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Policy strategies for inclusive renewable energy in Aotearoa (New Zealand)

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Introduction

New Zealand faces a range of challenges in reorienting its energy infrastructure to address both climate mitigation and adaptation goals. These include ensuring that the shift to a decarbonised, distributed energy system is economically efficient, meets energy security needs and is socially just. Despite recent interest in low emission scenarios and mass participation of consumers, few studies have addressed questions around socio-economic, political and environmental impacts of more or less inclusive energy scenarios, how to co-ordinate, encourage or regulate participation of different energy consumers, or questions around appropriate governance or leadership. Worldwide, local and community energy has been integrated in regional development and energy poverty policies and programmes, often featuring a prominent co-ordination role by local government (Figure 1). New Zealand, by virtue of its small size, isolation and its legacy of large state-owned hydropower is unusual in that it has not featured high-level strategies or programmatic support for distributed energy or local energy innovation. This policy brief will argue that addressing New Zealand's energy challenges will necessitate more proactive and inclusive policy co-ordination by government and regulatory authorities than that practiced since the late 1980's.

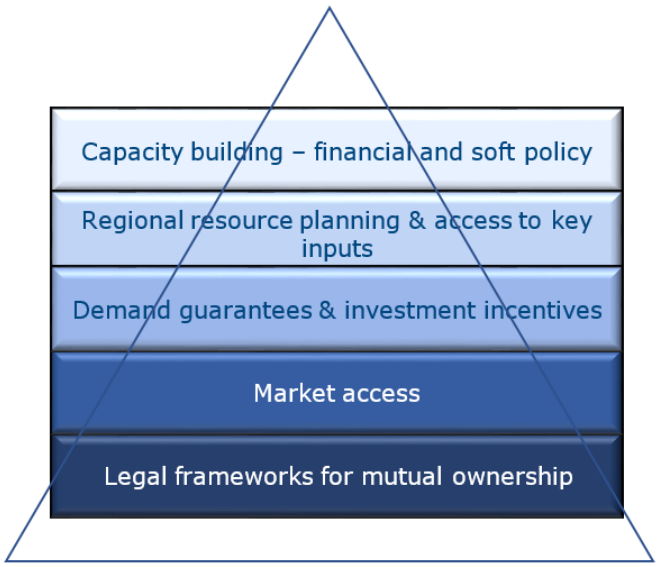

Figure 1. Enabling Policies for Local and Community Energy

In what follows, we:

1) Review the barriers facing Māori & community energy projects,
2) Identify potential areas for growth in local and community energy in the context of energy market projections and the governments Zero Carbon ambitions
3) Identify potential policy support mechanisms that can achieve these objectives

Local & community energy in New Zealand

In New Zealand, more than 131 local or community organizations account for 294 megawatts (MW) of power generation capacity, holding more than 11 billion NZD in assets. We can distinguish four main organisational types: 1) electricity distribution companies (former local power boards) owned by consumer trusts or by a co-operative, 2) Māori owned projects, 3) new social enterprises, and 4) local authorities. Each of these organisational forms is characterised by distinct motivations, resource capacity, and degree of citizen engagement. They offer different opportunities for facilitating energy emissions reductions through technology diffusion or behaviour change, and have different local impacts depending on the degree of wider community engagement, how they allocate revenues and to what extent they source locally.

Barriers

The absence of power purchase obligations and exposure to risk on New Zealand's wholesale market has long dogged entry of small-scale independent power generators. We find that newly established community energy organisations have necessarily had to seek partnerships with established utilities able to manage this risk, and frequently find themselves in a weak bargaining position when negotiating terms of finance, risk distribution and return.

Lack of a unified strategy for distributed energy has translated into a lack of regulatory streamlining and willingness of key stakeholders, such as councils and generation-retailers, to accommodate community energy projects where it conflicts with health and safety, planning or due diligence compliance regulation. Unlike most other countries, small scale wind and solar is not universally made exempt from resource consent and environmental impact assessment, posing administrative hurdles that are disproportionate in relation to risks posed. Importantly, this lack of leadership has translated into a widespread lack of public support and awareness of the benefits and opportunities provided by renewable energy, with nearly all community organisations reporting instances of local opposition (sometimes violent), health and safety concerns, or concerns around the effectiveness of the technology, many of which are unsupported by empirical evidence.

High potential areas for growth

There are a number of ways in which local and community energy could contribute to **low emissions scenarios** set out by the Ministry of Business, Innovation and Employment/Business NZ Energy Council/Vivid 2050**.** They can provide additional renewable electricity capacity (through community-owned geothermal, wind and solar assets), short-term flexibility and ancillary services (through microgeneration, battery storage and peer-to-peer trading), renewable dispatchable alternatives to gas (through small scale biomass CHP), and can reduce peak loads. A number of emerging models for local and community energy contribute to these objectives; including integrated generation/retail solar battery projects, off-grid microgrids, peer-to-peer trading pilots, virtual power plants and biomass combined heat and power systems.

The lack of programmatic support for distributed energy carries risks. Competing demands for home comfort and electronics can erode the potential for peak shaving and energy demand reductions. Market-driven technology adoption may exclude low-income households from the benefits of distributed energy technology. As such it may be necessary to consider policy instruments that can support local energy innovation, enable uptake of distributed energy technology across a wider variety of public, civic and business organisations and by households and communities across socio-economic status categories, supported by building standards that can improve the energy efficiency of housing. Along with media coverage of successful community energy projects, these steps would serve to reorient narratives around distributed energy in the public domain towards their positive impact.

Policy recommendations

A number of tried and tested policy options exist that would make distributed energy more accessible to a wider range of actors:

- A **centralised strategy** with associated targets, **regulatory streamlining** and development of appropriate policy instruments, including regulated power purchase prices
- A **one-stop-shop** providing information, network an tendering services
- Programmes providing **seed funding**, revolving funds or low interest public loans would provide **access to finance** for start-ups, enabling inclusion of public or community organisations from all walks of life
- Beyond formal integration of renewable energy into regional and district plans, local authorities could support community energy projects through **regional energy planning** and **set aside public land** for local energy projects.
- Internationally, **public procurement contracts** have provided important entry points for the professionalization of local and community energy organisations.
- Finally, several countries, have had success with voluntary or mandatory **guidelines for shared ownership**, where commercial ventures are required to offer equity shares to the local community.
- A capacity market with **special provisions for local energy projects** would remove exposure to long term price risks, enabling councils and community organisations to invest in renewable energy assets.

For the detailed policy brief, see: https://policycommons.blogs.auckland.ac.nz/2018/12/06/policy-strategies-for-inclusive-renewable-energy-in-aotearoa-new-zealand/

To find out more about this research, please contact: a.harmeijer@auckland.ac.nz

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