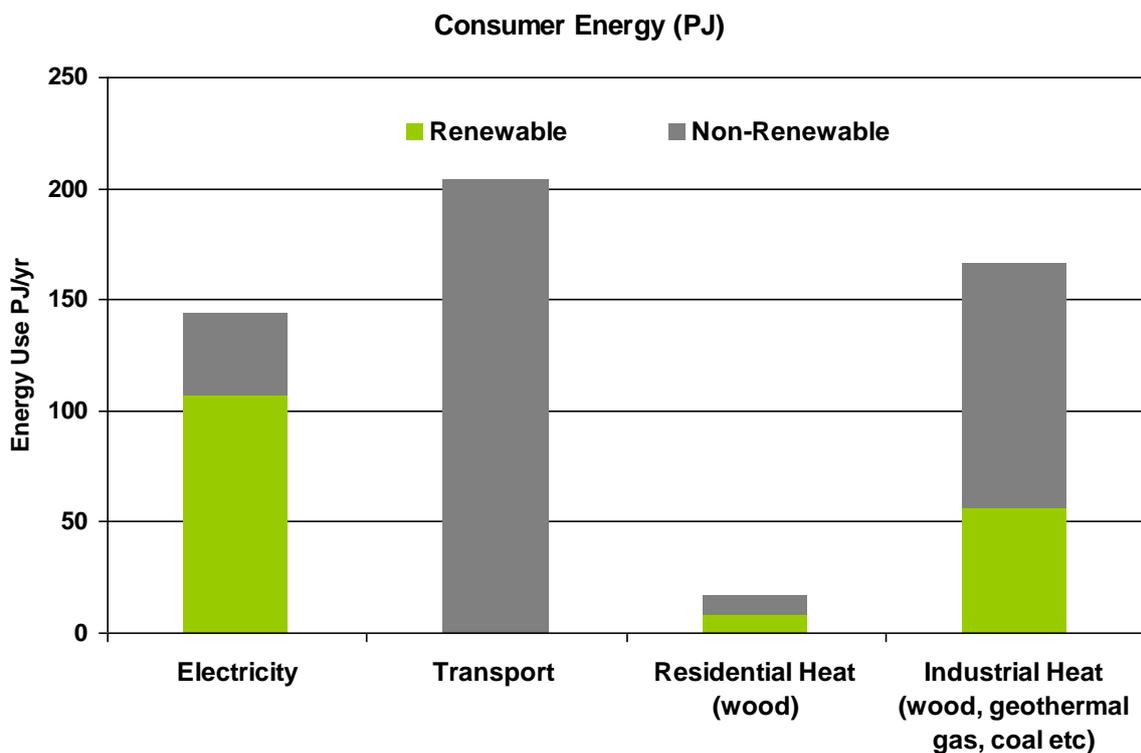


RENEWABLES TRANSFORMATION

Renewable Energy is one of the four [Transformation Areas](#) the Sustainable Business Network (SBN) believes New Zealand can and should lead on. As a nation we currently hold one of the leading positions globally in renewable energy sources for electricity use. There is plenty of potential for solar, wind and hydro energy to get us to 100 per cent. However in the efforts to move towards sourcing all our energy from renewable sources, one of our biggest **challenges is transport** (see graph below provided by the Energy Efficiency Conservation Authority (EECA) 2014). Almost all the energy sourced to power our national fleet is non-renewable.

The current situation has us exposed not only to the environmental risks associated with greenhouse gases and climate change, but also to the security of our energy supply and dependency as a nation on the global energy markets.



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Visit www.sustainable.org.nz/projects to see the latest updates on SBN transformation projects.

BACKGROUND TO 'SMART TRANSPORT'

In September 2014, the SBN's Project NZ conference launched a new approach to business transformation called 'The Big Shift' (#theBIGshift). The Big Shift approach was created by the SBN's UK partner, Forum for the Future* to bring about a big shift in the way we do business for a more sustainable future.

The shift to smart transport is already underway and The Big Shift seeks to accelerate it. In the lead-up to the conference, SBN engaged with government, businesses and industry experts to shape the transport stream and identify partners.

Nationally, a range of smart transport solutions and pioneering options already exists and the SBN recognises their potential for scale, replication and mass promotion.

Business opportunities continue to emerge as a result of new technology, greater uptake of location-aware social media, better utilisation of the national fleet and integration with home energy systems.

This paper has been written to give some context and explanation of SBN's Smart Transport projects. It updates on progress discussed as well as some of the challenges we face and how these might be overcome.

