation, energy efficiency and renewable energy resources have been broadly quantified and assessed using desktop analysis of publicly available data for stationary final use energy systems (i.e. excluding transportation) within the geographical area of Waitakere City and adjoining waters.

It was found that energy efficiency and energy conservation measures can consistently and predictably achieve overall energy savings and reduce daily and seasonal peak demand.

The best renewable energy resource potential exists with solar and geothermal for heating applications and wave, offshore and inshore wind and tidal currents for electricity generation. There is very limited potential for hydro and bioenergy systems beyond what already exists. PV solar and land based wind power generation are currently only feasible for limited off-grid applications.

This scoping study confirms the achievability of the vision expressed in Waitakere City Council's "Long Term Council Community Plan" (LTCCP) that by 2020 "*Waitakere City will be an energy cell, not an energy sink. Air quality supports good health*". A range of flagship projects have been identified to progress the achievement of this vision. Waitakere City Council can use this report as part of the development of a comprehensive energy management plan.



## Acknowledgements

The following people and institutions are acknowledged for their contribution to the development of this thesis.

Professor Ralph Sims (Massey University) – Study supervisor, editorial and initial concept

Waitakere City Council (Katja Lietz, Brent Bielby) – Study supervisor, benefactor of study, generic Waitakere data.

Philip Mladenov (EECA) – Editorial

EECA – Energy end user database for Waitakere City

Transpower – Data and information on Transpower network

Vector Energy – Waitakere network data and network maps.

James Frazerhurst – Wave power bathymetric studies and analysis

Rob Funnell (Institute of geological and nuclear sciences) – Geothermal data

Nigel Isaacs (BRANZ) – HEEP study

Murray Kennedy (Greater Wellington Regional Council) – Wellington renewable energy study and wind assessment

Dr Andrew Tait (NIWA) – Wind analysis using thin plate smoothing spline interpolation



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