



Australian
National
University

Travel in transition:

Exploring ANU travel practices in an era of
emissions reduction

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Executive Summary

Reducing travel emissions is essential for addressing climate change, particularly as emissions are expected to rise with increasing demand for air travel. As part of wider decarbonisation efforts, the Australian National University is **exploring strategies for reducing the emissions generated through travel**. This report concludes a three-part research project focused on lower-emission travel at ANU. Through this research we engaged with ANU staff and students to understand the **meanings, purposes, and challenges of business travel**. By highlighting **past, present and anticipated ways of travelling**, this report aims to lay the groundwork for future efforts to guide the University's business travel in more sustainable ways.

Framed using an established research framework, our findings centre on three key areas: **physical infrastructures and technologies** (Section 4.1), **perceived norms** around travel (Section 4.2), and the **travel practices** people already engage in (Section 4.3).

In terms of infrastructures and technologies, we found an **underutilisation of the ANU travel booking system** and **varying familiarity with information communication technologies (ICTs)** hinder effective travel planning. In the context of a **lack of practical alternatives to air travel** for some of the work undertaken at ANU, improved ICT training and support is essential for facilitating less carbon-intensive ways of collaborating.

Regarding travel norms, **the normalisation of hybrid work offers further opportunities** for learning how to support remote collaboration. At the same time, **the role of travel in career progression**, as well as **the role of funding in incentivising travel**, both require further attention, particularly to **ensure equitable outcomes for more vulnerable staff**.

The current travel practices of ANU staff and students demonstrate how people are already pursuing lower-carbon ways of travelling. These include through **remote conferencing, travelling by means other than plane**, and by **'bunching' events** together to reduce their total number of trips. The complexities of widening a current, informal ban in some Schools on flying to the nearby city of Sydney are also considered in order to explore how lower-carbon travel practices might work in future.

Additionally, the need to **act and advocate at different scales** – from individual ANU staff and students to the societal level – is vital for reimagining a lower-carbon way of working and travelling (Section 5.1). Adequately **accounting for the time costs associated with travel and its alternatives**, and the uneven nature of these time burdens for different kinds of people, is also vital (Section 5.2). Across all these findings, a need to proactively consider equity was also found to be crucial.

On the basis of these findings, we make **eleven recommendations** (Section 6) aimed to guide ANU towards less carbon-intensive ways of travelling and working.

1. Introduction

Reducing the greenhouse gas emissions arising from aviation is vital for combating climate change. Aviation emissions currently represent around 2.5 percent of global emissions, but is expected to grow both in absolute terms and as a proportion of total emissions as the demand for flying rebounds post-COVID (Ritchie & Roser, 2024; Vanolli, 2023). Aviation has proven a particularly difficult sector to decarbonise (Dray et al., 2022). In lieu of transformational, new technologies, the primary means of reducing aviation emissions at present is to simply fly less.

The responsibility for flying emissions are unevenly distributed: one percent of the world's population accounts for 50 percent of all air travel emissions (Gössling & Humpe, 2020). University staff and students are among the small proportion of people who fly frequently (Higham et al., 2022). However, academia has been slow to address the growing challenge presented by travel emissions (particularly those arising from aviation) (Schmidt, 2022). For example, in an analysis of sustainability policies at Australia's 43 universities, Glover et al. (2017) found that just 21 mentioned academic air travel as impacting climate change; none had a detailed strategy for addressing air travel emissions. More recently, universities in both Australia and abroad have recognised the need to reduce their overall emissions, including those associated with business travel. Alongside broader academic research on these subjects, a growing number of studies into university travel reduction programs have been published, including from researchers at ETH Zurich (Wenger, 2022), Massey University (Lampkin, 2022), Griffith University (Ryley et al., 2023), and our previous research (Boyle et al., 2024).

It is in this context of growing attention on reducing university emissions that the Below Zero project arose. In 2021, the Australian National University (ANU) set ambitious emission reduction targets, including the intention to research net zero emissions by 2025, and below zero emissions by 2030 (ANU, 2021a). The Below Zero strategy called for emissions reductions across all direct emissions (Scope 1), energy-related emissions (Scope 2), and university travel (excluding commuting) and waste emissions (Scope 3) (ANU, 2022). Travel was therefore part of a wider emissions reduction effort that included initiatives like promoting energy efficiency in campus buildings, investigating waste collection options, installing onsite renewable energy generation and electric vehicle chargers, and transitioning campus heating from gas-powered boilers to electric heat pumps.

The process investigating ways to reduce travel emissions took several forms. In 2020 an online survey and a university-wide consultation were conducted with ANU staff and students to gather the community's thoughts on how to reduce institutional emissions, with travel often raised as a potential solution. In order to assist with travel-related decision making and support research insights into curbing travel emissions, a Travel Working Group (comprising ANU academics, professional staff, and HDR students) was established in 2021, and a Travel Lab (involving an interdisciplinary group of ANU researchers) was established in 2023. The ANU also developed a voluntary pilot program to help staff consider emissions when making travel bookings.

This report is the final piece of a three-part ANU Travel Lab research project and was conducted by member-researchers from the University's Battery Storage and Grid Integration Program (recently renamed the ANU Centre for Energy Systems, or 'ACES'). In collaboration with the Below Zero team, ANU Travel Lab members were tasked with leading a review of relevant literature (stage one), and undertaking interviews with staff from other universities and research organisations involved in travel emissions reduction programs (stage two) (reports one and two available [here](#)). In stage three, we planned action research to design and implement a change program with staff at the Australian National University, as a means of reducing travel emissions – and in particular those arising from aviation – by rethinking the way business travel occurs. As

we discuss in Section 3.1, recruitment and funding challenges ultimately narrowed the project aims and scope of the work undertaken in stage three. Nonetheless, through our engagement with ANU staff and students regarding the meanings, purposes, and challenges of business travel, this report represents an important step towards better understanding the specific roles of travel in the work conducted by people at the ANU. By shedding light on past, current and anticipated ways of travelling, this report thereby establishes a foundation for future efforts to understand and more sustainably guide the business travel undertaken by people at the Australian National University.

2. Literature Background

The subject of business travel emissions in academia has received considerable research attention. In our previous reports (reports one and two available [here](#)), we examined the literature on academic flying in greater depth; here we give a summary of this material, focusing particularly on salient themes in the literature, as well as introducing the transport cultures framework of academic flying on which this report is based.

Alongside other issues, researchers have examined the perceived necessity and objectives of academic air travel (Eriksson et al., 2020), identified the significant role played by funders in shaping sustainable research practices (Bousema et al., 2022), explored sustainable workplace routines including those beyond travel (such as those arising from campus catering: Hoolohan et al., 2021), and also highlighted the institutional and structural underpinnings of travel in universities (Caset et al., 2018; Higham et al., 2022). Questions about the scale at which action takes place – from the behaviours of individuals to decisions made at higher levels like academic institutions – is another central subject of investigation, as it helps in identifying where the capacity to effect change lies (Glover et al., 2018). Finally, changes in the ways that academics travel and work brought about by the COVID-19 pandemic have also received particular attention in recent years (Jack & Glover, 2021; Tseng et al., 2023).

Within this body of scholarship, as well as in our own previous research, scholars have also emphasised a need to consider the groups most affected by any changes to business travel, those most able to shape travel policies and practices, and those contributing a higher proportion of travel-related emissions. Scholars have identified a number of groups as particularly vulnerable to possible changes to business travel, including early career researchers, women, older staff, those with young children or caring responsibilities, those living with disability, and members of the LGBTQIA+ community (Boyle et al., 2024; Cohen et al., 2020; Glover et al., 2022; Gundling et al., 2023). In such research, there is a general concern that well-intentioned efforts to reduce overall business travel, or to replace flying with other modes of transport (which are potentially more time-consuming or less accessible), may have an unanticipated negative impact on the careers or wellbeing of already disadvantaged groups. Other research illustrates that the responsibility for guiding travel policy – as well as broader policies that drive travel practices – is not evenly shared across institutions but instead concentrated in the hands of certain staff, particularly those in senior leadership positions and professional staff working on policy development (Glover et al., 2022; Sanders et al., 2022; Tseng et al., 2022b). Finally, it is consistently recognised that a small proportion of the workforce – generally well-established, senior staff – are responsible for an outsized proportion of travel-related emissions (Arsenault et al., 2019; Whitmarsh et al., 2020). On the basis of such research, it is important to speak with members of these different groups to gain a better understanding of how travel policies change, and what the impacts of these changes may be.

