

**BRCT submission on
Replacing the New Zealand Energy Efficiency and Conservation Strategy 2011 - 2016**



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Ministry of Business, Innovation and Employment
[by email: energymarkets@mbie.govt.nz]
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**Submission on Replacing the New Zealand Energy Efficiency and Conservation Strategy
2011 - 2016**

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1 Overview

Thank you for this opportunity to submit on **Replacing the New Zealand Energy Efficiency and Conservation Strategy 2011 - 2016**.

The Blueskin Resilient Communities Trust (BRCT) is a registered charitable trust formed in 2008 to create local climate solutions together. We work as a legal body to provide a public benefit and achieve the long-term objective of building community resilience, particularly in the context of our changing climate with a focus on energy. Our headline work is our Blueskin turbine development and our core activity areas are in energy. We provide service such as free Cosy Energy Advice, Home Performance Assessments, Healthy Rental Certification, Affordable firewood and insulation and engage in climate change action particularly through our projects. We offer support to number of community groups working in the field of sustainability. We are members of the Community Energy Network, the Otago Chamber of Commerce and the Sustainable Business Network. Jeanette Fitzsimons is our patron.

“There are no economic or technical barriers to move to 100% renewable energy. Governments regulate energy markets, both for supply and demand; they can educate everyone from consumers to industrialists and stimulate the market for renewable energy and energy efficiency by implementing a wide range of economic mechanisms.”¹

We believe there is much that can be done to both hasten the transition to a fully renewable electricity system and to rapidly increase our total energy supply to at least 50% renewable within little more than a decade, both through improving the energy productivity of businesses and homes and through delivering energy supply from natural renewable resources.

¹ Teske, Sven (2015) Energy [r]evolution: a sustainable world energy outlook 2015, page 24.
<http://www.greenpeace.org/international/Global/international/publications/climate/2015/Energy-Revolution-2015-Full.pdf>

2 Our responses to the consultation questions

2.0 Does the proposed goal capture what you see as the desirable future state from the promotion of energy efficiency, energy productivity and renewable energy in New Zealand?

The goal nearly captures our ideal. However it lacks some teeth and is rather narrow.

By stating “**Support** New Zealand to be an energy efficient, productive and low emissions economy” rather than “**Deliver** increased energy efficiency, energy productivity and lower emissions..”, it avoids responsibility and intimates that the strategy will support something else, without exactly spelling it out. It needs to be more substantial. The NZEECS is an important document. We’d prefer it to indicate a “practical and scalable economic development plan that can put [New Zealand] back to work, address global warming, and create a sustainable quality of life for its citizenry”².

By stating a “... low emissions economy” without reference to all of society, it focusses overly on economic aspects, rather than whole society outcomes.

We propose rewording the **goal** as follows:

“Deliver increased energy efficiency, energy productivity and lower emissions to develop economic opportunity, reduce climate change impacts and build a sustainable society for all our citizens”.

There has been plenty of strategic thinking in New Zealand and overseas on how to make the transition to a low carbon society and we need not be timid. A key document you no doubt have referred to is the Royal Society’s report “*Transition to a Low-Carbon Economy for New Zealand*”³. We encourage you to lean more heavily on this work. In particular, while the strategy is government led, we fully acknowledge that for it to be successful it will need all New Zealanders to become personally involved in helping deliver the strategy and solutions. Policy suggestions can also be found in the 2015 World Energy Scenario report⁴.

² Rifkin et al (2013), Nord-Pas de Calais, Third Industrial Revolution, Master Plan 2013. Page 8 (<https://eu-smartcities.eu/sites/all/files/blog/files/Third%20Industrial%20Revolution%20in%20Nord%20Pas%20de%20Calais%20-%20Final%20report%20in%20English.pdf>)

³ Sims, R. et al (2016). *Transition to a low carbon economy for New Zealand*. The Royal Society of New Zealand. <http://royalsociety.org.nz/media/2016/06/Report-Transition-to-Low-Carbon-Economy-for-NZ.pdf>

⁴ Teske, Sven (2015) Energy [r]evolution: a sustainable world energy outlook 2015. <http://www.greenpeace.org/international/Global/international/publications/climate/2015/Energy-Revolution-2015-Full.pdf>

2.1 Where do the challenges and opportunities lie for energy efficiency and renewable energy in New Zealand over the next five years?

