

# LOW-CARBON TRAVEL GUIDE

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From setting targets to implementing alternatives: Experiences and tips from CET researchers



Centre for Climate  
and Energy Transformation

## A report from CET's Low-Carbon Travel Policy group

Academic researchers are amongst the highest emitters of climate gas emissions. CET's Low-Carbon Travel Policy hopes to mobilize and inspire to reduce our impact.

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# Actionable knowledge for transformation

## About CET

Climate change is one of the greatest societal challenges of our time. While we have acquired substantial knowledge about physical climate changes and their impacts on society, new knowledge is still needed on how to achieve deep, rapid and sustainable transformation of society.

Climate and energy transition is one of three priority areas at the University of Bergen (UiB). The Centre for Climate and Energy Transformation (CET) was established in 2016 by the Faculty of Social Sciences as a hub for interdisciplinary research with a basis in the social sciences in this area. CET brings together researchers from three partner institutions - the University of Bergen, NORCE Norwegian Research Centre AS and NHH Norwegian School of Economics.



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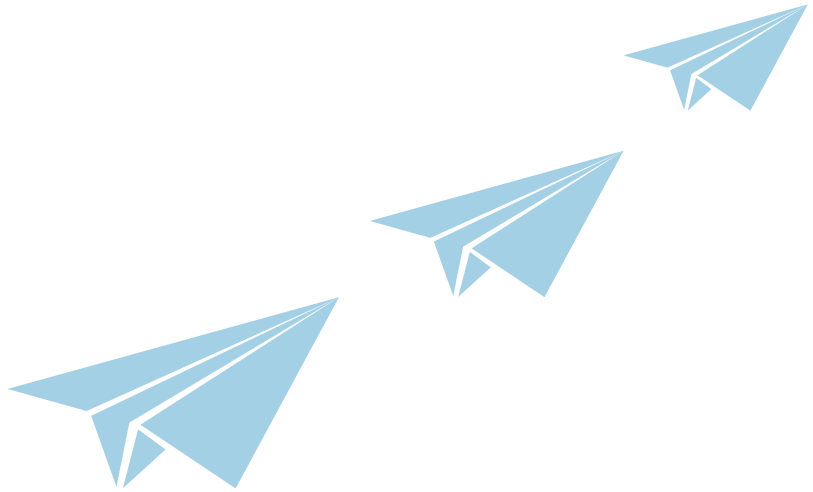
# Aviation in Academic culture

Taking a flight might well be the most carbon-intensive activity an academic undertakes, yet it remains unaddressed in most university climate action plans.

Participating first hand in a diversity of cultures, educations, or work practices is the hallmark of academic prestige. Be it for presenting at academic conference, collecting data, attending workshops or presenting at partner universities, academics and higher education overall have a strong role in maintaining carbon-intensive practices.

While ubiquitous, it is at the same time dearly problematic: the sector of aviation is the fastest-growing sector in terms of GHG emissions<sup>1</sup>. Its emissions have grown by a factor of seven over the last five decades, and projected growth will outstrip our ability to limit warming to the Paris Agreement's goals of 1,5 and 2,0 degrees of warming.

At the same time, flying remains an activity of the few. Only one percent of the global population is responsible for 50 percent of CO<sub>2</sub> emissions from commercial aviation<sup>2</sup>. And while higher engine efficiency, sustainable aviation fuels and airplane design could reduce emissions, there is a critical need to reduce the demand for aviation itself<sup>3</sup>.



## How then to align academic practices with the deep and rapid reductions in emissions required?

At CET, we recognize our share in contributing to global greenhouse gas emissions, in particular from our own air travel and the organization of conferences and meetings.

If we are to take the university sector's contribution to the climate transformation seriously, we see no clear reasons to exempt the research community from the emission reduction targets applied elsewhere.

In response to those pressing issues, the centre for Climate and Energy Transformation (CET) at the University of Bergen implemented a low-carbon travel policy<sup>4</sup>. The policy aims to reduce climate gas emissions from CET activities and inspire similar efforts outside CET.

