

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

OPPORTUNITIES AND BARRIERS TO, AND BENEFITS
AND IMPACTS FROM, PAPA KĀINGA OWNED ENERGY
SYSTEMS: A CASE STUDY OF PARIHAKA.

A thesis presented in partial fulfilment of the requirements for the degree of
Master of Environmental Management
at Massey University, Albany, New Zealand

Jonathan Paul Quinn

2017

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

Parihaka Pa



n.a. (229), South Taranaki, Taranaki, New Zealand

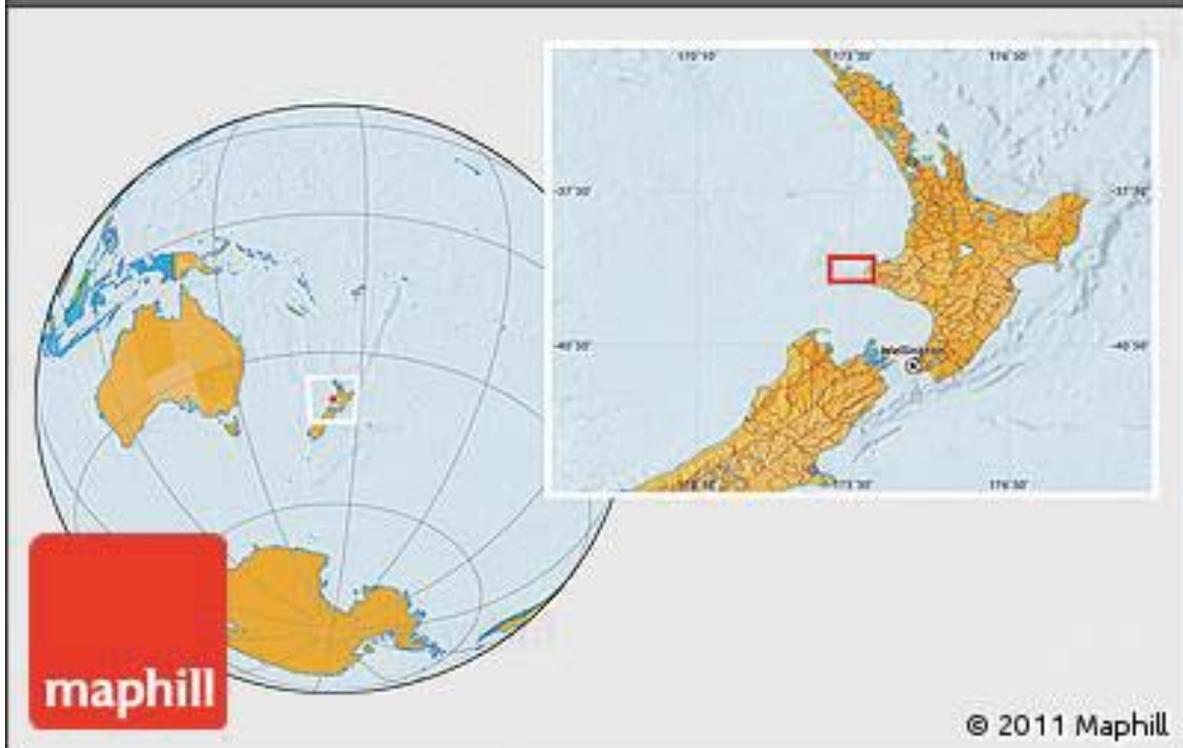


Figure 1: Map of Parihaka Pā location

Source: (Maphill, 2011)

Abstract

The development of an onsite renewable energy system is seen as key to developing the community of Parihaka and sustaining the expected population increase. This research has assessed the potential options for such a system and the potential opportunities, barriers, impacts and benefits that could come as a result. It was evident from the very first community consultation that one of the most important aspects of this system would be the ownership model, with hui and workshop attendees strongly favouring a community-owned system and this was further emphasised in survey responses. Interestingly, however, the interviews told a different story with a concern over a lack of social cohesion and an imbalance of work ethic leading to a preference for a joint ownership model.

