

FlexiWork: Reducing consumer emissions with greater teleworking

Overview

Working from home results in emissions reductions: reduced transport emissions are more than four times those of the accompanying increase in residential energy use.ⁱ Since transport contributed to 90% of direct household emissions between 2007 and 2018, a material increase in telecommuting would have a noticeable impact on emissions.ⁱⁱ

Although COVID-19 disrupted work patterns (around 40% of the workforce worked remotely in the first lockdown), strong social norms have slowed a permanent transition.ⁱⁱⁱ With nearly three-quarters of the workforce commuting via car and just one tenth telecommuting in 2018, this paper assesses policy options to permanently increase the uptake of remote work in New Zealand.^{iv}

Regulatory failures in the current policy design include:

1. A lack of consideration for social norms or stigma that can prevent employees from applying for flexible work arrangements.
2. A broad base of reasons for workplaces to turn down these requests, without regard to the sunk cost fallacies, risk aversion, and status quo biases potentially influencing managers considering these requests.
3. An absence of policies to overcome other structural barriers to remote working, such as direct subsidies for digital infrastructure or home office setup.

With spillover benefits for congestion and worker satisfaction, addressing behavioural barriers preventing large-scale teleworking is an enticing policy opportunity. Language in online resources, however, generally emphasises the negative impacts of telework and puts the onus on employees to formally request remote arrangements in writing.

‘FlexiWork’ is a nudge proposal that reverses this proposition, shifting the responsibility of justifying when work cannot be achieved remotely onto employers. This is recommended for knowledge-intensive industries, such as professional, ICT, and technical services, targeting 25% of the workforce ordinarily commuting via car to shift to two days per week of remote work. This could avoid 96 million car trips annually and save 192 kilotonnes of CO₂ per annum, or 2% of New Zealand’s consumer transport footprint.

Key recommendations:

Commit: to making regulatory changes via the Employment Relations Act that reframes partial remote work as a default option in suitable industries.

Require: managers in professions well-suited to remote work to formally justify if a role cannot be partially undertaken remotely.

Consult: on which industries, regions, or roles should be excluded from this change to balance negative trade-offs for productivity.

ⁱ IEA, "Working From Home Can Save Energy And Reduce Emissions".

ⁱⁱ MFE, "Chapter 2".

ⁱⁱⁱ Statistics New Zealand, "Four in 10 employed New Zealanders work from home during lockdown".

^{iv} Statistics New Zealand, "Census totals by topic".

Part One

Background

New Zealand has one of the highest rates of carbon dioxide emissions per capita in the 37 OECD countries with data for road transport emissions, ranking 5th in 2018.¹ Many of these emissions arise during daily commutes, with 70-75% of New Zealand's workforce of 2.7 million driving to work each day.² About 90% of direct household emissions arose from consumer transport use between 2007-2018.³

Globally, lockdown orders during the COVID-19 pandemic had significant impacts on direct emissions, reducing carbon dioxide to 2006 levels, principally as a result of reductions in road and air travel.⁴ Large-scale shifts to teleworking occurred globally, with around half of workforces in the UK and US working semi-remotely for most of 2020.⁵

Unlike other countries, New Zealand's strong public health response meant it did not face the same pressure to implement teleworking policies during the pandemic. One month after New Zealand returned to Level 1 restrictions, usual weekday traffic levels had returned in urban centres, despite 40% of New Zealand's workforce teleworking during the March-April lockdowns.⁶

The OECD estimate around 40% of New Zealand's workforce could work remotely at least some of the time, broadly aligning with evidence from the lockdown.⁷ The discrepancy between capability and regular work patterns suggests non-technical barriers deter employees from requesting remote arrangements, such as social stigma and norms. About 10% of workers regularly telecommuted in 2018.⁸

Critically, the International Energy Agency finds remote work generally reduces net energy demand, with energy savings around four times larger than the accompanying increase in residential energy consumption.⁹ With relatively renewable electricity resources and a comparatively fossil-fuel intensive car fleet, a sustained shift to large-scale teleworking is an attractive opportunity to reduce New Zealand's consumer transport emissions.