In continuing these efforts, this pamphlet aims to provide some tools, tips and knowledge that can assist other researchers and institutions in minimizing their climatic footprint. It builds on a survey carried out at CET in 2023, personal stories, data from the centre's staff and inspiration from other institutions. By doing so we hope to challenge the ubiquity of highly mobile academic careers and provide a practical way of transforming our own practices of doing research.

# Tracking & reporting travel behaviour

In the spring of 2023, CET staff were asked to submit their travel details for the year 2022 by using the CET Carbon Tracker. The CET Carbon Tracker can be used as a planning and prioritisation tool for organising individual travels as well as meetings. The tracker provides information on the carbon emissions associated with individual journeys. This is calculated according to the specific mode of transport selected, in combination with journey time. The flexibility of the tracker also means it can also be used for mapping total emissions as well as setting emission targets.

We received a total of 12 responses to the Carbon Tracker, covering 52% of the existing staff at CET. Data gathered through the Carbon Tracker indicated that as a centre, CET staff spent more than 360 hours of travel with a variety of travel modes. Travel duration varied considerably across different transport modes: among other transport modes, the centre summed a total of 180 hours of travelling operated by train, 85 hours with medium to long distance journeys, and 42 hours with short distance journeys.

However, given the significant contrast in carbon intensity of these travel modes, their effect on the centre's travel-related carbon footprint varies widely. The high journey time operated by train equated in the carbon tracker to 553kg CO<sub>2</sub>e, while the relatively small travel time from air travel equated to 9393kg CO<sub>2</sub>e for medium to long distance journeys, and 8134kg CO<sub>2</sub>e from short distance journeys. These are illustrated in the figure 1 below along with travel time and emissions from other journeys.

In complement to the Carbon Tracker, the travel committee also asked CET staff to fill-in a travel behaviour survey. The survey aimed at understanding the reasons CET staff engage in air travel, exploring how the centre could further support alternatives to short and long-distance air travel, and evaluate existing support for policy.

