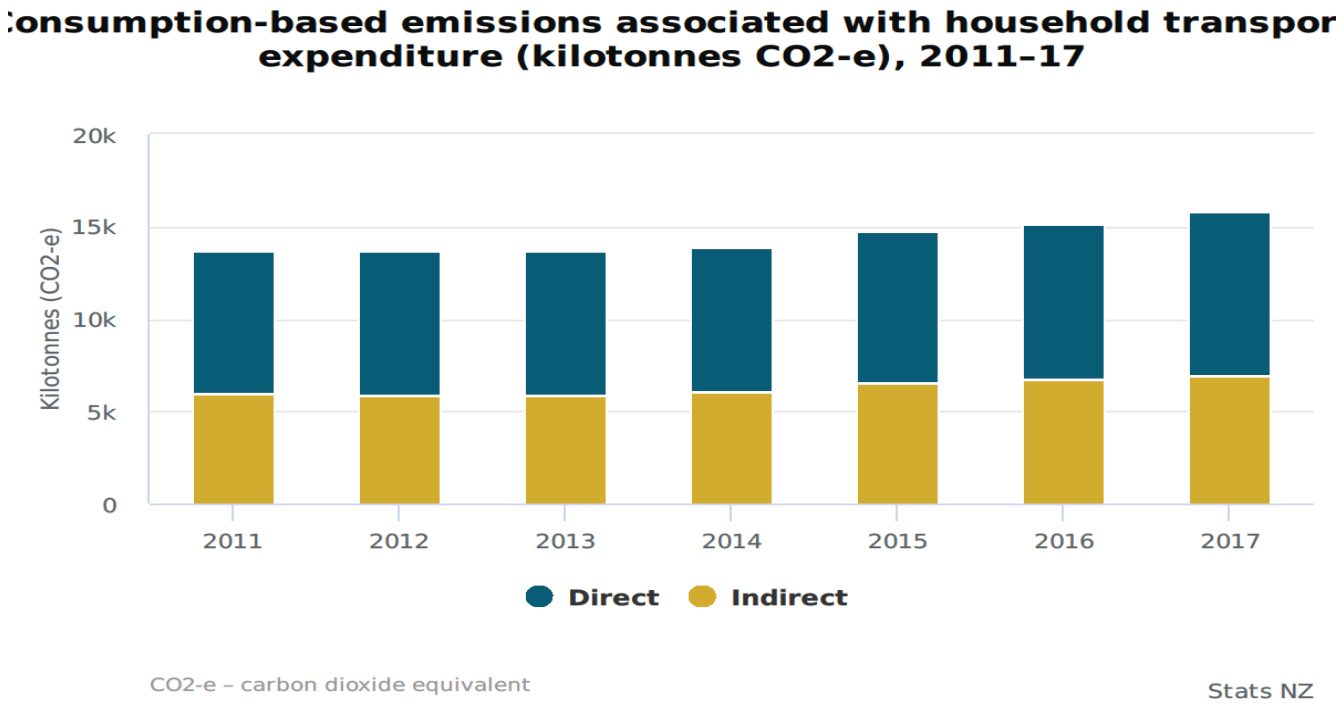
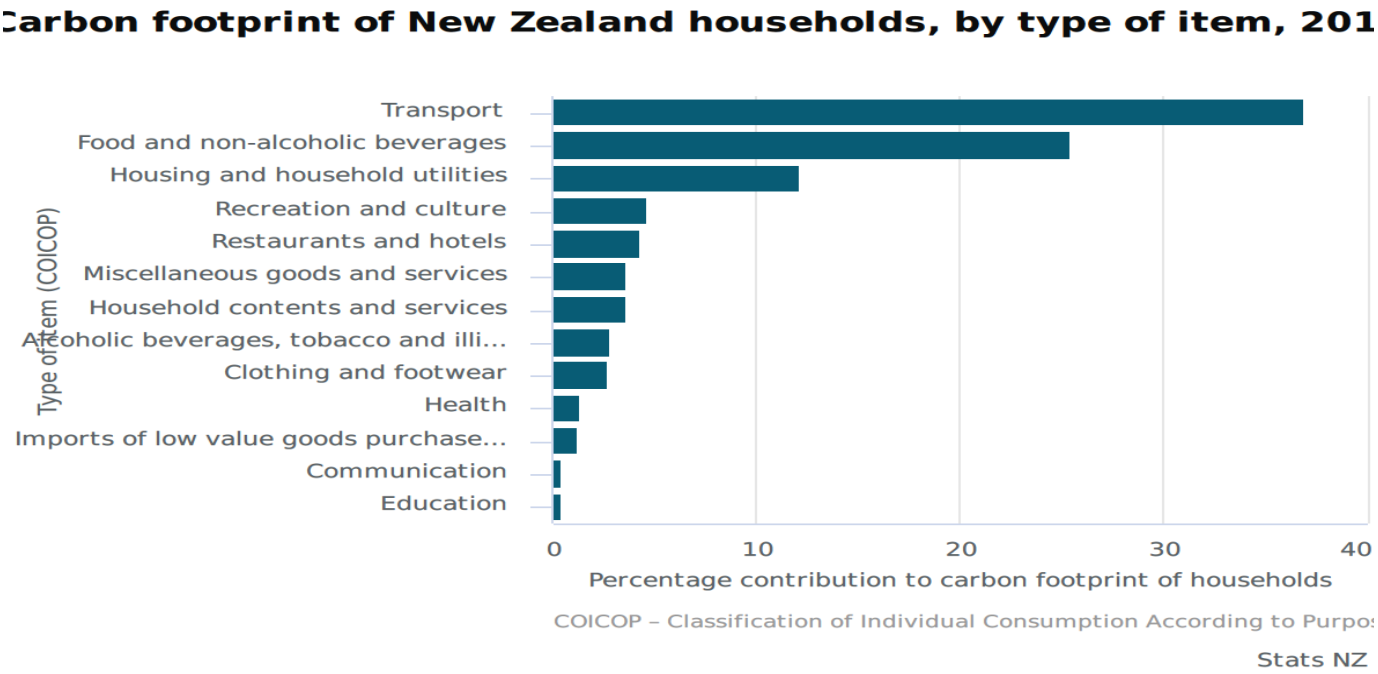
Statistics NZ:
Household GHG emissions have increased 15% from 2011 to 2017
Direct fuel use represents just over 50% of NZ households. On top of that there has been an increase in indirect fuel use through flying and water transport, i.e. travel.



