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Policy brief

Reducing the carbon footprint of academic conferences: lessons learnt from the INOGOV Spring School in Heerlen

By Ira Shefer, Lisanne Groen, Emel Türker-Alpay

Summary

- Travel GHG emissions seem to be a main challenge to tackle when organising small-size international academic conferences at which amounts of food and energy consumed are not that large.
- Offsetting mechanisms may not be the most appropriate tool for reducing travel emissions. Instead, other measures such as combining the attendance of several events in one long-distance trip seem to be a more promising option.
- A more systematic approach to obtaining emissions data on the event's food and energy consumption may assist in selecting more climate-friendly accommodations and event venues to try to keep the event's emissions low.

Why assess the carbon footprint of the INOGOV Heerlen Spring School?

International meetings and gatherings are an essential part of academic life, but at the same time generate a significant carbon footprint. Academic attempts at exploring, understanding and/or reducing the greenhouse gas (GHG) emissions resulting from participation in academic conferences, especially those with international participants, are still at an early stage[1]. This policy brief aims to advance these efforts by assessing the carbon footprint of the INOGOV Spring School that took place in late March 2017 in Heerlen, the Netherlands. The brief focuses on the process of obtaining data for that assessment and presents both lessons learnt from that process and recommendations for its improvement.

We, three Spring School students, decided to track the group's GHG emissions from travelling. To do so, we followed the 2016 INOGOV ECIN workshop's exercise that applied the Tyndall Travel Tracker survey[2] (see box). Moreover, we broadened this exercise with the aim to get as close as possible to the actual GHG emissions of the workshop. Not only did we calculate travel emissions, but we also offered offsetting mechanisms to the participants and tried to obtain and calculate emissions from the group's meals and energy consumption. The organisers of the Heerlen workshop also included a discussion session about the carbon burden of academic events in the workshop programme.

The Tyndall Travel Tracker

- The Tyndall Centre for Climate Change Research at the University of East Anglia has developed a simple calculator that estimates GHG emissions from travelling as a part of academic practices (the Tyndall Travel Tracker survey).
- The survey allows its users to compare travel emissions to past years and against the average of all researchers. To encourage behaviour change, the Tracker asks for travel justification to evaluate necessity.
- The survey consists of several questions regarding the participant's stage in academia, justification for her/his travel destination (according to 4 categories developed by the Centre) and means of transport to the destination (e.g. airplane, railway).
- The survey can be found at: http://travel.tyndall.ac.uk/. (The Tyndall Travel Strategy is available at: http://www.tyndall.ac.uk/travel-strategy.)

The reasons for expanding the exercise are twofold. First, lodging and using university facilities are an inherent part of academic meetings and conferences and, therefore, academics should at least be aware of their carbon impact. Monitoring these emissions is one way of raising awareness about the issue and, moreover, could encourage participants to consider direct ways to reduce this burden (e.g. by choosing certain types of food that are low in carbon emissions and lodging in facilities that adopt sustainability measures). A discussion session at the event is another way to raise awareness. Such awareness may lead academics to incorporate similar choices in their daily professional and personal lives[3]. Moreover, sharing the experience laid out here with the organisers of future academic conferences (not only with INOGOV members but other academics as well) can help them draw lessons and improve future, similar endeavours. Second, participation in the Spring School was considerable and global: 25 students and at least 10 teachers from different continents took part. The group's prospected carbon footprint was, therefore, supposed to be substantial and thus worth investigating and reflecting on.

We used the Tyndall Tracker Survey to calculate emissions from transportation. We requested the hosting facilities (the Eikhold Guest House and the Open University) to provide accurate data on our emissions from food and energy consumption, but they could unfortunately not fulfil that request[4]. The remaining sections present the results of calculating the GHG emissions from the Spring School and a discussion about that process, as well as a set of policy recommendations.

Significant travel emissions, smaller food emissions and some offsetting

Out of 29 Spring School participants (students + teachers) who received the survey, 25 replied (86.2% response rate). Most of the students came from Western European universities (with dominancy of German and Dutch universities), and a minority from outside of Europe (e.g. Turkey, Israel, Canada and Japan). Several teachers came from other continents. Most participants arrived by airplane or combined air and land travel. A few of them used land transportation only.

