STARS EU

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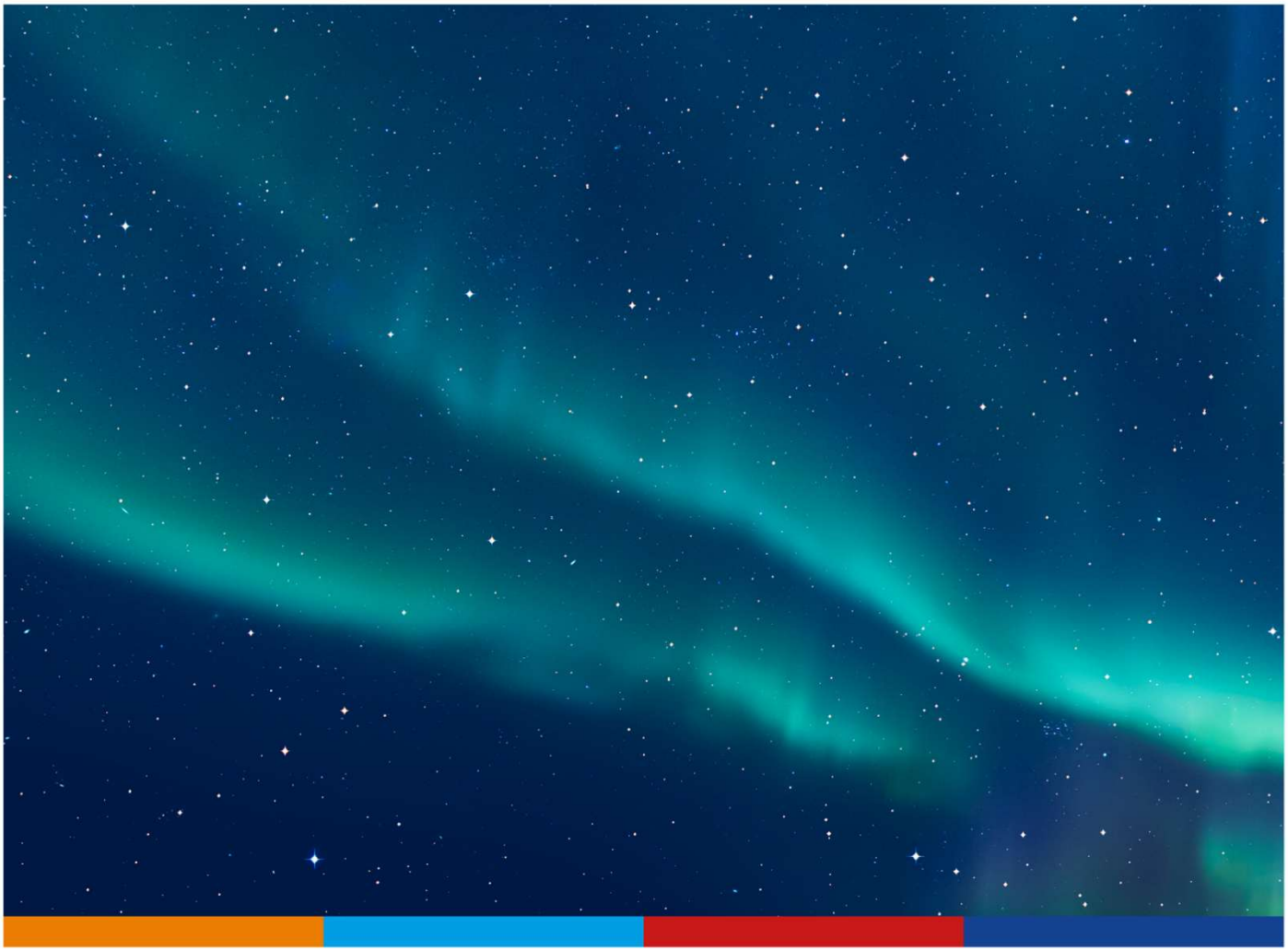
Green Impact Assessment

Milestone MS19



Work package 7 – Sustainable Model

Task 7.3 - Develop the STARS EU Green Impact Plan

Date: 28 November 2025

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0. Introduction

The main aim for Task 7.3 is to develop a Green Impact Plan for the alliance to be decided at the end of the first four-year period of the STARS EU Alliance. This report is the first assessment of the green impact of the alliance partners carried out by the STARS EU team, from which the Green Impact Plan will be developed.

