

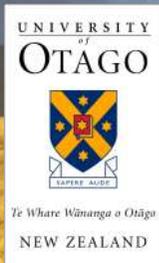
Changing For Good

Ten ways to adjust your lifestyle to reduce greenhouse gas emissions

Talk to University Club, 24 May 2019

Assoc Prof Janet Stephenson

Centre for Sustainability, University of Otago





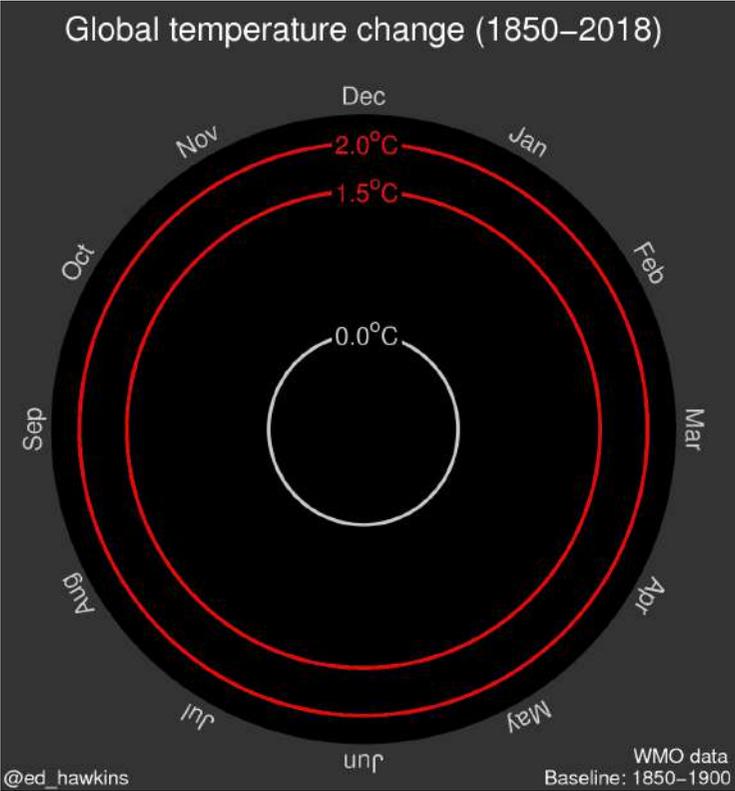
1972 Apollo 17

Origins = industrial revolution, powered by fossil fuels



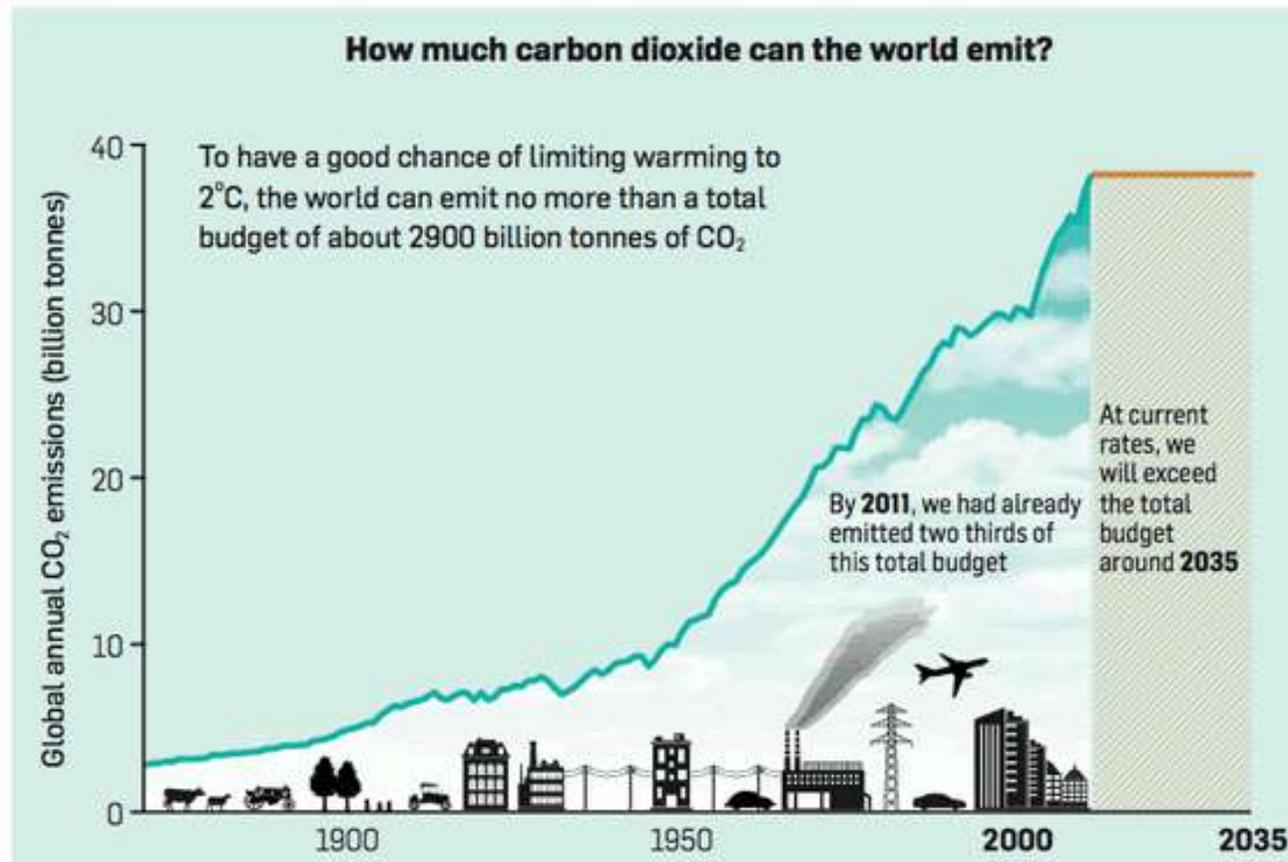
Created expectations of ever-increasing wealth and consumption

Global temperature increase



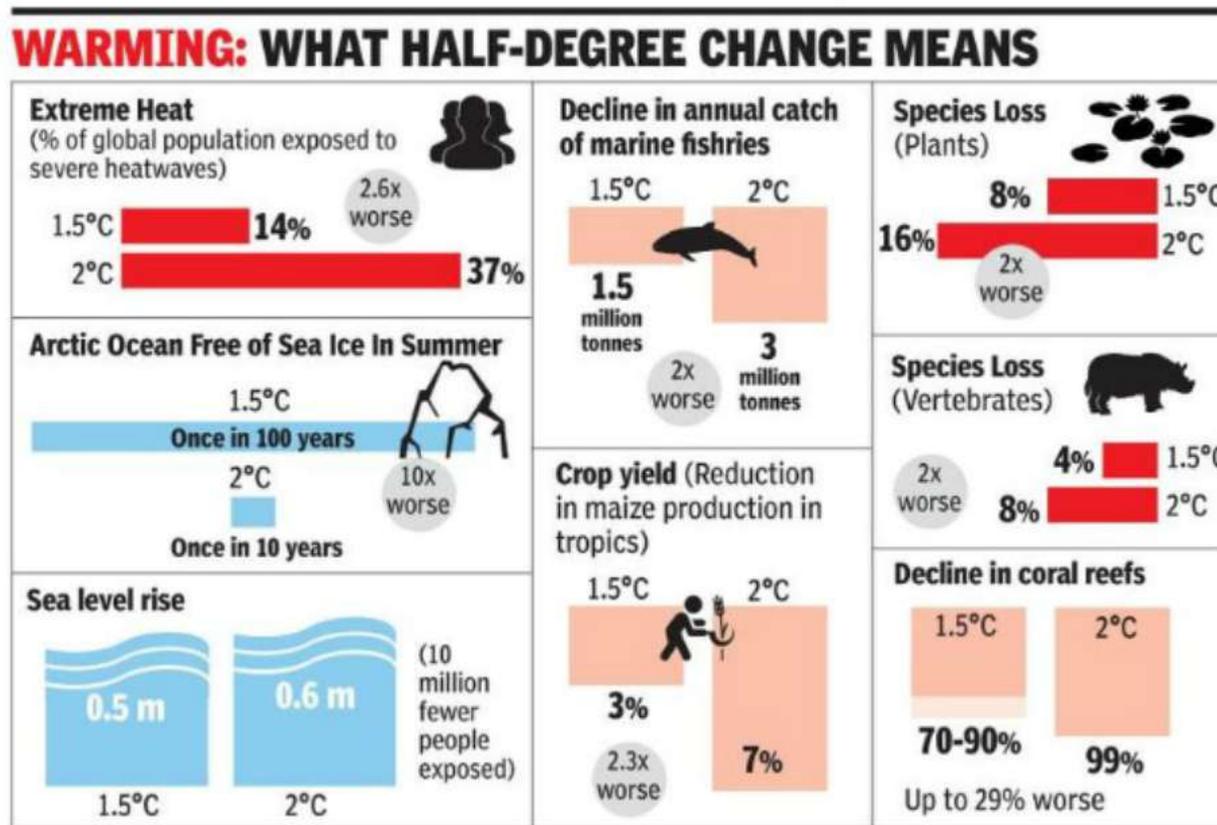
IPCC 'Fifth Assessment Report' 2014

FIGURE 1



Source: Information is sourced from the IPCC's Fifth Assessment Report, Working Group 1 (emissions data, Figure 6.8; carbon budget, SPM E.8)