2.1 The academic transport cultures framework

In order to better understand what is already a diverse and rapidly growing body of research, Tseng et al. (2022a; 2022b) developed the transport cultures framework of academic flying (hereafter 'academic transport cultures framework'). Tseng et al.'s (2022a; 2022b) framework is based on the energy cultures framework developed by Stephenson et al. (2010, p. 6127), which was designed to holistically understand the complex factors influencing energy consumption by "bridg[ing] the divide... between research traditions centred on the individual... and those focused on wider social and technological constructs." Similarly, Tseng et al. (2022a; 2022b) seek to understand the complex factors influencing academic air travel by examining three key elements – material culture, cognitive norms, and practices – the interactions between these elements, and moderators that increase or decrease their respective impacts on academic travel.

According to Tseng et al. (2022a, p. 343), material culture represents the "available technologies and material products which help academics fly less", and include the built environment, transportation infrastructure and information and communication technologies (ICT). The impact of material culture on travel can be influenced by moderating factors such as a university's location, ICT support within the university, or an individual's own knowledge of and capacity to use ICT systems. The challenges of lacking transport infrastructure and geographical remoteness – challenges which are particularly acute for staff at antipodean research institutions – have been identified in other academic literature as important influences on people's travel (Glover et al., 2019; Higham et al., 2022).

Cognitive norms describe attitudes, values, and beliefs about 'how to do' academia, and are described as "the main pressures that force academics to travel and fly frequently." (Tseng et al., 2022a, p. 341). Examples of cognitive norms include expectations around career progression including activities like networking or engaging with academic associations outside of one's institution, as well as university internationalisation strategies, which may not explicitly relate to travel policies but nonetheless importantly influence air travel (Hopkins et al., 2016). Academic conferences are a chief driver of university travel, and in addition to sharing research findings also enable academics to build and maintain professional networks, initiate collaborations, and engage informally with others in the field (Hauss, 2020; Klöwer et al., 2020). The impact of cognitive norms on an individual's travel may also be moderated by factors including family commitments and personal beliefs or values. Nevertheless, according to Tseng et al. (2022b), cognitive norms remain a key driver of air travel behaviours in academia.

In the academic transport cultures framework, practices refer to what people do, including both habitual and irregular actions (Tseng et al., 2022b). Conference cultures, such as favoured formats, locations, policies and funders are one clear example of practices, and importantly shape the extent to which people travel for work (Whitmarsh et al., 2020). Beyond Tseng et al.'s (2022b) focus on conferences cultures as an example of practices, conventions around the purposes, modes of transport, frequency, and destination for travel are all important subjects of examination when considering air travel practices.

3. Methods and participant recruitment

As noted above, this report is the final part of a qualitative research project examining university approaches to reducing travel-related emissions. The first report was a review of relevant literature, and the second involved semi-structured interviews with staff from Australian and international universities and research organisations involved in travel emissions reduction programs (reports one and two available [here](#)). Building on the findings of these reports – particularly regarding the need for localised support and solutions for any changes in travel policy due to the decentralised and relatively autonomous nature of university organisational structures – the intention of this third stage of research was to conduct action research at the school and college level. However, participant recruitment and funding challenges shifted the empirical research conducted for this report. In the next section we give an overview of the original research design, and the challenges which forced a re-evaluation of our approach. In section 4.2 we then turn to a discussion of our employed research method.

3.1 Original research design and project challenges

The original research design involved four phases:

1. A pilot workshop to test workshop methods and travel emission reduction proposals with a broad group of staff (conducted concurrently with phase two);
2. Semi-structured interviews with key stakeholders to explore relevant issues, and alongside phase one to develop methods for the school- and college-based workshops in phase four;
3. Online engagement via a survey tool (Polis) with school or college staff to gauge feedback on a range of potential travel policies; and,
4. Workshops at the school- and college-level, where specific travel emission reduction proposals would be evaluated, with a view to selecting a given number to pass on to school or college deans for consideration and possible implementation.

The research design was also intended to develop methods that could be used to build our understanding of local views on travel, foster genuine collaboration with the ANU community as a means of building consensus and legitimising the research process, and to help us identify opportunities for reducing the emissions associated with business travel. In this way the research design was iterative, with each phase intended to generate knowledge and buy-in from the ANU community that would advance the subsequent phase.

Despite our best efforts and strong support from individuals (including some college deans and school directors) within the university, we were unable to recruit sufficient participants to undertake the research as intended, nor generate the necessary buy-in from schools and colleges to conduct multi-stage research with their staff. These obstacles reflect some of the institutional and structural challenges around changing travel policies noted in the literature, including the autonomous nature of universities and the diversity of their work (for example between disciplines), both of which can make centralised, blanket decisions difficult (Christopher, 2012; Davies et al., 2001). Moreover, the general pressures of working in a university – particularly in the context of increasing staff responsibilities and financial uncertainty in 2024 – meant that staff were not necessarily able to prioritise participation in an extended consultation processes over their existing responsibilities (an issue reflected by participants we were able to interview). At the same time, funding challenges at the ANU and long-term uncertainty around the sector's financial future introduced further problems for the project (which is internally funded). Due to these practical and financial challenges, the project funding and therefore the scope was

reduced part-way through conducting the semi-structured interviews. Subsequently, it was decided that finishing these interviews would be important for exploring the views and experiences of ANU staff around travel, and as a means of setting a foundation for any future work in this area.

3.2 Research participants

The evidence for this report is based on semi-structured interviews with staff at the ANU identified as representing key stakeholder groups. These groups were identified as important to speak with based on the previous stages of the research, including an examination of relevant literature. These groups were selected because of their: 1) high impact on travel emissions; 2) the kind of work they perform or position at the university; or, 3) due to equity considerations that may make them more vulnerable to changes in travel policy. The key stakeholder groups identified were: early career researchers (ECRs); frequent flyers; academic staff; professional staff; leadership; and staff facing equity challenges¹. Most interviewees belonged to more than one of these broadly defined groups.

Participants were recruited through a combination of organisational charts, personal networks, and snowballing. A total of 13 participants from across the university took part in the research, including eight academic staff, four professional staff, and one higher degree research student. Of the eight academic staff, two were early career researchers, one a mid-career researcher, with the remaining five being established academics. Nine of the research participants were frequent flyers (based either on their status in an airline flying program or number of long-haul flights per year). Seven of the thirteen were in either leadership positions, or managers of other staff. No gender or age data was collected as part of the research process, although a range of people were sought for participation.

The research design was approved by the ANU human research ethics committee.

3.3 Semi-structured interviews

Semi-structured interviews were conducted with 13 participants. Semi-structured interviews have been used in other research on academic travel (for examples see: Glover et al., 2019; Higham et al., 2022). The interviews were based around a prepared list of questions on themes identified as important through previous stages of the research, and in view of relevant literature. These themes included: past, present and anticipated travel practices; the purposes and meanings of travel; and, perspectives on different travel alternatives or emissions reduction measures. In drawing on these themes, we also created space for participants to steer the conversation in directions they felt were relevant, or to ask their own questions; in this way we sought to explore issues beyond those which we anticipated.

Interviews were conducted either in-person at the ANU campus (eight), or online via Teams (five). Interviews lasted between 29 minutes and one hour and nine minutes, with the average interview taking 42 minutes. The interviews were audio recorded and once completed, professionally transcribed and then thematically coded using the qualitative analysis software NVivo. These coded themes were then analysed to develop an understanding of the role of travel at ANU.

¹ These staff included those identified in the literature as particularly vulnerable to possible changes to business travel, including early career researchers, women, older staff, those with young children or other caring responsibilities, those living with disability, and members of the LGBTQIA+ community.

4. Research findings

In this section we present our research findings, which are organised around the academic transport cultures framework developed by Tseng et al. (2022a; 2022b), which include material culture, cognitive norms, and practices. In employing these categories to explore the factors shaping travel at the ANU, we also stress that the categories are not rigid or fixed, that some factors may fit into more than one category, and that there are interactions between factors from different categories that importantly shape how and why people travel.

4.1 Material culture

As noted in Section 2, Tseng et al. (p. 343, 2022) define material culture as the “available technologies and material products which help academics fly less”; these include the built environment, transportation infrastructure and information and communication technologies (ICT).