For the most part, the data collection phase verified much of the literature review in that Parihaka community views reflected research to date. Examples include high levels of project support when community involvement and consultation throughout the planning phase is present, expected local employment gains and a preference for at least a joint community ownership stake in the project. However, while the survey and interview respondents felt that social barriers would pose the greatest issues the literature review noted that institutional barriers could very well pose much greater difficulties.

Visual impact on the landscape from wind turbines is a major source of opposition and residents and people living in the vicinity have the right to disapprove of the aesthetics of a wind turbine. Similar opposition to the use of other RE resources can greatly impede on successful implementation levels. However, the perceived negative impacts of these RE technologies must be assessed with consideration to the fossil fuel equivalents in order to get a clearer picture.

Further research opportunities exist for assessing the next stages of the planning phase, with specific regards to papakāinga land, including the preparation of a resource consent application and the legalities and considerations that must be addressed in order to increase the chances of success. Research into the specifics of the desired ownership model is also recommended, in addition to considering the ongoing community commitments needed to maintain the system.

Acknowledgments

I would like to extend sincere thanks to several people who contributed to this thesis. To my supervisors, Dr Phil Murray and Dr Nick Roskrige, who gave up considerable amounts of their time to provide advice and steer me through the completion of this research. Without their commitment, guidance and unwavering interest in my research it would have been a much tougher journey.

I would like to express my sincere gratitude to all survey and interview participants who devoted significant time to partake in this research and to the Parihaka community for warmly welcoming me into the community from the very first visit right up to the end of the research.

I would also like to thank my fellow Taiepa Tiketike researchers for providing a collaborative and engaging environment, which made this journey challenging and thoroughly enjoyable.

Table of Contents

1. Introduction.....	1
1.1. Problem Statement	1
1.2. Aims.....	2
1.3. Objectives.....	5
1.4. Report Overview	5
2. Significance of Research	7
3. Literature Review	9
3.1. Parihaka – A history of passive resistance	9
3.2. Papakāinga settlements in New Zealand	11
3.3. Energy Supply in New Zealand	12
3.4. Renewable Energy Expansion for Residential Systems.....	14
3.5. Renewable Energy as a source of electricity in Parihaka.....	15
3.6. Public Attitudes towards Renewable Energy	16
3.6.1. Public approval rates of wind energy	16
3.6.2. Public approval rates of solar energy	17
3.6.3. Public approval rates of hydropower	18
3.6.4. Public approval rates of biomass energy.....	20
3.7. NIMBY and overcoming this opposition	20
3.8. Different types of ownership models	22
3.8.1. Different equity structures	24
4. Methodology	26
4.1. Kaupapa Māori Research Considerations	26
4.2. Quantitative and Qualitative Research Methods	28
4.3. Workshops.....	29
4.4. Focus Groups.....	30
4.5. Literature Review	32
4.6. Interviews and Surveys	33
4.7. Interview and Survey Design.....	34
5. Data Collection.....	36
6. Results/Analysis	38

