Rebuild New Zealand: transitioning to a low-emissions future

pwc

Prior to COVID-19, the single biggest issue facing the world was climate change

As we seek to recover from the many crises induced by COVID-19, climate change has not gone away or solved itself. In tackling the pressing impact of the virus on people's lives and livelihoods, New Zealand has had to borrow so much from the future. The rapid response has left little time for an action plan that explicitly addresses the longer-term and absolutely critical issue of climate change.

Without a comprehensive and connecting strategy to rebuild all sectors and aspects of New Zealand impacted by the current pandemic, the country is at risk of having a narrow economic response that addresses only the immediate issue of COVID-19. We are in danger of failing to address New Zealanders' bigger climate change problem, while depleting the funding available to invest in moving our economy onto a low carbon trajectory.

New Zealand's commitment to transition to a low-emissions economy, and to integrate environmental considerations and climate impact into all decisions across the economy is an important one. Our success or failure will be felt not only by the present generation, but by all of those to come.

> The year 2019 was the second warmest on record and the end of the warmest decade (2010–2019), bringing with it massive wildfires, hurricanes, droughts, floods and other climate disasters across continents. Global temperatures are on track to rise as much as 3.2°C by the end of the century.

United Nations Sustainable Development Goals report 2020

We have the opportunity to build back better

It is vital that we rebuild better together in a way that tackles New Zealand's commitment to net zero carbon emissions by 2050 and supports the health of all people and the environment.

New Zealand's net zero carbon target requires the Government, businesses and individuals to take prompt and specific action to limit global warming. In an era of response and recovery, we have a chance to be smart about the future New Zealand we want to create and the ways in which we achieve it.

Taking the lead

The Government must take a stronger lead. Without increased intervention, New Zealand will not reach its net zero carbon reduction target by 2050. There is a considerable amount of work to be done by the Government and all sectors of the economy. Our response to the impact of COVID-19, particularly in the planning stages of forthcoming infrastructure projects, provides an opportunity to transition to a low-carbon future and embed climate resilience.

