

What does working from home do to your carbon footprint?



New Zealand businesses have embraced digital technology like never before. With the right digital, security and collaboration tools employees can work from pretty much anywhere.

But what impact does this new flexibility have on our carbon footprints?

Supporting Kiwis to work more sustainably

At Vodafone we aim to support businesses to thrive and New Zealanders to lead more sustainable lives. There are a lot of business benefits to giving staff the flexibility they demand. We wanted to learn more about the environmental impact of hybrid models that combine remote work and time in the office.

We asked sustainability experts thinkstep-anz to carry out a Consequential Life Cycle Assessment (CLCA) to measure how working from home one day a week affects the size of an employee's carbon footprint.



What is a Consequential Life Cycle Assessment?

CLCA is a science-based approach that looks at how environmental impacts change if we do things differently. A CLCA can help a business understand how to manage those impacts without shifting the burdens to other activities, people or organisations.

What the study involved



First, thinkstep-anz considered the carbon footprint of working in an office.



Then they looked at what changed when people worked from home one day a week.



Finally, they compared those two scenarios.

Comparing the impact: working from home versus working in the office

The study took working at the office as the baseline and compared it with the impact of all the activities that become necessary when some employees worked from home once a week.

What wasn't included

The study didn't look at potential long-term impacts of working from home permanently, like moving to the countryside or buying a bigger house.

As the study was only interested in what changed between the two scenarios, it excluded everything that stayed the same no matter if some employees worked from home once a week. For example, buses and trains would still be running, offices would still operate in the same way and IT equipment wouldn't change.



What is a carbon footprint?

A carbon footprint is the total greenhouse gas emissions caused by our actions. Carbon footprints are measured in carbon dioxide equivalent (CO₂e), a unit that is used to standardise the climate effects of various greenhouse gases.



Discovering the carbon 'hotspots'

Impacts that were avoided when working from home included

- ⊖ transport to/from the office
- ⊖ heating/cooling to make up for the 'missing' remote worker's body heat and computer heat.

Additional impacts when working from home included

- ⊕ heating/cooling and lighting the home-office room
- ⊕ video and audio calls with co-workers that usually take place in person.

The result: flexible working can have a smaller carbon footprint

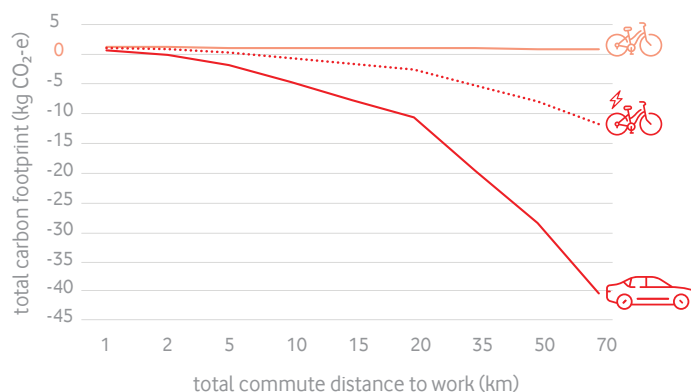
The study found that the average New Zealand office worker who works one day a week from home will save 4.2 kg in carbon emissions per day, compared to commuting into the office every day.

Where do the benefits come from?

The biggest difference comes from the avoided commute, and the further you drive, the bigger the saving. For example, workers who would otherwise use a car to drive five kilometres each way are very likely to reduce their carbon footprint by working from home. This is likely to apply to most office workers: according to Census 2018 data, 78% of New Zealanders use a car to drive to work. For at least 57% of these this journey is longer than five kilometres each way. Fewer than 3% currently drive a hybrid/electric car.

Part-time, full impact

For a part-time remote worker who doesn't work full eighthour days, the carbon savings can be even higher per hour worked. While the carbon footprint for working from home depends on the number of work hours, the impact from the commute stays the same.

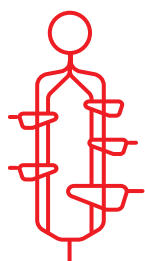


1.2% Working from home one day a week saves on average 1.2% of a person's annual carbon footprint¹, or

4.2 KG

CO₂e saved per remote worker per day.

That's the equivalent of 1.3 flights from Auckland to Wellington per year, or 738 kilometres by car².



Working in Tāmaki Makaurau?

If you live in Tāmaki Makaurau Auckland, you can likely shrink your carbon footprint more by working from home compared to other regions in the country. This is due to higher average commuting distances in Auckland.



1. Calculation based on *New Zealand's Greenhouse Gas Inventory 1990-2019 Snapshot*, MfE

2. Calculation based on *Measuring Emissions Factors Summary 2020*, MfE

Reduce your impact

Transport is one of our largest sources of greenhouse gas emissions and is responsible for 17 per cent of Aotearoa New Zealand's gross emissions. Over time, consumers and the transport industry are expected to switch to cars, buses and trucks powered by electricity, biofuels and/or hydrogen fuel cells but here is how businesses and your team can make a difference right now. Encourage your staff to:



Work from home: Equip your staff with what they need to work remotely. Heating a home office has the biggest impact, so encourage staff to use small office spaces and efficient low-carbon heaters. If they travel to the office encourage them to:



Bike, walk or scooter: Make space available to park bikes securely. Offer charging spots for e-bikes. Provide showers. The better the infrastructure, the more cyclists will use it. Offer bike safety lessons. Negotiate a staff deal for e-bikes.



Carpool: Set up internal noticeboards or investigate apps like Waze, Thumbs Up or Hitch to connect people.



Use public transport: Subsidised bus tickets anyone?



Are you ready to electrify your business fleet?

Encouraged by government incentives many companies are eyeing up electrifying their fleet. Depending on the distance each vehicle needs to travel daily and what jobs it is required for, there is a growing number of options on the market. Hybrids and plug-in hybrids can be a good stepping-stone to a full EV.

Find more tips for low-carbon businesses at genless.govt.nz/for-business



At Vodafone, we're committed to creating a better future for Aotearoa New Zealand through remarkable technology that simplifies lives and businesses.

About thinkstep-anz

We work with you to put sustainability at the heart of your business, to set you up to succeed and inspire you to keep achieving more.

We use data to understand your business, we focus on what matters, and we connect your organisation with practical resources and ideas that move you ahead.

It's what we've been doing for 20 years – bringing our technical expertise and business know-how to create value for organisations like yours and help you tell your story.

meet@thinkstep-anz.com | www.thinkstep-anz.com

thinkstep ltd (New Zealand)
Wellington | Auckland
Hamilton | Christchurch
+64 4 889 2520

thinkstep pty ltd (Australia)
Sydney | Canberra | Brisbane
Adelaide | Perth
+61 2 8007 3330