The survey reveals that the average per capita emissions from travelling are 651.84kg CO_2e, and that the group's travel emissions were 16,296 kg CO_2e. The average per capita emissions represent (already) 16.3% of what a person can emit in one year to keep global temperature increase below 2°C above pre-industrial levels. Eight people who preferred offsetting measures offset 3,503 kg CO_2e, which is 21.5% of the total travel emissions. GHG emissions from one daily meal are estimated at 3.395Kg CO_2e per capita, and 339.5kg CO2e in total, which is 48 times less than the total travel emissions (!) and only 2% of total emissions when combined with those from travelling. Altogether, emissions from travelling and one daily meal reached 16,635.5kg CO_2e. This equals the annual carbon budget of 4.16 people[5].

About 50% of respondents contributed low or very low amounts of GHG emissions from their travels, while three participants contributed almost half of the total emissions. These are the participants from outside of Europe. Figure 1 shows that with their travel emissions alone, they already spent more than

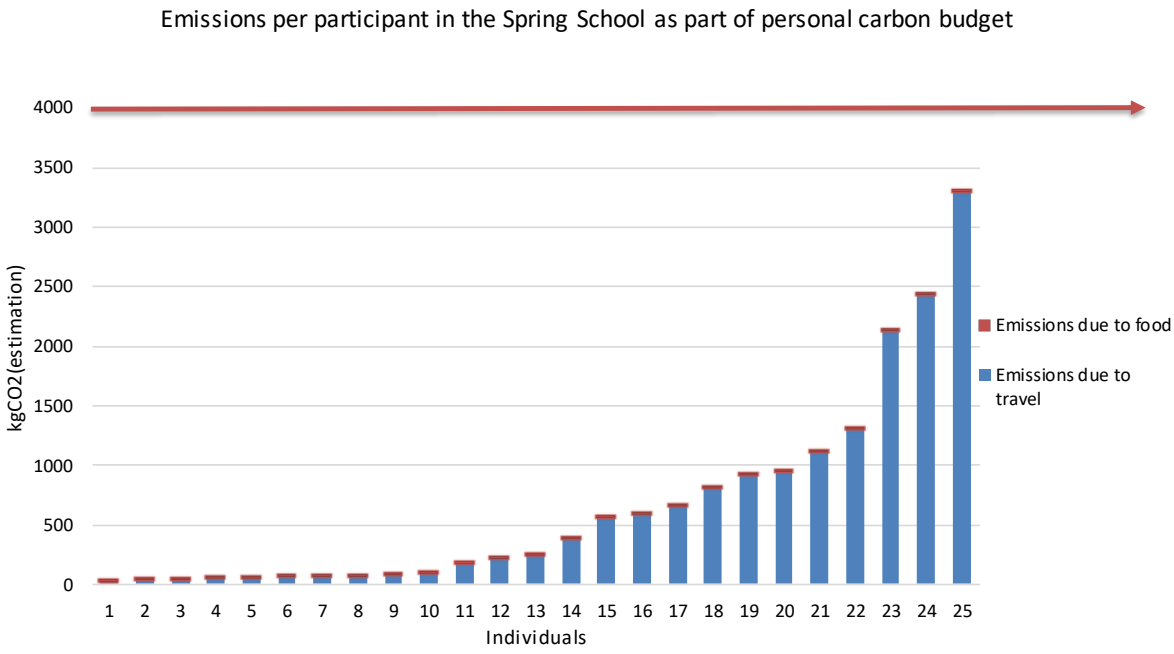

Figure 1. Emissions per participant in the Spring School as part of personal carbon budget. *However, the hostel could provide only general information about the type of breakfast it serves, and the university could not provide any relevant data. Therefore, a simple, free online food calculator was applied to generate a general estimation of GHG emissions from*

half of their yearly personal carbon budget to stay below an average temperature increase of 2°C above pre-industrial levels[6]. Even if emissions for two more meals per day and for energy use in conference rooms were to be included (which we could not calculate), the total emissions from meals and energy use would (probably) still be much lower than those from travelling.

