



CLIMATE FRIENDLY CLIMATE RESEARCH - RECOMMENDATIONS

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The material presented here is based in particular on the JPI CLIMATE – Climate Friendly Climate Research project, coordinated by the Austrian Alliance of Sustainable Universities.



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Introduction

Climate change research and research programming, especially in terms of publicly funded research programs, aim to support society in tackling the grand societal challenge of climate change and to underpin the necessity of reducing the carbon footprint of its activities. Ironically, the carbon emissions of universities and research organizations as well as international research programming – are high and in some regions on the rise.¹ This is due to the considerably carbon-intensive working style that researchers, research policy-makers and their institutions have developed, fuelled by growing expectations of international cooperation, low air fares and an increasing use of resource-intensive infrastructures. However, crucial to scientific communication is also credibility, which can be severely undermined by such activities, which are often inconsistent with the message that climate scientists in particular advocate.

In consideration of the grand societal challenge of climate change that is central to research efforts initiated by JPI CLIMATE, the Governing Board of JPI CLIMATE adopted the JPI CLIMATE sustainability principle of “taking into account the challenges of climate change in the work of the JPI, based on active reflection of operations (e.g. “green meetings”) and formulating the endeavour of constant improvement of the operations’ climate performance” or, as Erica Thompson (2011) from Imperial College London recently stated, to “making our actions consistent with our scientific predictions”.

But more importantly than the issue of credibility is the example set by the research system. Science can offer society positive role models. Scientists and other staff from the research sector are making a strong statement if they communicate to both the public and decision-makers that they are actually acting in line with the implications of their findings and working towards reducing the steadily increasing ecological and carbon footprint of the research system.

¹ See CFCR policy brief “Problem Analysis”.

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CO₂-emissions of selected research related activities & events and universities

Activity / Event / University	Participants / students & faculty	Total CO ₂ emissions (t CO ₂)	Year	Annual per capita CO ₂ emissions (t CO ₂)
JPI CLIMATE governing board and secretariat	40	197	2011	4.93
15 th Conference of Parties, Copenhagen	33,526	71,740	2009	2.14
Planet under Pressure conference, London	3,018	7,298	2012	2.42
University of Natural Resources and Life Sciences, Vienna (AT)	12,456	8,231	2011	0.81
University of Plymouth (UK)	33,000	12,293	2009/2010	0.37
University of Oslo (NO)	35,000	31,731	2009	0.91
University of Paris Diderot (FR)	30,300	29,086	2011	0.96

Although comparisons between individual institutions are very difficult, in particular due to the major differences between institutions (e. g. labs vs. archives, universities vs. research centres, etc.), the major sources of research related CO₂-emissions are more or less similar:

- Heating and cooling of buildings
- Mobility (from daily commuting to attending conferences)
- Food
- Electr(on)ic devices

The results of enquiries in the context of the “Climate Friendly Climate Research” project have been collated in the form of an overall check-list and six specific recommendation lists, which can be used as guidelines for concerned scientists and managers of research institutions, who wish to contribute to a reduction of the negative environmental impacts of research related activities.

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Recommendations 1: Mobility

Mobility is of outmost importance when aiming at reducing the carbon footprint of a research institution.

1. Map the key figures regarding everyday/commuting mobility of employees and students:
 - How many use public transport, bicycles, cars, or walk?
 - How many kilometres/year? What does the modal split look like?
 - How is infrastructure regarding parking (of bicycles and cars) (m²)?
 - What does the public transport network look like (lines, stops, timetable)?
2. Define target figures regarding mobility, with the aim to reduce the carbon footprint – that means increased use of bicycles and public transport, and on foot; define a “green” modal split, i.e. the percentage of kilometres by car, by public transport, by bicycle, and walking per year, and when it should be achieved.
3. Develop an action plan – in a participatory process, together with actors from inside and outside your institution – shifting the mobility of employees and students to the target figures. Define necessary supply-side improvements (e. g. infrastructure, timetable of public transport; bicycle-lanes), and necessary incentives and disincentives for the users (fixed in an agreement between employer and employees’ representatives).
4. Map the key figures regarding research related mobility for lectures, conferences, workshops and project meetings:
 - How many use public transport, cars, planes? How many kilometres/year?
 - What does the modal split look like?
5. Define target figures regarding research related mobility, with the aim to reduce the carbon footprint – that means increased use of public transport and the use of virtual conferencing; define a “green” modal split, i.e. the percentage of kilometres by car, by plane, by public transport per year, and when it should be achieved.
6. Develop an action plan – in a participatory process, together with actors from inside and outside your institution – shifting the research related mobility of the employees to the target figures. Define necessary supply-side improvements (e. g. virtual conferencing tools: introduction and helpdesk; timetable and quality of public transport), and necessary incentives and disincentives for the users (written down in an agreement between employer and employees’ representatives).
7. Learn from similar institutions: Compare and imitate/copy good practice!
8. Include mobility related target figures and activities to achieve them into your EMAS.