IPCC report 2018 – we can't afford to go above 1.5°C

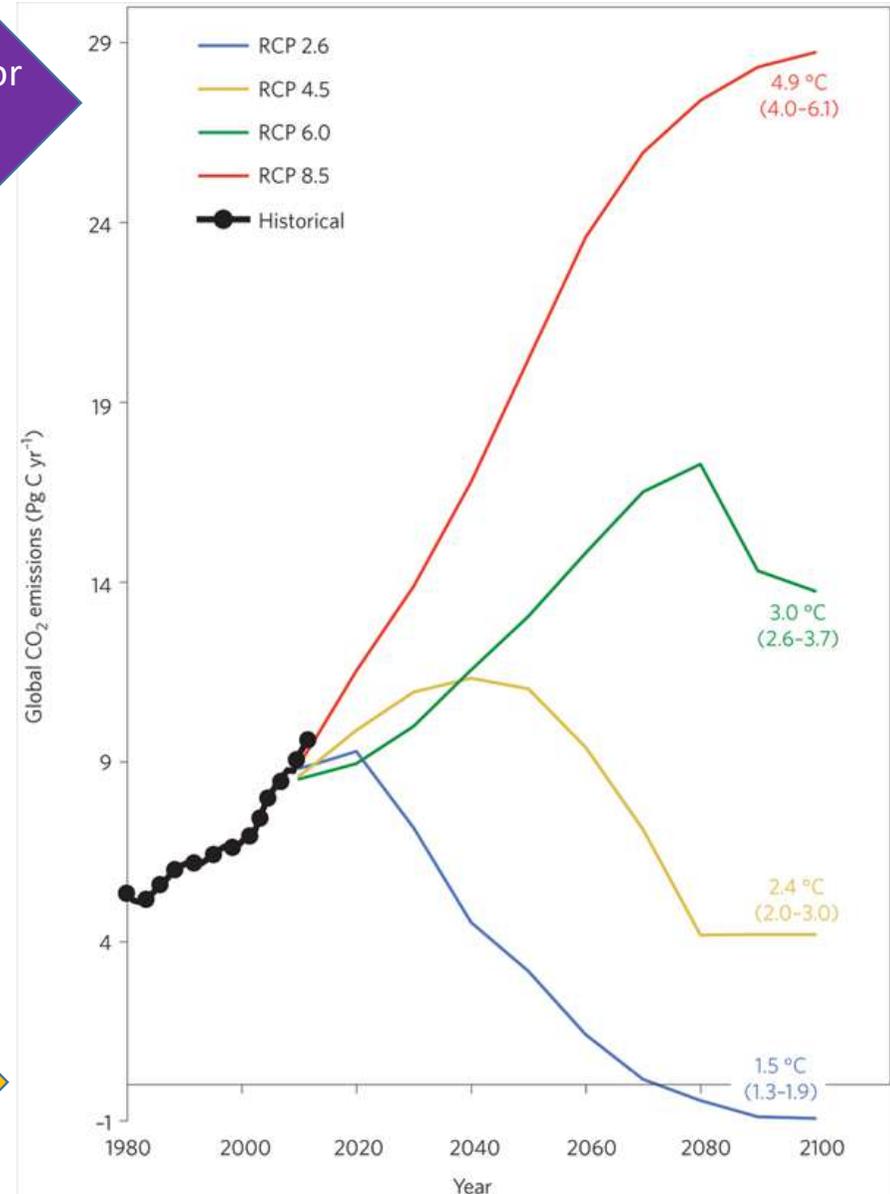


Pathways to the future

4-6 °C - Unliveable planet for many humans and species

2-3 °C - Tipping points, irreversible change, many regions unliveable

1.5 °C - Significant climate impacts but a liveable planet



Action needed at all scales

Global action

The Paris climate agreement: key points

The historic pact, approved by 195 countries, will take effect from 2020

Temperatures 2100



- Keep warming **"well below 2 degrees Celsius"**. Continue all efforts to limit the rise in temperatures to **1.5 degrees Celsius**"

Finance 2020-2025



- Rich countries must provide **100 billion dollars from 2020**, as a "floor"
- Amount to be updated by 2025

Differentiation



- Developed countries **must continue to "take the lead"** in the reduction of greenhouse gases
- Developing nations are encouraged to "enhance their efforts" and move over time to cuts

Emissions objectives 2050



- Aim for greenhouse gases emissions to peak **"as soon as possible"**
- From 2050: **rapid reductions to achieve a balance between emissions from human activity and the amount that can be captured by "sinks"**

Burden-sharing



- Developed countries must provide financial resources to help developing countries
- Other countries are invited to provide support on a voluntary basis

Review mechanism 2023



- A review every five years
First world review: 2023
- Each review will inform countries in "updating and enhancing" their pledges

Climate damage

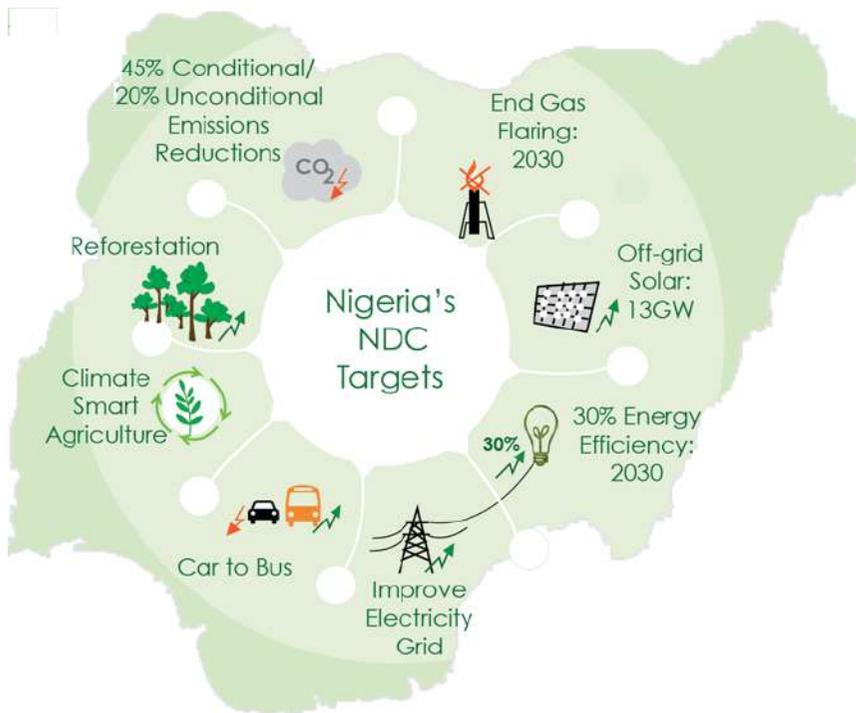


- Vulnerable countries have won recognition of the need for "averting, minimising and addressing" losses suffered due to climate change

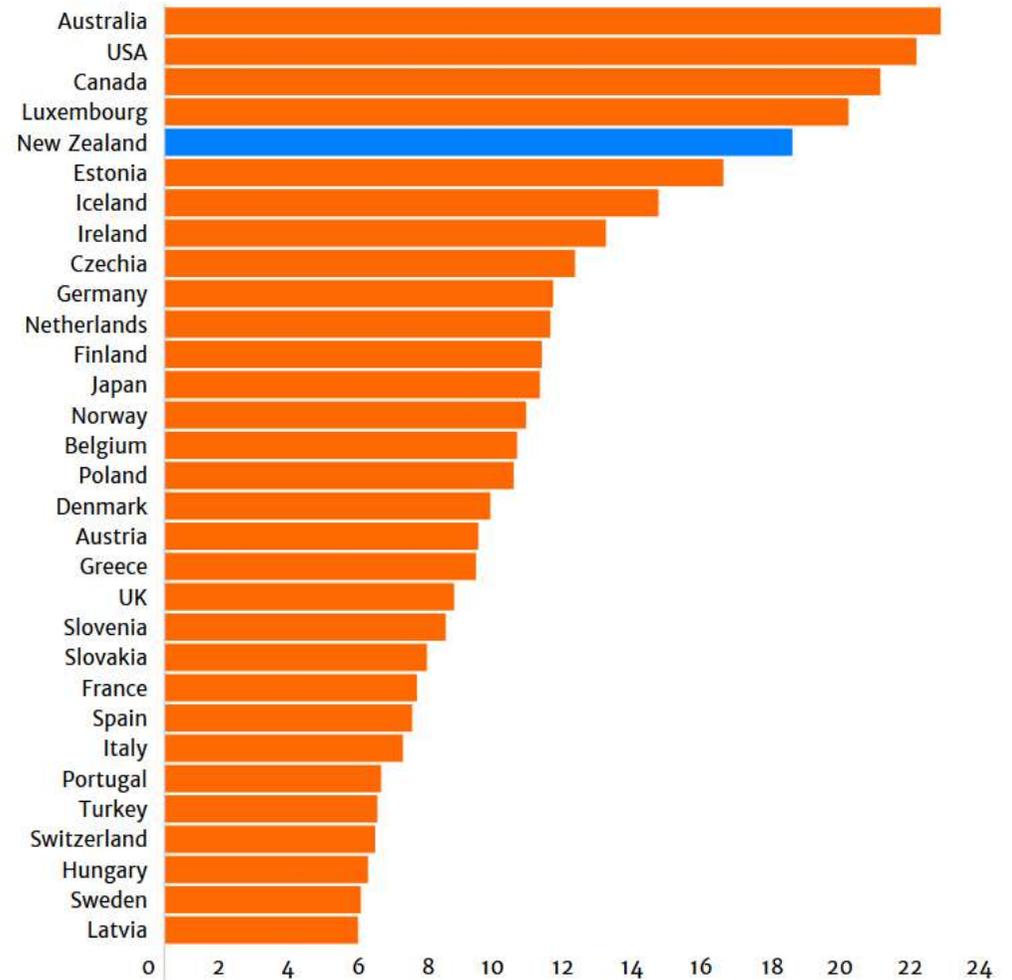
AFP

United Nations Framework Convention on **Climate Change** (UNFCCC)

National action



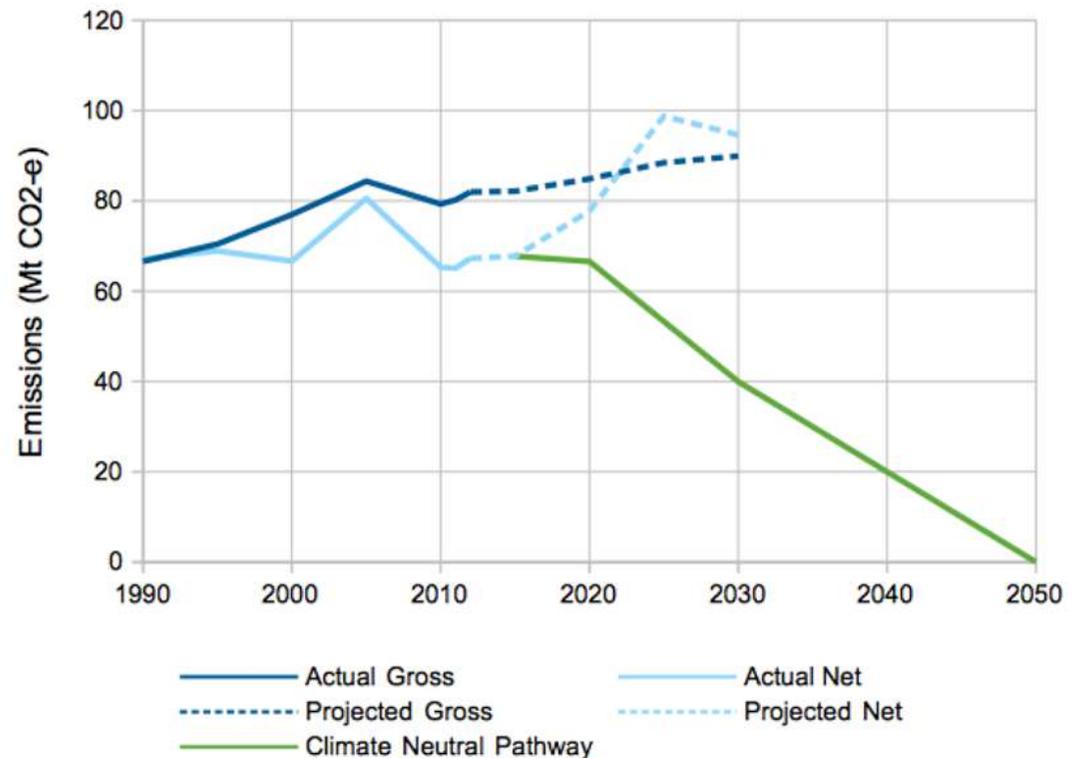
Total greenhouse gas emissions per capita in OECD countries (tonnes)