Current policy settings for remote work (status quo)

New Zealand's policy settings currently provide for the right to work remotely but do not actively encourage it.¹⁰ There are no policies in place to overcome structural barriers to remote work, such as those to address digital infrastructure availability or lack of private space in households.

¹ MFE, "Chapter 2".

² Statistics New Zealand, "Census totals by topic".

³ MFE, "Chapter 2".

⁴ MFE, "Chapter 2"; Le Quéré et al., "Temporary reduction in daily global CO2 emissions during COVID-19".

⁵ Brynjolfsson "COVID-19 and Remote Work"; Armour et al., "The COVID-19 Pandemic and the Changing Nature of Work".

⁶ Statistics New Zealand, "Four in 10 employed New Zealanders work from home during lockdown".

⁷ OECD, "Who can log in? Feasibility study".

⁸ Statistics New Zealand, "Census totals by topic".

⁹ IEA, "Working From Home Can Save Energy And Reduce Emissions".

¹⁰ Employment New Zealand, "Flexible Work".

Regulatory design is limited to the right to request flexible work arrangements, including remote work, under Part6AA of the Employment Relations Amendment Act 2014. This allows all employees to request a change to their working arrangements at any time in their employment term.

But while firms are obliged to consider such a request, they do not have to grant it.

This is described in the accompanying resources as:¹¹

- ⇒ *“A right to the process, not a right to the outcome”*
- ⇒ *“A privilege, not a right”.*

Language in online resources generally emphasises the negative impacts of remote work for employers and puts the onus on employees to formally request and justify flexible work arrangements in writing.

For instance, the ‘Flexible Work Toolkit’ published by Employment NZ advises employees to:¹²

- ⇒ *“Consider the risks and negative impacts [for the business] and see if there is a way you and your employer can address them.”*
- ⇒ *“Consider why you feel traditional ways of working are not producing the best results and what would be best for you and your employer.”*
- ⇒ *“Flexible work is a condition... if there is a negative impact on the business, the employer can review [arrangements] and does not have to continue with them.”*

It notes that many employees do not ask for flexible work arrangements out of fear of burdening their business. However, the regulatory design does little to overcome this, with workers potentially influenced by factors such as:

- ⇒ Social stigma: power dynamics in the workplace that means workers do not push for remote working out of fear of looking difficult.
- ⇒ Anchoring and norms: workers may not have previous experience with remote work to reference in decision making.
- ⇒ Inertia and habit: workers do not generally change habits once settled in the workplace.

Regulatory settings also do not seek to overcome behavioural barriers influencing managers reviewing remote work requests. These could include sunk cost fallacies (managers overstate the value of their existing office space in decision-making) or risk aversion and status quo biases (managers are influenced by the psychological stress of uncertainty and tend to prefer the status quo).

Applications for flexible work can be declined on a broad range of grounds, including:

- ⇒ *Practicality*
- ⇒ *Impact on quality or performance*

¹¹ Employment New Zealand, “Flexible Work Toolkit”.

¹² Employment New Zealand, “Flexible Work”.

- ⇒ *Additional burden or cost for the organisation*
- ⇒ *If the arrangement cannot easily be accommodated*
- ⇒ *Potential detrimental effect on the ability to meet customer demands*
- ⇒ *Potential detrimental effect on the ability to meet team demands*

This means that while remote work is legally possible in New Zealand, it is not a default option of any workplace, including in industries that can most likely benefit from partial shifts to remote work.¹³

Problem definition

Previously, strong social norms have prevented remote work from being considered seriously in an emissions-reduction framework.¹⁴ However, with COVID-19 creating new opportunities to shape social norms, policies to sustain a cultural shift to widespread teleworking can be justified. In the context of reducing emissions, this can:

- ⇒ **Benefit around 30-40% of the workforce (540,000-810,000 additional workers on top of a ~270,000 worker baseline).¹⁵** The OECD notes that, if positioned as a choice, partial teleworking arrangements can be popular with workers and directly improve productivity via increases to worker satisfaction, or indirectly via cost reductions for CBD office spaces.
- ⇒ **Address congestion failures through improved regulatory design.** Congestion is estimated to cost the Auckland economy alone around \$1.25 billion each year. Consumer vehicle use contributes to around 27% of gross national carbon dioxide emissions.¹⁶
- ⇒ **Contribute meaningfully to an emissions-reduction toolkit:**
 - Assuming with policy intervention that 500,000 additional workers can telecommute an average of two days a week (about 25% of the workforce who ordinarily commute via car); and
 - commuters ordinarily travel an average 11.5 km each way at an emissions rate of 174.4 grams CO₂ per km; then
 - intervention can avoid 96 million car trips each year (assuming 48 work weeks), saving 192 kilotonnes of CO₂ per annum. This is about 2% of New Zealand's annual carbon emissions from consumer transport (8700 kt in 2018).¹⁷

Policy Objectives

Given the opportunity to reduce emissions, teleworking is a positive feature of new workplace norms. The OECD predicts that widespread teleworking will be largely sustained after the COVID-19 crisis, due to benefits for workers' satisfaction.¹⁸

¹³ OECD, "Who can log in? Feasibility study".

¹⁴ Bridges, "Opportunities to cut NZ's road transport emissions".

¹⁵ MBIE, "Labour Market Dashboard".

¹⁶ MFE, "Chapter 2"; NZTA, "Road pricing (congestion charging)".

¹⁷ Motor Industry Association, "CO2 Emissions graph by sector 2006 to 2019."; Statistics New Zealand, "Household Travel Survey." MFE, "Chapter 2". This is a gross figure and does not include offset effects for residential energy use.

¹⁸ OECD, "Productivity gains from teleworking in the post COVID-19 era".

However, they also note careful policy design is required to achieve a level playing field and position telework as a viable choice, rather than a forced shift.¹⁹ Uptake will vary substantially across industries, firms, and locations, with workers in high-skilled jobs most likely to transition to telework. **SMEs are especially likely to struggle with adjustment, relative to larger firms that can more readily exploit economies of scale and absorb digital training costs.**

Acknowledging these challenges, this paper seeks to identify policy options that can increase the prevalence of remote working in New Zealand while maintaining freedom of choice for workplaces and workers.

The objectives are to:

Identify appropriate policies that position partial remote work as a viable choice for workers and firms, to support a reduction in commuter transport emissions.

Success criteria for interventions will include assessments of:

- Effectiveness in reducing consumer emissions.
- Cost to implement
- Complexity
- Regulatory impacts on key groups, including impacts on:
 - Agglomeration effects and productivity
 - Businesses and SMEs
 - Workers across varying income levels.

¹⁹ *ibid.*

Part Two

Regulatory Options

While regulations permitting remote work existed in many countries before the pandemic (both in law and collective bargaining agreements), in many cases these were found to be restrictive or required prior written agreement by parties.²⁰ Such regulations evolved quickly throughout the pandemic, with policies introduced in many countries to support an abrupt telework transition.

Table 1 sets out examples of specific policies implemented during 2020:²¹

Barrier	Types of intervention(s)	Country example
Regulation barrier	Relaxing existing regulations or introducing new options for remote working.	⇒ Italy simplified teleworking procedures during COVID-19, allowing companies and employees to arrange teleworking without a prior agreement with unions, without a written agreement, and at the employee's place of choice. ²²
Technology barrier	Partnerships with technology companies to provide SMEs and the self-employed with free access to communication and digital tools, and direct subsidies and financing schemes for remote workplace set up.	⇒ In Japan, firms could receive a subsidy of 50% (up to JPY 1 million) towards the cost of establishing telework infrastructure. ⇒ Argentina introduced a financing line of EUR 7.2million for SMEs transitioning to teleworking. ⇒ Some large tech companies in the US, including Amazon Web Services, Cisco, Dropbox and Google, provided temporary free-of-charge access to digital tools for companies. ⇒ "Digital Team Austria" offered a range of select digital services to SMEs free of charge for a minimum of three months. ⇒ China purchased cloud technology on behalf of SMEs to accelerate digital adoption during COVID, including video conferencing, online training, collaborative R&D, and e-commerce tools. ⇒ Ireland extended its 'Digital Trading Online Voucher' scheme by an additional EUR 3.3 million, giving small firms up to EUR 2 500 for digital training and tools adoption.
Information barrier	Encouragement of employers' organisations to inform their members of the benefits of telework and to offer assistance.	⇒ The Italian Ministry of Innovation launched a website to provide an overview of various digital tools that could support remote work and remote education in Italy. ²³

²⁰ OECD, "Supporting people and companies to deal with the COVID-19 virus"; OECD, "Coronavirus (COVID-19): SME Policy Responses".

