TRANSPORTATION 2021 CONFERENCE

Tools for tackling organisational transport emissions

PRACTICE PAPER

(This paper has not been peer reviewed)

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ABSTRACT

Over the past year, Abley has been engaging with private and public sector organisations to understand current efforts and challenges in the transport aspects of organisational sustainability. This paper shares learnings from these conversations and presents the next steps needed for organisational transport emissions to be effectively tackled using digital tools.

Measuring transportation emissions in an organisation currently requires aggregating data from multiple sources in multiple formats and in some cases, the data does not exist and needs to be gathered using appropriate methodologies. Engaging employees in carbon reduction activities and creating lasting behaviour change is also a challenge many sustainability teams are grappling with.

Abley's engagement with sustainability practitioners in both public and private sectors has revealed a need for more joined up tools that break organisational and professional siloes. Such integrated tools can avoid data and system duplicates and enable on-going insights as opposed to rare snapshots of carbon reduction activities in organisations.

INTRODUCTION

Transport $CO_{2\text{-}e}$ emissions represent 21% of New Zealand's greenhouse gas emissions (MfE, 2018 data). 91% of transport emissions originate from land transport and 7% and 2% respectively are emitted by aviation and shipping (Climate Change Commission, 2021). Employers have a major role to play in reducing transport emissions as their decisions impact on business travel, commutes, and freight. There are 2,690 businesses with more than 100 employees in NZ representing 48% of all employees (Stats NZ, 2020). Therefore, a relatively small number of organisations can influence a significant portion of the travel demand.

Businesses increasingly see themselves as leaders in climate solutions and adopt "science-based targets" that translate the Paris Agreement commitments to no more than 1.5 degree warming into their emission pathways. Coalitions of businesses such as the Climate Leaders Coalition and the Sustainable Business Network are raising the profile of organisational sustainability and challenging each other to lead change. More recently, the NZ Government announced that public sector organisations (not including Councils) are to become carbon neutral by 2025 (Beehive, 2020).

Over the past year, Abley has been engaging with private and public sector organisations to understand current efforts and challenges in the transport aspects of organisational sustainability. Over 20 interviews were conducted as well as multiple informal conversations, revealing how organisations can help reduce overall transport emissions.

This paper shares learnings from these conversations and presents the next steps needed for organisational transport emissions to be effectively tackled using digital tools. Most current efforts can be categorised into two functions described here:

- **Measure:** this sits in the data analysis, carbon emissions, and sustainability reporting fields.
- **Engage:** this function relates to behaviour change, wellbeing, and corporate social responsibility fields.

In the third section, this paper details an approach Abley is currently taking to join up both functions into a new tool and fill an important gap.

MEASURE - TRANSPORT IN CARBON INVENTORIES

The international Greenhouse Gas Protocol is a standard on how organisations should report on their greenhouse gas emissions. It defines three scopes which are in effect categorising emissions by their type of source.

Emission Scopes

The scopes and the emissions they entail are detailed below in Table 1. Emissions from travel by a company's employees or through its operations are represented (underlined in the table) under several scopes depending on the purpose of a trip, the vehicle used and its ownership model.

- Company vehicle emissions come under **scope 1** because they represent direct combustion emissions. This is currently easily captured by organisations through simple mileage data.
- Emissions from the electricity used to power a company electric vehicle would come under **scope 2** as it would be captured through purchased electricity bills.
- Emissions from business travel (taxis, flights, public transport for trips with a business purpose) and employee commuting come under **scope 3** as a convention.
- Finally, freight and shipping come under "transportation and distribution", also part of **scope 3** emissions.

Table 1: Emission Scopes (adapted from the Greenhouse Gas Protocol, 2015)

Scope 1 Direct emissions	Scope 2 Energy Indirect Emissions	Scope 3 Other Indirect Emissions
• Fuel combustion • **Company vehicles** • Fugitive emissions	• **Purchased electricity**, heat and steam	• Purchased goods and services • **Business travel** • **Employee commuting** • Waste disposal • Use of sold products • **Transportation and distribution (up- and downstream)** • Investments • Leased assets and franchises

As shown by Table 1 transport emissions occur in various parts of a company's operations and represent different forms of travel. While measuring scope 1 and scope 2 emissions is straightforward through fuel receipts and energy bills, Scope 3 transport emissions can be more difficult to measure because they entail multiple sources measured in different ways.