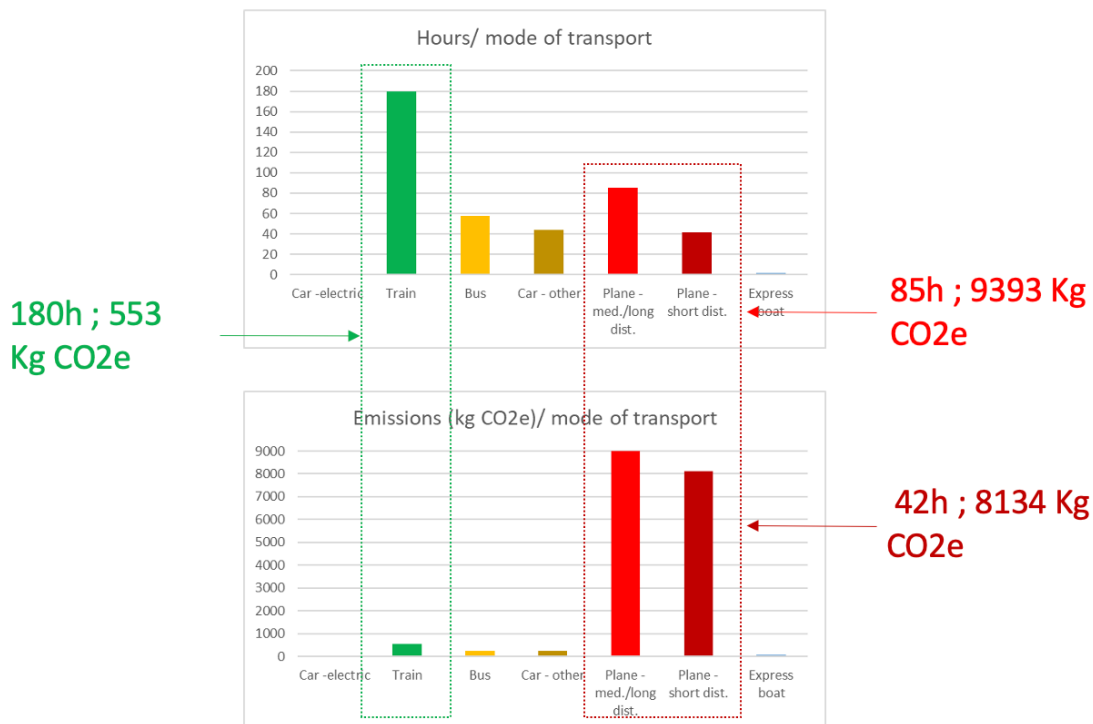


Figure 1. Total reported amount of hours travelled in 2022 from CET employees, and their associated emissions. Trips taken by train and aircrafts constitute the biggest share of time travelled and emissions during that year.

We received 12 responses for the travel behaviour survey. When asked about motivation to travel, the majority of responses can be categorised into two key dimensions of academic work: the need for the sociality that academic work entails (meeting colleagues face to face, networking), or the need for further professional development (such as attending conferences, or taking courses, workshops and seminars).

When asked about “what reasons are likely to prevent you from taking alternatives to air travel”, a number of answers emerged. The most likely reasons selected was the lack of alternatives to air travel. Increased travel time from taking e.g. trains, cars or buses as alternatives to flying was also likely to CET staff to not take alternatives to air travel. Finally, limited funding also emerged as a likely source of constrain to select alternatives to flying.

Finally, when asked about the role that CET could take in supporting a reduction of travel-related emissions, the responses highlight the importance of improved logistical support in planning for a land-based trip, as well as financial support. Further support for virtual meetings was also stressed.

These results are insightful in a number of ways. For many researchers at CET, filling-in the CET Carbon Tracker offered new knowledge on the significant difference in emissions between train and air-based journeys. For the centre as a whole, these results also provide critical insights into the climate emissions that are part of everyday academic work.

# How to set climate targets for university departments and centres?

Setting targets for air travel is an important first step to guarantee that a clearly-defined pathway to reduce travel-related emission is set. Targets are key to guide efforts to reduce travel-related emissions in universities, and offer a benchmark against which efforts can be monitored. Targets should be clearly defined, though they can take a variety of shapes and forms. Consider the following dimensions:

## **Type - What type of target should be adopted?**

A common way of approaching climate targets is to set **emission reductions** from a baseline year to a target year e.g. 45% reduction of greenhouse by 2030 compared to 1990 levels of emissions. These are often expressed as a percentage reduction from a baseline year.

More recently, **cumulative emissions targets** as carbon budgets have also been recommended as important tools in target setting. Here a set and “allowable” amount of emissions, e.g. 200t CO<sub>2</sub>e, is defined over a defined period, e.g. from 2023 to 2030, and can then be disaggregated yearly. Critically, carbon budgets are independent of the path taken to reduce emissions, implying that if emissions in year 1 are above the set emission allowances, the allowance for year 2 must be reduced.

Finally, **yearly emission reductions** have also been advanced. Here, a set emission reduction rate is set from a baseline year, e.g. a 10% yearly reduction of emissions from 2019. Though less common, this approach allows for yearly assessment of efforts against a set reduction rate.





Day Zero is a fully digital conference held the day before the SDG Bergen conference. In 2023 CET held a seminar on “What role for academia in a changing climate?” discussing travel and food emissions from higher education institutions.

## **Ambition - How ambitious should the target be?**

Once the type of target has been adopted, what level of ambitions should be adopted?

Guiding such choice, decision makers can relate to:

- Their university's climate goals;
- Paris-compliant pathways. Based on the Paris goals of limiting warming to 1,5 and 2C of warming, science-based targets would imply an ambition of – at least – a halving of emissions from 2020 to 2030. This goal, however, does not offer a fair account of emission reduction for high-income countries, and recent research found that yearly reduction rates of 10-15% per year for developed countries are necessary.

## **Scope – What should the scope of the target be?**

How a climate target is allocated is a critical dimension to consider. A climate target for a whole university can be disaggregated to:

- Members of staff;
- Research projects;
- Centres or departments.
- Research activities (i.e. data collection, conference presentation or research exchange)

We invite other researchers and university centres to reflect on these different dimensions as they articulate and identify climate targets for travel-related emissions.