4.1.1 Geographical and transport infrastructure challenges

Material culture shaped the frequency and way in which ANU staff travel in several ways. Most significantly, the University’s geographical location plays a defining role in shaping the material culture around travel. Located in Canberra, the ANU sits in the south-east of a large yet relatively thinly populated island continent. Due to a lack of reliable and economical alternatives (such as high-speed rail), air travel is the primary means for ANU staff to move around Australia, as well as travel internationally. Given Australia’s geographical challenges, the availability and reliability of telecommunications infrastructure is also uncertain in some regional and remote areas of the country, meaning that ICT are not necessarily a viable alternative to travel. (Moreover, some forms of work including fieldwork and the use of specialised laboratory equipment or computers, is not currently practical to conduct remotely, as noted below). A number of research participants explained that it was viable to travel to destinations close to Canberra by means other than plane; people described travelling or planning to travel to locations including Sydney, Newcastle, Wollongong and Melbourne via car (both personal or hire car), train and bus. However, beyond the south-eastern corner of Australia, it appeared that flying was seen as the only viable option. As Vera² explained: “Domestically it really just depends where I’m headed so for instance east coast I have both planed and trained, bused occasionally as well if it’s Sydney and then if it’s any further west we’re thinking planes. It’s hard to get to Adelaide or Perth without planes.” Car travel was also seen as practical (if not necessary) in remote areas, although driving was usually the last leg in a journey involving flying to a regional hub: “basically communities are spread out and there are many, many small communities in any local or regional area so you normally fly in to the regional centre where there is the infrastructure and you’ve got an airport to land in but then you’ve always got to get a car to drive out.” (Mark). In summary, the nature of Australian society and geography, as well as the University’s particular location, mean that at present there are few means of connecting in-person with colleagues and collaborators around the country without involving some form of flying.

The challenges of connecting and travelling domestically are mirrored at the international level. Australia’s position as an island nation means that flying is currently seen as the only practical means of travelling internationally. For example, although a number of interviewees were aware of the growing discussion in academia about avoiding air travel, it was also recognised that in

² Note: participants have been anonymised and pseudonyms used to protect their identities

Australia there were few alternatives to flying: “some colleagues in Europe have taken to only taking land-based transport which is quite possible in Europe... This is not an option for us. If we wanted to go that way we would over time shut ourselves out from international research and policy processes.” (Eric). In terms of where the University’s international travel occurs, the ANU is seek to engage further in the Asia Pacific region (ANU, 2021b); nonetheless, according to internal surveys³ at present most business travel is to comparatively distant parts of the world (Europe and North America) where flying is the only realistic means of travel. In short, the geographical location of ANU means that, at present, flying is generally the most feasible, time-efficient, inexpensive – and, indeed, sometimes the only viable – means of travelling, whether domestically or internationally.

4.1.2 Information communication technologies

Another impact of material culture on ANU travel concerns information communication technologies. The capacity of, and staff’s familiarity with, the university’s ICT systems presented challenges for how people both organise travel and remotely engage with people beyond the campus. In terms of organising travel, the ANU travel booking system was previously underutilised. According to a member of the travel team, reduced staffing post-pandemic diminished the capacity for the ANU travel agency to work effectively: “the ANU only ever sent an email or picked up the phone to the travel agent to make their bookings. It was taking three or four weeks to get responses.” (Laurence). As a result, in 2022 only 15 percent of travel was booked through the ANU system. However, with improved ICT systems, and informal training sessions to help people learn these new processes, this number is now around 40 percent: “we also rolled out online booking technology which gave people the ability to jump online and do it themselves.” (Laurence). Alongside advantages like improved access to negotiated discounts, increased use of the ANU travel booking system enables improved visibility of how ANU staff travel, and the greenhouse gas emissions associated with travel. Improving the quality of and access to ICT systems like online travel bookings may encourage travel by easing the organisational challenges involved; nonetheless, the ability for ANU to more accurately track and influence how travel occurs at the university is also evidently a necessary step towards reducing travel related emissions.

Another ICT-related issue discussed by participants concerned the use of videoconferencing tools like Zoom and Teams, and the technical support for these systems. All participants noted an increased use of videoconferencing since the pandemic as a means of remote collaboration. However, the knowledge of how to use ICT (including dedicated videoconferencing facilities at ANU), the availability of technical support for larger online gatherings, as well as the ICT and associated infrastructures like internet availability all presented challenges for how remote collaboration was conducted. While knowledge of ICT systems appeared to be generally good among participants, there was still some trepidation in using tools like Zoom, particularly for larger gatherings like workshops or conferences: “I feel limited by my knowledge of the technology and my capacity to do it and it’s also one of the weak points I feel in our capacity to do more. I need help, really, and I need someone with technical expertise and if I had that we could do a lot more online work, using IT platforms in different kinds of ways for outreach and so on.” (Sue). Similarly, while the ANU does have dedicated, high-quality videoconferencing facilities, as one interviewee noted “most of us don’t actually know how to use the tech.” (Robert). In both cases, technical support (to either teach people how to use ICT systems, or to run them during

³ The ANU has a Travel Emissions Tracker designed for managing greenhouse gas emissions from university business travel by ANU staff and students. While the system and its data is not publicly available, it is possible to substantiate general statements about trends regarding ANU business travel.

conferences and workshops) was recognised as vital for a successful event. However, technical support was not always available, and some participants expressed concern that limited support at the ANU meant that staff were “basically competing for the small pool of expertise in the college.” In these cases, more technical support staff, along with improved and continuing opportunities to train with ICT systems, could help ANU staff work remotely more successfully, thereby reducing their reliance on travel as a means of connection and collaboration.

A final ICT issue noted by interviewees concerned the quality and availability of ICT infrastructures in the places where ANU collaborators work. While reliable infrastructures like electricity supply and internet connectivity are the norm in large parts of the world, ANU collaborators and staff also work in areas where this is not the case. For example, one participant explained that “one of the problems in some remote areas is that the connectivity’s not very good or they’re out in the field and they can’t get much connectivity that’s reliable.” (Sue). Conducting work via videoconferencing tools could also restrict who staff were able to connect with in remote Australia: “Most people have got access to computers these days so I suppose there is that opportunity but it’s depending on who you talk to. If you’re just talking to the administrator in the office and stuff then obviously you can do it on the telephone on Teams or whatever.” (Mark). In this regard, the challenges inherent in cross-cultural collaboration could also be exacerbated if only conducted remotely: “It might be language issues, people’s understanding of English, concepts and stuff, particularly if you’re dealing in areas where English might be the third or fourth language, you’ve got to be able to spend time there, people to get to know you and people can understand.” Alongside the on-campus challenges ANU faces regarding ICT systems, the existence of reliable and familiar ICT infrastructures in communities where ANU staff collaborate also importantly shape how people connect, and why they may travel for work.

4.1.3 Material culture in the wider context

The impact of material culture on the University’s travel is also shaped by cognitive norms and practices. In this regard, two salient issues arose during the interviews. The first was around the perception that, as one interviewee described it, living in Australia “mean[s] that you’re kind of isolated.” (Caroline). Although Australia is geographically removed, as reflected by both the travel survey and interview material, ANU staff have more connections with universities and colleagues in Europe and North America than they do with those in our own region. Cognitive norms and practices around who academics perceive as important to collaborate with, or where research findings should be disseminated, may therefore reinforce this sense of remoteness, as people focus attention on more distant parts of the world. However, this attitude appeared to be changing, with some interviewees noting their growing interest in regional collaboration or preference for attending local conferences: “Then also engagement with our close neighbours in the Australia-Pacific region... I think that there’s a future for that.” (Max), and later “So part of it is with development in Asia the establishment and growth of research in tropical Asian countries particularly. Oh and maybe just realisation by western researchers that not everything has to be so Euro-centric. So I think there’s a few things happening at the same time but what the outcome of that is a stronger base for research in the Asian-Australian-Pacific region which I think will massively impact travel in the next decade.”

Beyond the cognitive norms and practices evident at the ANU – themselves a reflection of broader academia – the expectations of collaborators and colleagues also shaped ANU staff travel. Cultural norms around face-to-face meetings and in-person connections shaped how work in some places could be conducted. For example, one researcher who had worked in South East Asia explained that: “our duty to the region and those things are harder to do remotely. If you need to be in Indonesia as occasionally I’ve had to, if you need to be in Indonesia you need to be in Indonesia. The Zoom conversations are not culturally appropriate to the kind of work that you

need to do sometimes on projects in our region.” (Marie). A similar comment was made by those working with Indigenous Australians: “from an Aboriginal cultural perspective you will not get any work done and you will not be viewed in the right frame of mind if you’re going to just be talking to people on the telephone. People won’t take you seriously.” (Mark). More broadly, conventions around high-level talks needing to be in-person were also noted by several research participants. For example, Eric explained: “So there’s often a type of asymmetry in a sense of we get the opportunity for example to speak with a Minister or Vice Minister or head of Department in a country in Asia-Pacific to inform them about research-based insights... through the help of an Australian embassy somewhere. That engagement will have to be in person, that Minister or Vice Minister will not sit down for this sort of an online engagement with some academic from Australia that they haven’t met. It’s just completely not on the agenda.” Similarly, in talking about philanthropic funding Robert explained: “People give away large amounts of money because they have a belief and a trust in the ability of the institution to be a great custodian of that money... people give to people, I don’t think we’ll ever see large philanthropic giving be replaced entirely just on Zoom.”