A first assessment of the ecological footprint at partners and the alliance level has been made with data from 2024. Best practices among the partners have also been initially assessed and will be further developed in the coming months. The findings will be used to define measures to reduce negative ecological impact at partner and alliance level, and the results will lay the ground for the final STARS EU Green Impact Plan.

The main body of this report is structured in four sections: (1) Work with green impact in the alliance; (2) STARS EU Self-Assessment on Environmental Sustainability; (3) Green Impact Assessment; (4) Green Impact Assessment the way forward Green Impact Plan.

The first section presents a brief overview of each partner, along with a summary description of environmental sustainability practices already implemented by each institution. Existing measures and practices aimed at reducing the ecological footprint—such as waste management, sustainable mobility, and efficient resource use—are described and provide the basis for assessing institutional maturity in sustainability. To know current practices will help STARS EU to set realistic targets and actions in relation to existing organisational practices and resistance.

The second section concerns the results of the survey conducted with all partners to directly collect information on practices, policies, and infrastructure related to environmental sustainability. The online survey is included in the annexe, along with the responses received.

The third section presents an assessment of the ecological footprint in four key areas: buildings, waste, travel, and consumption, based on qualitative and quantitative methodologies to measure impacts.

The final section outlines the proposed way forward for designing the STARS EU Green Impact Plan. The ambition at this stage is to prioritise actions that do not require major investments, and which are supported by concrete data and conclusions drawn from the previous sections.

1. Work with green impact in the alliance

1.1 Aleksandër Moisiu University of Durrës

The University of Durrës (UAMD), formally re-established in 2006, traces its origins to 1380, making it one of Europe's oldest centres of learning. Initially founded in Durrës, the institution was later relocated to Zadar due to Ottoman incursions—today known as the University of Zadar. Archival sources underscore the university's historical significance in Balkan intellectual life.

Today, UAMD has about 16 500 students and a full-time academic staff of 232 Professors and other staff of 210 persons. The University of Durres is a public university comprising five Faculties that offer over 100 study programs across all three study cycles (Bachelor's, Master's, and Doctorate). A new program was added to the Department of Economic Sciences at the Faculty of Business last year, entitled "Circular Economy and Sustainable Development", a program that aims to prepare students by adapting to the demands of the time.[1] The university has signed over 250 cooperation agreements.

The University offers an environment with a surface area of 21.242 m² across its three buildings, featuring considerable green space, particularly in the Campus buildings. As Albania prepares to join the EU, the Albanian Government has approved a series of legal and sub-legal acts related to waste treatment, green consumption, and the use of renewable energy. These acts are also being prioritised by public institutions in Albania, including the Universities. UAMD is also a Partner with the Municipality of Durrës in a Project named: "Protection of environment through Integrated Waste Management in Durres". The aim is to develop the work of the Municipality of Durres with effective environmental protection and sustainable management of urban waste. This is achieved through the implementation of innovative methods and the active involvement of local stakeholders, as defined in the Strategic Policy Document for Integrated Waste Management 2022-2035, the Sectoral Plan for Solid Waste Management and National Environmental Policies. The University of Durres has several projects in progress that contribute to green consumption, sustainable economy and environmental protection[2].

[1] https://uamd.edu.al/ekonomia-qarkulluese-dhe-zhvillimi-i-qendrueshem/

[2] **SUSTAINTOUR** - Capacity Building of VET providers in the sustainable tourism https://uamd.edu.al/en/portfolio/sustaintour/ | **BLUE ecosystem Project** - https://uamd.edu.al/en/portfolio/blue-ecosystem/ | **Building Capacities for Decarbonised Maritime Transport and Logistics in Albania and Montenegro** https://uamd.edu.al/en/portfolio/charity-voluntary-for-social/ | **IOT – ECO – IOT** Green transformation for academic society and business-oriented ecosystem in the Western Balkans https://uamd.edu.al/en/portfolio/iot-eco/ | **PELMOB** - Promotion and popularisation of Electric Mobility through transformation and modernisation https://uamd.edu.al/en/portfolio/pelmob/ | **ALMARS** - Capacity Building for Blue Growth and Curriculum Development of Marine Fishery in Albania https://uamd.edu.al/en/portfolio/free-training-for-senior/ | **ENGINE** -Engineering Curricula Modernisation in Renewable Energy in Albanian Universities https://uamd.edu.al/en/portfolio/engine/ | **KALCEA** - Knowledge triangle for a low carbon economy – https://uamd.edu.al/en/portfolio/kalcea/