The draft strategy acknowledges the existing government target of 90% renewable electricity generation by 2025. However the most recent Ministry of Business Innovation and Employment modeling of Electricity Demand and Generation Scenarios (EDGS) confirms that under all five modeled scenarios the **90% renewable electricity target** will not be reached by 2025. Indeed, if the strategy is implemented as it has been drafted, we might expect electricity demand to rise with no corresponding rise in renewable electricity generation. In our view the NZECS needs to firmly restate this target and develop policy actions to ensure it will be met.

Additionally, if there's a further drive to decarbonise, that would mean a higher probability of large additions to electricity demand as consumers switch away from fossil fuels in transport and heating sectors⁵. Already 9% of New Zealand's total greenhouse gas emissions come from electricity generation⁶. The 90% renewable electricity target belongs firmly in the strategy.

The first great challenge therefore is changing the trajectory of renewable electricity generation and working with other government agencies to meet this modest target. The opportunities to do so are many as we'll detail below.

Improving the energy efficiency of residential property remains a critical challenge. The **Warm Up NZ programme** has begun the work of improving the energy efficiency of New Zealand homes but there remains much to do to improve energy intensity while delivering social benefit. While the programme is an exemplar social investment programme, EECA estimates that there are at least 600 000 homes with inadequate levels of insulation remaining. This programme is critical because it has such strong co-benefits, such as improving the health and wellbeing of New Zealanders while reducing health expenditure⁷. We see the benefits of this programme first hand in our community. The opportunities to expand and improve the Warm Up NZ programme with community partnership to improve the situation of the most vulnerable are great, as we detail below.

⁵ Personal communication from Greg Sise, EnergyLink.

⁶ Alan Miller, director of the EPECentre (Electric Power Engineering Centre) at University of Canterbury and the GREEN Grid project, in a presentation on "What if we all drove electric vehicles?" at the Hutton Theatre, University of Otago, on Thursday the 20th of October 2016. <https://www.youtube.com/watch?v=9gRS7PK6TP0>

⁷ For every \$1 spent insulating and heating a home, the Government saves \$5 in health spending (source: <http://www.scoop.co.nz/stories/GE1312/S00037/warm-houses-key-to-child-health.htm> - original report not attached)

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Some of the best ways for New Zealand to use energy more efficiently are in transport. **Transport** presents a third great challenge and enormous opportunity. 20% of New Zealand's greenhouse gas emissions come from the transport sector, and within this 20%, 91% is from road transport, and 65.5% of that is from light passenger vehicles. In other words, 12% of New Zealand's total emissions come from light passenger vehicles⁸. EECA has reported that for every 370, 000 ICE light vehicles replaced by EVs (14% of 2013 fleet) NZ would save \$420m in energy costs and avoid 1 million tonnes of carbon dioxide emissions per year. Switching the national fleet to fully electric would have significant economic benefit while dramatically reducing emissions. Alan Miller, Director Electric Power Engineering Centre in Christchurch has pointed out that the environmental aspects of low emission transport are only one positive aspect. Other aspects to consider are the potential for building a more secure, resilient national grid and the potential to develop new skills and jobs. Meanwhile, the electric motor is about 95% efficient compared to Internal Combustion Engines which are about 17% efficient. On an efficiency register alone it makes sense to invest heavily in transforming our national fleet to EVs.

Replacing **Industrial Heat fuels** with renewable energy forms appears as a challenge because of the upfront cost, but could equally be considered a fantastic opportunity to reskill a workforce, reduce emissions and stimulate regional development. We would like to see some credible policy actions to deliver reduced emissions from industrial heat fuels.

Market reform is perhaps the greatest challenge and yet has the most potential to stimulate positive change. As stated in the Royal Society of New Zealand report, "The social and technological changes required are significant, but achievable if people and organisations are enabled so they can choose low-carbon options"⁹. There are many ways this can occur which we detail below.

2.2 Do the proposed objectives and priority areas capture the key contributions that needed to achieve the goal?

Objectives.