# Experiences from the field

In this section two employees at CET reflect on their experiences prioritising train journeys. Whether as part of their research activities, or as part of organising a conference, they consider the benefits offered by land-based travel.



## Alternatives already exists

Shayan Shokrgozar,  
PhD fellow at CET

“Over the past couple of years, I have travelled through a dozen countries over land and sea, to attend courses, conferences, research stays, and workshops. Whether it consisted taking the ferry to Helsinki to avoid a connecting flight to India—where ground transport was not feasible—or taking the train and bus to conferences in Austria, France, and Portugal, lower-carbon travel has been an enriching part of my Ph.D. period.

While having a high threshold for attending events in-person is imperative—as noting is more low-carbon than not traveling—it is hard to deny the importance of meeting people and forming bonds that can result in long-term remote collaborations. In my experience, meeting new colleagues at informal gathering around conferences has resulted in publications and other forms of long-term collaboration and exchange of ideas. This means being intentional and contemplating how to make the most out of travel, i.e., staying longer and combining events.

In addition to significantly reducing transport related emissions, alternatives to flying encourage and support a culture of slow movement, and the use of convivial and appropriate tools and technologies (regular trains vs., jet-engine planes). As climate and energy social scientists, we can not only foster a stronger culture of accountability and care as individuals, but also collectively act as trendsetters for our sector, and serve as a source of inspiration for our comrades in other departments and faculties.”

## Low-carbon conferencing: CO<sub>2</sub>e, experiments and lessons learned.

Judith Reczek Dalsgård  
Communication manager CET



How can we organize an international conference and at the same time, reduce our climate impact? CET organises the Beyond Oil conference every other year and this has become a central question in the organizing process. Because of the pandemic our 2021 conference was fully hybrid and only local researchers participated in-person. In 2019 we set out to systematically reduce our emissions from the previous conference Beyond Oil conference in 2017.

We experimented with several ideas that resulted in a 50% reduction of travel-based emissions. These experiments included a strong digital presence at our conference, which at the time was not that common. CET collaborated with a research centre in Cardiff that became a satellite hub with participants gathered in both locations. Lastly, we added a “conference train” to our programme.

### CET Conference train

One of the most ambitious plans we had for the conference was our “conference train”. In collaboration with Vy (the Norwegian train company), we hired a carriage on the 12.03 train from Oslo-Bergen on Tuesday, October 15.

The idea was to offer a free train ride for attendees and motivate them to think differently about travelling to the conference.

Not only did we want our participants to consider travelling low-carbon, but we also wanted to prove that slow travelling doesn't have to be boring. We created an extra conference day with engaging content, on the train!

We couldn't have been happier with the result. 25 Beyond Oil participants joined our conference train committee for a 7-hour train ride out of the ordinary. The program consisted of lectures, group discussions and workshops on the themes of low-carbon academic practices, embodied knowledge and academic engagement.

It was messy; with announcements interrupting lectures, unstable footing, and some motion sickness (but nothing an impromptu 5-minute snowball fight at Finse couldn't fix).



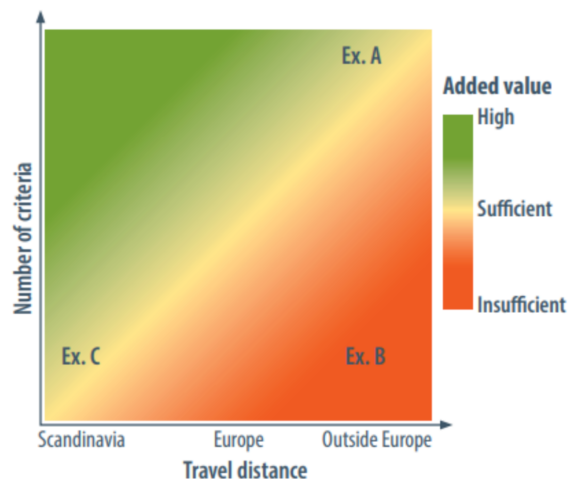
# Implementing emissions reductions

While setting targets to reduce travel-related emissions is an important first step, university-level policymaking is crucial to ensure that these concerns and plans are translated into action. A good travel policy is designed to meet a set emission target and includes clear systems and structures to create accountability, measure progress along the way, and distribute efforts in the fairest possible way.