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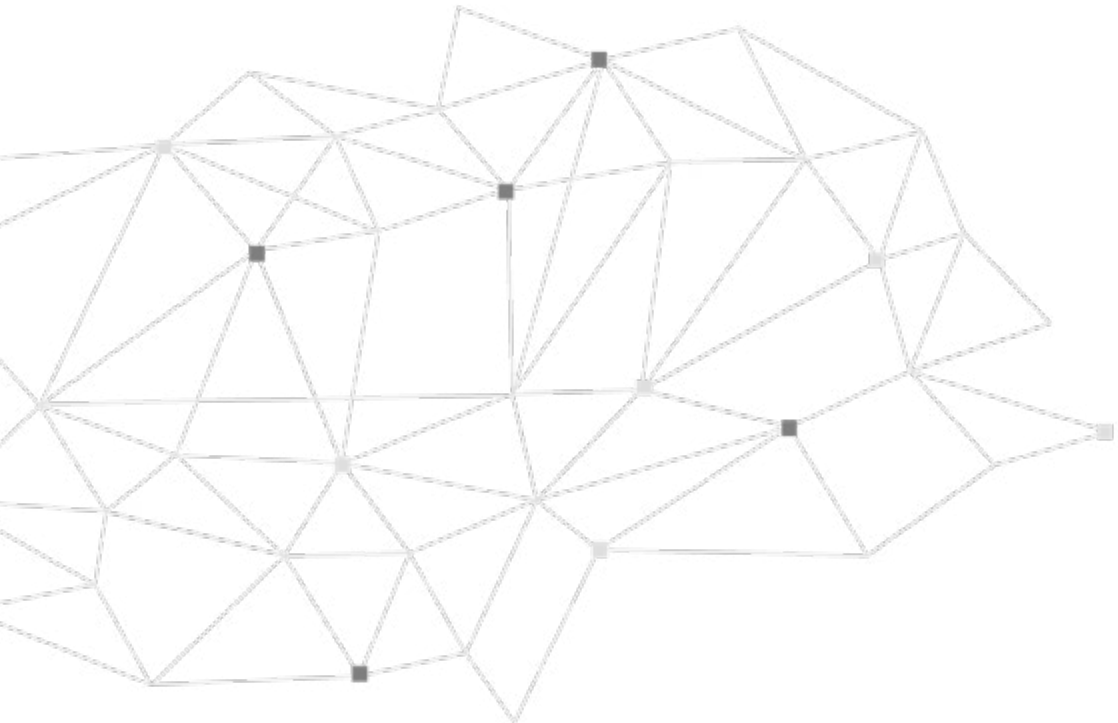
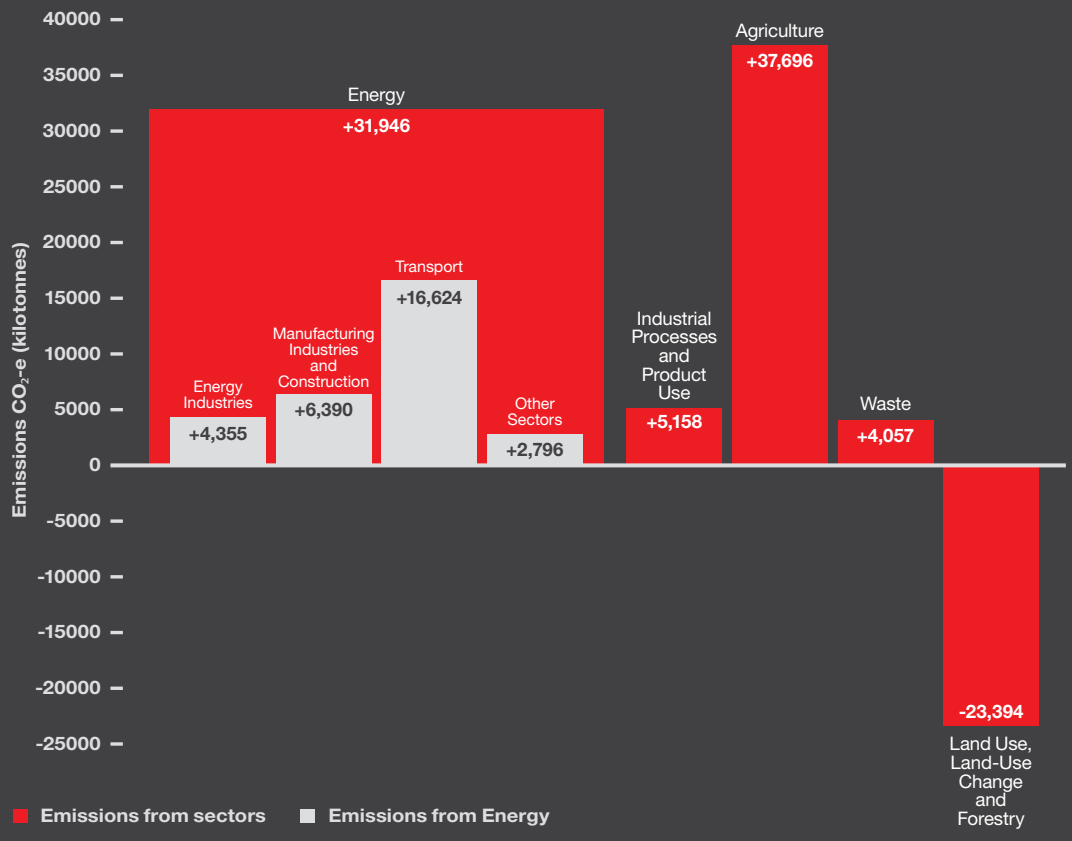


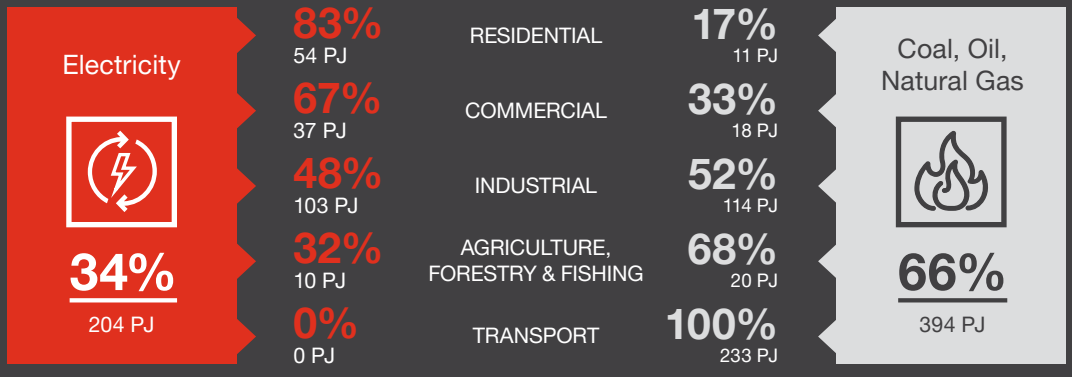
An overview of New Zealand's emissions and energy use