The objectives are generally fine but a reordering might assist with prioritisation and a slight reformulation could help. For example, because market reform is a such critical challenge, it would make sense to replace Objective 4: "Market Participants" with "Market Reform" and place it as number 1 on the objectives list. MBIE may be

⁸ Alan Miller, as above <https://www.youtube.com/watch?v=9gRS7PK6TP0>

⁹ Sims, R. et al (2016) *Transition to a low-carbon economy for New Zealand*, pp 53. The Royal Society of New Zealand (<http://royalsociety.org.nz/expert-advice/papers/yr2016/mitigation-options-for-new-zealand/>)

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constrained in what it is enabled to do however we view Market Reform as imperative to acknowledge and critical to achieve if we are to establish a low emissions economy.

While working to “*encourage the development and adoption of energy efficient and renewable energy products and services*” is a valuable objective to work towards within the current market structure, there are some fundamental limits to what the market will allow, which will continue to stymie attempts to achieve the existing government target of 90% renewable electricity generation by 2025. If the limits and inconsistencies of the lightly regulated market model are not acknowledged this strategy’s effectiveness will be reduced. Greater consistency across government agencies could improve market structure and market signals.

The Electricity Authority, for example, which replaced the Electricity Commission in 2010, has no specific mandate to take climate change or emissions reduction into account in decision making. Its purpose is stated as: “*The Electricity Authority promotes competition in, reliable supply by, and the efficient operation of, the New Zealand electricity industry for the long-term benefit of consumers*”¹⁰.

The Electricity Commission did have a specific mandate: “*The Commission regulates the operation of the electricity industry and markets, to ensure electricity is produced and delivered to all consumers in an efficient, fair, reliable and **environmentally sustainable** manner. The Commission also promotes and facilitates the efficient use of electricity.*”¹¹

By tweaking the mandate of the Electricity Authority to allow it to consider the benefits of renewables, agencies will not find it so difficult to work together to deliver consistent results.

Current objective 1 “Businesses make energy efficient and renewable energy investments and adopt best practice energy management” is a good objective, however the supporting actions by different agencies are not particularly inspiring. The ETS does not currently provide much impetus for businesses to voluntarily adopt best practice to lower emissions and until there is a higher carbon price (which might happen at some indefinite point in the future) we can’t expect voluntarism alone to deliver results. Cheap international abatements have not delivered the incentives in New Zealand to reduce emissions. We need either some firmer carbon signals or regulation or both. We favour a carbon tax over an emissions trading scheme as taxation provides a direct and transparent mechanism that moves money from polluters to the government and avoids the speculation and corruption associated with the emissions trading scheme.

¹⁰ <http://www.ea.govt.nz/>

¹¹ <https://web.archive.org/web/20100811021328/http://www.electricitycommission.govt.nz/>

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Current objective 2 *“Individuals choose energy efficient technologies, adopt energy efficient behaviours and make greater use of renewable energy”* is a good objective. To make this objective real, more investment in existing programmes is necessary and market development will be required as well. For example:

- Renewal and significant expansion of the Warm Up NZ programme (rather than terminating it by 2018) to provide interest free loans for wall insulation and double glazing, and fixed heating in the colder zones in addition to ceiling and underfloor insulation. The NZEECS needs specific supporting actions/programmes to continue home insulation;
- Upgrading insulation standards for rental properties in the Residential Properties Act and upgrading the Building Code performance standards to reflect improvements in technology and in particular insulation. And where any aspect of the house is such that the appropriate thermal performance of the house is inadequate, other parts are required to be upgraded above minimum standard;
- Providing finance to local government to enable local authorities to offer affordable targeted rates for individuals to install insulation, double glazing, fixed space heating, new appliances, etc;
- Removing GST from purchases of EVs, micro-wind turbines, solar panels, and solar thermal installations;
- Supplying core funding to community enterprises providing free community energy advice and subsidised home performance assessments;
- Establishing a Green Social Investment Bank, a government owned, for-profit bank¹²;

In addition to the additional investment in the above, assisting with renewable energy projects and energy efficiency projects in community organisations, schools, etc, could make a significant contribution to achieving the objectives. In the same vein enabling participation in Enviroschools and other programmes like those run by the various members of the Community Energy Network, in concrete, measurable terms will unlock our energy productivity and renewable potential.