6.1. Survey Data	38
6.2. Interview Data.....	51
7. Discussion.....	57
7.1. Potential Barriers to Community-Owned Energy Systems in Parihaka	60
7.1.1. Economic Barriers.....	60
7.1.2. Social Barriers	61
7.1.3. Cultural Barriers.....	62
7.1.4. Institutional Barriers.....	63
7.2 Overcoming barriers and potential opportunities in New Zealand.....	68
7.2.1. Overcoming Barriers to Papakāinga Development	71
7.2.2. Papakāinga Development Considerations specific to Parihaka	73
7.3. Specific Policy Tools to overcome barriers	74
7.3.1. Feed-in Tariff	75
7.3.2. Renewable Obligation Certificates (ROCs)	76
7.3.3. Policy Plans specific to Parihaka.....	77
7.4. Potential opportunities community-owned renewable energy can bring to Parihaka	78
7.4.1. Economic Opportunities	78
7.4.2. Social Opportunities	79
7.4.3. Cultural Opportunities.....	80
7.5. Potential Benefits of Community-owned Renewable Energy in Parihaka.....	81
7.5.1. Environmental Benefits	81
7.5.2. Social and Institutional Benefits	82
7.5.3. Cultural Benefits	84
7.6. Impacts.....	86
7.6.1. Environmental Impacts.....	86
7.6.2. Social Impacts	88
7.6.3. Cultural Impacts.....	89
7.6.4. Institutional and Legal Impacts	90
7.7. Community susceptibility from this system.....	90
8. Conclusions	92
8.1. Research findings specific to Parihaka	92
8.2. Research findings with a global perspective	95

8.3. Research limitations	95
8.4. Recommendations for further research	96
9. Ethical Statements	98
10. Appendices.....	111

LIST OF FIGURES and TABLES

FIGURES

Figure 1: Map of Parihaka Pā location	iii
Figure 2: Outline of thesis structure	6
Figure 3: Electricity Generation by resource	13
Figure 4: Community views on small-scale RE generation by resource	40
Figure 5: Community views on wind turbine aesthetics	43
Figure 6: Community views on having a similar hydropower system to the example pictured in Parihaka.....	44
Figure 7: Community views on ownership models.....	45
Figure 8: Anticipated opportunities arising from this system in Parihaka	47
Figure 9: Anticipated benefits arising from this system in Parihaka	49
Figure 10: Anticipated barriers arising from this system in Parihaka.....	50
Figure 11: Anticipated impacts arising from this system in Parihaka.....	51
Figure 12: Outline of Chapter 7 and summary of section content	59
Figure 13: Electricity Generation by Fuel Type, 2013 and 2014 years	67
Figure 14: Barriers facing community RE systems and policy solutions.....	78

TABLES

Table 1: Categorized list of Opportunities, Barriers, Benefits and Impacts to guide research .	4
Table 2: Support for electricity generation in New Zealand.....	18
Table 3: Consumer Electricity by source, 2007	19
Table 4: List of Case Studies used in this research	27

LIST OF ABBREVIATIONS

BANANA - Build absolutely nothing anywhere near anything

EECA - Energy Efficiency and Conservation Authority

EU - European Union

FIT – Feed-in-Tariff

GHG's – Greenhouse gases

GW – Gigawatt

IEA - International Energy Agency

IPCC - Intergovernmental Panel on Climate Change

MBIE - Ministry of Business, Innovation & Employment

MFAT - Ministry of Foreign Affairs and Trade

MGT - Microgeneration technologies

MWh - Megawatt hour

NIABY - Not-in-any-backyard

NIMBY - Not in My Back Yard

OECD - Organization for Economic Cooperation and Development

PPT – Parihaka Papakāinga Trust

PV – Photovoltaic

R&D - Research and development

RE – Renewable Energy

RMA - Resource Management Act

ROCs - Renewable Obligation Certificates

STDC – South Taranaki District Council

UK - United Kingdom

UN – United Nations

WDC – Whangarei District Council

GLOSSARY

Hapū - section of a large tribe, clan, secondary tribe

Hui – congregate, come together

Iwi – nation, people

Kaitiaki- guardian or steward

Kaitiakitanga – guardianship and stewardship

Mana – authority, control

Marae – enclosed space in front of a house, courtyard, village common

Maunga - mountain

Taonga – property, anything highly prized

Urupā – fence round a grave, burying place

Reo Māori – The Māori language

Wāhi tapu - sacred objects and areas

Wānanga – instruction, wise person

Whakapapa – genealogy, lineage, descent

Whānau - family group

Definitions sourced from (Moorfield, 2011; Williams, 1971)