

Submission - Infrastructure for a Better Future

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To: Infrastructure Commission

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Contact:



Introduction

Community Energy Network (CEN) has members who are working to grow resilience and community leadership in the energy sector. Over the last 15 years, CEN has successfully implemented several programmes that have improved energy efficiency and household wellbeing in New Zealand's housing infrastructure. While continuing this work, CEN is now also a leader in the community energy sector. Innovative approaches are being taken to guide communities in establishing and operating large scale renewable generation, storage and demand management services.

Our submission is predicated on our conviction that highly functional and resilient communities will have core roles in shaping, building, and operating several key parts of New Zealand's future infrastructure.

CEN supports strongly the systemic, inclusive and integrated approach to infrastructure strategy that is advocated by this document. We respond below to only those Questions and issues that lie within our fields of expertise and opportunities to engage with the future of infrastructure.

Question 1: Vision

Given the current disarray of New Zealand's infrastructure, this is an inspiring statement. However, it is a statement of the purpose of infrastructure. It is not visionary because it applies as much today as it will in 2050.

CEN considers that an aspirational vision for 2050 should establish a strong commitment to this core purpose being sustained throughout the major stresses and changes that will be experienced over the next 30 years and beyond.

Question 2: Principles for Decision Making

CEN agrees with the principle of **efficiency** but notes the danger that this principle could be interpreted to mean that only monetised benefits can be included in decision making processes. This would be a grave mistake, because many social, cultural and environmental benefits cannot be monetised.

The concept of **affordability** can lead to planning that is blocked by budgetary limits that are set without reference to benefits. CEN considers that this approach be replaced by the principle of **agreed resourcing**. This principle enables sourcing and allocation of resources to be considered in terms of anticipated benefits. In our experience, this has relevance to achieving resourcing through robust community actions that generate local funding. This approach allows for opportunities to be formally explored where communities are able to access funds that would normally not be provided for infrastructure projects. This represents one of the values of engaged communities.

CEN strongly endorses the principle of **future-focus**. However, the document is currently very weak in its perspectives on the future. Sensible decisions to invest in infrastructure need to be based on robust scenarios of future change.

The principle of **evidence-based** decision making is essential, but insistence that investment decisions are based on **robust and accurate information** is highly problematic if this is interpreted

literally. The scenarios of future change referred to in (4) should contain the best possible information derived from robust processes but recognition that substantive uncertainty will inevitably remain. This would be the context of decision making.

Question 3: Long-term Changes and Challenges

1. Housing:

CEN confirms that there is a major challenge in ensuring that all New Zealanders have housing that has proper insulation, ventilation, dryness and warmth. Our view is that present standards are both incomplete and too low. Implementation of an Energy Performance Certificate system should place housing quality well above the Building Code minimum standards (which will also need to be upgraded significantly). There will be a large and potentially enduring positive impact on infrastructure demand if housing quality is improved to healthy standards.

In terms of overall housing infrastructure policy, retrofit programmes should take equal priority alongside new-build programmes.

CEN expects Healthy Homes work will be subject to changes in the Building Code and further engineering specifications that are introduced as wind velocities increase and temperature ranges widen. CEN members have already introduced a concept for Climate-Safe Homes, alongside its Healthy Homes work, for households that become increasingly subject to flooding and coastal inundation. In some cases, whole communities will need to be relocated.

2. Impacts of Climate Change:

CEN agrees strongly that adapting infrastructure to climate change will be difficult and expensive, and that this will be compounded by simultaneous work to mitigate through emissions reductions. For this reason, we are concerned that the diagram in Figure 1 (page 10) may be misinterpreted. We understand that the diagram is intended to illustrate the gross shortfall in expenditure provisions, but it could also suggest that the cost of adaptation to climate change is about the same as the other six categories of cost. In CEN's view, adaptation costs will be by far the largest category. It will be necessary to allocate ever-increasing proportions of infrastructure funding to projects that are implemented to avert or manage anticipated impacts of climate change.

We note that the document refers only to the direct physical and biological effects. To these must be added the potentially very large indirect economic effects on New Zealand when global climate change affects export markets and international supply chains, and disrupts the global economy, especially its fragile financial institutions.

CEN's view is that these effects will make international supply chains increasingly unreliable and costly, with the consequent effect of incentivising a shift towards stronger self-sufficiency in the New Zealand manufacturing sector. **This would lead to greater reliance on regional and community economies, with consequences for employment, geographic population distributions, and needs for infrastructure.** These preliminary views must, of course, be reviewed and developed further through the scenario work referred to above.

Question 4: Structure of Action Areas and Needs

The Action Areas structure works well for the document. However, the impacts of climate change will have effects – direct and indirect – on all categories of action, but this is not recognised in the document. In modelling terms, the impacts of climate change are ‘overlay variables’ with much wider effects than the stated single need to prepare infrastructure for climate change.

Further, the term ‘Competitive’ – applied to Cities and Regions – is puzzling. In this context, what is it intended to mean? Surely it is not that cities and regions should compete with each other? A term such as ‘Thriving Cities and Regions’ would better capture the intention. This would also enable wellbeing frameworks to be used to measure the success of infrastructure investment.