Current objective 3 *“The public sector demonstrates leadership by adopting greater energy efficiency and renewable energy”* is a good objective. We particularly like the new supporting action to ‘identify opportunities to increase public sector energy efficiency and renewable energy use in publicly-owned boilers’. However, again the supporting actions need some more substance generally, and one simple way public agencies could ‘implement procurement policies that take into account life-cycle costs of products and services’ would be to establish a Renewable Portfolio requirement for the public sector, a version of the Renewable Portfolio Standard applied in a number of countries (a regulation to ensure increased production of energy from renewable energy sources). This would oblige public sector organisations to meet an escalating renewable

¹² A Green Party policy. See https://www.greens.org.nz/sites/default/files/policy-pdfs/green_investment_bank_policy_paper.pdf

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energy supply target (beginning at 30% and rising 10% per annum) for all energy requirements. It would encourage the switch from fossil fuels in the transport and heating sectors and encourage the increase in renewable electricity generation, assisting to reach the target of 90% renewable electricity generation by 2025.

Current objective 4 “Market participants encourage the development and adoption of energy efficient and renewable energy products and services” is something that needs significant attention as we’ve indicated above. There is some good work underway however, notably the Electricity Authority project and work-stream “*Multiple trading arrangements at an ICP: A1*” which is looking at the ‘feasibility and options to allow for multiple traders at an ICP’ to deliver greater competition, efficiency and system reliability (see page 11 of the work programme¹³). We reiterate the need to enhance the mandate of the Electricity Authority to ensure that environmentally sustainable becomes part of the statutory objective alongside competition, efficiency and reliability.

One key contribution that is additionally needed to achieve the goal is that of the **community enterprise sector**. The community enterprise sector, most prominently represented in the energy sector by the Community Energy Network and the Enviroschools Foundation, has become a critical part of the energy environment in New Zealand, delivering a broad range of services that are increasingly important in a context of rising house prices and rising inequality leading to fuel poverty. Our own company, Blueskin Energy Ltd also has a role in the energy sector, as a charitable, community owned company working to build a renewable generation asset, with profits to be directed to creating local climate solutions together¹⁴. Blueskin Energy Limited is developing a blueprint to:

- Build grid resilience through distributed generation close to consumers rather than Think Big projects at distance;
- Reduce reliance on thermal plants;
- Provide a vehicle for community development and changing norms around energy, and;
- Offset the cost of replacing or upgrading local networks.

A number of other community enterprises have a similar ambition and the strategy needs to recognise the community enterprise sector. We suggest it could be listed as:

The Community Enterprise Sector *provides services and leads projects to reduce fuel poverty, improve access to renewable energy and builds alliances to support the transition to a low carbon society.*

We submit that a suite of policy actions be developed around the Community Enterprise Sector.

¹³ <http://www.ea.govt.nz/about-us/strategic-planning-and-reporting/our-work-programme>

¹⁴ <http://www.blueskinenergy.co.nz/>

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Priorities.

The three priority areas can be improved to support government action as long as there is an understanding of how they will contribute to achieving the objectives in a meaningful way. Priority 3 will need restated. Much of this has been detailed above but we indicate further improvements that can be made below. For example:

Priority area 1 (“Renewable and efficient use of process heat”) has a target that is no target. A reduction of emissions intensity of 1% per annum is the business as usual forecast. A genuine target should be used and good policy actions indicated, so that we can evaluate progress towards it.

Priority area 2 (“Efficient and low-emissions transport”) has a very weak target of 2% of our vehicle fleet being comprised of electric vehicles by 2021. Supplying 10% of our vehicle fleet with electricity by 2021 would only require an additional 54 MW Geothermal power station or equivalent in wind farms. We already have over 2900MW of wind farms consented and ready to be built. We are easily capable of generating all the electrical energy required to power even 100% of electric vehicles in New Zealand¹⁵. The Electric Vehicle Programme needs to have much more ambition. We can achieve a far greater level of EV uptake by 2021 and we need to look at innovative opportunities such as EV-Grid discharging providing co-benefits such as grid security and demand side management.

Priority area 3 (“Innovative and efficient use of electricity”) is actually the wrong target. The previous NZEECS had the target of 90% renewable electricity generation by 2025 subject to security of supply and it is no closer to being reached. It makes no sense to abandon this target and replace it with a watered down target. It will take ‘innovative and efficient use of electricity’ policy actions to meet the 90% target, and this should be explored. Reinstate the 90% renewable target.