²¹ *ibid.*

²² The Japan Times, "Use of telecommuting in Tokyo surged from 24% to 63% in two months, survey says".

²³ Solidarietà Digitale, "Solidarietà Digitale al servizio di studenti e commercianti".

Nudge proposal: FlexiWork telecommuting policy.

Although other countries were pushed to adopt telework, **New Zealand did not implement tailored policies or experiment extensively with remote work during the pandemic response.** It faces embedded social norms that other countries may not experience as intensely when lifting restrictions after telecommuting for long periods of time in 2020 and 2021.

This makes the international evidence base useful for future policy planning but limited in terms of policies to increase voluntary uptake.²⁴ This remains a cheaper approach than directly subsidising a shift to remote work, such as in the case of Japan or Ireland. This justifies the narrow focus of the proposed nudge design (“FlexiWork”) below, which specifically targets changes to regulatory barriers in New Zealand.

Proposed nudge design: shift the responsibility to justify when remote work arrangements are not possible onto employers (FlexiWork).

Description	Introduce regulatory changes via the Employment Relations Act to reframe partial remote work as a default option in suitable industries. Require managers or workers in professions well-suited to remote work to formally justify if a position cannot be partially undertaken remotely, removing the onus on workers to formally request permission in writing.
Intervention logic	<p>This leverages the inertia of managers rather than employees, creating a ‘sludge’ process to slow down decisions to locate workers exclusively in an office.</p> <p>This works on a firm-level because it presents partial remote work as a default, which makes the case for fully remote work appear less extreme. It also presents fully office-based work as an exception to the rule. This is a fundamental tenant of nudge.²⁵ Exceptions are possible and easy to obtain but require active cognition from managers or workers to achieve.</p>
Costs	<p>Costs to firms: additional administration costs for firms opposed to partial remote work arrangements in selected industries.</p> <p>Costs to government: costs of regulatory design and implementation of new rules in the Employment Relations Act. Ongoing review of industries, roles, or places, exempted from the nudge (e.g., manufacturing or hospitality) will be required.</p>
Risks	There is some risk of reduced productivity by shifting the default to partial remote work. However, the nudge should only apply to industries deemed suitable for telework (e.g., knowledge-intensive industries), with an exemption list refined via consultation. The nudge must be relatively easy for firms and workers to avoid to minimise negative impacts.

²⁴ Whillans et. al., “Nudging the Commute”.

²⁵ Thaler and Sunstein (2008)’s theory of nudge design allows for changes to defaults, changes to information, changes to social norms or changes to physical spaces to prompt socially desirable behaviour.

Outcomes	Reset norms in suitable industries that increase the prevalence of partial remote working nationwide while still allowing for freedom of choice by workplaces and workers.
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Evaluation

The proposed FlexiWork intervention and status quo are assessed against the criteria set out in Part One below.