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Recommendations 2: Events

Events in general play an important role in science and research. It is obvious that environmentally friendly organized meetings, workshops, or conferences do have a high potential to reduce the environmental impact. The key impact factors are:

- Travelling – this factor trumps all others, by far!
 - Local transportation
 - Accommodation
 - Catering
 - Waste
1. Consider virtual meeting options – try to avoid unnecessary physical meetings: Synchronous online communication has become a valid option for co-operation of distant project teams as well as conferences and workshops. Survey the need for virtual conferencing tools at your university/ research institution: Regular introductions to these tools (e. g. webinars) and a helpdesk should be offered. Consider the introduction of incentives (financial, social) for web meetings!
 2. In case of necessary physical meetings: Guest should be encouraged to switch to more environmentally friendly means of transportation (e.g. by providing relevant information): Accessibility of venues by public transport; time-tables of trains, busses, local transportation; availability of night-trains; packages (hotel plus train/public transport tickets: make agreements with providers of public transport!)
 3. Implement a tool for environmental accounting of scientific events: Participants should be enabled to calculate the CO₂-emissions caused by their attendance. Also the overall CO₂-emissions of an event should be calculated and published.
 4. Compensation: Several specialized organizations offer compensation tools for unavoidable emission – these tools should be recommended.
 5. Develop a guideline for Green Meetings. As a basis the UNEP Green Meeting Guide is recommended.
 6. Learn from similar institutions: Many public entities/universities have enacted guidelines and strategies regarding Green Meetings. Compare and imitate/copy good practice!
 7. Include target figures regarding the greening of scientific events organized by your institution and activities to achieve them into your EMAS.

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Recommendations 3: Food

Food, its production, distribution, preparation, etc. has a substantial carbon footprint. So food should also be in the focus of “greening” a research institution. Food should be:

- Fresh
 - Regional
 - Seasonal
 - Vegetarian
 - Organic
 - Fairtrade
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1. Analyse the food offered at your canteen(s)/cafeteria(s) and of buffets at various occasions.
 2. Involve responsible persons/stakeholders in defining steps to achieve an increasing percentage (target figures!) of fresh, regional, seasonal, vegetarian, organic and fairtrade food served.
 3. Learn from similar institutions: Compare and imitate/copy good practice!
 4. Include food related target figures and activities to achieve them into your EMAS.

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Recommendations 4: Buildings

The environmental performance of the buildings of universities and research institutes play a key role for the environmental impact of research and its carbon footprint.

1. Start with EMAS, the EU-Eco-Management and Audit Scheme. Find out about the next national training workshop on EMAS, and attend. EMAS is a useful way to systematically collect data regarding the environmental performance of the buildings of your research institution, to develop relevant indicators, to define a baseline, a starting point for improvements, and to compare – year to year, either individual buildings or entire institutions. This also can be the starting point of a fruitful network between universities or research institutes in your country or on an international level. EMAS also requires a proper reporting system regarding activities and results.
2. Define target figures regarding the energy efficiency (e. g. kWh/m².a) for existing buildings, for CO₂-emissions (tons CO₂/employee and year, tons CO₂/student and year) and for the use of renewable energies. Adopt existing national or international “green building” standards.
3. Develop an action plan – in a participatory process, together with experts from inside and outside your institution (e. g. facility managers, energy consultants) – for enhanced energy efficiency and the increased use of renewable energies in existing buildings. A focus should be improved insulation, and modern heating/cooling systems. Participate in the EU GreenBuilding Programme!"
4. Adopt and enforce high national or international standards for new buildings, e. g. LEED (Leadership in Energy and Environmental Design) or BREEAM (BRE Environmental Assessment).
5. Learn from similar institutions: Compare and imitate/copy good practice!