4.1.4 Conclusion

In summary, the above examples highlight the contextual nature of the travel issue, revealing how ANU and its staff operate in regional, national and international contexts over which ANU staff have little direct control, and where there may in fact not be practically- or culturally-viable alternatives to travel in the foreseeable future. Nevertheless, the above material also reveals potential points of intervention that could enable these significant challenges to be at least partially addressed, such as by improving ICT systems and support or supporting air travel alternatives for regional travel.

4.2 Cognitive norms

As discussed in Section 2, cognitive norms describe attitudes, values, and beliefs about ‘how to do’ academia, and are described as “the main pressures that force academics to travel and fly frequently.” (Tseng et al., 2022a, p. 341). Cognitive norms encompass expectations regarding career advancement, such as networking and involvement with academic associations outside one’s institution, as well as university internationalisation strategies that, while not directly related to travel policies, significantly impact air travel. A primary motivation for air travel is participation in academic conferences, which serve various purposes beyond merely sharing research findings (Haus, 2020; Widmam et al., 2022). The influence of cognitive norms on an individual’s travel can be shaped by factors such as family responsibilities and personal beliefs or values. However, Tseng et al. (2022a; 2022b) assert that cognitive norms continue to be a significant factor driving air travel behaviours in academia.

4.2.1 Normalisation of hybrid work

The impacts of cognitive norms on the travel behaviours of ANU staff was evident in a number of ways. Interviewees noted several of the common pressures to travel discussed by Tseng et al. (2022a; 2022b) and others, such as the need to build and maintain networks (including with colleagues and collaborators overseas), the importance of attending quality conferences and workshops, recruiting students and staff, and disseminating research findings. For most participants, pressures to travel had been moderated by COVID lockdowns, during which time remote ways of working were normalised. Interviewees described taking part in online conferences, remotely attending meetings and workshops, and even conducting fieldwork: “I

have a lot of colleagues that do that so interviewing people online. I know this has become also more common during COVID and there is a lot of PhD students that had to do that just because they couldn't travel. I think it's more accepted now that you don't travel to do all your interviews." (Caroline). Crucial to effective remote work has been *learning* how and when to use tools like Zoom: "...what we tried to do in COVID was nuts. Let's sit on Zoom for eight hours a day for three days straight and try to simulate the conference experience. I mean that was crazy land." (Marie) But in recounting a recent, successful online collaboration with interstate colleagues, the same participant quipped: "So we've learned how to do it, and I think the actual working together I think has changed." (Marie).

With the lifting of lockdown restrictions, travel for in-person meetings, conferences and fieldwork has returned.⁴ Although not yet reaching their pre-pandemic levels, there still remains a strong view that travel is essential for certain kinds of work. As one participant noted: "that high-level and intensive engagement has gone back to in person tells you about the need for in person interactions." (Eric). Even so, a more hybrid way of working – including general outreach, and some forms of research collaboration, dissemination and fieldwork being (at least partially) conducted remotely – appears to be entrenched. As one interviewee explained: "The pandemic has taught us that it is absolutely possible to conduct meaningful and effective conversations via Zoom as well. So I'd say there's a hybrid now." (Robert). Thus, through the experiences of the pandemic, people learned that once strongly held views about the perceived necessity of travelling for work were being challenged; although travelling appears likely to remain important for certain people, tasks and disciplines, there does appear to be a growing acceptance that remote is a viable means of performing many aspects of work.

4.2.2 Career progression

Another cognitive norm shaping the way people thought about travel concerned career stage. Participants of all career stages recognised a differentiated need for travel depending on how established one was. Early- and mid-career researchers (ECRs and MCRs) were generally seen as needing particular support to establish their networks (including with overseas colleagues) and to gain experience, with travel seen as vital in these efforts. One ECR explained: "I feel this few years after PhD, attending conferences at a semiregular interval is pretty common for networking. I think there is an expectation that that's an opportunity for early career researchers to represent their group that we're working with... So I'd say that's pretty common at this career stage for people to be attending at least one conference a year, whether domestic or international." (Max).

Meanwhile, travel was often seen as important for established researchers and professional staff in higher positions for conducting high-level work, such as meetings with senior members of government and industry, establishing connections with potential funders, or introducing more junior staff to their own networks. One senior professional staff member discussed how some of the work in his unit was based on existing personal relationships, which he felt responsible for managing as junior colleagues learned these networks and the contexts they would be working in: "I built my career on my reputation in relationship[s]. I'm not going to base that on having people who don't know what the circumstances on the ground. I want [junior colleagues] there knowing and I want them to establish a relationship 'cause I think it makes them better workers, makes them more efficient, makes them understand the context and helps the nature of the intellectual productivity." (Mark).

The issue of equity between staff at different stages of their career was raised consistently by research participants during these discussions (and is also discussed from pg. 13 of our previous

⁴ As illustrated by the Travel Emissions Tracker

report, see: Boyle et al., 2024). Some more senior staff discussed their reduced interest in, and need to, travel for work. Although these decisions were often made on the basis of a number of considerations, including the health and time costs associated with travel, several participants also recognised that given their status as established researchers there was no longer the same pressure to travel and work in ways that may be expected of more junior staff: “if I was a midcareer academic I’d probably be feeling a lot more nervous than I am about making that decision [to travel less] than I am at this point. I just think it’s a bit easier for me to make that decision.” (Sarah). There was also a sense among some interviewees (both established and early career) that more senior staff needed to demonstrate leadership by modelling different ways of conducting business: “I think it would be punitive to not let young people travel given the conditions that we live in. I would probably rather put the resources into helping them establish their networks without travelling but I think if we’re going to allow travel then I think the leadership – well I think the leadership and what we do has to come from the top.” (Peggy). Although not widely discussed in our interviews, as noted in Section 2 and in our previous reports (Blackmore & Martin, 2023; Boyle et al., 2024), research has pointed out that academics are among the privileged few to be able to travel, and per capita academia contributes an outsized proportion of emissions. We recognise the real and important issue of equity and equal opportunities among university staff at different stages of their careers. However, it is also necessary to recognise the privileged role – and therefore the responsibility – that universities and their workers occupy in discussions about emissions reduction.

4.2.3 Funding and travel

The subject of equity and career progression was closely connected with that of funding, as senior staff tended to have greater access to travel funding than their junior counterparts. One senior staff member summed up the situation: “I mean every conversation I have had is how can we make sure that our ECRs, our PhD students and others who don’t have as ready access that maybe more senior people do to travel money from grants etc, how can we help them prioritise what they need to do to put them in the next foot for the next stage of their career? That conversation is happening all the time. That’s an equity issue.” (Marie). It’s also worth emphasising that discussions about career progression, travel and funding demonstrate the extent to which internationalisation is embedded in university life; a few participants questioned whether business travel was necessary at all (see Peggy above), but by and large participants were less interested in questioning the fundamental need for travel; instead, the focus tended to be on considering who was able to travel and how much. In summary, the issue of travel was closely tied in with expectations around career success and progression, and the funding available to people at different stages of their career.

Relatedly, it was noted by a number of interviewees that funding sources and expected uses could be a complicating factor for efforts to reduce travel emissions. In terms of funding sources, people explained that if funds were secured from sources external to the university (whether through project grants or invitations to attend an event), then ANU had less oversight regarding how that money was spent. As one established academic explained: “There is practically no travel that I do that is funded on the ANU recurrent budget. I do a lot of travel, I would say that close to 100% of it is on S accounts and Q accounts... directly paid for by other funders.” (Eric). As a consequence, ANU had a reduced ability to shape how much travel some (senior) staff were undertaking.

