

#SCI4NET0

SCIENCE FOR NET-ZERO TRANSITION

LINKING GREEN OBJECTIVES WITH SOCIETAL DEVELOPMENT

REPORT OF THE 8 NOVEMBER 2021
ONLINE SYMPOSIUM & SIDE EVENT TO COP26

CESAER
The strong and united voice of universities
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'Workshop Report: Science for Net-Zero Transition – Linking Green Objectives with Societal Development'

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A CALL TO ACTION FOR RESEARCH ORGANISATIONS

On 8 November 2021, at the 26th UN Climate Change Conference (COP26), [CESAER](#), the [International Sustainable Campus Network \(ISCN\)](#), [Science Europe](#) and the [University of Strathclyde](#) launched a joint call for collective global action to tackle climate change by reducing and transitioning to Net-Zero emissions. The four founding organisations share a vision of a collaborative, systems-based approach, where research and education systems work together and in interaction with industry and society at large, engaging in contributing to this crucial societal challenge. This commitment aligns with the United Nations' Sustainable Development Goal 13 on Climate Action: "take urgent action to combat climate change and its impacts." The Call to Action is for universities and research funding and performing organisations to assess how their actions and ambitions around climate change can collectively be upgraded.

Six key areas of the [Call to Action](#) were identified:

1. Responding to the complexity of the Net-Zero challenges by addressing them in an interdisciplinary way.
2. Developing the next generation of students and researchers for the Net-Zero Transition.
3. Reducing our own organisational carbon footprint.
4. Supporting the Net-Zero Transition in policy making at all levels.
5. Improving the shared understanding of what needs to be done.
6. Facing the challenges together.

To discuss the importance of climate sustainability and share good practice, the four organisations invited universities and national research performing and funding organisations to a 'Net-Zero Transition' Symposium on 8 November 2021, as a side event to COP26. The objective was to discuss how they could better work together for a climate-sustainable future, realising that the Net-Zero Transition is an enormously complex challenge that requires collaboration across all disciplines, communities, and institutions, and involves societies across the globe.

A SHARED VISION FOR A JOINT EFFORT

The Presidents of the four organisations put forward their **shared vision and values, committing to supporting and enabling concrete actions** to help the research and higher education communities achieve global sustainability and a Net-Zero Transition.

Both CESAER President Rik van de Walle and ISCN President Gisou van der Goot highlighted and encouraged the shared responsibility and collaboration in the face of the climate crisis. In the words of President Van der Goot: *"sustainability cannot be delegated; it has to be shared by everybody; otherwise, we will not reach our goals towards the Net-Zero Transition. We need to share our successes, as well as our failures in a collaborative manner and act."* President Van de Walle added that: *"as universities, as knowledge institutions, and as leading figures in academia, we have to practice what we preach. This means sharing knowledge and talents, but also sharing facilities. We should not look at each other as competitors, but instead as potential partners working towards solving these great challenges."*

The President of Science Europe, Marc Schiltz, emphasised the need to adopt systems-thinking approaches, recognising the complexity of the climate crisis we face: *"traditional approaches cannot address the climate challenge by looking only at sub-systems. On the contrary, this Call to Action is an example of systems-thinking following the three 'I's: Interdisciplinary research, International collaboration, and Intersectoral partnerships with societal stakeholders, such as the business sector, governments, and civil society."* Science Europe can contribute to the process of co-creation by engaging the research funding and performing organisations across Europe.

On the role of systems-thinking approaches to link green objectives with societal development, the Principal and Vice-Chancellor of the University of Strathclyde (Glasgow, UK), Sir Jim McDonald, explained the importance of making “a value proposition to policy makers to help them make the right decisions in a structured, transparent, and accountable way”, rather than telling them what they should be doing. He encouraged, within systems thinking, the inclusion of a diversity of approaches that would allow some disruption and novelty. He reminded the partners and all leading institutions that, as leaders, they have the responsibility to be authentic and empathetic in their approach, recognising they are part of a greater ecosystem.

The founding organisations of the Call to Action continue to engage, developing and growing their joint ambitions with the next phase taking place at COP27 in Sharm El-Sheikh (Egypt) from 7 to 18 November 2022. The four organisations will continue to mobilise other research and higher education organisations and develop ways to monitor the progress made towards the Net-Zero Transition.