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Recommendations 5: Procurement

The procurement, including long-life living electric and electronic devices, recycled paper, or biodegradable detergents of universities and research institutions offers a wide range to reduce their environmental footprint.

1. Develop a guideline – together with those responsible for purchasing – for greening the procurement of your institution. Define target figures and threshold values or mandatory labels (e. g. Energy Star or TCO-label for electronic devices, A+++ labelling for electric devices). As a good basis for your guideline use the EU Green Public Procurement (GPP) criteria and the EU Buying Green! Handbook
2. Learn from similar institutions: Many public entities have enacted guidelines and strategies regarding their procurement. Compare and imitate/copy good practice!
3. Include target figures regarding the procurement of your institution and activities to achieve them into your EMAS.
4. Join these national and international initiatives - purchasing together saves money!

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Recommendations 6: Research Programs

Research programs offer a good opportunity to foster environmentally more sound research projects by

1. Introducing “EMAS certified” as an advantage (later: precondition) for applicants.
2. Issuing guidelines regarding the use of (non-air) public transport and web conferencing tools by applicants, including mandatory reports.
3. Introducing green meetings as a criterion in funding programs. Stipulation for project consortiums to propose ways to avoid (air) travel without compromising the quality of collaboration. Carbon footprint to be taken into account similarly to e.g. gender or European dimension.
4. Linking the aspect of online collaboration with innovative aspects like open access, open science, and innovative science communication as online collaboration usually lowers the barrier for the implementation of such schemes. Thus, sustainability is improved not only in an environmental sense but as well in the sense of the longevity and accessibility of results.

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About JPI CLIMATE

The Joint Programming Initiative on Connecting Climate Knowledge for Europe (JPI CLIMATE) acts as a strategic platform for aligning national research priorities in the area of climate research and also for launching joint funding activities. It has fourteen member countries (Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Norway, Spain, Sweden, the Netherlands, and the United Kingdom).

JPI CLIMATE contributes to coordinated knowledge development and connecting that knowledge to decision-making on climate change adaptation and mitigation. By connecting science and decision making processes JPI CLIMATE aims to provide the knowledge necessary to meet the challenge of making Europe both climate-friendly and climate-proof, and reach the target of becoming a energy-efficient, low carbon society.

In consideration of the grand societal challenge of climate change being central to research efforts that are initiated by the JPI, it seeks to contribute to mitigating the carbon footprint of its work and activities. In doing so, JPI CLIMATE is committed to increasing the credibility of climate impact research and function as a role model for other groups of society in terms of responsible, climate-friendly science and research.

About the Alliance of Sustainable Universities in Austria

The Alliance of Sustainable Universities in Austria was founded in 2012 as an informal network of universities that aims at promoting sustainability issues in Austrian universities and thus to contribute to a more sustainable society. Currently nine Austrian universities are members of the network. Through its common appearance, the Alliance strengthens sustainability issues generally and also provides added motivation to its members to integrate sustainability at their institutions and adds support to these efforts. The main objectives of the alliance are to exchange good and best practice-experiences and to start joint activities in the fields of research, education, operations, society/knowledge transfer and identity, which are conducted in the framework of working groups. Within the Alliance the participating universities have committed to developing a sustainability strategy as part of the performance agreements for 2013-2015 that each university negotiates with the Austrian ministry for Science, Research and Economy.

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CFCR Policy Briefs

Schmitz, D. et. al. (2014): CLIMATE FRIENDLY CLIMATE RESEARCH
POLICY BRIEF “PROBLEM ANALYSIS”.

Zigel, B. et. al. (2014): CLIMATE FRIENDLY CLIMATE RESEARCH
POLICY BRIEF “EXISTING SOLUTIONS”.

Kirchhoff, T. et. al. (2014): CLIMATE FRIENDLY CLIMATE RESEARCH
POLICY BRIEF “FEASIBILITY ASSESSMENT”.

Policy Briefs published online: <http://ccca.boku.ac.at/kooperationen/verantwortung>

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