Table 2: Multi-criteria analysis

			Policy Options	
Objective	Weighting (1-5)	Interpretation (each criterion is scored on a range of 0-3)	FlexiWork Proposal	Status Quo
Effectiveness at reducing emissions	5	Does it achieve a significant reduction in congestion and commuting by increasing the prevalence of remote work?	High (3). This nudge is likely to result in reduced commuting and congestion (targeting 192 kilotonnes of avoided carbon dioxide emissions per year) as behavioural barriers preventing remote work are explicitly addressed. = 15	Low (1). Some change could occur naturally over time with COVID-19 adjusting work norms internationally but a shift is not guaranteed. = 5
Cost to implement	3	Is it low cost to implement relative to other policies?	Medium cost relative to other options (2). Although this nudge option incurs some cost in changing regulations, it does not require the use of direct subsidies to be effective. = 6	Low cost relative to other options (3). No new cost is incurred in the status quo. = 9
Complexity	3	Is it complex to implement the policy?	Some additional complexity (2). This nudge requires updates to the Employment Relations Act but should otherwise be relatively simple to implement. Consultation with firms will be necessary. = 6	No additional complexity (3). No new complexity is added by pursuing the status quo. = 9
Agglomeration and productivity effects*	2	What are the net impacts for productivity due to reductions in agglomeration?	Potential gains for productivity (3). Increasing voluntary remote work on a partial basis for those who wish to could capture productivity gains currently missed in the status quo. = 6	Potential missed opportunity (2). There are potentially forgone gains for productivity as a result of maintaining the status quo due to less than optimum worker satisfaction. = 4
Impacts on businesses and SMEs	3	Does it retain the right to choose for workplaces and minimise administrative workload?	Medium impact (2) The nudge retains the workplaces' right to choose a fully-office-based role in select industries. Some administrative costs will be incurred to avoid the nudge, but it should be relatively easy to avoid to minimise costs for firms. Exceptions can be designed for some SMEs. = 6	No impact (3). This option retains the existing process for requesting flexible work and minimises administrative costs for firms. = 9
Impact on workers across income levels	3	Does it overcome barriers preventing workers from teleworking in greater numbers?	Overcomes some barriers (2). This nudge supports workers' ability to choose where they want to work at least some of the time, but it does not account for varying impacts across income groups (e.g. lack of private space in some households). Other policies will be necessary to achieve this. = 6	No targeting of barriers (0). The current process does not account for behavioural or structural barriers preventing workers from requesting remote work arrangements. = 0
Weighted Score			45	36
* = Agglomeration effects are given a small weighting to reflect that although the benefits of agglomeration are reducing with increased digitalisation in some sectors, it is difficult to assume net effects for productivity (Clancy, 2020). As the objective is to increase partial remote work voluntarily, it is assumed workers who want (and who are able) to work remotely will primarily choose to do so.				

With criteria weighted to favour emissions reductions, along with consideration for productivity, businesses, and workers, the preferred course of action is to implement the nudge proposal. If implemented, this could be a win-win opportunity for workers and emissions reductions at relatively low cost of implementation.

Behavioural changes for firms and workers

The advantage of nudge interventions is that they can **predictably change choice architectures without being prescriptive or significantly altering agent incentives.**²⁶ This is important in this context, where freedom of choice for workers and workplaces is important to maintain productivity.

In the context of FlexiWork, the choice architecture will be changed for both groups.

For employees, this change will create a dynamic where:

- They do not have to actively request the right to telework, but it will be implied that this is their default option. This may lead workers to request more days working remotely each week in negotiations between firms, or to invest more in personal home office spaces. This leverages their inertia and uses anchoring psychology to maintain this norm.

For employers, this change will create a dynamic where:

- Active cognition is required to avoid the nudge. While this will be relatively easy to avoid in practice (via a written form or agreement), it will slow down the process for managers and ensure exceptions are sought mostly in cases where remote work is particularly unfeasible.