1.2 Bragança Polytechnic University

The Bragança Polytechnic University (IPB) is located in Bragança, Portugal. It serves approximately 10,000 students and employs over 500 faculty members and researchers. The institution plays a significant role in higher education in the northeastern region of Portugal.

Sustainability is a strategic priority for IPB, as outlined in its institutional strategic plan. The plan includes key axes such as “Innovating for Sustainability” and “Sustainable Campus,” reflecting the institution’s commitment to environmental responsibility and ethical values in decision-making and operations.

IPB has implemented several internal measures to promote environmental sustainability. These include digital transformation initiatives aimed at reducing paper consumption and actions to support carbon neutrality, energy efficiency, and circular resource use. The institution is also part of the national ECO AP 2030 program, which promotes resource efficiency in public administration.

IPB offers specialised academic programs in environmental fields. These include Bachelors in Renewable Energy Engineering, aimed at promoting the use of renewable energies, and Environmental Engineering, which prepares students for roles in waste management, wastewater treatment, environmental monitoring, and more. It also offers a Master’s in Environmental Technology, focused on advanced environmental protection technologies, and a Master’s in Environmental Education, aimed at promoting sustainable practices through education.

IPB leads research projects that address sustainability challenges both regionally and within its own campus. Among these is ProBioEner, a project that focuses on promoting bioenergy solutions and sustainable resource use, contributing to the transition toward low-carbon energy systems. The institution also supports initiatives through its research centres, such as CIMO and CeDRI, which collaborate under the SusTEC Associate Laboratory to tackle transdisciplinary challenges in sustainability and technology. These activities reflect IPB’s commitment to integrating sustainability into its operations, research, and academic mission.

IPB actively promotes environmental awareness within its academic community. This includes thematic newsletters, dissemination of best practices, and direct engagement through the dedicated email address: campus.sustentavel@ipb.pt.

1.3 Cracow University of Technology

Cracow University of Technology is a public technical university in Cracow, Poland.[3] The main campus of the university on Warszawska Street is located in 19th-century Austrian military buildings. Between them, new buildings have been constructed on the campus, and the historic façades have been renovated. The university's second campus is in Czyżyny, where teaching and research buildings, laboratories, the Cracow Technology Park and student dormitories have been built on an area of over 80 hectares.

The university offers full-time and part-time first- and second-cycle studies, as well as doctoral and postgraduate studies. The university's educational offer includes over 30 fields of study in Polish. In addition, some fields of study are also taught in English, and two fields of study are taught in Ukrainian.

As of 31 December 2024, there were 11,279 students enrolled at the Cracow University of Technology, including 8,947 full-time students, 2,332 part-time students, and 456 international students. The number of employees was 1,942, including 1,107 academic teachers and 835 other employees.

According to the results of the evaluation of scientific activity for the years 2017-2021, the Cracow University of Technology was ranked among the three best universities in Poland. The university evaluated its scientific activity in eight disciplines: architecture and urban planning, technical informatics and telecommunications, automation, electronics and electrical engineering; chemical engineering; civil engineering and transport; materials engineering; mechanical engineering, environmental engineering, mining and energy.

The University is currently finalising a new Sustainable Development Strategy 2026-2031 which is awaiting final approval.

The Cracow University of Technology implements its sustainable development policy through the Centre for Advanced Solutions, a platform for cooperation between science and business. It focuses on research on innovative technologies, including sustainable development and energy transition, as well as through its educational offer, such as the Ecotechnologies for Sustainable Development programme.