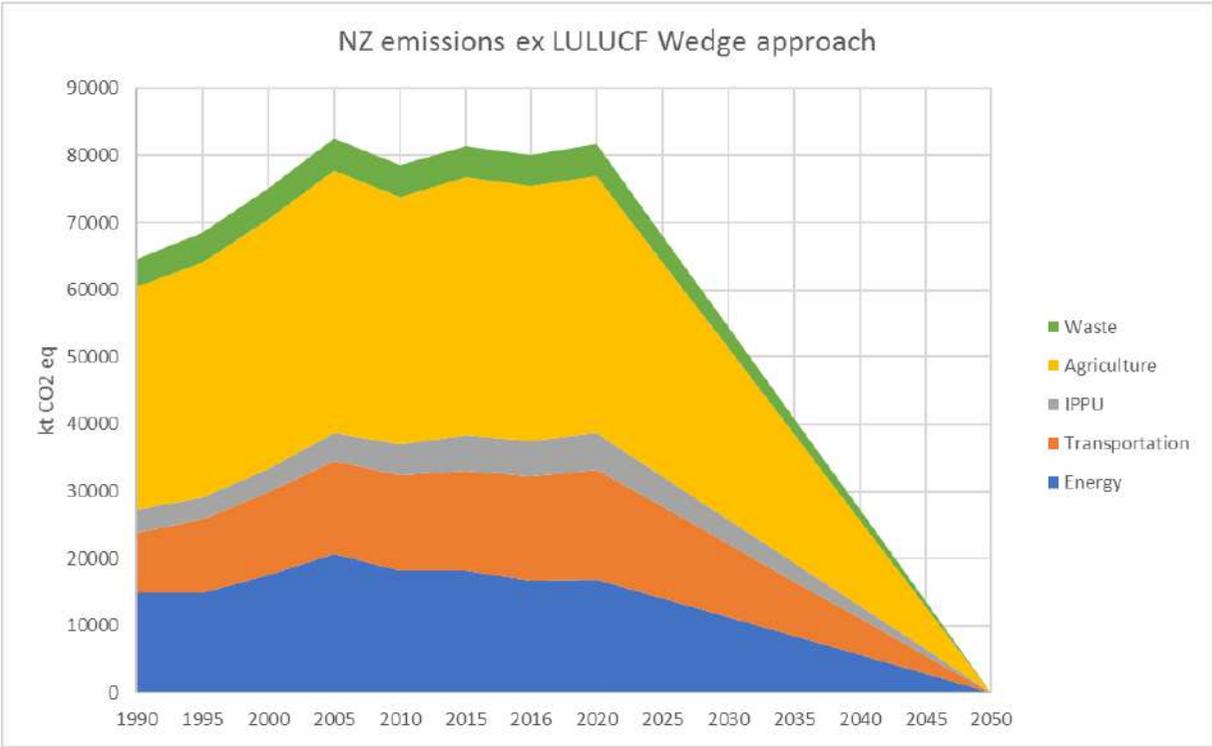
NZ's targets

- Reduce greenhouse gas emissions by 30% below 2005 levels by 2030.
- Reduce greenhouse gas emissions to 50% below 1990 levels by 2050.
- **Reduce our emissions to net zero by 2050**
- **“Zero Carbon” Bill 2019**

NZ Domestic Abatement Curve for Climate Neutrality: 2015-50 (net greenhouse gas emissions)



Emission reductions needed to get to zero by 2050



Requires a 3 - 5% decrease in GHG emissions per year

Councils taking action



- *International alliance of cities and local governments*
- *vision of promoting and supporting voluntary action to combat climate change and move to a low emission, resilient society.*



Phase 1



Phase 2



Phase 3



Phase 4



SOLD OUT - Climate Change and Local Government Forum

The Climate Change and Local Government Forum is an exciting new event featuring New Zealand experts in this area. It's an opportunity to hear from people facing the same challenges as you.

21 Jun - 22 Jun | Macs Function Centre, Wellington | 9:00 am - 4:00 pm | \$805.00 excl. GST for members
\$925.00 excl. GST for non-members | [Save to my calendar](#)

[LOGIN TO REGISTER](#)

This event is now sold out



If you have any further questions, contact the event coordinator:
Samantha Chicott
email: [Samantha](mailto:Samantha@solgm.org.nz)

Overview

Climate change is the 'nuclear free' issue of our age and Local Government is at the leading edge of responding to climate change. SOLGM is hosting the inaugural Climate Change and Local Government Forum on 21 and 22 June in Wellington. Don't miss out on this important opportunity to hear from the leading practice experts on climate change and to network with your colleagues. Climate change will continue to impact on everything we do. Make sure you can do your best to respond to the challenges of climate change in your community by attending this Forum.