2.3 Does the focus on what each group can contribute resonate with you? Do you think anyone is missing?

If you include the Community Enterprise Sector, and what it can contribute, we think you have covered off the essentials. See below:

¹⁵ Alan Miller, director of the EPECentre (Electric Power Engineering Centre) at University of Canterbury and the GREEN Grid project, in a presentation on “What if we all drove electric vehicles?” at the Hutton Theatre, University of Otago, on Thursday the 20th of October 2016. <https://www.youtube.com/watch?v=9gRS7PK6TP0>

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The Community Enterprise Sector provides services and leads projects to reduce fuel poverty, improve access to renewable energy and builds alliances to support the transition to a low carbon society.

2.4 Taken together, do you think the proposed goal, objectives and priority areas will set a clear direction for action to unlock our energy productivity and renewable potential?

Assuming you decide to include the Community Enterprise Sector, we think that a clearer direction will indeed be set. However the strategy still does not seem to express just how central energy is to all human activity, and as a consequence underplays the urgency with which we must phase out use of fossil fuels and transition to a low carbon society. We would like to see priority actions directed at reducing energy consumption through structural strategies (technology, infrastructure, financial incentives) and informational strategies (social change). We would like to see unambiguous direction on how New Zealand will reduce its carbon equivalent emissions each year over the next five years. For example, as set out in the PCE's 'Get smart, think small' 2006 report, "local energy systems have the potential to displace 16,000 GWh per year of electricity from larger power stations" (pp.7) very rapidly with government support¹⁶.

2.5 What specific actions could help us to achieve the goal of the Strategy? What, if any, additional costs would you face if those actions were implemented? Please quantify if possible.

We've listed a number of different actions above. We suspect that EECA will need a funding injection to be able to support many of these actions and that it is critical that resourcing is provided. From our perspective, the Community Enterprise Sector is already doing some very heavy lifting and needs recognition and to be included in policy actions.

2.6 Do you agree that the preferred targets will be measurable and meaningful targets, that support the objectives and actions?

Because different government agencies over time have prepared the different Energy Efficiency and Conservation strategies and the metrics have not been consistent, measurement and evaluation on progress through time is difficult. There is little data to justify the targets and no quantification of the costs and benefits, which we would have expected. We would have equally expected that an evaluation of the previous NZEECS

¹⁶ http://www.pce.parliament.nz/media/pdfs/Get_Smart_think_small.pdf

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efforts would have been provided with an analysis. At present we don't have confidence that the preferred targets as stated will be meaningful.

2.7 How can we ensure that energy data and research generates knowledge and understanding that can help to unlock our energy productivity and renewables potential?

Our small company, Blueskin Energy Limited, has been working through a Resource Consent process for our Blueskin turbine, a single 3MW turbine we want to build as a community asset in Blueskin Bay. The evidence and evaluations we have had to complete in order to receive regulatory authority to build a single turbine has been thorough. We suggest that if you undertake a similar level of thorough investigation, including reviewing past strategies and analysing their successes and deficiencies, then you can be confident of ensuring data and research will generate knowledge and understanding, and will help unlock our productivity and renewables potential.

3 Summary

For this strategy to work and for real change to happen, it needs to encourage action in a way that makes it attractive and desirable. Establishing fiscal instruments to hasten green technology uptake is a crucial first step.

For this strategy to be measurable, it needs to start from a robust understanding of what has gone before.

We believe in investing our wealth in future generations so that they can live well. We live in exciting times. The cost of renewable generation such as wind and solar has dropped dramatically in recent times, and newer technologies like electric vehicles are able to be integrated easily with the right incentives. This strategy has the potential to become an inspirational document but only if it truly intends to enable the switch to renewables and to ensure energy is used more productively in all sectors.

As an organisation, we are doing what we can to ***Deliver increased energy efficiency, energy productivity and lower emissions to develop economic opportunity, reduce climate change impacts and build a sustainable society for all our citizens.***

The BRCT Strategy articulates a 2025 vision for Blueskin Bay settlements to be free of fuel poverty, with energy efficient homes, and flourishing local transport options and networks. Our services and projects can deliver this over time. We would like the NZEECS to be invested with enough policy action to allow us to speed up the

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momentum we've already achieved and to inspire others, as the NZEECS is not just about delivering tangible results. It is also about transforming our energy culture just as it is about helping our government meet its obligations under the United Nations Framework Convention on Climate Change and the Paris Agreement to reduce its greenhouse gas emissions.

We thank you for your attention to this submission

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Scott Willis', is written over a faint, light blue rectangular background.

Scott Willis
Manager
Blueskin Resilient Communities Trust