The university is involved in research projects on recycling, energy and material efficiency, and cooperates with industry in the area of sustainable mobility. The Krakow University of Technology implements projects for Krakow in cooperation with the city authorities, which aim to develop urban greenery, visualise the future of public transport, and solve urban problems such as smog, and optimise spatial development. In 2022, the Cracow University of Technology developed a ‘Climate Standard’ for the city authorities, a set of guidelines and recommendations for sustainable construction to help the city of Cracow adapt to climate change and reduce its negative impact. The standard covers six areas of assessment: energy,

[3] https://www.pk.edu.pl/index.php?lang=en&template=pk18-tpl

water, greenery and the building environment, microclimate, indoor environmental comfort, and building materials and technologies.

1.4 Hanze University of Applied Sciences

Hanze University of Applied Sciences is located in Groningen, in the north of the Netherlands. The university focuses on sustainability, health, the energy transition, and digital transformation in collaboration with regional partners. Hanze UAS has approximately 28.000 students and 3.000 staff.

Hanze University of Applied Sciences works from a sustainable vision towards the future. In 2016, Hanze signed the Earth Charter, together with several other Dutch universities of applied sciences, to actively contribute to the United Nations Sustainable Development Goals (SDGs).[4] For Hanze, sustainability extends beyond environmental awareness. The university takes a broad approach, addressing the ecological, social, and economic dimensions of the SDGs.

In 2018, Hanze participated in The Green Quest, during which four sustainability goals were formulated for 2025. While these goals were not fully achieved, one of them — to educate all students to become sustainability ambassadors — led to the successful establishment of the SDG Ambassadors Programme. This initiative has since been adopted by several other universities of applied sciences across the Netherlands.

The university has made progress in reducing its energy consumption — almost all the buildings are now natural gas-free, and the university is working towards meeting the commitments of the Paris Climate Agreement. It is also making strong progress towards achieving its zero waste objective. However, progress on all goals has not been uniform. Therefore, in 2025, Hanze is developing a new strategic plan for 2025-2031, with concrete objectives related to the SDGs, encompassing education, research, and organisational operations. 2025 also marks the establishment of the SDG Hub, which drives SDG implementation within the organisation and initiates efforts in monitoring and accountability. While the university already undertakes extensive work in education and research to promote sustainability, it recognises that there is still much progress to be made and that we are currently not monitoring this adequately, as universities of applied sciences in the Netherlands are not required to comply with the CSRD legislation. Therefore, the first baseline measurements are currently being conducted using the national framework for sustainability reporting for education.[5] This framework focuses on three key dimensions: Environmental, Social, and Governance (ESG). These efforts form the foundation for further development and the integration of sustainability across all aspects of Hanze University of Applied Sciences.

[4] [https://www.hanze.nl/nl/over-hanze/ons-verhaal/sustainable-development-goals]

[5] [https://samenverantwoordenonderwijs.nl/groups/49-duurzaamheid/welcome

1.5 Hochschule Bremen - City University of Applied Sciences

The Hochschule Bremen – City University of Applied Sciences (HSB) is a modern and innovative institution of higher education located in Bremen, Germany. Its campus provides well-equipped facilities that foster a practical and application-oriented learning environment. HSB serves approximately 9,000 students across a wide range of undergraduate and graduate programmes. The university employs around 350 academic staff. In addition, some 200 researchers are involved in a wide range of projects focusing on applied sciences and interdisciplinary collaboration.

HSB pursues a comprehensive sustainability strategy that integrates ecological, economic, and social aspects into teaching, research, and administration. The goal is to promote sustainable practices within the university and to raise awareness among students and staff about the importance of sustainability, enabling them to apply these principles in their future professional fields.

Key elements of HSB's sustainability strategy include:

- Integration of sustainability into degree programmes: Sustainability-related topics are incorporated across curricula to familiarise students with key issues from the outset.
- Promotion of sustainable research: The university initiates and supports research projects that develop sustainable solutions to societal challenges.
- Resource-efficient administration: HSB focuses on energy-efficient buildings, environmentally friendly mobility, and responsible resource management in daily operations.
- Awareness-raising and participation: Through events, workshops, and collaborations, students and staff are encouraged to actively contribute to sustainable development.
- Cooperation with partners: The university works with regional and international partners to exchange sustainable ideas and practices.

Within its alliances and partnerships, HSB actively contributes to joint initiatives that generate positive environmental effects. Collaborations focus on sharing best practices in sustainable campus management, developing innovative green technologies, and fostering interdisciplinary projects that address climate change and resource efficiency. For example, HSB participates in regional networks that promote sustainable urban development and circular economy approaches. Through such partnerships, the university amplifies its green impact by combining expertise and resources to drive systemic change beyond its own campus.