The Programme

Event Sponsor



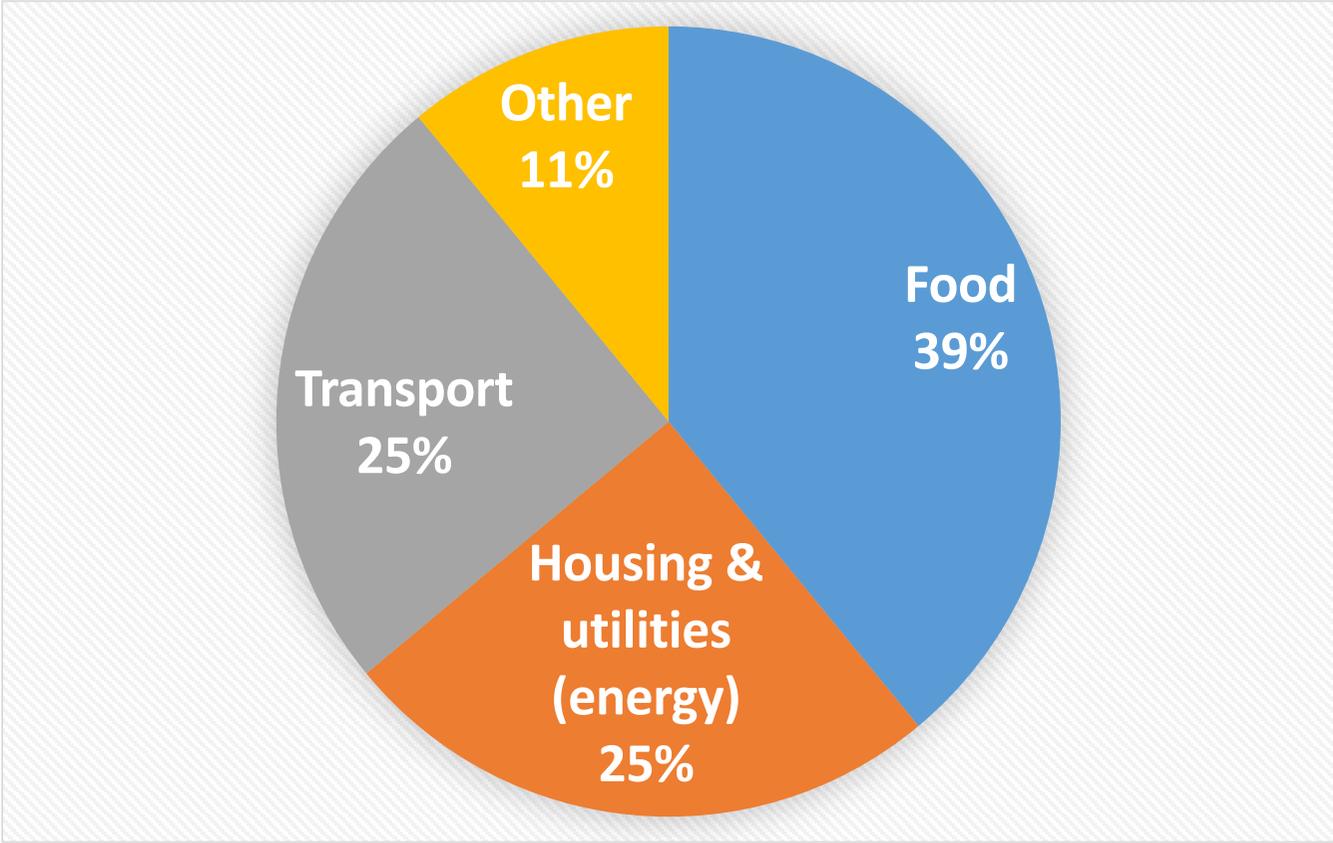
Businesses taking action



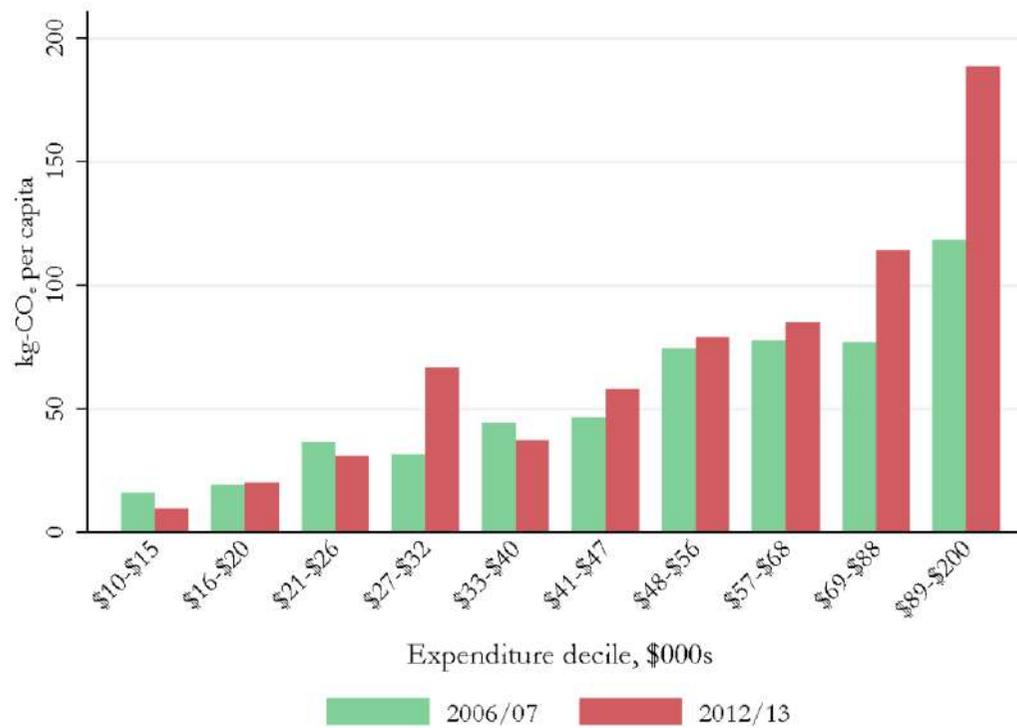
Personal action

10 categories of actions that are good for you and good for the planet

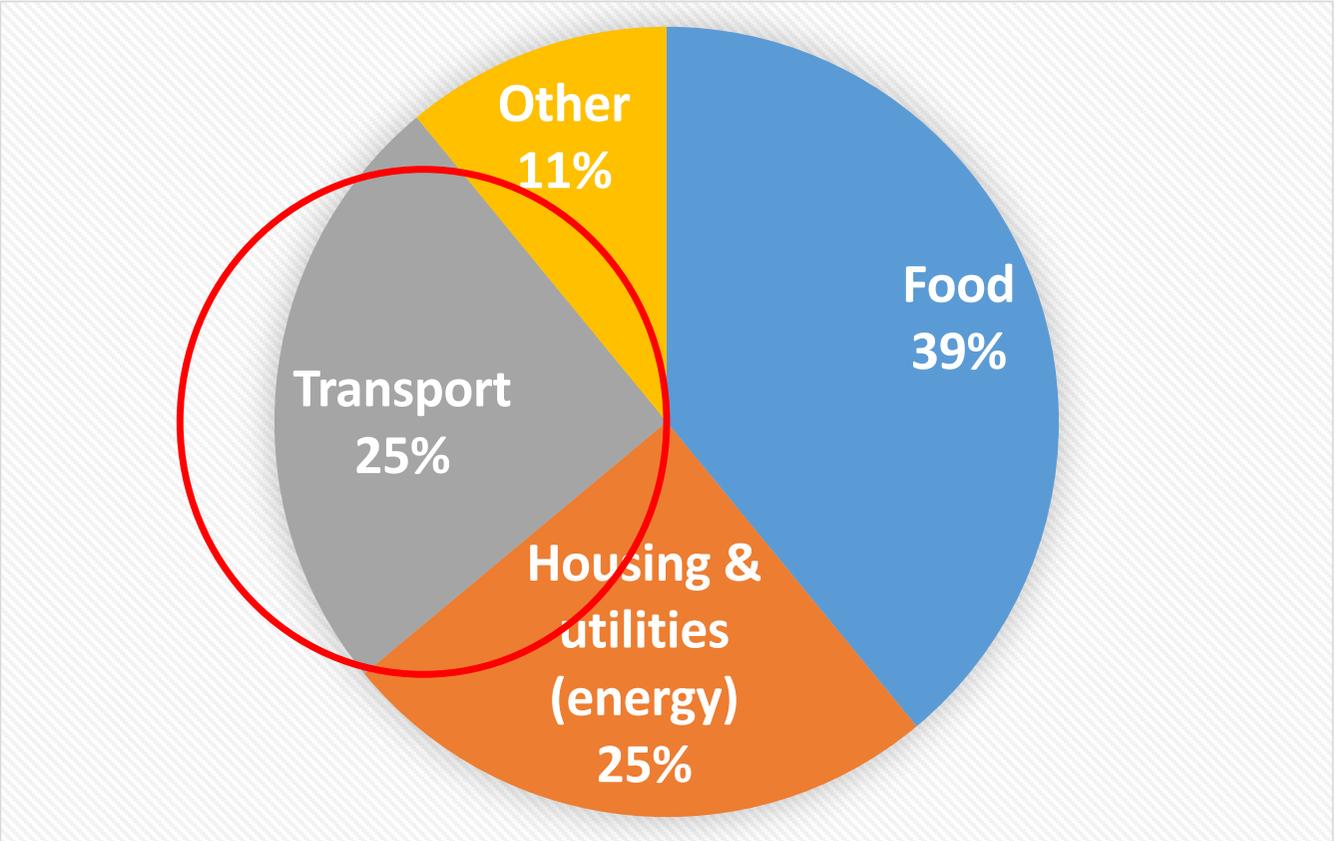
Household GHG emissions (average)



Increasing household emissions especially higher income brackets



Transport



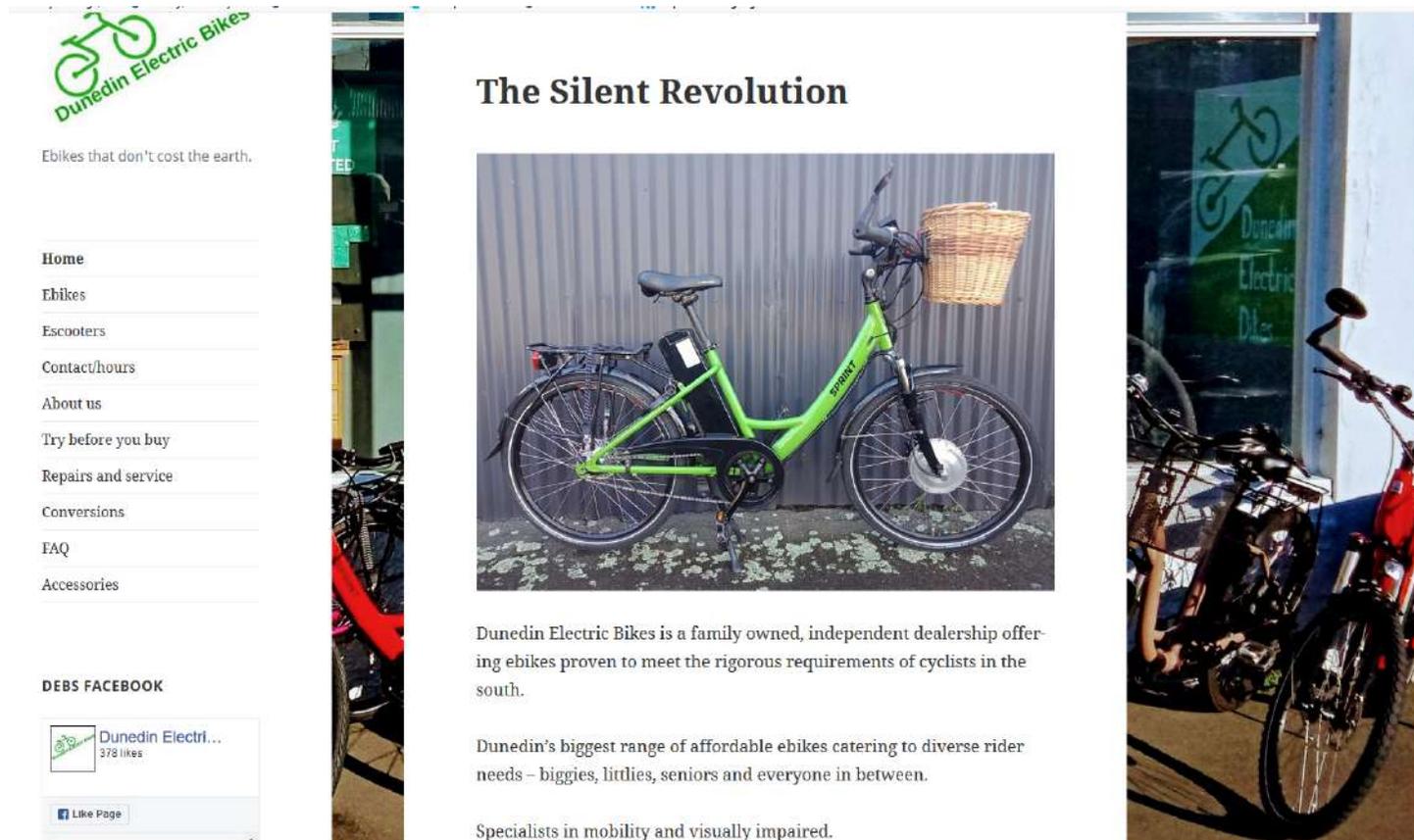
1. Use your car less



Shared mobility services



2. Electrify your transport



The image shows a screenshot of the Dunedin Electric Bikes website. On the left is a navigation menu with links: Home, Ebikes, Escooters, Contact/hours, About us, Try before you buy, Repairs and service, Conversions, FAQ, and Accessories. Below the menu is a Facebook widget for 'Dunedin Electric Bikes' with 378 likes and a 'Like Page' button. The main content area features the heading 'The Silent Revolution' above a photograph of a bright green e-bike with a wicker basket on the handlebars. The bike has 'SPRINT' written on the frame. Below the photo is a paragraph of text describing the business as a family-owned dealership. At the bottom of the text area, it says 'Specialists in mobility and visually impaired.' To the right of the website screenshot is a photograph of the Dunedin Electric Bikes storefront, showing a window with the company logo and several bicycles parked outside.

Dunedin Electric Bikes

Ebikes that don't cost the earth.

- Home
- Ebikes
- Escooters
- Contact/hours
- About us
- Try before you buy
- Repairs and service
- Conversions
- FAQ
- Accessories

DEBS FACEBOOK

Dunedin Electric Bikes
378 likes

Like Page

The Silent Revolution



Dunedin Electric Bikes is a family owned, independent dealership offering ebikes proven to meet the rigorous requirements of cyclists in the south.