As described by some research participants, the expected uses of grant funds was another potentially complicating factor for the University’s ambitions to reduce travel emissions. Some funders expect that travel will be a component of a project as a means of conducting fieldwork, collaborating, building professional networks or disseminating findings. One researcher

described her own experience with seeking grants for projects: “I have collaborators around the world and when we’re doing a grant or something we have in particular milestones that might involve some sort of collaboration... So that’s usually built into the grant at outset, that travel and I think that’s kind of an interesting point when you think about planning and reducing travel, is how that gets built into how you think about the research lifecycle.” (Marie). The connection between funders’ expectations and the perceived need to undertake travel again reflects the widespread emphasis placed on internationalisation. Thus, there are norms and expectations from funders regarding how projects should operate; while there is growing recognition from various funding bodies about the need for low-emissions research, such considerations are not yet the norm. In the context of rethinking the role of travel in work, this issue will complicate efforts to reduce travel-related emissions unless properly addressed, as grant seekers may become stuck between funders advocating for travel on the one hand, and the ANU advocating for reduced travel on the other.

4.2.4 Factors challenging travel norms

Alongside cognitive norms contributing to the normalisation of travelling and flying, participants also identified several factors that potentially moderated the extent to which such activities were undertaken. The first moderating factor revolved around caring responsibilities, including caring for children and family, oneself, and the environment (a theme also found in our previous report, see: Boyle et al., 2024). As one interviewee reflected, the notion of an academic able to travel for work is based on obsolete notions of who academics may be, and what their lives are like: “To travel in any capacity for work, for academic work, we’ve continued to follow a model that is probably from the ‘50s and ‘60s when it was white male academics with a travelling family. The wife usually would be the one that would look after the kids.” (Vera). Another interviewee – a single parent – noted that her decision to prioritise time at home with her child was not the norm. While this interviewee remarked that she had been fortunate to receive strong support from her head of school (for example by enabling travel funds to be used to bring people to Canberra, rather than to fund her own travel abroad), there was still an inherent conflict in her decision not to travel for work: “Without a doubt we know how much networks are important for career success and getting top publications requires networks that help with that publication process. Often those networks are only accessible overseas. So there’s absolutely a conflict there and my own personal circumstances are that I’ve chosen to prioritise I guess what I think is important to the detriment of my career.” (Chloe). While the potential conflict between caring responsibilities could affect all staff, as caring responsibilities are disproportionately undertaken by women this also appears to be particularly gendered issue. Alongside caring for others, research participants referenced a general need to look after themselves by limiting the amount they travelled, which could take a negative toll on their mental and physical health.

A further way in which care could be seen to moderate the way interviewees travelled concerned care for the environment. Although perhaps using different terms, everyone we spoke with discussed a need to reduce the environmental impacts of travel. A range of approaches including travelling less, using modes of transport other than flying, and purchasing carbon credits were all seen as ways to care for the environment. There was also an interesting connection here between the idea of caring for the environment and caring for oneself, as some participants explained feelings of “moral distress” (Sarah) or “eco-anxiety” (Caroline) at the idea of inadvertently contributing to climate change simply by meeting work expectations. One interviewee summed up this challenge: “people feel they’re trying to do the right thing but the system doesn’t let them do that.” (Sarah). In summary, it appeared that caring responsibilities of various kinds were often at odds with ways of working seen as normal or successful. (However, alternative ways of travel more conducive to caring responsibilities were also evident: see Section

5.3.3). Interviewees described different ways in which these norms were challenged, such as through the prioritisation of activities like caring for children, or through institutional or personal support they received to navigate dominant-yet-difficult ways of working; nonetheless, it was apparent that people faced considerable challenges if deciding to prioritise (or simply make room for?) diverse caring responsibilities.

4.2.5 Conclusion

In conclusion, through interviews with ANU staff a number of cognitive norms were identified that shaped the way people thought about, and engaged in, travel. Many of these norms appear connected with broader expectations about what it means to be successful and productive member of staff, such as those from funding bodies, peers, and colleagues at other academic institutions. We also found norms moderating travel, such as caring for oneself or the environment. Nonetheless, any efforts to reduce travel-related emissions will need to not only account for, but also work with, the pervasive cognitive norms that reinforce the role of travel in the work conducted by ANU staff.

4.3 Practices

As explained above, in the air travel cultures framework practices refer to what people do, including both habitual and irregular actions (Tseng et al., 2022a; Tseng et al., 2022b). Conference cultures – such as preferred formats, locations, policies, and funding sources – are a clear example of these practices, and significantly influencing whether people travel for work (Whitmarsh et al., 2020). In addition to Tseng et al.'s (2022a; 2022b) focus on conference cultures as an example of practices, it is essential to examine conventions surrounding the purposes, modes of transport, frequency, and destinations of travel when analysing academic business travel.

4.3.1 Conference practices

Among academic staff, common travel practices were evident around conferences; attending conferences on a regular basis was regarded by many as an important, routine aspect of their work (including in terms of career progression, see: Section 4.2.2 Career progression): “it’s very common to travel for work. I’d say I do a mix of domestic and international travel every year... pretty common to attend maybe one to two conferences a year with one of them being international.” (Max). Attending major conferences – particularly key disciplinary conferences, which typically required flying either to Europe or North America – was seen as particularly important for those earlier in their career (even though, as noted above, funding was generally more difficult to acquire for more junior academics): “I’ve been trying to make a conscious effort to go to those big conferences in the US and Europe to just make yourself visible and to have those connections. So I think for this period of my career I’m actively trying to build up those networks and so that naturally involves a lot of personal interaction, a lot of face-to-face meetings and things like that.” (Tamara).

However, interviewees also gave accounts of alternative ways of attending and organising conferences; these alternatives, both proposed and actual, differed from the common practice of attending large disciplinary gatherings in the northern hemisphere not only in terms of the conference location, but also in the opportunities for attending, and frequency and mode of travel involved. Most obviously, research participants described the increased opportunities to remotely attend conferences since COVID. Although the return to in-person attendance was generally welcomed by those we spoke with, there was still an evident interest in hybrid events and the

option to attend large gatherings online: “There are some really positive things about not travelling... one is efficiency so that it’s just a much more efficient use of your time not to be spending hours in airports jetting around the world.” (Peggy); “...this conference it’s got a virtual element so those people will still be able to attend the conference and see the talks. This conference is a particularly large one, they have a strong focus on equity and so they’ve made the virtual component. They’ve invested money into getting that component of it done right so in this case people will still be able to attend.” (Max).

Interviewees described examples of conferences and workshops changing the locations of events, so that participants could attend events without needing to travel as far: “The one place we don’t go to very often is Perth... What we’ve started to do instead as a Centre is to share funding for a workshop in Perth that all the people in Western Australia can go to without having to fly to either central Australia or the eastern seaboard.” (Sue); “There’s also some other good domestic things in my field happening now and I think that’s been a post-COVID thing as well where uni of New South Wales or Melbourne Uni have got more local scholarly events happening where we bring in international scholars. We’re trying to support each other a little more in doing that so that we don’t always have to be going to the northern hemisphere.” (Chloe). More broadly, research participants also discussed a range of alternative conference models, such as hub-and-spoke conferences, and online conferences making use of avatars. These and other alternative conference types are discussed in the literature, and so not further considered here (Klöwer et al., 2020).

4.3.2 Modes of travel

In terms of the mode of travel, for events close to Canberra (especially those in Sydney) most participants expressed a preference for travel by means other than plane: “Australia’s a big country so depends where you’re going but there’s going to be a conference that I potentially will attend in Melbourne in November and I’m trying to see if I could potentially get there even if it will take long time to go through public transport so buses or trains.” (Caroline). The same was also generally true if travelling in areas where good travel infrastructure was available, such as training between destinations in Europe. Nonetheless, people were only able to make practical decisions about modes of transport within the context of broader decisions largely beyond their control, such as where conferences were taking place.

4.3.3 ‘Bunching’: Travelling less while doing more

The frequency with which people attended conferences, as well as decisions about which conferences to attend, was another important dimension of the practices around conference cultures. People would select events to attend based not only on considerations like the conference quality, but also in view of considerations including their financial, time, and environmental costs, and their temporal and spatial proximity to other events (events tend to occur in seasonal clusters). Whatever the case, these alternative ways of organising and attending conferences are suggestive of the diverse ways in which academics can disseminate work and build and maintain connections with colleagues at other institutions, some of which may offer lower-emission opportunities to connect. This issue also connects with an important and broader travel practice we identified through our interviews: the idea of ‘bunching’.