Commuting

Measuring emissions from employee commuting requires undertaking a dedicated employee travel survey, and many organisations do not know where to start or lack resources to coordinate this internally. Measuring and collating commuting emissions is a time-consuming job that also requires a minimum of data analysis skills inhouse. Therefore, most workplaces do not currently measure commuting emissions. They are not required to as it is considered an optional category of emissions. However, it can be material and should not be ignored. In fact, in office-based organisations, commuting can often be the second largest source of transportation emissions after air travel.

Only a few workplaces have undertaken (usually one-off) surveys, using an off-the-shelf online survey platform and compiling results in excel spreadsheets. However, repetition of such surveys each year and ideally every six months is key to be able to consolidate data and track evolution of travel patterns. For example, if an employer is actively promoting cycling to employees, only repeat surveys can show the resulting modal shift.

Business Travel

To measure business travel emissions, sustainability teams need to gather trip logs from a range of providers. For example, at Abley measuring business travel emissions requires us to aggregate flight data from Orbit (Serko travel), trip logs from Uber for business, taxi receipts, and a summary of accommodation bookings. All third-party booking and transport providers have their own systems and formats, which makes collation of the outputs time consuming. Several sustainability practitioners have expressed the wish for tools that automate the process and bring all emissions together with minimal manual intervention.

Logistics & Supply Chains

Large organisations, both private and public, have recently started turning their attention to sustainability within their supply chains. With sustainable procurement, they hope to influence not just their direct emissions but also their suppliers' emissions. This is true of government agencies introducing more sustainability criteria in tenders, and of corporates working with courier companies to reduce shipping emissions. The challenge they face is often to obtain data from suppliers who have not adapted their internal processes to allow reporting on emissions. Tools to allow corporates and their suppliers to report on emissions from their interactions have recently

been developed, such as Toitū's "Carbon Assess" platform (Toitū, 2020).

Carbon Reporting
Once data on all activities (including transportation) in the organisation has been collated, sustainability teams usually provide the data to a third party with a view to get their emissions audited and certified. This service is offered by companies like E-Bench, Toitū, Ekos, Thinkstep, and Bravegen. Since they aim to capture all material emissions in an organisation, these providers consider non-transport emissions too, such as energy and waste.

Some of these providers have proprietary software with varying levels of insights: while some are simply focused on certifying emissions, others aim to give ongoing feedback on emissions to allow course-correcting when emissions are not reducing sufficiently. The dynamic insights represent a move away from the practice of annual reporting which implies that decisions taken based on emission inventories rely on data from the past year. Ongoing tracking of emissions means they are becoming part of routine business reporting and can be used like accounting data to steer the organisation on its emission reduction pathway.

ENGAGE - BEHAVIOUR CHANGE

Transportation emissions in an organisation are largely dependent on behaviour and individual choices. Employers increasingly take responsibility for their people's decisions and recognise their role in supporting them to make the right decision, as illustrated in the Climate Leaders Coalition's pledge to "Proactively support [their] people to reduce their emissions" (CLC, 2019). A few approaches and tools presented in this section are being used by employers to channel behaviour into carbon emission reductions. However sustainability teams have identified this area as an ongoing challenge: how to make employees care (often) enough to make decisions that help the organisation reduce its emissions? Also, how to get other departments of the organisation on board?

Campaigns and Personalised Support
Most businesses we talked to communicate to employees about sustainability initiatives using internal channels (email, intranet, posters, surveys). The feedback from sustainability practitioners is that while there is often a group of sustainability enthusiasts, getting the wider workforce to pay attention is challenging. Sustainability communications compete with other internal announcements and employees filter what they dedicate their attention to. When internal campaigns are successful in generating behaviour change, there is also a risk that old habits return after a while.

FutureFit for Business (https://www.futurefit.nz/business) was developed by Auckland Council to assist organisations with employee engagement. It is an online platform where employees can log actions they have taken to reduce their emissions, and it includes marketing collateral to launch an internal sustainability campaign. It is aimed at raising awareness around a range of sustainability topics (waste, commuting, etc) through thematic internal communications.

There are other public sector initiatives to support businesses in engaging their employees: Auckland Transport provides free assistance for Auckland businesses to undertake commuter surveys, and Christchurch City Council provides in person one to one sessions to discuss an employee's commuting options (this approach is called "personalised travel planning").