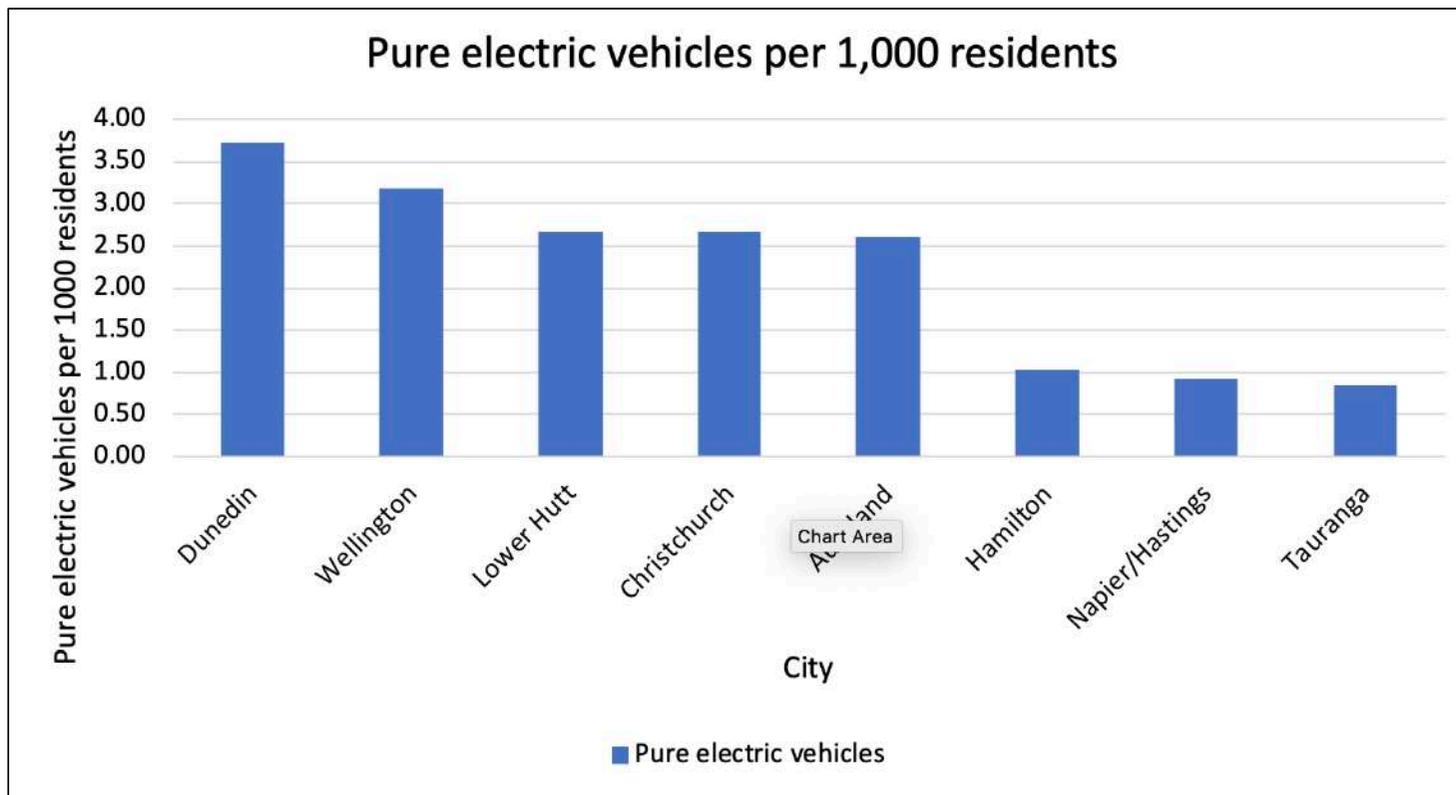
Dunedin's biggest range of affordable ebikes catering to diverse rider needs – biggies, littlies, seniors and everyone in between.

Specialists in mobility and visually impaired.

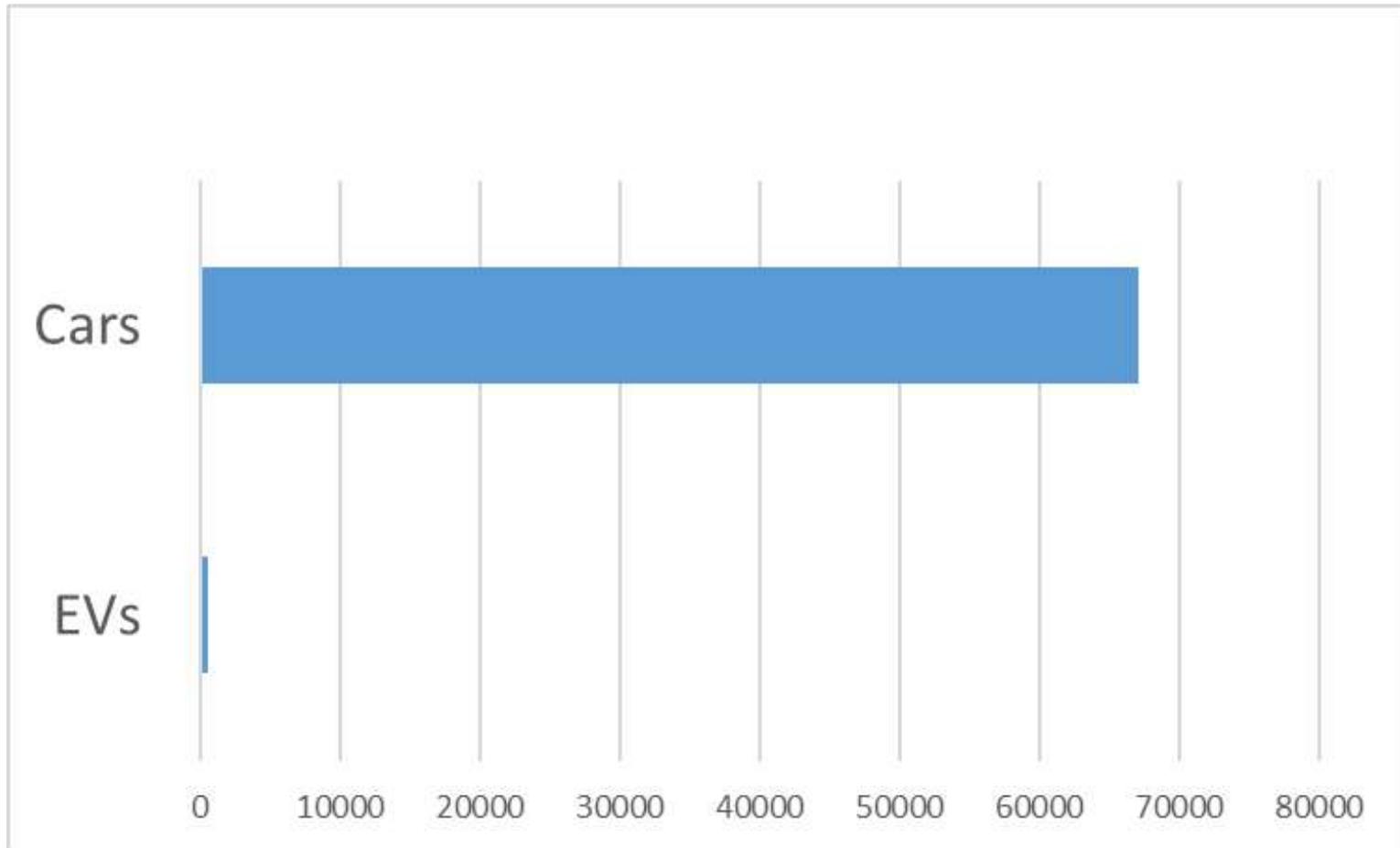
Your next car



Dunedin's doing well ...

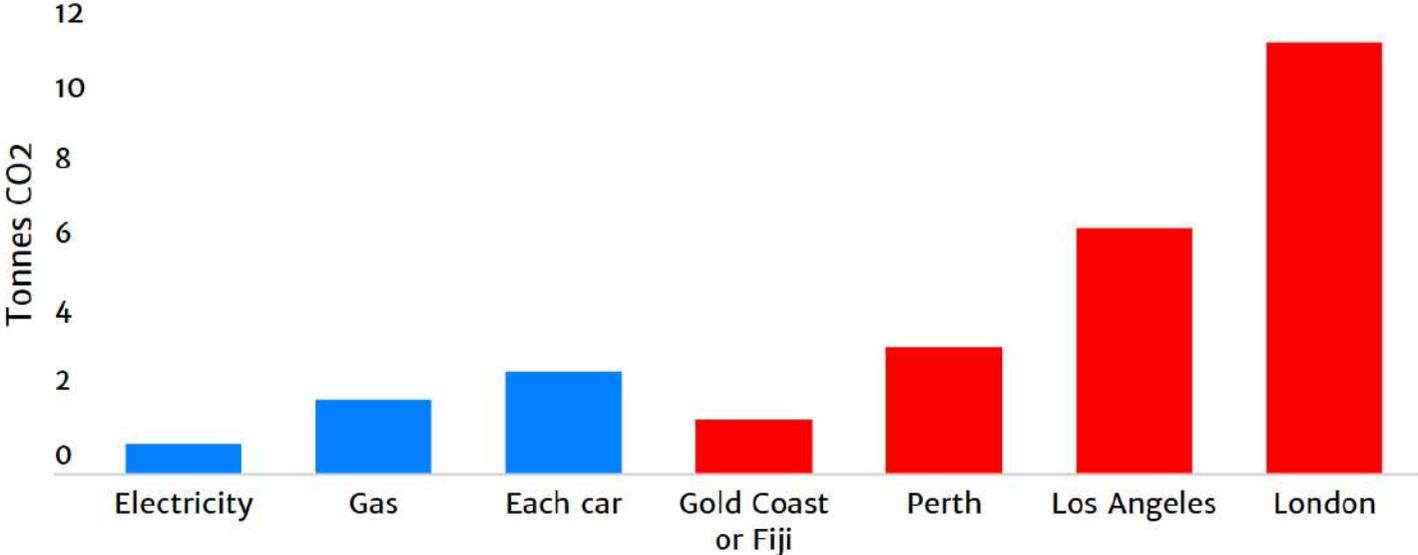


But ... a drop in the bucket so far



3. Limit your flying

Impact of a flight for four people to various destinations from Auckland compared to annual average household emissions



SOURCE: NZTA, MBIE, AIR NZ

[Share](#)



Fly less

Forget plastic-free Feb, try no-fly 2019

2 Mar, 2019 5:00am

9 minutes to read



Swedish activists Maja Rosen and Lotta Hammar have already convinced 14,500 people to refuse air travel in 2019. Photo / Grant Bradley



By: **Alanah Eriksen**
Deputy editor of Weekend Herald, Herald on Sunday



Offset when you purchase air tickets

AIR NEW ZEALAND  Plan Book Experience Airpoints™ Help [Manage booking](#) [Check-in](#) [Sign in](#)

Dunedin to Auckland NZ0676 DUD > AKL	 Fri 29 Mar 2019 9:55AM	Janet Stephenson	seat (T)	No bags	NZD \$358.00 incl. taxes & charges Earn  6 / Status Points 21
Auckland to Dunedin NZ0671 AKL > DUD	 Sat 30 Mar 2019 7:30AM		seat (S)	No bags	

[VIEW DETAILS](#)



Offset your carbon emissions

Help support native forests and global sustainable energy projects

Offsets are certified carbon credits from native forestry projects in New Zealand and global sustainable energy projects.