GOOD PRACTICES AND CHALLENGES FROM RESEARCH FUNDING AND PERFORMING ORGANISATIONS AND UNIVERSITIES

The Net-Zero symposium on 8 November 2021 provided a unique first opportunity to gather together research funding and performing organisations and universities from around the world to discuss their experiences, viewpoints and possible ways to collaborate. This discussion provided the opportunity to gather different perspectives on the roles and contributions to the Net-Zero Transition around the Call to Action.

Recordings from all three sessions, as well as an overview of messages from research funding and performing organisations and from universities participating in the symposium on how they are engaging with the Net-Zero Transition, are available from [the event website](#).

LESSONS LEARNED FOR RESEARCH FUNDING AND PERFORMING ORGANISATIONS

Four main lessons learnt for research funding and performing organisations were identified relating to research programmes, international collaboration, science-policy interface, and stakeholders' engagement.

- Research funding organisations already promote (and should continue doing so) inter- and trans-disciplinary **research programmes** to understand the complexity of this challenge.
- **International research collaborations** are crucial to addressing climate-related challenges. Mari Sundli Tveit, Executive Director of the Research Council of Norway, emphasised that these international collaborations should be fair, equitable, and allow all researchers to learn from each other resulting in feasible and tangible actions – especially for the global South.
- Climate policy requires **effective science-policy interfaces**. Anne-Hélène Prieur-Richard, Head of the Department 'Environment, Ecosystem, and Biological Resources' of the French National Research Agency, highlighted that the education of students and early-career researchers is crucial. Ángeles Gómez Borrego, Vice-President of the Spanish National Research Council, stressed the importance of providing the right incentives and rewards.
- An integrated approach to **stakeholders' engagement** is needed to combine national and international levels and align global research goals with national actions. Duncan Wingham, Executive Chair of the Natural Environment Research Council at UK Research and Innovation, underlined that non-academic stakeholders, business sectors, and citizens should be involved at all levels.

These lessons demand the development of new tools and mechanisms to measure the emissions generated by research and education activities, session moderator Angelika Kalt, Director of the Swiss National Science Foundation, set out. Adequate measurement is a necessary step to have effective incentives to achieve the Net-Zero Transition. The collaboration between research funding and performing organisations with universities is essential to achieve the common goal of the Net-Zero Transition.

The crucial importance of **partnerships** between the different actors involved was highlighted throughout the Symposium by university leaders as well. Universities should work beyond academia, engaging with governments at national, international, regional, and local levels, as well as the business sectors to tackle the grand global challenges our societies face.

KEY MESSAGES FOR UNIVERSITIES

The following key messages were raised by university leaders:

- Universities should utilise their **campuses and infrastructures as living laboratories** and embed a systems-thinking approach to develop new solutions and contribute to the Net-Zero Transition. Wei Shyy, President of the Hong Kong University of Science and Technology, suggested that universities should make significant investments in campus operations, such as electric vehicles and renewables. Universities should lead by example to create impact both internally and externally through their institutions.
- The **involvement of the entire university community**, from faculty and professional services to students and staff, is needed to mobilise every individual on campus. University leadership and administrations' full commitment implies leveraging internal resources and focusing on a university's own operations.
- The innovation brought by **talent and youthful activism** is key to achieving the Net-Zero Transition. The impact from graduate students can be one of the most powerful and effective ways for universities to give value to society, and it is the responsibility of the university to provide them the necessary education for creating a better future. Mamokgethi Phakeng, Vice-Chancellor of the University of Cape Town, reinforced that young voices need to be encouraged and empowered to address crucial challenges, such as the links between poverty, equality, and climate change. Universities have a role to play in uniting students and young people's voices on a global scale, ensuring they have the right platform and framework to tackle global challenges. Mikael Östling, Deputy President of the KTH Royal Institute of Technology, supported this statement, adding that universities need to take a holistic approach, involving all diverse student communities, supporting, empowering, and equipping them to combat the climate emergency.
- The **structural issue between academic need and government funding** should be addressed to discuss what mechanisms better support the Net-Zero Transition, as raised by William Lee, Vice-Rector for Scientific Research at the National Autonomous University of Mexico (UNAM). A frank conversation should take place, considering the specificities of each university system, listening and learning from each other, to align priorities and efforts towards the common objective of the Net-Zero Transition. The moderator for the session Santa Ono, President and Vice-Chancellor of the University of British Columbia and President of University Climate Change Coalition (UC3), added that integrated funding streams and recognition of universities' long-term plans should be the priorities of new funding mechanisms. Instead of a competitive approach for funding, a more equitable approach should be sought to support universities in sharing resources towards the Net-Zero Transition.