THANKS TO OUR 2014/15 SUPPORT PARTNERS

Gull, Auckland Transport, Fulton Hogan, Opus, NZ Motor Caravan Association, Tourism Holdings Ltd, Mighty River Power, AECOM, Leaseplan, Auckland Council and Forum for the Future.

*Forum for the Future is one of the world's leading sustainability organisations.

SMART TRANSPORT OPPORTUNITY FOR NZ

The shift to smart transport alternatives is already underway. Nationally a range of pioneering transport options exist which now have the potential for scale, replication and mass promotion.

Growing business opportunities exist in capitalising on emerging technology, integration with home energy systems and better utilisation of the national fleet.

Following a series of interviews and workshops around the country, SBN published its 2014 report on '[Business Opportunities for a Sustainable New Zealand](#)' (and identified focus areas for New Zealand). From these a series of projects have been created or are emerging.

Evidence that also supports a move to a smart transport future includes:

- the **New Zealand Transport Agency** research on future travel patterns, with a focus on under 35s, indicates that the younger generation are choosing to drive less (NZTA/Opus, 2015 forthcoming);
- the 2014 briefing to the incoming Minister for Transport discussed growing demand for public transport and active modes, a role for "*travel assistance* [smartphone] *apps*" as well as a growing market share for electric vehicles (Ministry of Transport, 2014);
- Generation Zero, Transport Blog and the Campaign for Better Transport continue to lobby and gather evidence to support a 'Congestion Free Network' for Auckland, and to push sustainable transport options in other New Zealand cities;
- Further to this, Seba's July 2014 Auckland Conversation drew a full house, indicating interest from the public (Auckland Conversations, 2014);
- NZ Institute of Economic Research published a paper that discussed how changes to auto-technology (i.e. electric and autonomous vehicles) will disrupt the New Zealand transport system (Allison, 2014).

Smart Transport & Renewables Action

FOCUS AREA 1: ADOPTING ELECTRIC VEHICLES AND BIOFUELS

Electric vehicles (EVs) and **biofuels** will be the technologies that will best leverage our natural resources and provide the most feasible options to power the New Zealand fleet in the near future.

Electric Vehicles:

Since New Zealand already sources 40 per cent of its energy from renewables, which is the third highest contribution for renewables in the Organisation for Economic Co-operation and Development, an electric vehicle on the road here really is a low-carbon option when compared to a fossil-fuel powered car, and will become more so as locally generated solar energy gains market share.

SBN has established a coalition of members (including LeasePlan, OptiFleet, Mighty River Power, Vector and Opus) interested in accelerating EVs and EV infrastructure in NZ. (See separate project outline.)

There has been a lot of activity recently in both these areas, for example:

- The price of a Nissan Leaf has now fallen to just under NZ\$40k and its annual recharging costs are less than 25 per cent of the fuel-running cost of an equivalent petrol car. This lower upfront cost and the savings on running costs are putting electric vehicles within reach for some fleet managers.
- A new tool for full cost accounting has been developed to support much fuller analysis of car value in company fleets by OptiFleet (and supported by EECA). LeasePlan is actively supporting EV integration into its clients fleets.
- Innovation continues within the vehicle industry seeing the emergence of micro EVs, as well as electric SUVs and services which support access to EVs through rental and car sharing schemes.
- EV infrastructure is now being established in parts of the country and activities are underway to build an electric highway.
- Auckland Transport put out a tender for an Electric Vehicle Car sharing scheme (June 2015).

Opportunities include:

- **Corporate fleet models:** collaborate with a set of companies to create models of electric vehicle or biofuel-integrated corporate fleets;
- **Station electric vehicle fleets:** make available an electric vehicle fleet that people can take home or use to travel to meetings from train or bus stations, supported by a user-friendly payment method;
- **Open power grid:** create a set-up pack and a website platform to enable consumers to offer their driveways for electric vehicle charging stations and be paid a flat fee for use. (The range of new electric vehicles is 100-400km and New Zealand only has a handful of fast charging points, so this project will help to address range anxiety by building a network of places at which drivers can charge their vehicles.);
- **Model smart home:** build a demonstration home with the technology of the future (i.e. on-site solar energy generation), showing how electric vehicles integrate with the home.

Biofuels:

New Zealand has a fledgling biofuels industry with considerable potential. Bioethanol and biodiesel are produced and are available for wholesale purchase, and blended bioethanol petrol is available for retail sales at two outlets.

Gull was the first company to bring a biofuel to market in New Zealand with Gull Force 10. Also available is Gull Regular Plus. Interest in biofuels has been accelerated by recent public moves by Z Energy who is building a new plant which will be converting meat waste into biofuel. In terms of demand there is also enlivened interest in biofuels from those companies interested in the emission reductions possible with these fuel types.