Out of 25 respondents eight (about 32%) chose to use an offsetting mechanism to compensate their GHG emissions. Relatively low use of offsetting mechanisms seems to indicate that not many participants consider this an appropriate tool for reducing the burden of their travel emissions. Moreover, the discussion session at the Spring School confirmed that several workshop participants have mixed feelings about offsetting: some claimed it encourages, rather than reduces, GHG emissions from travelling (i.e. "buy off guilt" rather than seriously tackle climate change), while others suggested offsetting is a realistic tool for reducing emissions.

Conclusion

In summary, even though an accurate calculation of emissions from food and energy consumption could not be made, it is clear that the travel emissions from the Heerlen Spring School represented the largest share of the event's total emissions, especially as three long-distance flights were among them. This positions travel emissions as a main challenge to tackle when organising small-size international academic conferences at which amounts of food and energy consumed are not that large. In this regard, offsetting mechanisms may not be the most appropriate tool for reducing travel emissions. Combining the attendance of several events in one long-distance trip seems to be a more promising option to really reduce emissions. Attending an event closer to

Policy recommendations

Emissions from travelling

First of all, measuring the travel emissions of an academic event is important for raising awareness. This exercise should be applied not only to climate-specific conferences but also to academic events in other fields of study. We can raise participants' awareness by using simple and accessible tools such as the Tyndall Travel Tracker, as well as highlighting other steps recommended in the tracker like combining multiple events in one trip. Second, we should encourage participants to rethink whether their participation in the event is really worthwhile and if there is not a similar event closer to home that could bring similar results or benefits. Online participation should also be considered. Third, we can remind participants of the emission rates of different means of transport (plane, coach, car and train) and propose different travel options to the venue. Instruments to encourage participants to use a train or coach could be financial incentives, including reimbursement for overnight lodging in case of long distance travel. Fourth, to receive a more accurate estimation of emissions, calculation needs to include as many participants as possible, students and teachers alike. This could be achieved by informing all participants (students, teachers, administrators) of the importance of survey participation before and during the event.

Offsetting mechanisms

We propose to present offsetting mechanisms to participants as an option to compensate for their GHG emissions related to the event and let them decide if they use them or not. In addition, a discussion session can be included in the event to talk about the pros and cons of offsetting and alternative options.

GHG emissions from food and energy

The contribution of calculating emissions from food and energy use is expressed mainly in presenting an average scale of carbon emissions from one segment of academic conferences. Since the calculation excluded lunches, dinners, coffee breaks and energy consumption, adding these factors increases the group's actual GHG emissions (we assume, however, that this increase is not substantial); and, therefore, increases the need to address and try to reduce them in academic meetings. We recommend the following:

First, develop an estimation tool for food and/or energy consumption during academic meetings, similar to the Tyndall Travel Tracker. Second, develop a systematic approach to obtain data regarding food and energy consumption at academic conferences from hosting facilities. For example, contacting high-level officials in the hosting institutes may facilitate obtaining that data, and producing questionnaires for administrators of hosting facilities regarding their sustainability measures can assist event coordinators in choosing among several facilities.

These steps may drive hosting facilities to: 1) initiate or improve their data collection regarding GHG emissions from food and energy consumption; 2) pay more attention to their GHG emissions, and; 3) take active steps to reduce their emissions accordingly[7].

home that could bring similar benefits or online participation could also be considered. Finally, a more systematic approach to obtaining emissions data on the event's food and energy consumption may assist in selecting more climate-friendly accommodations and event venues to try to keep the event's emissions low.

2017 Heerlen Spring School participants.

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About the Authors

Ira Shefer is a PhD candidate at the Bavarian School of Public Policy, School of Governance, the Technical University of Munich. His research focuses on climate governance, policy diffusion and environmental cooperation.

Lisanne Groen is a postdoctoral researcher at the United Nations University Institute for the Advanced Study of Sustainability in Tokyo, Japan. She works on the transfer of low-carbon technology from developed to developing countries. She obtained a PhD in political science at the Institute for European Studies (IES), Vrije Universiteit Brussel, in October 2016, where she is an associate researcher.

Emel Türker-Alpay is a PhD student at Ankara University (Turkey) in Socio-environmental Studies. Her research focuses on climate governance and climate justice.