Emissions increasing means messages about climate crisis are not changing behaviour. Unlike the pandemic we are not taking this seriously.
If we are to take it seriously we would start to change our behaviours and this session is about what can we do about our transport emissions, what changes are we prepared to make?



“People need to accept responsibility and do something. Most people are waiting for the government to tell them what to do, and then grizzle about it, like carbon taxes.” Dave Bryce of Christchurch has challenged people to reduce emissions by 1%/month – driving less, flying less, making family home more energy efficient. Stuff 2019. He claims to have reduced his emissions by a factor of 8.

So in terms of transport what are our options?

- Walk more,
- Ride bikes.
- Use public transport where we can.

What do we drive?

The motor car is an essential part of kiwi life but what decisions can we make about what we drive, where we drive and how we drive?

Consider:

- Intentional trips in car for a list of errands
- Reduced acceleration and anticipatory slowing/stopping;
- Shorter journeys for holidays.
- EV (Electric Vehicle) instead of ICE (internal combustion engine), EV no tail pipe emissions. In NZ an EV results in 80% less carbon emissions as 80% of NZ electricity comes from renewable sources. Over the lifecycle of an EV the emissions are 60% less than ICE – cradle to grave. Average commute for New Zealanders is 22km. Carbon footprint in manufacture of EV is slightly greater than ICE but this is quite quickly written off with driving, more so in NZ. (Carbon footprint is substantial for all vehicle manufacture).
  Manufacturing estimate of carbon emissions:
  ICE - 10.5 tonnes CO2
  EV - 13 tons CO2 (incl. battery)
  Battery alone - 3.2 tons CO2
  Lifespan of EV longer as mechanically far simpler and maintenance costs much lower.
  Battery life is a worry for some people. There is now the technology for replacement either a refurbished battery or a new, or a transplant from vehicles written off after crash - a company in Christchurch is doing this and sharing the technology round NZ. It is not complicated.

Air travel

Are long distance holidays our right?

A single, economy class return trip to Europe elevates personal carbon footprint by estimated 6, 8, and >11 tonnes in 3 separate studies.[1].
A typical medium sized family car will create around 24 tonnes of CO^2 during its life cycle.

Consider the impact of tourism

There were 3.9 million tourist arrivals in 2018 and it was projected to be 5.1 million by 2024.
The pandemic has scuppered this for the time being. There is also air freight and military aircraft.
On 24 July 2019 225,000 flights took to skies globally.
Tourism flying dominates business flying.

Atomic Travel carbon estimates for travel from Christchurch to Dunedin

Plane	190kg CO2
EV	14kg – questionable, may be a lot less.
ICE	118kg
SUV	140kg
Bus/coach	22kg

[1] Institute of Governance and Policy, Victoria University, Sept 2019

Even in countries where power generation is fossil fuel based it is at least easier to control emission quality at source of generation than it is from multiple tail pipes. The US has cleaned up emissions from power generators quite significantly.
Hybrid manufacturing emissions are similar to EV with less tail pipe emissions than ICE but this is dependent on how driven and how far.
An estimate of lifetime CO^2 emissions for a typical medium sized family car will create around 24 tonnes of CO^2 during its life cycle, while an EV will produce around 18 tonnes over its life.