Asset booking systems
Employers can use asset booking systems to allow employees to book a company vehicle or a parking space for example. There are app-based services that allow managing bookings, either on publicly accessible car parks (ParkMate) or within private car parks (Parkable). When car parking is abundant or made easy to find by such services, it makes it easier for employees to drive to their workplace and can therefore contribute to higher carbon emissions. The ability to book vehicles and car parking is generally put in place from an asset management perspective, aiming to maximise their utilisation. The sustainability perspective requires thinking about the broader

context of why assets are provided and whether their supply contributes to lower emission behaviours. Different professional cultures between sustainability teams and facilities or property teams mean adopting a joint approach can be challenging.

The asset booking infrastructure can be repurposed to restrict access to parking or ensure it is fairly distributed if it is in short supply. Abley have developed an internal tool (ParkingWhiz) allowing employees to book a space in the company car park only a certain number of times per month. Employees all have an allocation of parking tokens and they can use these tokens when they need a space, but the allocation is not sufficient to park at work every day. This type of system balances the convenience of being able to park at work some days while ensuring fairness and prompting employees to use alternative transport modes when they cannot access a car parking space.

Some employers we talked to have also started providing e-bikes or e-scooters for employees to book in a similar way to company cars, for example to travel to a meeting or a site visit. Providing these options does more than replacing business trips with alternative modes: it is also an occasion for employees to try these vehicles out and can potentially lead them to get their own for commuting.

Challenges & Rewards

There are a variety of rewards or challenge platforms all based on the same premise: earning a reward (financial or symbolic) for a certain behaviour, mostly walking or cycling. Some use phone GPS data to record trips while others require manual input by the users. Employers can use these platforms to motivate employees to take up active travel. For example, the Aotearoa Bike Challenge (https://www.lovetoride.net/nz) is now a well-recognised event with 2,335 participating organisations and about 22,000 participants logging cycling activity in the February 2021 edition. Other apps like UK-based Betterpoints and Sweatcoin offer vouchers at participating shops and cafes as a reward for active travel recorded through the user's phone GPS.

THE NEED FOR INTEGRATED TOOLS

As discussed in the first two sections, many tools exist to help organisations measure their transport emissions and engage employees in their reduction. However, these tools are often information siloes as they are not set up to integrate with each other. This section investigates the missing links and outlines the benefits of having a more integrated tool.

Gaps and information siloes

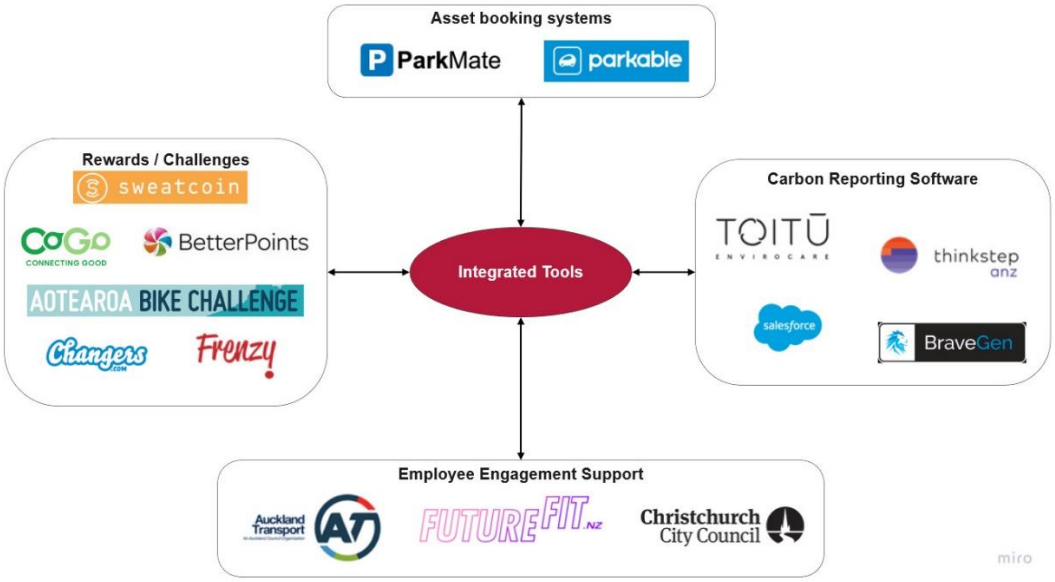

Figure 1: Types of organisational sustainability tools and examples

Figure 1 represents categories of tools that can be used for organisational sustainability along with some examples. Each category has its own narrow focus and while it may solve a particular problem well, it is only one piece of the puzzle. A more joined up approach is currently missing, for example combining carbon inventory data with behavioural insights to understand the most effective ways to reduce emissions through behaviour change. We have gathered from our conversations with sustainability practitioners that the multiplicity of tools they use can require manual data entry and duplicates. While greenhouse gas inventory software provides a certain view of organisational sustainability, they only relate to emissions and are not suited for managing behaviour change programmes nor tracking achievements. Conversely, behaviour change tools do not have the methodological rigour and scope required to contribute data to carbon inventories.

