Towards climate sustainability in the academic system in Europe and beyond

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ALLEA working group on climate sustainability in the academic system

• ALLEA: European Federation of Academies; member academies from about 40 countries; working groups on topics in evidence-based policy advice and in science policy

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or at www.allea.org
Three key messages:

• The academic system is currently not climate sustainable.
• Individual stakeholders are taking first steps towards climate sustainability.
• There are many options of action available right now for all stakeholders to become more climate sustainable.
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The academic system in the context of the climate crisis

• Academia is part of the solution through research, education, evidence-based policy advice

• Academia is part of the problem through emissions from own operations
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→ Data and examples
The academic system in the context of the climate crisis

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Data and examples

IPCC (2022):
300 Gigatons CO₂ emissions ``remaining” for 83 % chance to limit global warming below 1.5 degrees → 1 t per capita per year until 2050
Data on climate impact

Stakeholders:

• Universities
• Research institutes
• Students
• Individual academics
• Funding organizations
• Conference organizers
• Academies, learned societies
• Ranking agencies
• Policy makers

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Majority from scientific computing

[Data from Jahnke et al. 2020]
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Majority from detector emissions

[figure from 2nd CERN environment report, 2021]

[ Straße 1, Straße 2, Straße 3, Straße 4, Straße 5, Straße 6]

Astronomy

[data from Jahnke et al. 2020]
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ERC interviews: ~ 1 t per interview

Data gap: no funding organization reports emissions from funded research
Climate sustainability of the academic system

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Key message 1:
The academic system is currently not climate sustainable.
What does it take for climate sustainability?

Cultural change requires change in individual behaviors and changes in framework conditions, norms and incentives

Key message 2: Individual stakeholders are taking first steps towards climate sustainability.
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Examples for current practises

1) Change without change of behavior (top-down strategy successful): Green energy on campus
What does it take for climate sustainability?

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Key message 2:
Individual stakeholders are taking first steps towards climate sustainability.

Examples for current practises

1) Change without change of behavior (top-down strategy successful): Green energy on campus

2) Change with behavioral change required (top-down strategy may fail): Travel policy
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Key message 2:
Individual stakeholders are taking first steps towards climate sustainability.

Examples for current practises

1) Change without change of behavior (top-down strategy successful): Green energy on campus

2) Change with behavioral change required (top-down strategy may fail): Travel policy

3) Change based on experience during pandemic: virtual instead of physical mobility
Key message 3:
There are many options of action available right now for all stakeholders to become more climate sustainable.

Recommendations

• Goal: Specific, actionable steps, not just overarching principles and general guidelines
• Many recommendations may be obvious
What is next?

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For all stakeholders:
• Mix & match approach to meetings (in-person, hybrid, online)
What is next?

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For all stakeholders:
• Mix & match approach to meetings (in-person, hybrid, online)
• Improve virtual communication (technology, skills and formats)
• Base your actions on a solid evidence base - but don’t stop at publishing a climate report
Recommendations: selected examples

Universities:
1) Use green energy on campus
2) Incentivize low-carbon forms of travel
3) Join sustainability network to exchange best-practice ideas

Research institutes:
1) Reduce emissions from computing through efficiency gains & computing center location/cloud use
2) Make climate sustainability key part of institutional strategy

Students:

Academies, learned societies:

Ranking agencies:
1) Ask that applicants discuss the climate impact in their applications
2) Virtualise committee work and interviews
3) Fund research on climate sustainability of research

Policy makers:
1) Adapt procurement rules for public universities to enable climate sustainable choices

Conference organizers:
1) Lower travel-related emissions by choice of conference location
2) Include online-formats (hybrid; in-person only every second year; always online)
3) Monitor, report and reduce emissions
Recommendations: selected examples

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Students:
Hold university management accountable

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Academies, learned societies:
Become platforms to exchange knowledge and coordinate climate sustainability efforts across individual institutions and across disciplines

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Ranking agencies:
Abandon a competitive ranking model for a collaborative threshold model

Policy makers:
Adapt procurement rules for public universities to enable climate sustainable choices

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Individual academics:
Consider all your opportunities for leverage

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Policy makers:
Adapt procurement rules for public universities to enable climate sustainable choices
Summary: three key messages:

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