Although described in different ways, several participants discussed an alternative way of travelling that could potentially reduce travel-related emissions. “Bunching” (Eric; Marie), “stacking events” (Max), or creating a “trip chain” (Sarah) were all terms used to describe

travelling with “a tendency towards fewer but longer trips” (Eric)⁵. Bunching was generally discussed in the context of international travel, with the idea being that participants would seek to either add additional engagements onto a primary commitment, or seek to remain in a region between engagements as a means of avoiding travelling to-and-fro. As one frequent flyer explained, the “previous equilibrium might have been four overseas trips... In future that might be two but taking in a larger number of engagements in those two trips or even in just that one trip.” (Eric). Given that flights were already occurring, interviewees also described an approach of mixing work and personal leave so that holidays would be tacked on to business travel; this was seen as a way of both saving money and emissions: “I’d say a bulk of the early, midcareer researchers would be stacking events to save money, basically but also people are conscious of the impact of flying and wanting to make the most of if you’re going to spend all that carbon and time to get the most out of it.” (Max). Obstacles to the bunching approach to travel were also identified, including possible issues around fringe benefits tax (if personal leave was taken alongside business travel) (Laurence), and challenges around travelling for multiple purposes or for trips that involved “bridging time” between engagements, both of which can create funding and administrative issues in a system geared towards shorter, more defined travel (Eric). The potential that bunching could also reinforce perceptions that travelling is a necessary dimension of academic work and career progression is another caveat for this approach (the uncertain career benefits of travel are discussed in greater detail in our previous research, see: Blackmore & Martin, 2023). Nonetheless, through bunching people could potentially reduce the frequency with which they travel, and thereby the emissions associated with business travel.

4.3.4 ‘No-fly Sydney’

Another travel practice discussed by participants concerned the issue of ‘no-fly Sydney’. Several Colleges and groups at the ANU had either suggested or mandated that all travel to Sydney – a common destination for work, as well as the closest workable international airport for overseas travel – should be undertaken by land given the availability of other modes of transport (including bus, train, personal car, and hire car). For many, the idea of no-fly Sydney appeared practical, particularly as the environmental and financial costs involved with flying this short distance (roughly 300km away) did not deliver significant time savings: “I guess that’s a carbon consideration but then there’s a monetary cost. There’s also the hassle like flying to Sydney, for example, if you were to get to the airport, fly, land, get your luggage, whatever like have you saved that much time? Maybe not.” (Max).

While there appeared to be broad-based agreement with the concept of no-fly Sydney among staff we spoke with – many of whom were engaged in this travel practice without a blanket rule being enforced by their school or college – there were still complicating issues to iron out if a ban on flying to Sydney was to be developed. A member of the ANU travel team explained that challenges around timing (buses and trains did not arrive in Sydney in time for 9am meetings or early Sydney flight departures), cost (personal car use is charged at a prohibitively expensive per kilometre rate, and hire cars were also costly to rent and run), and knowledge (knowing how to charge and drive an EV – along with the time required to recharge the battery before returning to a depot – were seen as lacking among staff), and a duty of care (driving to and from Sydney could add risks for staff) all contributed to a view that mandating a blanket ban on flying to Sydney was not yet practical. Without additional, clearer policy guidance around the University’s goals, it was felt by this member of the travel team that a no-fly Sydney rule would not address ANU objectives: “There’s so much at play but I think we need to clearly define in our policy what the

⁵ Although used in the context of local travel (e.g. between one’s home, place of work, shopping centres etc.), the term “trip chain” is well-established in literature exploring travel behaviours (see: Primerano et al., 2008; Zhao et al., 2015).

standing is and that's where I feel up until 2023 there was no real position clearly defined in our travel policy around many aspects. The Sydney-Canberra's just one of those."

4.3.5 Conclusion

In summary, interviewees described a wide range of travel practices they performed as part of their work at ANU. Alongside examples of the commonplace nature of travel for ANU staff, there were descriptions of alternative ways of working, connecting, organising and travelling that, if properly guided, offer opportunities for ANU to support the work of its staff while reducing associated emissions and other costs.

5. Discussion

In view of the above, we now turn to a discussion of the broader implications of our findings. There were two meta issues consistently raised by research participants that significantly influenced the findings presented above because they importantly shaped the role of travel in people's work at the ANU. The first of these overarching issues concerned the structural nature of the travel emissions challenge, and the scales at which action could effectively be taken; the question of responsibility was also fundamental to this subject.

5.1 Addressing travel emissions at different scales

A number of participants recognised that, as discussed in the literature, the idea of addressing university travel emissions involves activities, responsibilities, and capacities to act at a range of scales: namely, at the individual, institutional, sectoral, and societal levels. As the below examples illustrate, many of these challenges exist across scales (although perhaps manifesting in different ways). These moderating factors also compound, such that multiple drivers and incentives placed increasing pressure on individuals, institutions, and the sector to engage in travel practices, particularly those involve air travel. This idea was expressed by one participant when talking about the pressures to travel placed on individual academics: "I think it's those wider structures that incentivise travel that particularly as we go up for grants or we go up for promotion they're all indicators that you want to be able to tick off and so that's how you do it, by travelling, by meeting people, by getting those invitations to collaborate or whatever." (Vera).

5.1.1 The individual

At the individual level, a number of participants expressed the sense that they could only affect limited change. This sentiment arose from the difficulty of operating within institutional, structural or societal constraints: "Carbon offset, yes. I was booking with the ANU credit card and the ANU credit card people told me that I wasn't allowed to do that... whereas now I think the University's attitude to that has changed. I just thought it was quite ironic that I was trying to do the right thing as an individual but the institution wasn't at that point and now they've swung 'round the other way." (Sue). The sense that structural problems were being individualised also presented a challenge: "But I think back to this individualising, if you don't change that culture, you tell academics to change that behaviour then that is actually entirely individualising the problem" (Sarah). Regardless of their motivations for doing so, any changes taken by an individual to limit their emissions or change the way or amount they travel could also be personally limiting, as evident from this quote: "Most of the colleagues at my level are going to those conferences

and go annually. So they still do that. I just personally have chosen not to do it. Probably career-limiting move but yeah.” (Chloe). As demonstrated by our previous report, this sentiment is not unique to ANU staff, but rather appears to be a common perception among academics (see: Boyle et al., 2024). In this way, interviewees recognised that institutional and sectoral structures incentivised people to continue travelling and conducting business as usual, such that when individuals sought to change the way they worked and travelled they could be competing with people still supported to travel. These examples again illustrate how the challenge of changing university travel practices is one that exists across multiple scales.

5.1.2 The institutional

At the institutional level, research participants noted a range of moderating factors contributing to the travel undertaken at the ANU. A number of these factors have been discussed above, including internationalisation strategies, the drive for collaboration (both domestic and international), and funding codes and policies that support shorter (and therefore potentially more frequent) travel.

Beyond these, there was a recognition that, as a comparatively decentralised, ‘flat’ organisation, the ANU faced challenges in mandating some policies or encouraging consistent use of tools like the travel booking system. As a member of the travel team explained: “the phrase that has been thrown at me that many times is it will be like herding cats... When I read the travel policy I’m like I’m sorry but there’s so much grey in here like can I do this? Well yes ‘cause the policy says you can’t not do it.” (Laurence). The challenge for decentralised institutions like universities to mandate travel policies is also recognised in the literature and by university staff themselves (Boyle et al., 2024).

Several participants also explained that as the national university, the ANU had a unique responsibility to engage with and represent the wider Australian community. Connecting with people and communities across the nation was seen as vital: “We can’t be saying we’re the national university and just be based in Canberra.” (Mark). As noted elsewhere, however, given the role of decisions at the societal level, such as around infrastructure and transport policies, as well as cultural or disciplinary norms, ANU staff often had little choice but to travel – and in particular to fly – if they wished to remain engaged with the broader Australian community. Relatedly, it was also noted by some interviewees that travel was normalised at the university, including among leadership. The idea of more senior staff modelling alternative travel practices was touted as a way of changing these norms: “It seems to me that one of the things that we really need to do is to reframe how we think about travel... reframe how we interact with people... It’s that whole thing about what the cultural norms are. So it would be really terrific if the ANU On Campus (an all staff weekly newsletter) and the annual report and we started having articles, ‘Vice Chancellor Hosts Online Meeting Of International University Leaders’ or ‘ANU Hosts A Really Innovative Online Conference’.” (Peggy).