Different universities and research institutions have adopted a wide range of travel policies and developed a range of tools to design and enforce them. Here we summarise some of them:

- **Individual checklists** or **decision trees** that researchers can consult before planning travel. These checklists commonly require university staff to evaluate whether the travel is necessary, whether they can attend online, take ground transport (part of the way), combine trips, or travel in smaller groups. While they can set a norm for thinking about sustainable travel, these checklists tend to act as guiding individual behaviour rather than strongly regulating travel choices. The Tyndall Centre's travel checklist is a useful decision tree to support low-carbon travel choices<sup>5</sup>.
- **Travel caps** or limits to air travel based on time or distance. Several universities (for example: the University of Innsbruck in Austria and the University of Groningen in the Netherlands) have implemented a policy that states their employees are not allowed to fly to destinations within a certain distance or time if alternatives by train/bus exist. This type of policy is often accompanied by online maps or tools to visualize and inform researchers of which destinations can be reached from the university within the limited time/distance and by which mode of transport.

What is the added value of a trip?  
 The Norwegian Institute for Nature Research provides a tool to assess the added value of individual travels. The higher the associated emissions of traveling to a destination, the higher the required value of this trip to justify its execution<sup>6</sup>



- **Support ground travel.** Providing booking assistance for ground travel, institutional support for longer travel times (such as extra days of leave/exemption from work appointments) or extra funding for ground travel (for example for first-class train tickets, or for extra overnight stays required for optimal train connections) are key to incentivise low-carbon travelling.
- **Mandatory carbon tracking and reporting.** To ensure transparency, and allow comparison of travel records and emissions, tracking and reporting is critical for departments or centres.
- **Lobbying for more ambitious action.** Engaging with the university leadership is critical to advance climate action for the university as a whole. This might concern: improved VC alternatives, recognising low-carbon commitments in hiring processes, advancing a flight tax for university staff or, allowing individual centres or department to experiment climate policies.
- **Regionalise academic engagement.** Holding conferences/meetings in places that minimize total travel based, taking geography into account when selecting speakers, guest lecturers, and panel members, and providing tools to help with this calculation process is key to make reduce the total distance travelled.



Where can we travel in 8 hours? This map outlines the journeys that are possible within 8 hours, considering trains (green dots), or buses (blue dots). Red dots are destinations that are reachable in 9 hours.

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# Practical tips for researchers

Taking a long train trip for the first time might offer some challenges. In this section we provide a set of practical advice to help researchers prepare and successfully complete their train journeys. This advice is predominantly for employees at the university of Bergen, though it also offer insights for aspiring low-carbon travellers elsewhere.

Once you have decided on planning a trip and on the mode of travel, there are several sources of information which can help you plan your trip. You can start with Bergen university's travel planning page. Yyou will find information about an employee credit card, booking through the official travel agency Berg-Hansen, travel insurance, and how to file a travel expense claim.

At the university of Bergen, Berg-Hansen is the university's official travel agency, and booking through Berg-Hansen with an employee credit card allows you to defer payment of transport (train and flights) until after you have travelled. Berg-Hansen only covers train tickets in Norway or onwards to Sweden that can be booked with Norwegian train companies.

## Within Norway

Entur is a national travel planner for rail and bus journeys to or from Norway (includes trains to Sweden and buses to Sweden and Denmark). Within the Entur plaform you can buy public transport tickets within Norway, which covers regional train tickets and local transport (train, bus, tram, etc.). You can plan express bus journeys, but tickets have to be purchased directly from the bus companies. These are:

- [Nor-Way](#), which takes you from Bergen to Stavanger and onwards to Kristiansand or Arendal in the South; to Voss, Flåm and even Lillehammer in the East; or North to Sogndal or Førde.
- [Vy](#) (bus), which can take you most places in Norway. Vy is both a rail and bus company, and you can book combined travel through them.