[Read about our FlyNeutral programme.](#)



\$0 \$5 \$ 6.96

Contributions are not refundable. [Read carbon offset terms and conditions.](#)

Offset after you've flown: Ekos or Enviromark

BE A CARBON FRIENDLY FLYER

Your offsets grow and protect indigenous forests

Did you know flying return to London emits more CO2 than an average year of driving?

Flying is one of the most carbon intensive activities we do in modern life. Offsetting your flights helps to reduce your impact on the planet.

WE HAVE MADE FLIGHT OFFSETTING QUICK AND EASY -SCROLL DOWN TO BEGIN

1→ I want to offset my... *

- A Domestic NZ flights
- B Multi city or international flights

ENVIROMARK SOLUTIONS

Offset my emissions

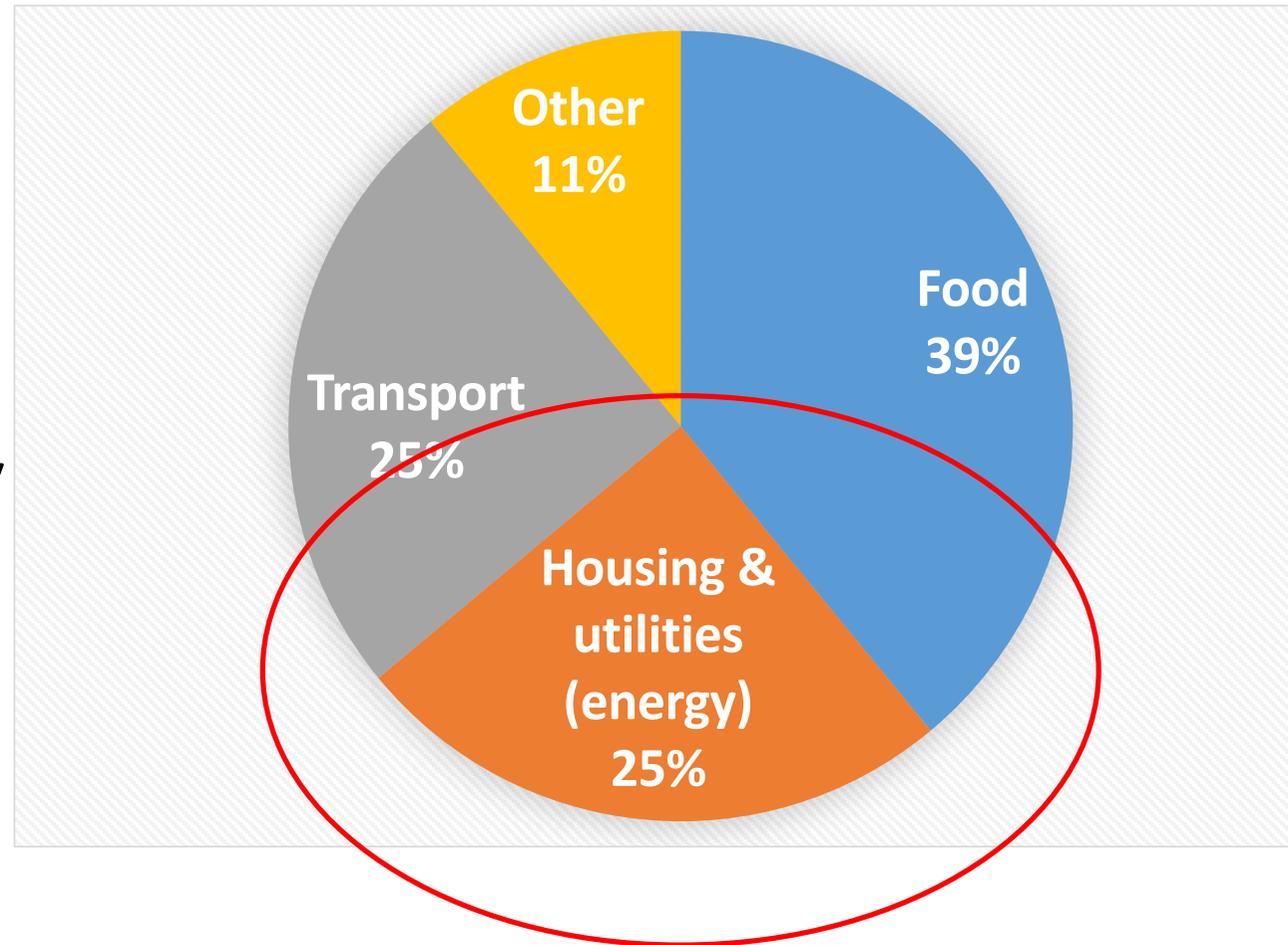
Start date	End date	Emissions (kg CO2e)
1 January 2019	31 December 2019	8143
Total emissions:	8143 Kg CO ₂ e	
Total offset so far:	0 Kg CO ₂ e	
Total not offset:	8143 Kg CO ₂ e	
Total paid so far:	0 NZD (incl. GST)	

Select the type of offsets to purchase

Click the images below for more information

- Renewable energy (solar) \$13.80
- Biomass Energy \$5.75
- Native forest restoration \$38.62
- Renewable energy (wind) \$5.17
- Low emission cook stoves \$22.78
- Landfill Gas Recovery \$8.04

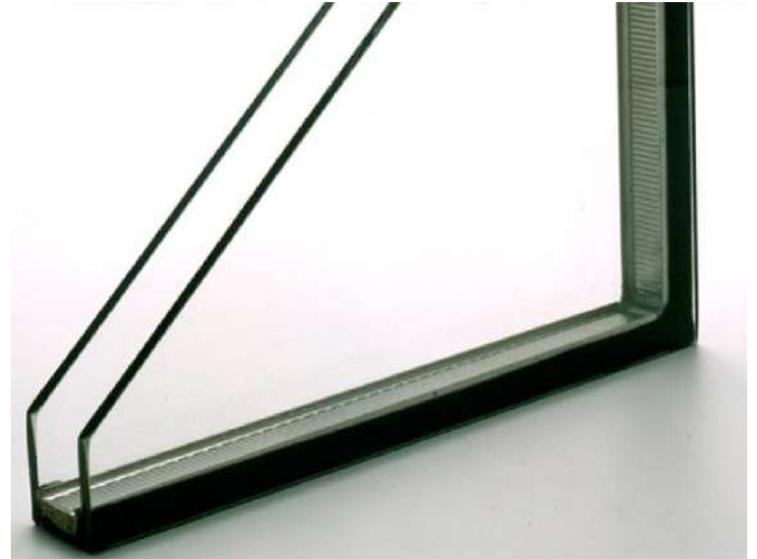
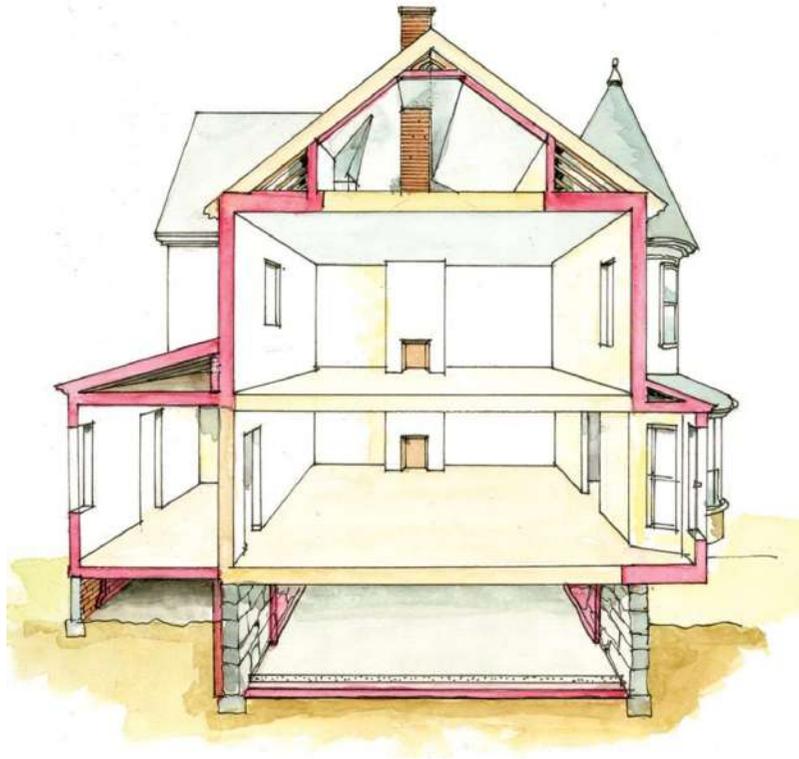
Home energy



4. Low-carbon warmth



5. Keep in the warmth



6. Make your own electricity

Photovoltaic (PV) generation & batteries



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EECA **energywise**
THE POWER TO CHOOSE

At home On the road Home office Energy labels Funding & support

You are here: At home > Solar panels > Thinking of investing in solar panels?

