



## Transition to a low-carbon economy for New Zealand Taking Action



*A talk by Dr Janet Stephenson (report co-author) at the Royal Society of New Zealand's launch of its report 'Transition to a low-carbon economy for New Zealand', at Wellington, 27 April and Auckland, 29 April 2016.*

*For full and summary reports, see:*

<http://www.royalsociety.org.nz/expert-advice/papers/yr2016/mitigation-options-for-new-zealand/>

To achieve a net zero emissions during the second half of the century will involve a massive scale and rate of change in what we do, how we do it, and what we do it with – that is, in our behaviours, and the technologies that support those behaviours. We can take some learnings from the massive socio-technical changes that have occurred over the past century or so. This time, however, the change is not driven by resource discoveries such as abundant fossil fuels, or new technologies such as the digital revolution, but by a very human aspiration - the need to actively re-shape our global and local economies so that our children and grandchildren can experience a reasonable level of wellbeing. Failure to contain climate change within the two degree (or maybe 1.5 degree) limit will have serious consequences, and there is already plenty of evidence of what that might look like.

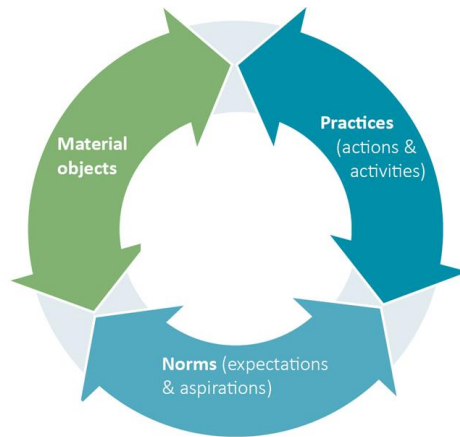
So, we are in a race against time. And there is no single silver bullet. For New Zealand, as with most other nations, this means many changes, large and small, in the systems of production and consumption that underpin our economy. But starting this transition is possibly less difficult than it seems because, as we point out in the report, there are already many cost-effective options that can be immediately implemented. Also, as we know from other system-wide changes such as the rapid transition from horses to automobiles, and the digital revolution, change can occur really rapidly if the right conditions prevail. The important message is that we need to establish the right conditions, both globally and within New Zealand, that support the behavioural changes needed.

People often say to me 'so how do you get people to change their behaviour?' It's a difficult question to easily answer, for a few reasons. Firstly, because it suggests that 'others' need to change their behaviour, not the person asking the question! Secondly, it suggests that its only individuals that need to change, whereas it will involve behavioural change at all scales – households, businesses, organisations, local authorities, government. But most importantly, it is hard to answer because behaviour change is an immensely complicated topic, with many disciplines having different perspectives on what is involved in change – ranging from individual psychological factors, to societal and economic structures.

In the report I've tried to boil all of this down into a couple of pages, and I'll outline some of it here, but do be aware that it is just a high-level overview presenting a few key ideas.

Basically, low-carbon change can be initiated in your life, my life, the dairy down the road, the factory in South Auckland, or wherever, in one of three ways: 1. changing what we have; 2. changing what we do; and/or 3. changing how we think, and in particular what we think is normal and appropriate.





1. Changing what we have. This is all about making low-carbon choices when we acquire new technologies or vehicles, or make changes to our house or commercial premises. It might involve investing in insulation, putting LED lights in the factory, getting a high-efficiency fridge when the old one gives up the ghost, or buying a low-emissions vehicle next time round – an EV, a highly efficient car, an e-bike. Bear in mind this won't be just one change – to achieve a low-carbon future, changes will be ongoing and in every aspect of life, to gradually crank down those emissions.

2. Changing what we do – this is about making changes to everyday practices. For example it might mean taking the train, bus or bike to get to work rather than the car; or if you do need a car, carpooling or getting involved in a shared vehicle scheme. A big difference between low-emissions and high-emissions households is the amount of flying they do, so avoiding flying by using other means such as virtual meetings, or using carbon offset schemes, can help here.