Question 7: Energy Infrastructure

We have defined community energy as any renewable energy activity that is managed in an open and participative way, and has local and collective benefits and outcomes. Community energy includes both communities of place (defined by the places people live, such as a neighbourhood or region), and communities of interest (defined by a shared interest, such as a sports club or national co-operative). Community energy can involve a wide range of activities, including heat and power generation, demand side management, storage, clean transport and energy efficiency.

CEN believes that there is huge potential to expand distributed electricity generation at the community level. Our work indicates that these enterprises should access the economies of scale available from quite large arrays of solar or wind resources, rather than focus on solar arrays on residential roofs.

CEN has demonstrated that properly engaged communities can develop strong commitment to innovative planning and eventual implementation. This commitment also facilitates sourcing of local resources – including both finance and talented people. These qualities can assist development of infrastructure at levels that enable communities to be actively engaged.

CEN considers that New Zealanders should have the opportunity to be actively engaged in the processes of planning infrastructure that impacts directly on their communities. This form of engagement helps to energise communities. Co-design principles need to be used. For co-design to be effective, local and central government need to operate in communities in ways that can effectively engage communities in the planning processes.

CEN is actively establishing community owned DERs. In doing so, we have encountered substantial disinterest, or at least low understanding, and push-back within the mainstream electricity sector. The sector has a poor understanding of the concept of active communities and does not appear to value the collaborative opportunities that engaged communities can provide for building robust and equitable energy systems.

These barriers increase costs, delay progress, and dampen community commitment to action. Hence, institutional changes are required within the regulation and governance of the sector to free-up the large number of opportunities for community generation. Action F2.1 is essential, and it must

be understood to apply to community energy enterprises and well as the other types of DER operator.

Question 8: Renewable Energy Zones

CEN does not favour the concept of renewable energy zones because they would be sited for reasons of regulatory and administrative convenience. The zones would inevitably exclude sites for DERs that are favourable and would disempower many communities that wish to establish them. Instead, current regulatory and cultural constraints in the electricity sector should be removed for the whole of New Zealand.

Question 9: MBIE 'Accelerating Electrification' Paper

CEN is a little confused as to whether this question refers to 'Accelerated Electrification: Evidence, Analysis and Recommendations' (written by the CCC) or 'Accelerating Renewable Energy and Energy Efficiency' (MBIE)?

In our submission on the MBIE Report, the priority for CEN was that communities were recognised as a core contributor and receiver of energy services. This was critical as communities should not be seen as passive consumers of energy if they are to be included properly in the design and implementation of a *just* transition to a low carbon economy. To succeed in an equitable transition, communities must be fully engaged and empowered to take a leadership role in their own energy generation, management and use.

This would require changes in the regulatory framework for regional electricity distributors. Their present configuration, as distributors of electricity delivered by the National Grid and their own local grids, must be recast as providers of a specified network service to consumers, DER operators and Grid services.

The present sector configuration makes it likely that first-mover DER operators will suffer cost disadvantages due to the lines cost models used by incumbent distributors. This disincentive should be removed immediately through additional regulations that spread costs over all DER operators over time.

Question 13: Demographic Change

CEN considers that population and demographic projections will change substantially when the future impacts of climate change – both physical/biological are properly modelled. In particular, the economic drivers of increasing self-sufficiency will expand local-for-local manufacturing in regional centres and communities, with a resultant shifts of population away from large cities.

CEN notes that population decline in some communities have been caused over many years by policies based on neo-liberal thinking. **This trend can and should be reversed by adoption of policies that encourage active community engagement in the local economy.**

Questions 15, 16, and 17: Maori Engagement

CEN is not a kaupapa Maori organisation. However, several CEN's member are Maori organisations, and Maori interests are engaged in community energy enterprises. CEN and/or our Maori members are available to share its experience.

Question 18: Cities and Regions – the Growth Assumption

CEN notes that the whole document is predicated on the assumption that a future thriving New Zealand requires economic growth. This assumption strongly underpins the section on Cities and Regions.

CEN considers that the impacts of climate change will cast increasing doubt on the technical and economic feasibility of this assumption. The economic impacts of climate change are likely to require our nation and communities to learn how to thrive and maximise wellbeing in ways that are decoupled from economic growth. CEN and its members already have experience of this type of thinking through focussing on community enterprise and genuine community engagement.

As the decoupling happens it will transform thinking about infrastructure – away from needs dictated by growth projections, and towards the needs that emerge from New Zealand’s re-thinking.

Questions 26 and 27: Coordination and Governance

CEN strongly supports the call for improved coordination. However, the document refers only to Central Government and Local Government. It ignores the presence and potential of active communities as institutions that contribute to planning, funding, and operating infrastructure.

Community engagement is not covered well through the present mandates of Local Government, which also lack many of the skills and perspectives that are needed. Therefore, CEN proposes a third aspect of governance and coordination – Active Communities.

Questions 28 and 29: Funding and Financing

CEN’s members are already demonstrating Community Ownership of infrastructure assets and the scope for contributions to funding by active communities. We note that Maori owned organisations, that are run with community enterprise lens, are also not included well.

The document ignores these aspects of a thriving future New Zealand. This can be rectified by adding to Figure 10 the new category ‘Community Ownership Organisations’ in both the Non-commercial and Semi-commercial columns. Further, the outer ring in Figure 11 should be labelled ‘Private, Mixed, and Community Ownership’.