Emissions from sectors 2018



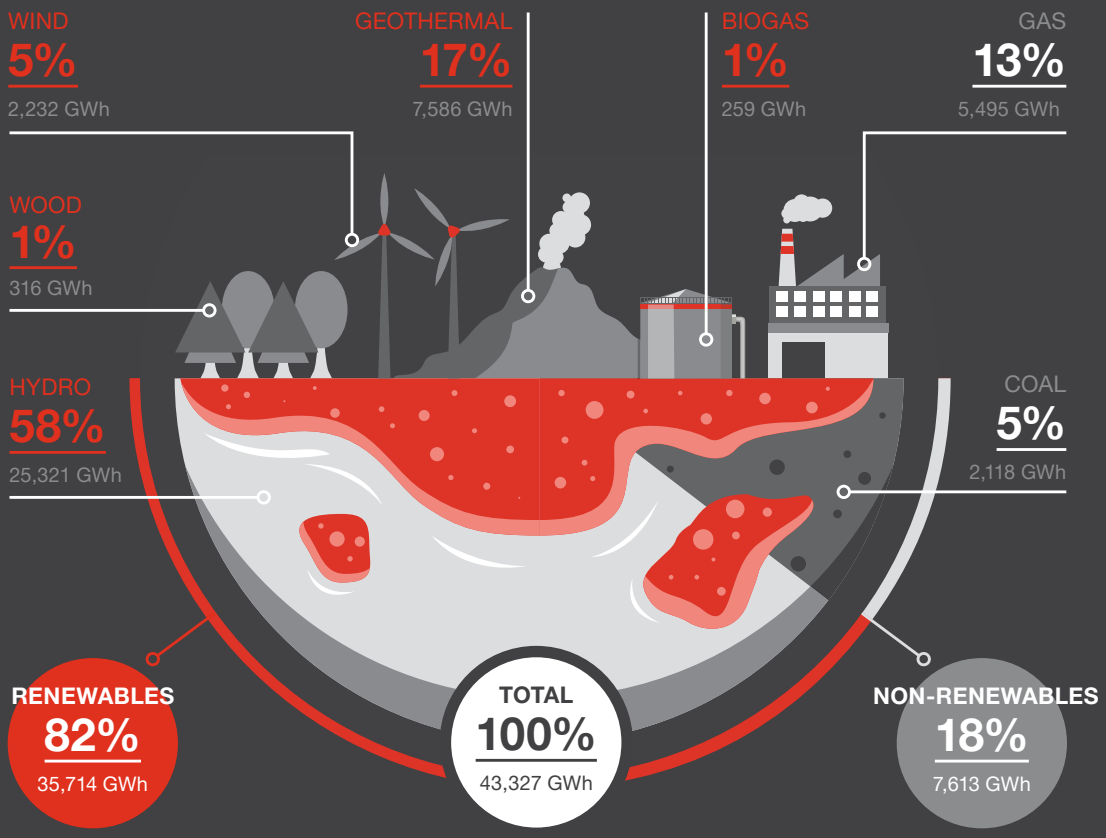
Source: MFE New Zealand's Interactive Emissions Tracker

Annual energy use 2019



Source: MBIE Energy Data Series (Energy Balance)

Net Electricity Generation (GWh) 2019



Source: MBIE Energy Data Series (Electricity)

The primary sources of energy for industry and transport are fossil fuels. Electricity generation contributes approximately 5% of New Zealand's emissions. But energy generated during industrial processes and transportation are responsible for about 30% of our emissions.

A future-proofed New Zealand

As a result of efforts to contain COVID-19, New Zealanders are operating in a new behavioural paradigm. This is significant for New Zealand's climate change response.

Prioritising health has forced other aspects of life to fall in line and the experience has both raised and lowered expectations on how we could or should be living.

Aspects of how we live, work, socialise, travel, shop, learn, holiday and exist generally within our environments may change permanently.

Any plans to deliver new infrastructure to support our future life in New Zealand need to respond to these new patterns of behaviour. There is much to be learned from how we have adapted throughout 2020 which can be combined with what we already know must be achieved to mitigate climate change.

Exporters must consider future sustainability benchmarks

New Zealand is known for its high-performing agricultural sector which has exhibited its strength and resilience during the COVID-19 crisis this year. However, the sector is also one that has been, and continues to be, criticised extensively with respect to its emissions and environmental practices.

In 2019, Colmar Brunton's Better Futures report stated that 1 in 10 New Zealanders were almost, or wholly, vegetarian. This is echoed by the global rise of veganism and growing ethical concern from consumers generally around the integrity of products, packaging, pollution and waste. We must consider what our country's main exports could or should be in another 10 or 20 years and how these can be delivered in a sustainable way.

New Zealand's dairy producers are already tackling their operational ecosystem from waste management to emissions-reductions, setting targets that include electrification of coal-powered boilers and committing to zero waste to landfill goals. The promise of technology and innovation to address more embedded emissions from this industry is a much anticipated development. It is currently unclear how this issue will be resolved, but it cannot be ignored.