CONCLUSIONS AND NEXT STEPS

The four founding organisations of the [Call to Action for the Net-Zero Transition](#) acknowledge the different perspectives of each organisation, and invite everyone in research and higher education communities to join up their efforts for this collective global challenge. A key question is how to understand if we are moving in the right direction. For this, the four organisations will continue to engage, animate the public debate, develop a collective reflection and vision, and mobilise societal stakeholders.

The Call to Action is a framework document that can embrace the contributions of many, and the four partners commit to reconvening at COP27 in November 2022 while working on concrete actions and mobilising other research organisations and universities for the Net-Zero Transition.

PROGRAMME OF THE SYMPOSIUM

MONDAY 8 NOVEMBER 2021

11.00–12.30

Session I: National and International Research Programmes for Net-Zero Transition

Based on [examples](#) of national and international funding and performing research programmes contributing to the Net-Zero Transition, panellists will reflect on how to increase collaboration between researchers and with non-academic sectors, what roles performing and funding organisations can play, how to promote cross-border collaboration, the design and implementation of effective research-policy interfaces, and better communicate science.

Introduction

Tim Bedford, Associate Principal of the University of Strathclyde

Moderator

Angelika Kalt, Director of Swiss National Science Foundation

Speakers

- **Ángeles G. Borrego**, Vice-President of the Spanish National Research Council
- **Anne-Hélène Prieur-Richard**, Head of Department Environment, Ecosystem, Biological Resources of the French National Research Agency
- **Mari Sundli Tveit**, Director of the Norwegian Research Council
- **Sir Duncan Wingham**, Executive Chair of the Natural Environment Research Council, UK Research and Innovation

13.00–14.30

Session II: Universities for Net-Zero Transition

Based on examples from their respective universities on how they are contributing to the Net-Zero transition (videos), the speakers will reflect upon the roles that universities play at the regional level and collaborating with academic and non-academic partners.

Introduction

Tim Bedford, Associate Principal of the University of Strathclyde

Moderator

Santa Ono, President & Vice-Chancellor of University of British Columbia and President of the University Climate Change Coalition (U3)

Speakers

- **William Lee**, Vice Rector for Scientific Research of the National Autonomous University of Mexico
- **Mikael Östling**, Deputy President of the KTH Royal Institute of Technology
- **Mamokgethi Phakeng**, Vice-Chancellor of the University of Cape Town
- **Wei Shyy**, President of the Hongkong University of Science and Technology

15.00–16.30

Session III: Systems Thinking and Approaches to Achieving Net-Zero Transition and Tackling Climate Change

A final panel discussion is aimed at synthesising concrete recommendations on how this cooperation could be improved and applied in different contexts and within different regional ecosystems.

Introduction

Lidia Borrell-Damián, Secretary General of Science Europe

Moderator

Tim Bedford, Associate Principal of the University of Strathclyde

Speakers

- **Gisou van der Goot**, President of ISCN & Vice President at EPFL
- **Marc Schiltz**, President of Science Europe & Secretary General of the National Research Fund of Luxembourg
- **Sir Jim McDonald**, President of the Royal Academy of Engineering and Principal & Vice-Chancellor of the University of Strathclyde
- **Rik Van de Walle**, President of CESAER and Rector of Ghent University

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CESAER is the European association of leading specialised and comprehensive universities of science and technology who champion excellence in higher education, training, research, and innovation; influence debate; contribute to the realisation of open knowledge societies; and deliver significant scientific, social, economic, and societal impact.

www.cesaer.org



ISCN is a global network of 90 universities in over 30 countries. The mission of the network is to provide an international forum to support higher education institutions in the exchange of information, ideas, and best practices for achieving sustainable campus operations and integrating sustainability in research and teaching.

international-sustainable-campus-network.org



Science Europe is the association representing 38 public research funding and performing organisations across 28 European countries. It brings together the scientific expertise of its members to push the frontiers of how scientific research is produced and delivers benefits to society. It advocates science and the scientific community to help build the European Research Area.

www.scienceeurope.org



The University of Strathclyde is a leading international technological university based in Glasgow (UK). Inspired by the founding principle as 'a place of useful learning', its mission is to make a positive difference to the lives of its students, to society and to the world. It is a member of CESAER and ISCN and works closely with government, industrial and NGO partners on the Net-Zero Transition.

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