Share + **Thinking of investing in solar panels?**

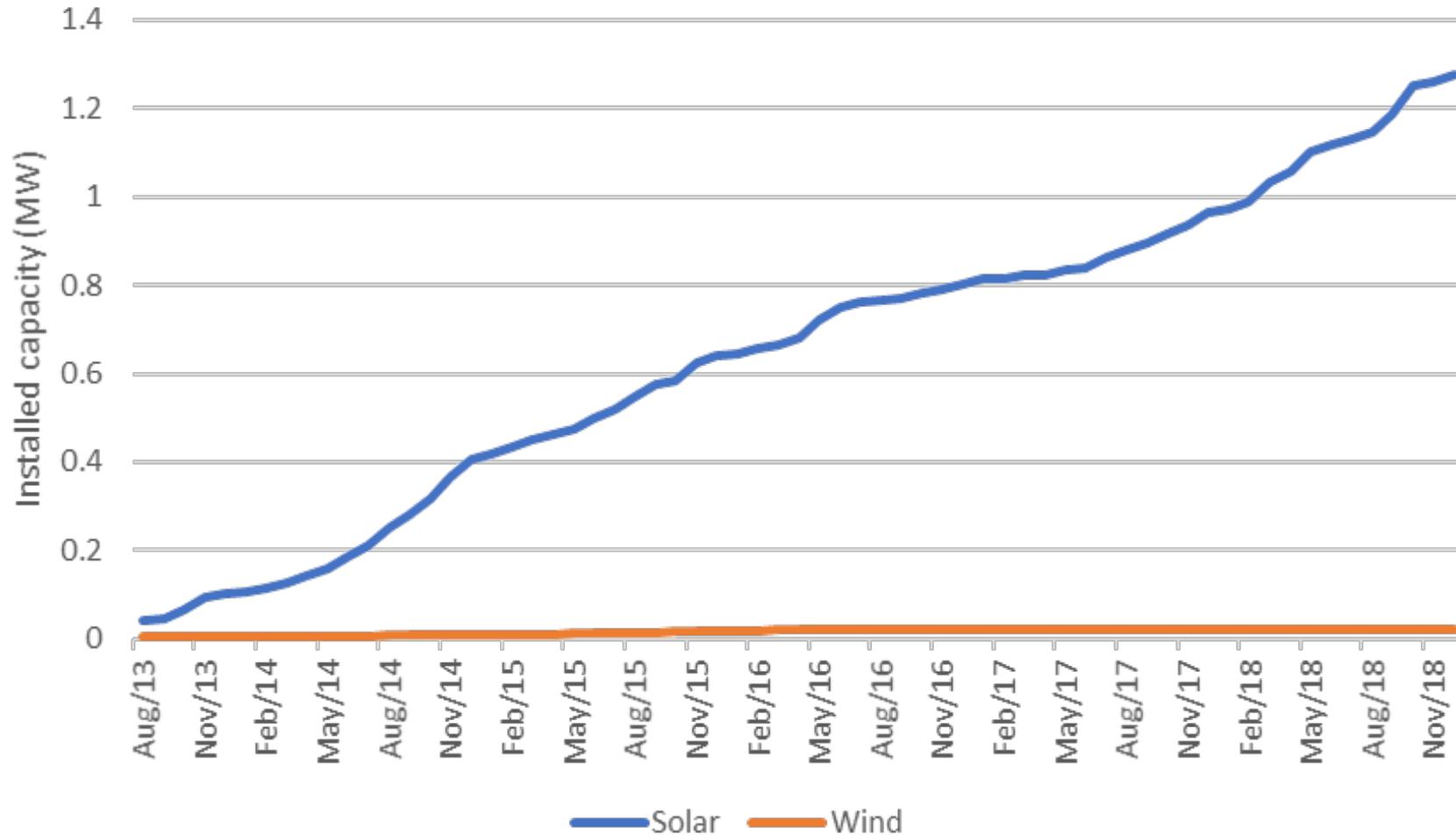
Before investing in solar panels, we strongly advise you do some homework.

ALSO IN THIS SECTION

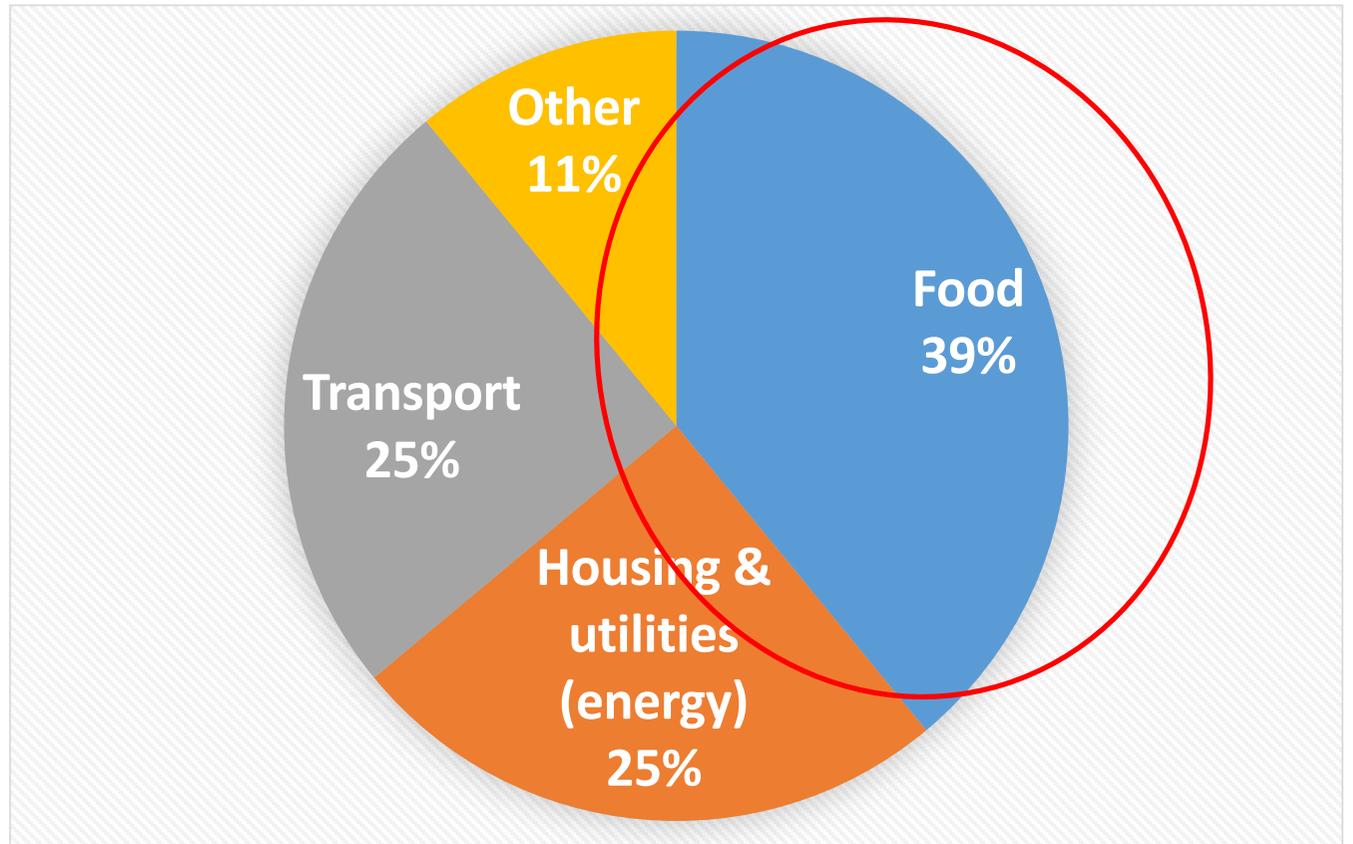
- Simple ways to lower energy bills
- Renovating
- Heating & cooling
- Insulation
- Dampness

Over 23,000 in NZ now

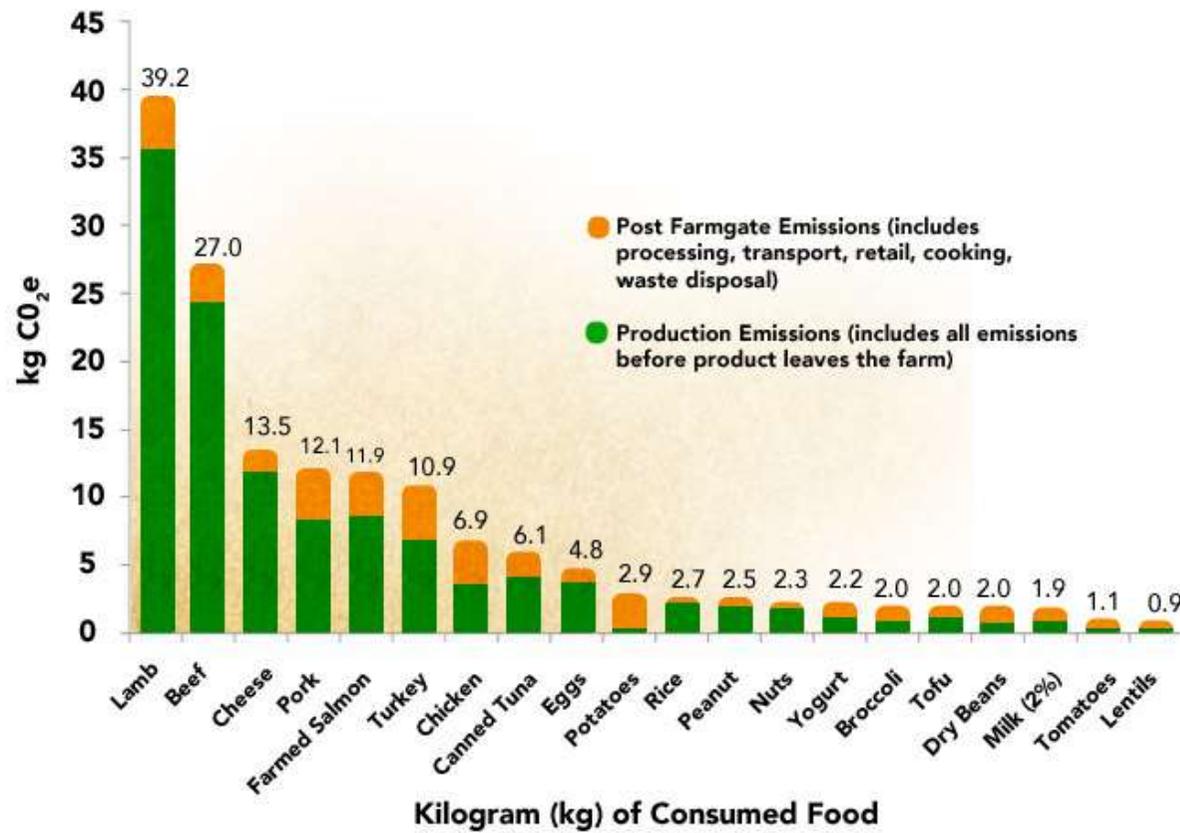
Small-scale wind & solar (PV) Dunedin



Food



7. Adjust your consumption habits



Farming

Avoiding meat and dairy is 'single biggest way' to reduce your impact on Earth

Biggest analysis to date reveals huge footprint of livestock - it provides just 18% of calories but takes up 83% of farmland

Damian Carrington
Environment editor

@dpcarrington

Thu 31 May 2018 19:00 BST



938,854 3,747

This article is over 9 months old



▲ Cattle at an illegal settlement in the Jamanxim National Forest, state of Para, northern Brazil, November 29, 2009. With 1.3 million hectares, the Jamanxim National Forest is today a microcosm that replicates what happens in the Amazon, where thousands of hectares of land are prey of illegal woodcutters, stock breeders and gold miners. Photograph: Antonio Scorza/AFP/Getty Images

Avoiding meat and dairy products is the single biggest way to reduce your environmental impact on the planet, according to the scientists behind the most comprehensive analysis to date of the damage farming does to the planet.