Government policy does not currently focus sufficiently on incentivising many businesses, which are a fundamental cornerstone of our economy, to convert to low-emission technologies. There are widespread gains for consumers, the Government, businesses and the environment from making this work.

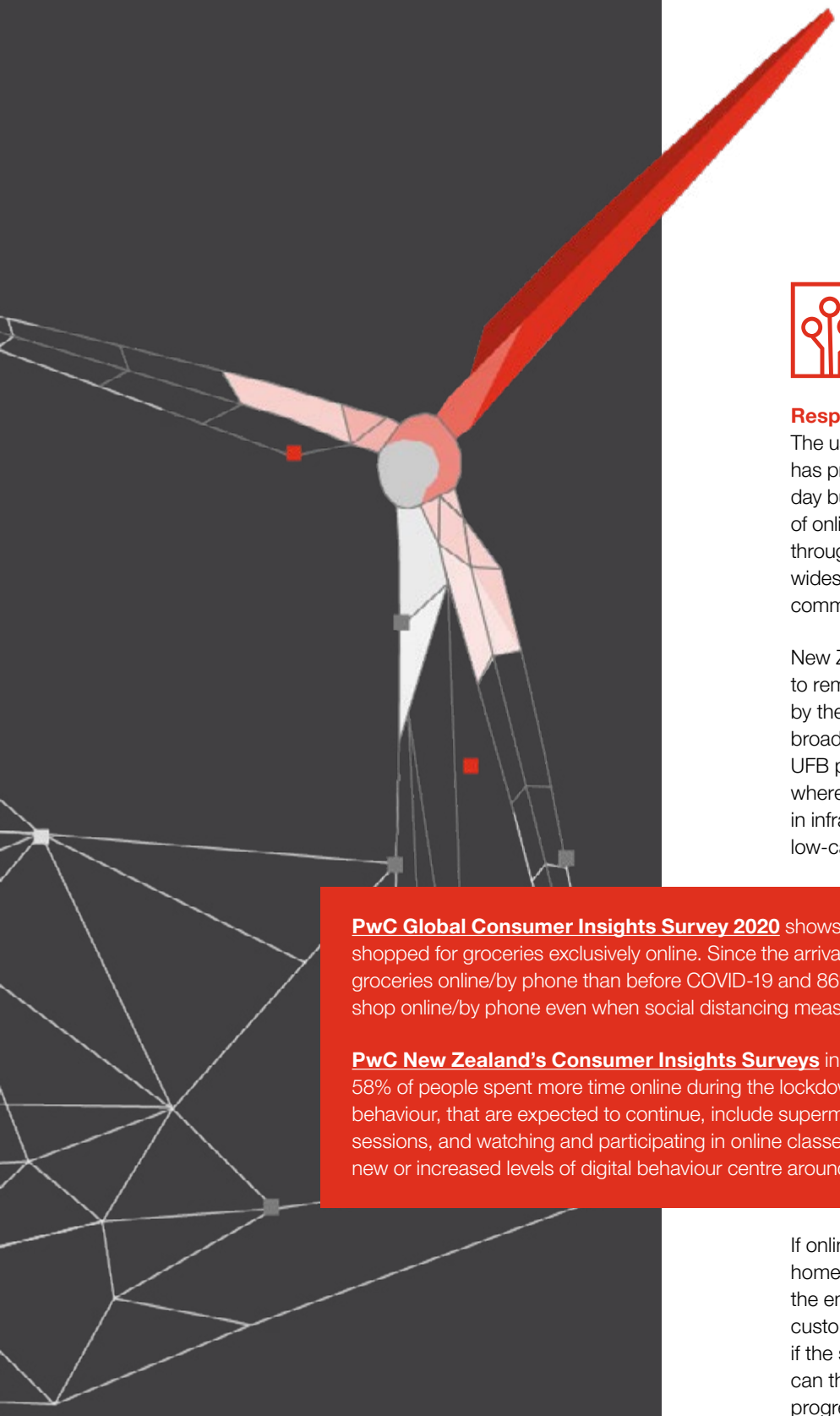
Keeping New Zealand moving forward

The transport sector is one of the largest contributors to New Zealand's annual emissions and is almost 100% reliant on fossil fuels. The Government has been clear about its intention to transition domestic transport and business fleets towards a lower carbon future. As part of its COVID-19 response 'shovel-ready projects' initiative, a portion of funding should be allocated to infrastructure that will support an increasing number of electric vehicles (EVs) on the road. There is increasing pressure to make new vehicle imports into New Zealand low or zero emissions. However, this places increasing pressure on the Government to ensure the necessary infrastructure is in place across the country to support this transition.