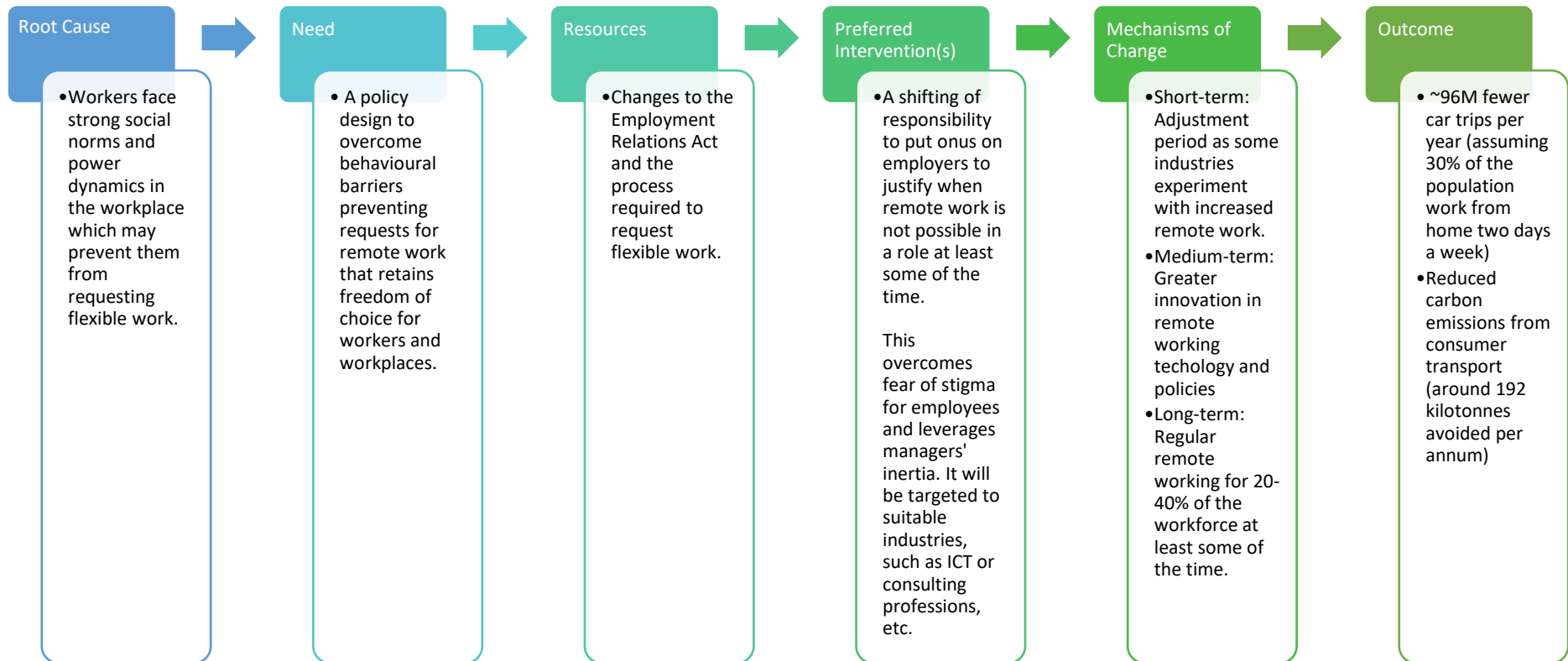
At a macro-scale, these nudges should support broader changes to social norms. Encouraging uptake by the public sector, which makes up around 18% of the workforce, will be an impactful way to achieve this shift via norm-setting.²⁷

Figure 1 summarises the complete intervention logic.

²⁶ Thaler and Sunstein, "Nudge: Improving Decisions about Health, Wealth, and Happiness", 6.

²⁷ Public Service, "Workforce size".

Figure 1: FlexiWork intervention logic



Implementation

If implemented, the FlexiWork nudge should catalyse new norms around working remotely. While this is not a panacea, it is an important opportunity for emissions reductions.²⁸ However, increased teleworking could amplify pre-existing inequalities that must be considered in policy design (e.g. those without access to adequate private space or digital technology in their home).

In addition, the IEA warns that reduced congestion could lead to faster-moving traffic and a possible net shift away from public transport. To avoid unintended consequences, policies such as congestion charges and public transit incentives may be necessary to supplement the nudge.

To coordinate policies, implementation should be planned alongside existing strategies to reduce car dependency, such as NZTA's Keeping Cities Moving²⁹ or EECA's Efficient and Low-emissions Transport Programme³⁰. Given the context, MBIE is likely well placed to support this work. Consultation will be required to reduce any negative impacts for SMEs, potentially with exemptions granted for firms under a certain size in the first phase of rollout.

If these inequalities, business needs, and transport patterns are considered, FlexiWork would make a promising behavioural addition to New Zealand's emissions reduction toolkit. Targeting 25% of workers ordinarily commuting via car is a technically feasible objective, with possible reductions of 192 CO₂ kilotonnes per year. Implementation is warranted and recommended.

Final recommendations:

Commit: to making regulatory changes via the Employment Relations Act that reframes partial remote work as a default option in suitable industries.

Require: managers in professions well-suited to remote work to formally justify if a role cannot be partially undertaken remotely.

Consult: on which industries, regions or roles should be excluded from this change to balance trade-offs for productivity.

²⁸ Clancy, "The Case for Remote Work".

²⁹ NZTA, "Keeping Cities Moving".

³⁰ EECA, "Efficient and low-emissions transport".

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