Additionally, it seems that no tool exists in NZ that helps organisations build and launch commuter surveys, and then automatically deliver results.

So there seems to be a need for tools that perform the following functions:

- aggregate information from various sources (e.g. trip logs from all providers);
- present insights at organisation level, both on carbon emissions and behaviour change activities;
- allow sustainability teams to build, launch and administer commuter surveys easily and generate automated results.

Benefits of integrated tools

There is strong synergy between the measurement and engagement functions discussed in the first two sections as they reinforce each other. An integrated tool could harness this synergy in the following way (illustrated by Figure 1): with an initial round of data collection from available sources (e.g. business trip logs, fuel claims), employers can provide feedback to employees on how transportation emissions are evolving. With this feedback, employers can engage employees in actions which they can record through a dedicated app (for example cycling to work). The data logged in by engaged employees is added to the organisation's transportation data, allowing for ongoing insights that enrich the dataset. Back to the first step, the organisation has a better view on transportation emissions and can use ongoing insights to steer emission reduction activities.

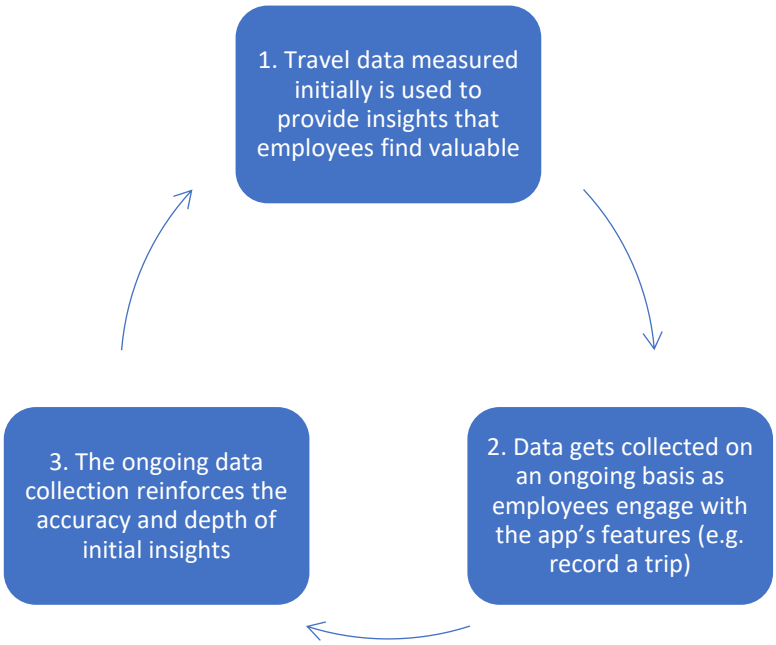

Figure 2: Positive feedback loop exploiting synergies between measuring data and engaging employees

CONCLUSION

Measuring transportation emissions in an organisation currently requires aggregating data from multiple sources in multiple formats, and then entering this data in a carbon inventory software for verification and certification. Feedback from the industry is that this process is tedious and could be partly automated. In some cases, the data does not exist and needs to be gathered using appropriate methodologies.

Engaging employees in carbon reduction activities and creating lasting behaviour change is a challenge that many sustainability teams are grappling with. While tools exist that achieve temporary levels of engagement, there is a lack of tools that embed behaviour change longer term and contribute ongoing behavioural data. In this sense, behaviour change tools are disjointed from transportation CO_2 measurement tools.

Abley's engagement with sustainability practitioners in both public and private sectors has revealed a need for more joined up tools that break organisational and professional siloes. Aggregating data from multiple sources including carbon data and behavioural data promises to deliver insights that sustainability teams can action through one platform. Such integrated tools can avoid data and system duplicates and enable on-going insights as opposed to rare snapshots of carbon reduction activities.

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- Sweatcoin – Active Travel Rewards App (https://sweatco.in)

ACKNOWLEDGEMENTS

Thank you to all sustainability practitioners who took the time to tell us about the challenges they experience over the past year.