Fast-charging stations are popping up across New Zealand, but the network doesn't yet adequately cater for the full reach across the country. Both the spread and amount of chargers needs to be ramped up to support range requirements, plugging the gaps in rural areas where, beyond the Energy Efficiency and Conservation Authority (EECA) Low Emissions Vehicle Contestable Fund, there is little incentive for private companies to invest. In addition, the cost of most EVs continues to be a barrier for both businesses and personal use. Moreover, the batteries in vehicles available at the more affordable end of the EV market hold limited charge. While electric battery solutions are expected to support light and short-haul freight, as well as public transport (e.g. buses and ferries), alternative fuels such as hydrogen and biofuels will be crucial for decarbonising long-haul and high-use heavy transport.

Government assistance that promotes incorporating EVs within business fleets, and which encourages companies to expand the charging network, goes some way to ensuring progress. The tipping point for increased buy-in will be when the EV technology meets the logistical and practical requirements of businesses, creating commercially viable electric substitutes for many of the heavier vehicles used by businesses.

The legacy of New Zealand's existing vehicle fleet is also preventing faster EV uptake. The average age of light passenger vehicles is 14 years, and the light commercial fleet is 12 years. The limited supply of EVs into New Zealand is also a barrier to accelerated uptake. Additional policy directed at addressing the key barriers – price, supply, and charging options – will be needed if the Government's Future of Transport plan is to succeed.



Responding to an accelerated digital age

The use of digital technology and virtual services has proliferated over recent months, from day-to-day business connectivity and the practicalities of online shopping to potentially saving lives through contact tracing apps, telehealth and widespread internet-based voice, data and video communications during the lockdown periods.

New Zealand's ability to successfully adapt to remote and online working was enabled by the widespread deployment of ultra-fast broadband (UFB) by the Government and its UFB partners. This is an excellent example of where public money has been wisely invested in infrastructure that enables the transition to low-carbon behaviours.

PwC Global Consumer Insights Survey 2020 shows that before COVID-19, 9% of people shopped for groceries exclusively online. Since the arrival of COVID-19, 63% are buying more groceries online/by phone than before COVID-19 and 86% of those are likely to continue to shop online/by phone even when social distancing measures are removed.

PwC New Zealand's Consumer Insights Surveys in August and September showed that 58% of people spent more time online during the lockdowns. New or higher levels of digital behaviour, that are expected to continue, include supermarket shopping, virtual exercise sessions, and watching and participating in online classes and tutorials. Motivation to adopt new or increased levels of digital behaviour centre around ease, convenience and safety.

If online shopping and supermarket home-deliveries are increasing, how does the emissions saving weigh against individual customer trips to collect groceries, particularly if the supermarket fleet is electric, and how can the Government support or fast-track this progress towards low-carbon behaviours? As the country seeks to rebuild, and invest in new infrastructure, we must incorporate this new digital way of life at design stages, particularly if this connects us to a low carbon future.

Efficiency and electrification

The strong concentration of renewable energy in New Zealand presents a significant opportunity to identify ways to electrify aspects of our economy that have traditionally relied on fossil fuels. An overarching sector strategy is critical to ensuring the electricity sector supports New Zealand's transition to a more sustainable future.

Prioritising renewable-wins

The primary sources of energy for industry and transport are fossil fuels. Electricity generation contributes approximately 5% of New Zealand's emissions. But energy used during industrial processes and transportation are responsible for about 30% of our emissions.