For train travel elsewhere in Norway, you can book directly through Vy but may have to change trains to [Go-Ahead Nordic](#) (Southern Norway) or [SJ Norway](#) (Northern Norway).

## Outside Norway

- if you are travelling for several days, it may be worth considering an [Eurail](#) ticket. These tickets are valid for a specific number of 'travel days' which can be cheaper than buying several train tickets in one or more countries. These tickets allow flexibility, as you can jump on most trains without a reservation, all managed in an app. Some journeys require reservations, including those in Norway and busy routes in Europe during the summer.
- [SJ](#) is the Swedish national railway, and allows for bookings to and from Sweden, including (night) trains onwards to Hamburg or Berlin.
- [DSB](#) is the Danish national railway and allows for bookings Oslo-Copenhagen 2 weeks in advance. If travelling beyond Denmark through Germany, it is easiest to book through Deutsche Bahn.
- [DB](#) (Deutsche Bahn) is the German national railway and allows booking of any journey to or from Germany. It has the largest overview of European rail schedules apart from the Eurail system. If you are travelling with an Interrail/Eurail ticket, you can book seat reservations in the DB website. Note: When travelling through Germany, there may be delays, so it is always wise to allow enough transfer time between trains (ideally 1-2 hours).

## Tips

- if you miss a train connection, check with your train conductor as to your rights. With an eurail ticket you may be able to take any later train, and with Deutsche Bahn and its partners as well (Thalys, Euostar, Austrian, Belgian, Dutch, French, and Swiss Railways). Check [Railteam](#) for these carriers. Blogs such as [Seat61](#) will provide you with more tips.
- always check if your train has a food carriage or vending machine before a long journey. It is always worth having a water bottle.

For bus travel, you can use Vy for travel from Norway within the Nordics or [Flixbus](#) to continue to the rest of Europe. Flixbus is also present in most of Europe and even offers train services in some countries.

Train and bus companies often provide discounted tickets for students. PhD candidates can still benefit from most of these student discounts by applying for an International Student Identity Card (ISIC), which is recognized by most Norwegian travel companies and costs 100NOK a year. Check out their website for details.



# Bringing these ideas to CET

At CET, we draw inspiration from these existing tools and policies at other institutions, while also ensuring that they are in alignment with targets set by the university of Bergen and CET's own mission. During a workshop carried out in the fall 2023 and attended by nearly all centre employees, a presentation of the above examples and discussion of CET's own needs and targets was followed by a brainstorming session on policy solutions in groups. The results will be used to draft CET's new travel policy.

This policy will go through at least one more round of revisions with the centre employees, before it is presented to CET's steering committee, and later, the university and the wider public. We have found the workshop to be incredibly productive, and helpful in moving the discussion of (air)travel at work away from shame and taboo, and towards a transparent and constructive dialogue.

By means of this participatory process, CET also aims to create a policy that is realistic and legitimate in its context, as well as innovative, with the potential to set an example for other university centers and departments. A particular way in which CET's new policy strives to innovate is by incorporating ideas of equity and the (in)accessibility of lower emission modes of transport through a Carbon Management Plan. From experiences and discussions within the center it became clear that people's capability to opt out of flying can differ greatly depending on factors such as: being a (single) parent, having disabilities, nationality/border politics, or even field of study.

**We aim to make emission reduction a shared responsibility and an integrated part of our current and future research activity.**

CET is committed to developing a policy that derives from a climate justice perspective, meaning that the people for whom such barriers are (largely) absent will have a greater responsibility to reduce their travel-induced emissions. One idea that the centre is currently exploring focuses on achieving emission reduction targets through a shared carbon budget, that the centre divides internally based on projects, period of employment, as well as some of the aforementioned (external) factors.

You can read about latest updates on the [CET Low-Carbon Travel Policy](#) webpage.

# Low-Carbon Travel Policy Committee 2023



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