All of the above contributed to a perception problem regarding the broader emissions reduction efforts at ANU, which involved reducing the university’s emissions across a range of areas beyond travel. Several interviewees – including those supportive of the ANU reducing its total operating emissions – were sceptical of the university’s efforts to reduce travel emissions; these participants felt that individuals were being asked to shoulder the responsibility for, and wear the consequences of, activities that were embedded in the university’s operations, and therefore both outside their own personal control as well as running contrary to other priorities and structures set by the ANU: “If academics were told they could only travel twice a year but then they were promoted on their international collaborations then there’s a way the institution’s not making any effort at all... So I think that lack of alignment between what you reward and what you punish is

one piece... I think the institution doing that and then for example leaving the lights on all day and letting all the recycling be wrapped in plastic every single day, couple of handfuls of paper covered in plastic, I think that's neglect." (Sarah).

Relatedly, some participants also questioned the extent to which emissions from travel were relevant to the university's overall reduction efforts: "I suspect there would be some scepticism that it's travel that is the biggest carbon cost going on around the place and so perhaps there'd be a bit more attention to either demonstrating how that is... but what are our other aspects of our doing business like keeping the lights on? Are our buildings energy-efficient? What are we doing about our computer storage? All these sorts of things that are all part of the bigger problem." (Vera). The same interviewee later continued: "In terms of getting staff to buy into these sorts of changes it would be worth the University's while I think to show what other efforts are being made because if all the cost is being borne by the academic staff who aren't the only people that work here then it's going to be I think easier, an easier sell." (Vera). Another interviewee commented: "One of the things that I hear a lot about when I talk to colleagues about travel and the university, they say yeah well what we need to do is degasify ... [but] because that's too hard and too expensive what they're going to do is go after our travel." (Marie). We know that travel is the largest contributor to the University's emissions⁶, and that through the Below Zero program emission reduction efforts encompass a wide range of activities beyond those involving travel; nonetheless, it is important to recognise that even among supportive staff members, there remains not only a lack of understanding about key aspects of the university's emissions profile and climate ambitions, but more importantly scepticism that addressing travel emissions is a necessary part of these efforts. Addressing this doubt and general lack of awareness will be crucial for the achievement of ANU climate ambition (a point we return to in the Recommendations section below).

5.1.3 The sector

As discussed by interviewees, there were three connected factors contributing to ANU travel practices emerging from the tertiary education sector (both in Australia and abroad). The first concerned conferences and journals, where, as noted in the literature section above, there is immense pressure to collaborate, present and publish at an international level. Often, this pressure results in staff travelling abroad, regardless of personal efforts to reduce air travel: "I have a conscience around travel emissions and so that does influence my thinking. But I guess I'm working in a university where the incentive is to publish in top journals and sometimes to do that going to top conferences and that requires overseas travel." (Chloe). Another participant, who was president of an international organisation that hosted an annual conference, similarly explained this issue: "The prevailing ethos is still travel is good... This [conference] is going to be face-to-face and they're just oversubscribed. People just want to go. People are horrified at the fact that I won't be there as the president of this organisation, blah, blah, blah. I'm really pissed off because the conference has a very, very poor online component and they're not doing much to facilitate my ability to participate as the president." (Peggy).

There was a recognition among staff that, in the words of one interviewee: "to be in the game you have to play the game the way others play it" (Robert). In other words, although ANU has autonomy over decisions around issues like travel policy, there nonetheless remains an inherent drive to conform to sectoral norms and structures, particularly given the competition within the national and global tertiary education sectors over things like grant funding, students, staff, and philanthropic support. The competition between universities (and indeed beyond the education

⁶ Evident on the Travel Emissions Tracker

sector, depending on the area) was a connected factor raised by interviewees as shaping travel practices. As another interviewee explained: “I remember some of the survey results that came out from an earlier initiative of this program... and someone was like well we’re not going to be able to recruit with that kind of [reduced travel] approach. People from other parts of the world won’t look at ANU as a place that’s connected to the world anymore, it’ll be a backwater and so it’ll become increasingly marginalised... the challenge is of course we don’t live in a bubble. If we apply to the ARC [Australian Research Council] this is where those esteem things come into play and if you’re saying well I was invited to give a keynote but ANU says I can’t travel, [it] gets tricky.” (Vera).

A third and overarching issue in this regard concerned university rankings. Rankings are a metric used to assess and compare a range of university activities, including research reputation, research income, international staff, and citation impact⁷. As evident from material throughout this report, a number of factors that contribute to increased travel also positively influence a university’s ranking. This creates a conundrum for organisations seeking to reduce their travel related emissions while maintaining or improving their university rankings. “I’m also aware of the broader institutional structures that ANU is working within. Actually one of the things that I’m quite interested in... is of course world rankings [which] are very important to ANU. And similarly in my school getting the required number of research outputs and our standing in the international academic community is incredibly important... Our dean talks about the fact that the only reason we have the revenue coming in from international students is because of our rankings in the university world rankings system.” (Chloe). The same participant then continued: “So at some point we need to have a pretty serious conversation about how we balance what’s expected in terms of research outputs with environmental sustainability. I haven’t heard anyone who’s really tackling that. All I hear in my area is research outputs, A* publications. We don’t care how you get them, just get them. So I think some of those institutional structures are really inhibiting progress on social and environmental challenges that the University faces.” (Chloe). A different interviewee summed up this sectoral challenge: “drivers are things like believe it or not our rankings are on international collaborations. Well there’s a problem. So we’ve got an institutional driver that will straight away be putting brakes on reducing international travel.” (Sarah). In summary, structural features of the tertiary education sector mean that the ANU is, and will continue to face, significant obstacles in its efforts to reduce the travel practices of its staff.

5.1.4 Society

In terms of wider society (i.e. beyond the tertiary education sector), there were also challenges that importantly shaped how people worked and travelled. Most pronounced was the challenges of distance, and a lack of high-speed, accessible transport infrastructure beyond air travel. These factors evidently guided the way ANU staff travelled in Australia, as evident from the interview material presented in Section 4.1. Another participant, (Max), described the issue more succinctly: “I guess the infrastructure’s so terrible... [we’re] sort of limited in terms of definitely getting people and moving people between the capital cities of Australia so I think flying will have to be a part of the discussion...”. As discussed above in Section 5.1, given the work ANU does in remote and regional Australia, as well as internationally, flying will likely remain the only viable transport option for the foreseeable future. Nonetheless, without broader consideration, investment and change in society as a whole – including support from state and federal governments – the

⁷ Recent university rankings have also included sustainability considerations, although the extent to which these metrics will drive real-world change, including regarding travel emissions, remains to be seen

absence of viable alternative infrastructures will continue to importantly shape the way ANU staff travel for work.

5.2 Uncounted: the under-acknowledged role of time in travel

A second overarching theme emerging from the research was the subject of time, which permeated all our discussions with participants. Time was discussed in relation to people's changing (and often increasing) workloads, when selecting modes of travel or thinking about the length of a work trip, in relation to time zones and the challenges of working across them, in the context of arranging travel around university teaching schedules or other institutional rhythms like funding rounds, and when explaining private commitments or family priorities that placed demands on people's time beyond their work. Whatever the context in which it was discussed, it was clear that participants perceived their time to be valuable though increasingly limited.

Alongside the various considerations and moderating factors outlined above, it is evident that time importantly shapes how people work, including the way they travel for work. In an interview with one participant, it became clear that there were a number of considerations that shaped how she travelled, including work commitments (both at the ANU, and in relation to any prospective work trips), convenience, environmental consequences, financial cost, personal comfort, and the geographical location of any prospective work trips. When asked which of these considerations was the most important, she replied: "I think it's time, I think it's very often [that] time is the main one. So that can be time to get on either side of the travel, working out well what – how to use that travel time efficiently and family commitments, work commitments. You might not be able to leave until a certain point so then that shortens the available travel time. There's not always the connections that you want, whether that's train or plane so just trying to work out those different dynamics. But I think time is the ultimate one." (Vera). This quote exemplifies the point that regardless of the considerations influencing the way people undertake business travel, time appears to be the determining factor shaping if, when, how, and for how long people travel.

As another interviewee explained the important role of time in shaping what people do, and efforts to equitably guide them towards more sustainable practices: "in an affluent society [time] is as strong [a] driver of consumption behaviour as the cost. If you just even click on any website you'll see people market things for time costs as well as financial costs. So any environmental strategy that goes 'let's make people take a lot longer to do something in order to be sustainable' is pretty much shooting itself in the feet. It's also creating social inequality because it's based on the assumption that everyone has the same time and they don't, just like no one has the same money. So environmental strategies that understand ways to be time-sensitive in their design are far more likely to succeed... That's a huge problem because we as a society have understood money as the kind of marker for feasibility and it really isn't." (Sarah).