SBN has established a coalition of members (including Gull, Tourism Holdings Ltd, Auckland Transport, Fulton Hogan and NZ Motor Caravan Association) working to accelerate the integration of biofuels into NZ fleet. (See separate project outline.)

Opportunities include:

- **Truck fleet models:** collaborate with a set of companies to create models of biofuel-integrated corporate fleets;
- **Campaign on biofuels:** create a myth buster to dispel the myths associated with biofuels.

FOCUS AREA 2: SMART PHONES, HOMES AND NEIGHBOURHOODS

More than two million Kiwis currently own a smartphone and these devices are expected to play much more of a central role in transport in the future. Ride-hailing apps like Uber in Auckland and Wellington, and Lyft in the USA, show the potential of the phone in transport. Users can hail a ride with the touch of a button, and split fares by sharing a ride or organising a shuttle.

Opportunities include:

- **Trip planning:** develop or promote smartphone apps that help people to plan their trips on public transport;
- **Smart Working/Local hub:** create or retrofit office space as hubs for local business people to use instead of commuting into town. SBN is currently looking at opportunities within the Hobsonville development.
- **Local social network:** create or strengthen local web-based social networks to help locals share their commute, school trips and grocery trips;
- **Model smart home:** create a demonstration home with the technology of the future, showing how it can connect people to work from home.

FOCUS AREA 3: USING PUBLIC TRANSPORT

There are a growing number of model cities around the world providing inspiration for the challenge of how to increase the use of public transport, and public transport already plays a key role in New Zealand's transport system. Creative collaborations and council experiments are seen as key to increasing uptake and growing services.

Opportunities include:

- **Free ride challenge:** provide free access to public transport services for a day, with a challenge to incentivise people to use it;
- **Innovation class:** use LinkedIn as a platform to create connections between business mentors and those needing mentoring, using a train carriage or a bus as a meeting place;

- **Public transport rewards:** create a rewards structure with partners like Flybuys to reward those using public transport and encourage greater use;
- **Station bike fleets:** provide a fleet of bikes people can use at public transport interchanges, bus stops and stations using a platform like the Auckland Transport HOP Card for easy payment.

FOCUS AREA 4: SHARING VEHICLES

A big opportunity area for emission reduction is more efficiently using the vehicles that we already have on the road. There are a number of ventures working in this area including YourDrive, a peer-to-peer car share service, and findatruckload.co.nz which helps users to identify trucks travelling around New Zealand with empty loads available for use.

Opportunities include:

- Electric Vehicle car-sharing service for Auckland;
- **Share parked cars:** create an online app to enable people to share their cars when they are parked at work, the airport, around town or at home;
- **Friend car sharing:** using a social network platform, create challenges for friends and colleagues to share cars between themselves or with a group of trusted strangers;
- **Find a truck:** extend 'FINDATRUCKLOAD' to include smaller vehicles, and integrate it with companies like New Zealand Post.

FOCUS AREA 5: REDUCING MOTOR VEHICLES ON THE ROAD

While the current Government's transport spending prioritises roads (Frost, 2014), a balanced mix of transport infrastructure is needed for mature transport systems, so it is important that those with interests in active transport modes (such as walking and cycling) make the most of the current resources and infrastructure available.

Information on how people move about the city has, until recently, been fairly absent. New businesses have formed which focus on providing the information/ data on real-time movement and modes which will make our transport planning much more responsive. This allows for new business service design and allows us to reflect on how we design our cities.

Most of the conversations regarding active transport at the Big Think events focused on bikes and cycling infrastructure, and a range of creative ventures already exist.

SBN has established a coalition of members (including AECOM, Auckland Transport, Fulton Hogan and NZTA) working to accelerate cycling in New Zealand. (See separate project outline.)

Opportunities include:

- **Bike pools:** develop a number of shared pools of bikes across cities where people donate their old bikes to be fixed and used;
- **Bike game:** develop apps that motivate people to start and continue cycling;
- **Public bikes:** provide access to bikes to those using integrated public transport ticketing e.g. HOP card users;
- **Bike share systems:** combine the learning from around New Zealand on how to build effective and user-friendly bike sharing services;
- **Bike2050 Design Challenge:** A challenge for passionate people to design better infrastructure for cycling in New Zealand – and to share the results via an online platform.

To see the active projects visit: <http://sustainable.org.nz/what-we-do/sustainable-tools-resources/projects/>