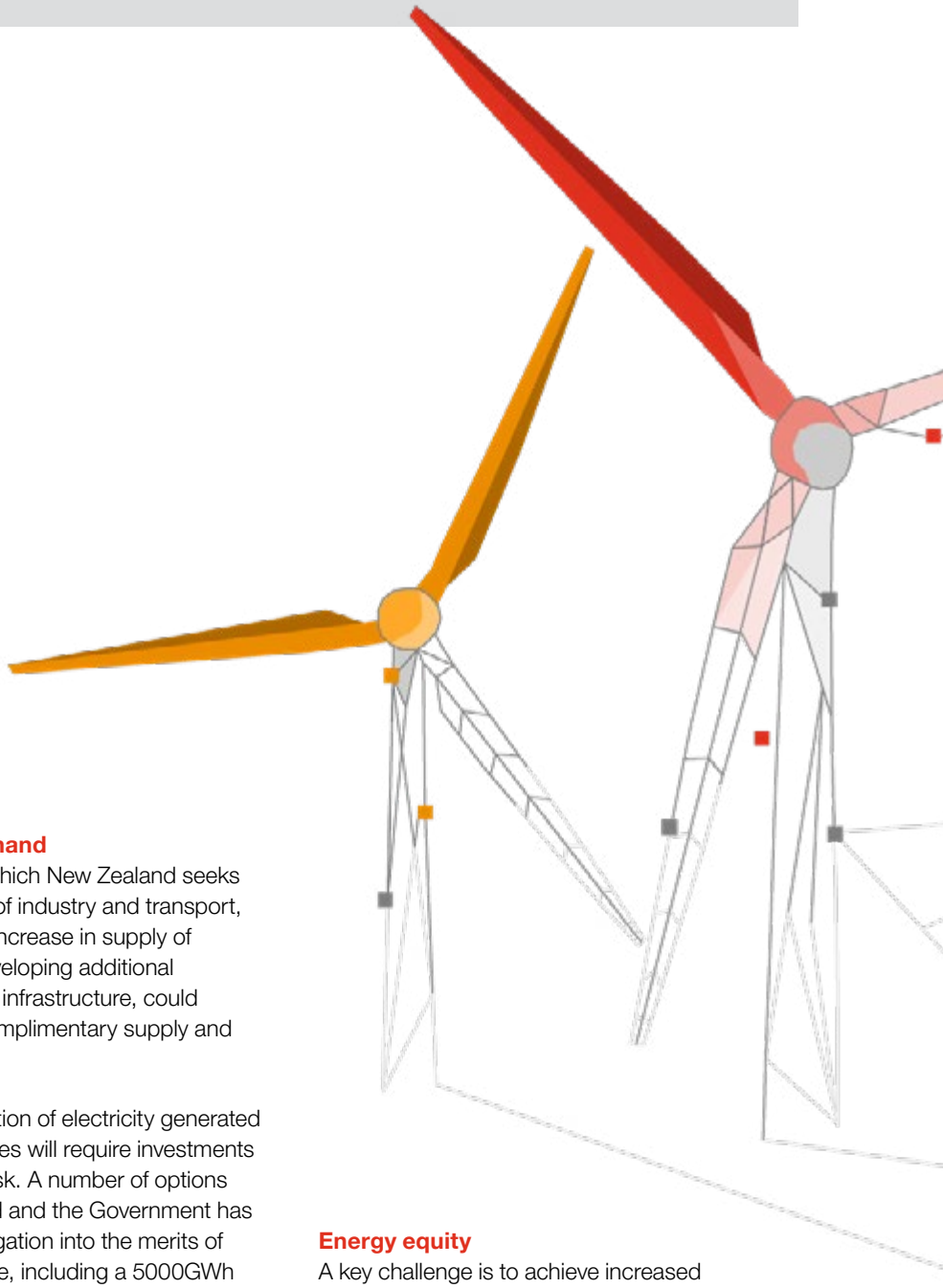
Pledges made in the run-up to the 2020 election to make New Zealand's electricity generation 100% renewable do not significantly tackle the country's emissions in a way that supports our 2050 net zero emissions target. Even a 100% renewable electricity sector would only reduce New Zealand's current level of gross carbon emissions, given the current levels of electricity sector demand, by 4-5%. There are larger gains to be made by concentrating efforts and funding in other areas such as agricultural and industrial processing heat.

However, increasing the proportion of renewable electricity in our energy mix allows New Zealand to support electrification of sectors which previously have been more carbon intensive (e.g. transportation) whilst reducing the risk that additional electricity demand will trigger a requirement to construct additional non-renewable generation.

While highly renewable, New Zealand's electricity mix relies heavily on hydro-electricity, capacity that is not easily consented and constructed to meet increasing demand in today's world that is far more environmentally conscious. The electricity sector therefore requires special attention to ensure that it can maintain, and over time, increase, its renewable capacity to meet the expected demand growth of the future.

> The benefits of decarbonising our entire economy through widespread electrification are profound. It is a unique opportunity that we must seize now. There is no time to waste and we cannot afford to fail.

Transpower, Whakamana i Te Mauri Hiko, August 2020



Supply to meet demand

A dual approach by which New Zealand seeks staged electrification of industry and transport, buoyed by a gradual increase in supply of electricity through developing additional renewable generation infrastructure, could potentially result in complimentary supply and demand trajectories.

Increasing the proportion of electricity generated from renewable sources will require investments to manage dry year risk. A number of options have been considered and the Government has announced an investigation into the merits of pumped hydro storage, including a 5000GWh option at Lake Onslow in Central Otago.

Tiwai Point aluminium smelter is NZ's largest industrial consumer of electricity, accounting for 13% of the country's total electricity generation. If the smelter closes this will release a significant amount of electricity for use elsewhere in our economy – subject to transmission capacity – allowing our existing renewable capacity assets (hydro electricity in particular) to be leveraged to meet the demand of the broader New Zealand population. However, significant infrastructure investment is required to ensure the electricity reaches the end user. Further investment in wind, solar and geothermal generation would also support this objective, along with investments in battery storage technology and alternative fuels such as hydrogen and biofuels.