Buy local foods



Be content with less



Life cycle thinking

Impacts before I buy



Impacts while I'm using/doing

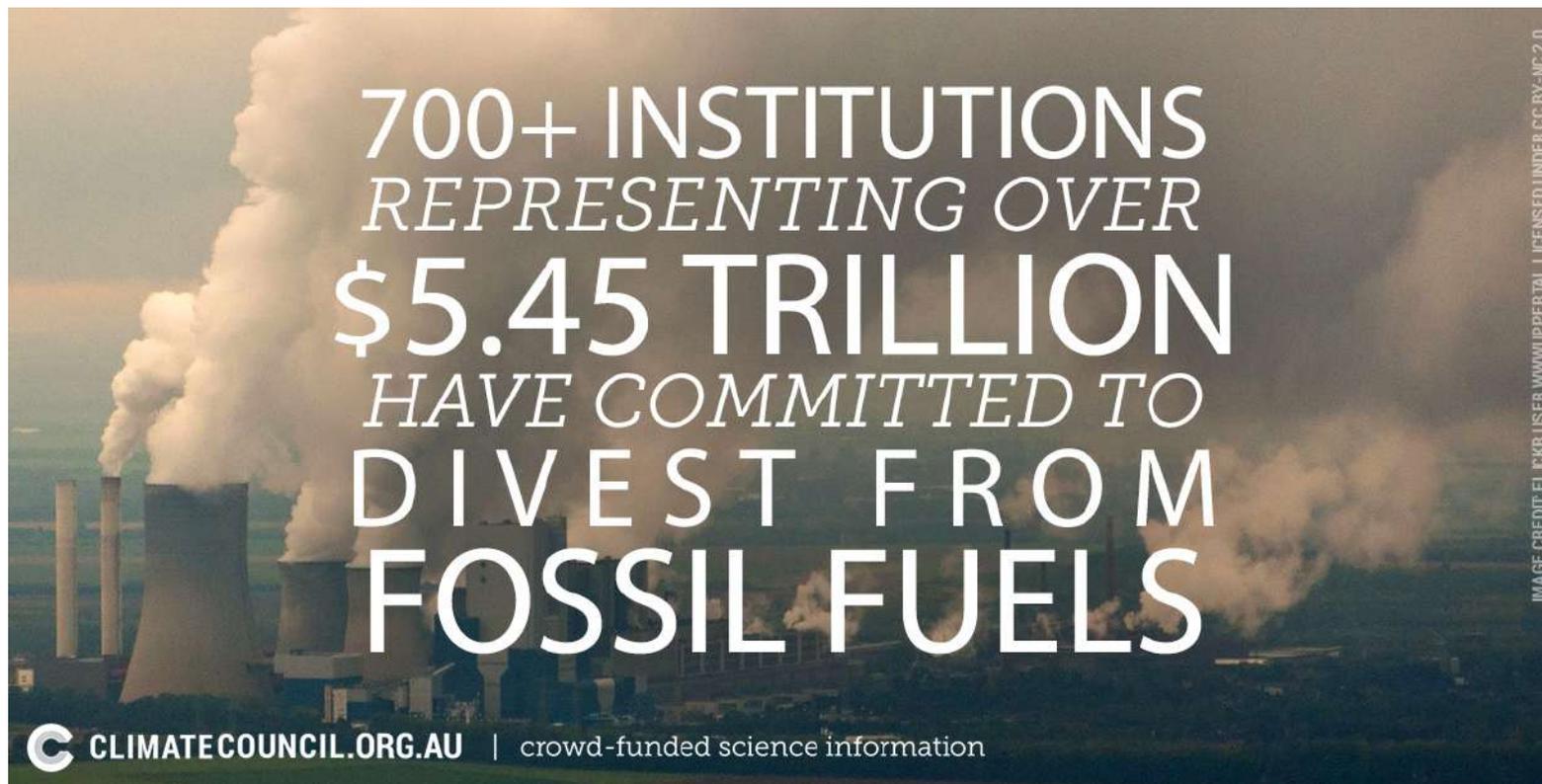


Impacts after I've finished



8. Invest in the future

Divest from stocks and shares in fossil fuels



700+ INSTITUTIONS
REPRESENTING OVER
\$5.45 TRILLION
HAVE COMMITTED TO
DIVEST FROM
FOSSIL FUELS

 CLIMATECOUNCIL.ORG.AU | crowd-funded science information

IMAGE CREDIT: FLICKR USER WWWUPPERTAL. LICENSED UNDER CC BY-NC 2.0

Invest in solutions

Forbes Billionaires Innovation Leadership Money Consumer Industry Lifes

2,184 views | May 15, 2018, 10:45am

Renewables Investment Nudges Out Fossil Fuel And Nuclear



Felicia Jackson Contributor ⓘ
Energy
I write about innovation, finance, energy, climate and sustainability.

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Top Clean Energy Stocks for 2019

A deep dive into the renewable, alternative, and clean energy stocks that could enrich investors in 2019 and beyond.

Matthew DiLallo (TMFmd19)
Jan 3, 2019 at 8:47PM

Responsible investment is skyrocketing



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[Home](#) > [Insights](#) > Responsible Investment Benchmark Report 2018

Responsible Investment Benchmark Report 2018

15 August 2018

New Report: Responsible Investments Hit Major Milestone, Representing Vast Majority of all New Zealand Investments



Erica Miles

Erica Miles – Director – Sustainable Value

KPMG in New Zealand

[✉ Contact](#)



Also on KPMG.com



KPMG are proud to support the 4th annual **Responsible Investment Benchmark Report** by the Responsible Investment Association Australasia (RIAA), based on survey results researched and collated by KPMG's Sustainable Value team.



9. Work out your emissions footprint



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Enviro-Mark Solutions is inspiring action for a better environment.

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Calculators

NEW! We are excited to announce the launch of our new public calculators which have undergone major changes. Use the links below to calculate and offset emissions for your travels, or your household activities. Alternatively, you can also directly offset your emissions if you have already calculated your footprint.



Household Calculator

Allows you to calculate emissions for your household and transport activities.

NEW! Need help calculating your household emissions? Now you can use the provided default emission values for the 'average' New Zealand household and tailor them to best fit your household.

[Click here to access the Household Calculator](#)



Travel Calculator

Allows travellers to calculate emissions for their domestic or overseas travel and also emissions associated with a range of New Zealand-specific accommodation.

[Click here to access the Travel Calculator](#)

Average



ENVIRO-MARK SOLUTIONS

888143 kg CO₂e

Household Emissions Calculator

Year: 2018

Period: Whole Year

Adults: two

Kids: one

Home energy: 1362 (Average)

Travel: 5850 (Average)

Household waste: 931 (Average)

Clear all inputs

Reset average footprint

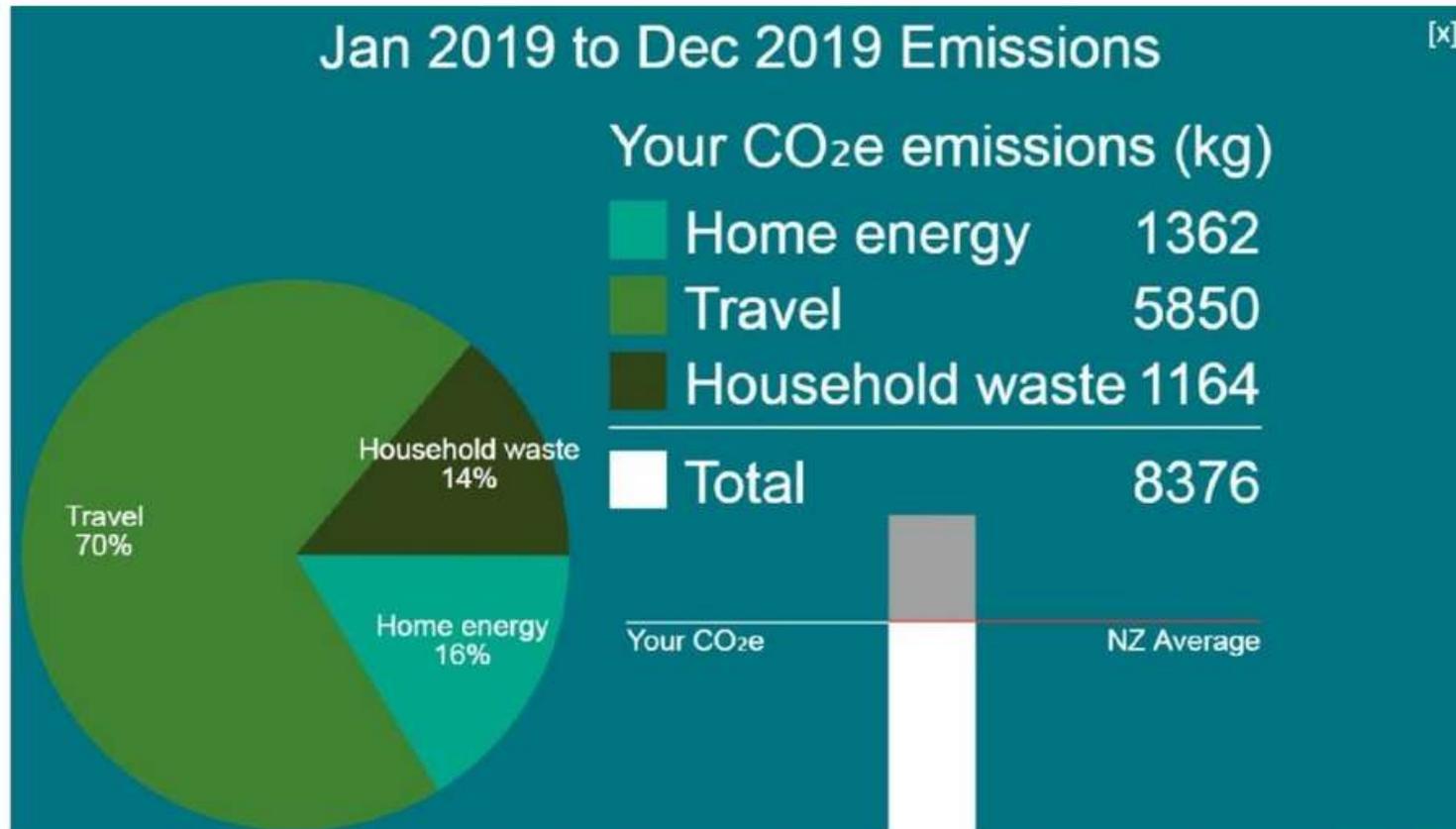
Log in / register

Offset my emissions

Powered by Enviro-Mark Solutions Ltd ©2017 [contact us](#)



Example



WILL HARVIE

Estimated emission report from the online household calculator.

Thank you!