HSB's sustainability strategy aligns with the United Nations Sustainable Development Goals (SDGs) and aims to create a sustainable university that combines ecological responsibility, social commitment, and economic viability. The strategy is further outlined in the university's

guiding principles on sustainability, campus development, and operations, which emphasise long-term ecological stewardship and responsible management.[6]

1.6 Silesian University in Opava

The Silesian University in Opava is a public higher education institution located in two cities in the Moravian-Silesian Region of the Czech Republic. It comprises three faculties and two university institutes. The main building of the Rector's Office, two faculties, and two university institutes are situated in the city of Opava, while one faculty is located in the city of Karviná, approximately 60 kilometres away. In 2024, there were 5,454 full-year equivalent students and 595 full-year equivalent staff. It employs both academic and non-academic staff.

Czech public universities are not legally required to operate an environmental management system, but several national policy frameworks and government strategies set the direction that universities are expected to follow. At the national level, the university takes into account the Strategic Framework Czech Republic 2030, which defines the country's development direction for this decade. It also follows the Strategic Plan for Higher Education for 2021+, in particular Priority 1 "Developing competences directly relevant to life and practice in the 21st century," and the Strategy for the Internationalisation of Higher Education adopted in 2021.[7]

Sustainability is one of the key strategic themes of the university. In 2024, it adopted the Sustainability Strategy SU 2030, which will be implemented through specific measures every two years in the form of an Action Plan. The main objectives are to reduce the university's ecological and energy footprint, to support research and education in sustainability, and to strengthen cooperation with regional and international partners.

The Strategy follows the ESG framework (Environmental, Social, and Governance) and reflects the United Nations Sustainable Development Goals (SDGs). In the environmental field, the university develops a waste separation system, promotes circular economy principles and composting, implements energy-saving measures, and explores options for renewable energy use. It manages water responsibly, reduces its consumption, installs features to support biodiversity, and identifies opportunities to introduce green roofs and façades on new buildings.

A new building is currently being designed in Karviná – the Centre for Entrepreneurship, Professional and International Studies (CEPIS). The building is designed to minimise operating energy costs and achieve an energy-plus balance. This objective is reflected in both the architectural concept (use of mature greenery, water integration, roof inclination, and façade design) and technological solutions (heat pumps, geothermal boreholes, and photovoltaic systems).[8]

[6] See in German: https://www.hs-bremen.de/assets/hsb/de/Dokumente/Rektorat/202304Leits%C3%A4tzeNachhaltigkeitStandortentwicklungundBetriebanderHSB.pdf ; Additional information is available on HSB's official website: https://www.hs-bremen.de/en/hsb/our-profile/sustainability/.

[7] https://msmt.gov.cz/uploads/odbor_30/DH/SZ/Strategie_internacionalizace_2021_.pdf)

[8] https://cepis.slu.cz/

More information on how the Silesian University in Opava works with sustainability is available on the university's website in the publicly accessible documents Sustainability Strategy 2030 and the Action Plan 2024–2025.[9]

1.7 University of La Laguna

The University is situated in La Laguna, San Cristóbal de La Laguna, Tenerife, Canary Islands, Spain. The institution's main campuses (Central, Anchieta, Guajara, and Ofra) are located in the municipality of La Laguna, with additional centres distributed across Santa Cruz de Tenerife. [10] Nearly 20,000 students pursue official undergraduate and postgraduate studies at these sites, supported by 1,635 faculty members and 797 administrative and service staff.

In accordance with the mission and vision of the University of La Laguna, the University formally adopted its Environmental Sustainability Policy Declaration in early 2018 formally adopted by the University's Governing Council.[11] In addition, the University of La Laguna has launched its Environmental Sustainability Plan 2025–2027, the document that will govern actions in this field and which has likewise been approved by the University's Governing Council.[12] This document has a SWOT analysis of strengths and weaknesses and goes on to define the strategic framework and lines of action to integrate sustainability across all areas of the institution. The plan is structured around four strategic pillars: organisation (sustainable governance, communication, and participation), teaching, research (transfer and dissemination of knowledge on environmental sustainability), and environmental management (urban planning and biodiversity, energy, water, mobility, waste, green procurement, and environmental impact assessment).