Energy equity

A key challenge is to achieve increased renewable electricity generation while maintaining affordable electricity prices.

The relatively poor quality of much of New Zealand's housing stock contributes to hardship for many households. Investment in energy efficiency programmes can deliver affordability benefits directly to end users. Uptake of insulation and modern technology, such as LEDs, heat pumps, and energy efficient water heating could provide New Zealand's electricity system with significant extra capacity, at much lower cost, than investment in new generation. Government assistance will likely be necessary to ensure that the benefits of these technologies can be captured by all households irrespective of socio-economic standing, and to support an energy efficiency transition.

Making the transition

A more sustainable future for New Zealanders can be achieved if we are innovative in addressing agricultural emissions and transport and industrial process heating are electrified. This will have a greater impact on our emissions at a lower cost than attempting to remove the residual thermal generation from the electricity market.

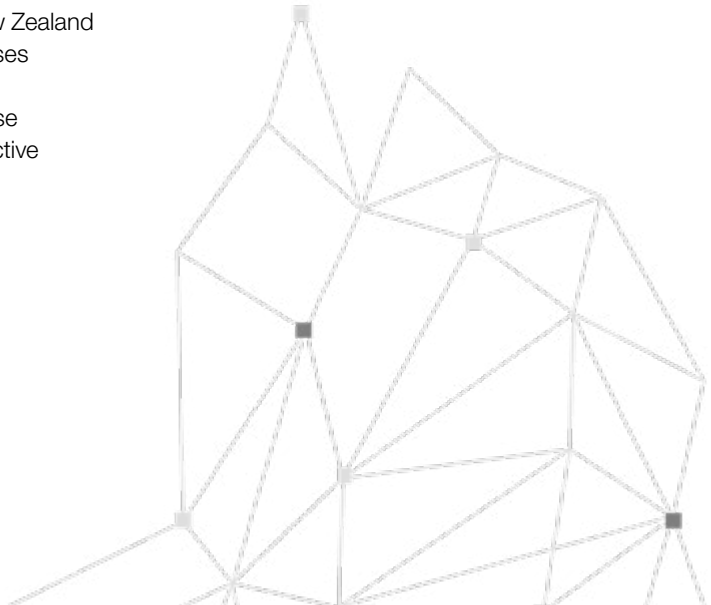
The transition to a sustainable or low-emissions economy is an attractive prospect but, as we transition, it is important to remember that many emitters businesses in sectors that form the backbone of our economy, employing large numbers of New Zealanders. It is therefore necessary to find ways for these companies to make the transition to renewable fuel sources and better environmental practices in a financially sustainable way.

Policy changes such as those relating to the Emissions Trading Scheme (ETS), Resource Management Act (RMA) and the recent announcement by the Government to mandate climate-related financial disclosure are examples of what can assist. Minimum energy performance standards and incentives to remove fossil fuel boilers, along with government grants can also help industrial users to transition.

Environmental sustainability and financial performance need not be at odds with one another. There is a future in which New Zealand has exemplary environmental businesses that are also large employers making healthy contributions to the public purse and at the same time generating attractive shareholder returns.

However, in order for organisations to make this shift, guidance, assistance and a managed transition can help, and ensure that these businesses remain viable and continue to contribute strongly to the New Zealand economy.

A low-emissions economy will require deliberate targeted policy settings aimed at reducing transport emissions over the next decade, including moving petrol and diesel vehicles out of New Zealand's fleet, alongside further investment in public transport and walking and cycling infrastructure. Additional targeted policies will be needed to incentivise industry to replace thermal processes with renewable energy sources.



What does success look like?

New Zealand's response to COVID-19 demonstrated how efficiently and effectively we could work together to manage our country in the midst of a global emergency. If we were to treat climate change with the same level of seriousness and urgency, our country could be the envy of the world. The Government needs to take a strong lead in promoting a sustainable rebuild of New Zealand's economy in the wake of COVID-19, and set New Zealand on a path towards a low-emissions economy. Businesses understand the need for urgent action and are seeking productive pathways to become more sustainable and lower their carbon footprint. This is evident in the number and range of businesses that are signed-up to the Climate Leaders Coalition.

People will want to do business with a country that is leading the way, providing international learning opportunities and creating an appealing physical environment for highly qualified people to live and work. New Zealand's global brand continues to rely on our natural environment and green image. This is worth billions of dollars to our economy and it defines us as an attractive business destination. We must invest in this transition now if we want to benefit in the future.