Despite the evident significance of time for the way people travel, however, it appears to be largely overlooked or only implicitly considered. The ANU travel emissions reduction strategy does not place any particular emphasis on time as a consideration in people's work or business travel. Although discussed in a few limited circumstances – specifically regarding travel times, time away from home, and the challenges of working across time zones – there was little mention of the subject of time among the staff working on travel emissions reduction programs from 15 universities we interviewed for our second report. In this report we have sought to organise our findings around the transport cultures framework of academic flying developed by Tseng et al. (2022a; 2022b); however, time is not a feature of this framework. We do not seek to resolve this conceptual ambiguity here. However, what is clear is that understanding and properly accounting for the role that time plays in structuring people's lives and work – including the ways that they

travel – will be a crucial step in any efforts to reduce travel related emissions. As one participant stated: “If we take time seriously we can kick all goals, there’s not a lose-lose here. But if we don’t take time seriously then we don’t kick all goals.” (Sarah).

5.3 Conclusion

The limited scale of this project, and our recruitment of people representing key stakeholder groups – groups identified as important based on the previous stages of the research, including an examination of relevant literature – have necessarily shaped our findings. We do not claim to have a full picture of the experiences and views of ANU staff regarding travel. However, our findings do strongly reflect or build on the findings of both our own previous research, as well as those of other scholars examining university travel. Moreover, our intention in this report is not to present statistically representative views, but rather to explore the role of travel in ANU staff’s work in a detailed, contextual way that prioritises their own words and experiences. In the context of a reduced research project, a further aim has been to build on previous stages of the project by engaging with the ANU community, thereby establishing a foundation for future research.

In addition to our research findings presented throughout Section 4, we identified two overarching issues relevant to how and why business travel is undertaken at the ANU – the issue of tackling travel emissions at different scales, and the under-acknowledged role of time in travel. These meta themes were both directly and implicitly discussed by all participants during interviews, but are also strongly reflected in the literature on academic transport cultures, and sustainability research more broadly. Our aim in discussing these wider themes here has been twofold: first, in order to demonstrate the interconnectedness of the various findings presented in Section 4; second, to highlight the broader contexts and challenges in which the ANU-specific findings sit, and which suggest that any proposed changes to business travel need to be approached in a holistic rather than piecemeal manner.

6. Recommendations

Based on the above research regarding travel practices at the Australian National University, we have identified several key areas for improvement that align with the University’s sustainability goals and desire to support staff well-being. Acknowledging the important role that travel plays in the work of ANU staff, our recommendations are designed to support the University’s efforts to reduce business travel emissions, while also promoting workplace equity and equal opportunities. By implementing the below recommendations, ANU can foster a culture of sustainable travel while addressing the diverse needs of its community, ultimately leading to more effective and sustainable travel practices across the institution.

- **An approach that fosters a sense of shared accountability and collaboration will better align the institution's goals with the realities of the work conducted at the ANU.** Recognising and further supporting the necessity of travel for certain types of work is essential for maintaining staff engagement and reducing the perception that the ANU is shifting its emission reduction responsibilities onto individuals. However, such recognition and support must also be made alongside an acceptance of the outsized contribution of academia to global emissions, and acknowledgement of the need to model more sustainable ways of working.
- Relatedly, **continued communication about the University’s broader sustainability efforts will help staff better understand how travel changes sit within a wider range of emissions**

reduction measures. Future communications could also emphasise the systemic way in which the University – and indeed other tertiary education institutions, and society at large – are addressing environmental challenges, thereby helping to dispel the sense that individuals are solely responsible for reducing business emissions.

- **Acknowledging the link between travel and career stage could support lower emission and more equitable travel practices.** As discussed in the literature, implementing differentiated carbon budgets based on career stage and other criteria appears a more equitable way of reducing travel emissions. More senior staff could focus on traveling less frequently while prioritising the establishment of new connections, grants, and projects. Meanwhile, more junior staff could be supported to thoughtfully use travel as a means of establishing themselves and building networks, including taking on the responsibility of maintaining those relationships.
- **Implementing more systematic training for staff in the use of the ANU travel booking system will enhance the booking process by guiding employees toward more sustainable and cost-effective options.** This approach not only allows for better oversight of travel practices, facilitating improved quantification and management of travel and carbon budgets, but also enhances the University's capacity to assist staff in case of a crisis while travelling. By equipping employees with the skills necessary to use the travel booking system, ANU can foster responsible travel while ensuring safety and accountability.
- **Increasing ICT resources, support, and training** to improve the capacity of ANU staff and students to successfully use technologies for remote collaborations is essential. This support needs to come in the form of improved training around current and new ICT, as well as through IT support to assist with setting up technologies and managing events. This support is particularly important for conferences, workshops, and similar activities where larger groups of people or more complicated activities are involved.
- The **opportunities presented by the normalisation of hybrid working patterns should be capitalised on**, as people are both increasingly adept at using new technologies for remote work and collaboration, and increasingly aware of how such ways of working can be productive. Remote work and collaboration will not be feasible for all kinds of activities, and barriers such as inadequate ICT training and support remain. Nonetheless, leveraging the significant opportunity presented by established hybrid working patterns will be crucial for decarbonising the way ANU staff and students carry out their work, and whether they see travel as necessary for successfully performing their work in future.
- **To explore lower emissions policies and ideas, implementing discrete and limited trials could be effective.** An initial example could be a more formal no-fly policy for travelling to Sydney. Trialling such a ban would allow staff to provide feedback on their experiences, which could then inform future travel policies. Other potential trial initiatives might include exploring flying alternatives for travel to nearby destinations (Wollongong, Newcastle), utilising electric vehicles for local and regional travel (accompanied by training in EV driving and charging), and testing travel bunching strategies to facilitate more efficient travel practices. These trials would collectively contribute to developing more sustainable travel practices.
- **To support travel 'bunching,' structures such as dedicated funds, clear travel policies, and administrative support should be established.** This could include a straightforward Fringe Benefits Tax (FBT) explainer that outlines when FBT applies, helping staff compare the costs of additional FBT against the expenses of separate trips. By promoting travel bunching, the university can encourage more time- and carbon-efficient travel practices.
- **To enhance ANU travel policy, it's essential to better acknowledge and account for various accessibility, equity, and caregiving considerations.** Particular focus needs to be

paid to younger staff, those with young children, women, and individuals living with disabilities or health vulnerabilities. In some cases, existing programs like the 'Carers' Career Development Assistance Fund' could be further promoted. Additional support structures, including grants, administrative support and altered travel policies, will likely also need to be created. In addressing equity considerations, travel policies may result in increased travel emissions for some. However, the focus of travel policies should be on supporting core ANU business in an equitable way, rather than solely on reducing total travel emissions. A proactively equitable approach to travel will ensure that all staff members have fair access to travel resources and support, fostering a more inclusive and productive work environment.

- **To address the challenge of affecting change at different scales, several recommendations can be made.** At the societal scale, the ANU should continue to engage in lobbying efforts – including leveraging our own research – to advocate for sustainable transport at the national level. On a sectoral scale, it's important to think carefully about our particular approach to internationalisation, with the present focus on strategies that enhance rankings potentially contributing to higher travel emissions. Lobbying research funders to consider greenhouse gas emissions in awarding funding, and to actively support those operating in more sustainable ways, would be another productive strategy at the sectoral level. At the institutional level, implementing more consistent travel policies, providing training for the ANU travel booking system, increasing ICT support and training, and funding initiatives that support practices like travel bunching and bridging time between commitments would be beneficial. Underpinning all these strategies, support for ways of connecting and working that do not necessarily involve travel would also be essential. Together, these efforts should support both academics and professional staff at the individual level to reduce their travel emissions.
- The University should **better account for the time involved in undertaking different kinds of work, collaboration, and travel – time costs that will likely increase if alternatives to flying are prioritised.** In the Australian context faster modes of transportation are often connected with greater carbon intensity. If lower-carbon ways of working and travelling are to be successful and become entrenched, allowances must be made for the time costs that will likely accompany such changes. More broadly, the varying time costs for certain staff and students – such as those with caring responsibilities, or those living with disabilities – to complete their work and any related travel requires a more thorough consideration of how to support potentially disadvantaged individuals. Particular care should be taken to ensure that any changes to travel policies aimed at reducing carbon emissions do not inadvertently disadvantage already vulnerable groups by increasing the demands on their time.

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