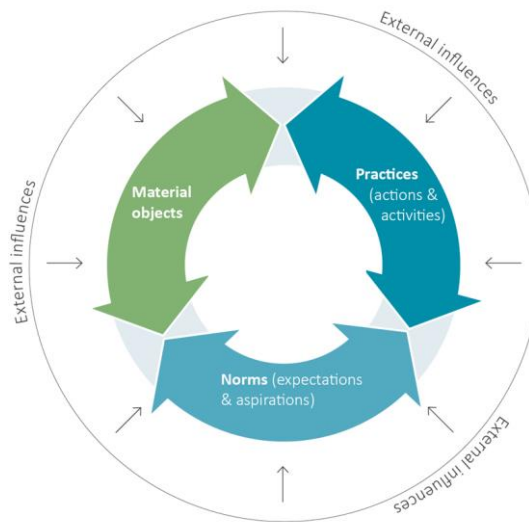
3. Changing our norms – this is about our expectations of what is the normal or right thing to do, and how we think we might behave in future. Changing norms in themselves don't reduce emissions, but can be an important precursor to change. Globally we've seen a huge shift in norms relating to climate mitigation over the past few years – exemplified by the record number of nations that signed up to the Paris climate agreement last weekend; the many cities that have committed to climate action such as through the Compact of Mayors, and the mainstreaming of divestment from fossil fuel related stocks and shares. It is now becoming 'normal' to talk about moving away from fossil fuels to a net zero carbon future, whereas a few years ago it certainly wasn't. Changing norms are occurring locally too, shown by things like New Zealand businesses and councils setting their own emissions reduction targets, undertaking various forms of carbon accounting, and actively discussing their decarbonisation pathways.

But low-carbon change can change even when this isn't the primary motivation. People might take up biking because they want to get fit, or get energy-efficient machinery because they want to cut costs, or they might invest in PV because they are tired of their monthly electricity bills. But the carbon reduction effect will still occur. In seeking to change behaviour, it is important to recognise the many motivations for change, and to communicate the co-benefits. However, it is obviously helpful if people and businesses understand which of their actions create emissions, and what actions can reduce them, so public education and tools like carbon calculators are definitely useful.

As you can see in the diagram, there is an interplay between people's norms, practices and material objects. If I expect to drive to work, then I'll feel the need to own and use a car. But if I get a bike (a change in my material possessions) I now have the capacity to use it to get to work (thus potentially



changing my practices). If my friends start to bike to work, then I'm more likely to do it as well because I'll see it as 'normal' (thus changing my norms).



But regardless of whether I do or don't aspire to reduce my emissions, my ability to do so is shaped or constrained by a whole lot of things that are outside of my control. These external influences are things like policies, prices and infrastructure. For example, if there are no policies preventing high-emissions vehicles coming into NZ then of course they are going to be available on the market, and will be purchased and driven around for probably the next 25 years or so (the average age of a car in NZ is 13 years). If there is no price signal that using high-carbon fuels is a bad idea, then I'll probably not think twice about buying and using a gas-guzzler. And even if I want to bike to work, I probably won't until there's a safe bike path.

So, although direct reductions in greenhouse gas emissions will need people, households, businesses and others to actively change their behaviour, there is a limit to how much they can achieve - unless these wider influences are aligned to support those changes. This means that behaviour amongst government agencies and other influential organisations needs to consistently support low-carbon choices, and consider how to remove barriers to adoption. Regulations, investments, market settings, social marketing and other influences need to be crafted so as to make it straightforward and obvious for people to make low-carbon choices about their material possessions and practices, to ensure equity issues are addressed, and to normalise an expectation of a low-carbon future. As we point out in the report, many families, businesses and council are already taking the initiative to change, and realising the benefits of doing so. Achieving a widespread transition will require a more integrated approach, including carefully planned policies and inclusive engagement so that Kiwis journey together to a low-carbon future.

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