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How we can help

Sources of risk and complexity associated with sustainability and climate change are constantly emerging and present both major challenges and tremendous opportunities for business. More than ever, businesses are being judged by their customers, employees, society and investors on how they deal with these issues.

PwC advises clients across the New Zealand economy on a range of sustainability initiatives, carbon reduction strategies and reporting. Our team includes leading specialists in sectors that are at the forefront of the transition to a renewable future, including the energy, transportation, agriculture, and the digital sectors. Please contact us to discuss how we can help your business make the transition to a sustainable future.

Lara Hillier
Partner
+64 21 240 8640
lara.w.hillier@pwc.com

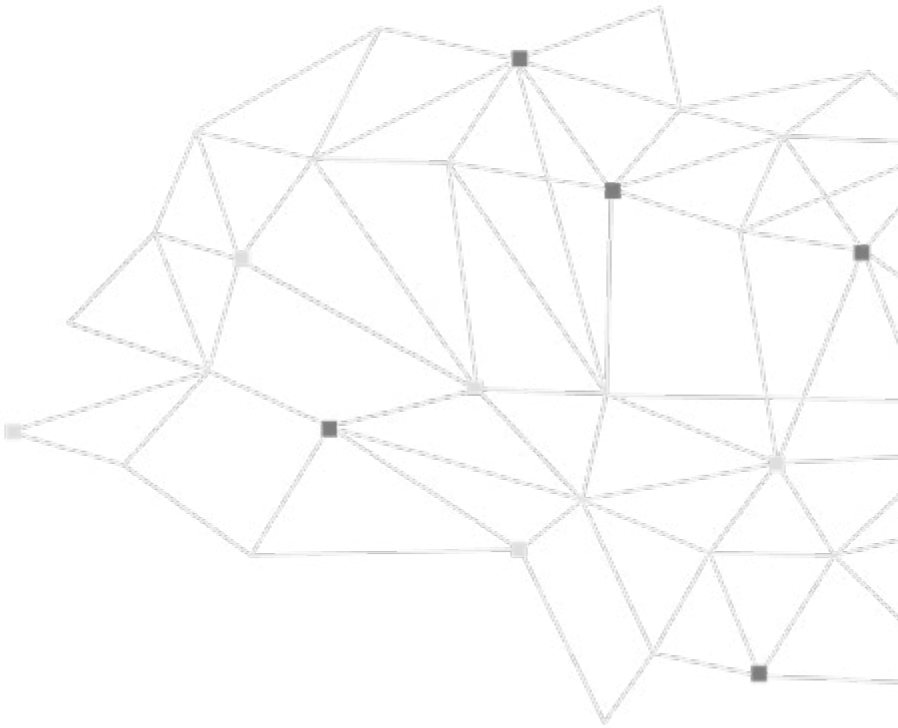
Colum Rice
Partner
+64 21 608 869
colum.rice@pwc.com

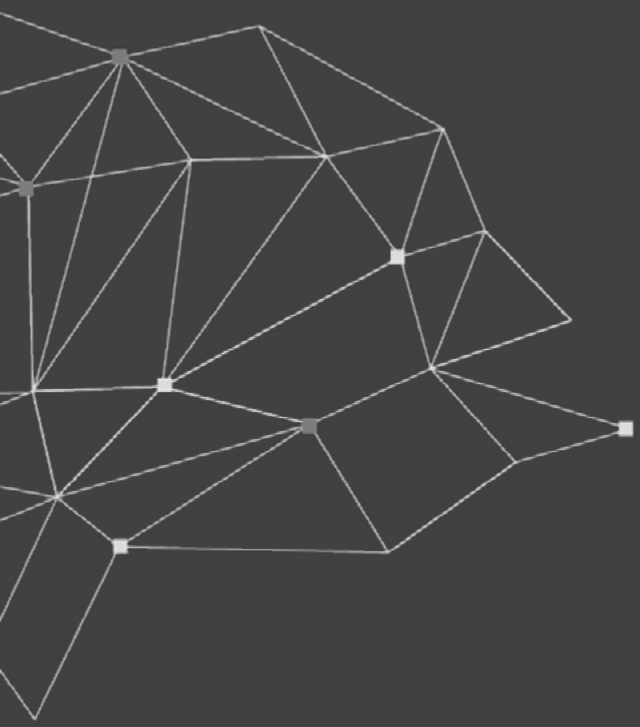
Annabell Chartres
Executive Director
+64 21 799 927
annabell.l.chartres@pwc.com

Lynne Taylor
Executive Director
+64 21 779 088
lynne.taylor@pwc.com

Aaron Webb
Director
+64 21 869 705
aaron.m.webb@pwc.com

Melanie Craxton
Associate Director
+64 21 851 308
melanie.j.craxton@pwc.com





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