It is worth highlighting that, in 2020, the University of La Laguna adopted the Declaration of the Climate Emergency, in which it acknowledged the urgency of taking action to mitigate climate change.[13] This Declaration seeks to promote the active participation of the entire university community in decision-making and the implementation of measures, while also taking into account the Good Practices Guide–2030 Agenda developed by the University itself.[14]

1.8 University Marie and Louis Pasteur

University Marie and Louis Pasteur is a French higher education institution deeply embedded in its regional ecosystem. It welcomes around 27000 students and operates with 2500 staff members on 6 different campuses. Sustainable development is at the heart of UMLP's institutional strategy for 2024-2028, as is evidenced by the University's adoption of the

[9] For more information see here: https://www.slu.cz/slu/cz/file/cul/1505f3dc-89a8-428d-b645-d4629fb4f836 and https://www.slu.cz/slu/cz/file/cul/19b42008-4848-4d5c-8d8b-7e521db077e3.
[10] https://riull.ull.es/xmlui/bitstream/handle/915/7771/acuerdo5.pdf?sequence=1&isAllowed=y,
[11] https://riull.ull.es/xmlui/bitstream/handle/915/7771/acuerdo5.pdf?sequence=1&isAllowed=y, in Spanish
[12] https://drive.google.com/file/d/1kGsXNnU6ATHb3QVOLrnHg-eYtJaTvkSc/view, in Spanish.
[13] https://drive.google.com/file/d/1SrtXttF9xPi213dIVi1y36cbhmIz2MCH/view, in Spanish
[14] For more information see here: https://www.ull.es/portal/campus-y-sostenibilidad/.

Sustainable development, environmental and social responsibility (DD&RSE) roadmap for 2025-2030.

During the 2022-2024 period, UMLP progressively committed to socio-ecological transition, leading to the creation of an eco-responsibility steering committee, roadmap, and charter. The main objectives of the roadmap and charter were to limit the environmental impact of the institution's activities and to orient its main missions (education, research and innovation) towards transforming society in line with socio-ecological challenges.

Among the key actions undertaken during the 2022-2024 period was the organisation of a Climate Awareness Week (Rentrée du Climat), which raised awareness of climate issues among nearly 5000 students and more than 500 members over two years. The collective momentum generated by this project is at the root of the collaborative development of the common training module "Socio-ecological issues". This training module was assembled by dozens of specialists from UMLP and was rolled out in all the university's faculties at the start of the 2024-2025 academic year.

Other actions include a professional staff mobility policy (guide de l'agent en mission), an eco-responsible purchasing guide, and a reflection on soft/eco-responsible mobilities.

UMLP's Sustainable development, environmental and social responsibility (DD&RSE) roadmap focuses on four main priorities. The University aims to establish a DD&RSE strategy involving all the university and its partners. To do so, it plans to formalise, deploy, and integrate the DD&RSE strategy in its processes and activities, not only on a governance level, but also at the level of all faculties and institutes, through, for example, the drafting of an eco-responsible digital policy. As the University fosters close links with its regional ecosystem, it can contribute to the construction of an eco-responsible society by encouraging regional stakeholders to also adopt DD&RSE actions.

UMLP also aims to share DD&RSE skills, knowledge and competences within the university and throughout society. This will be achieved through the integration of socio-ecological challenges not only in academic training, but also in the training of trainers and teachers. The University will also build on its privileged relationship with socio-economic actors in its region to share knowledge beyond University walls.

UMLP aims to integrate DD&RSE challenges in its research and innovation (R&I) activities while reducing their ecological impact. The University also aims to bridge the gap between science and society, enhancing scientific literacy in the public.

Finally, UMLP acts for an eco-responsible university that limits its ecological footprint through the reduction of greenhouse gas emissions and the limiting of resource consumption. The governance is also working on a policy for preventing and reducing environmental damage and a policy in favour of biodiversity.

1.9 University West

The university is situated in Trollhättan, Sweden. It has one main campus where most students study, and most staff work. In 2024, there were 5 600 full-year equivalent students, and 605 full-year equivalent staff. There are four departments - engineering sciences, health sciences, and two departments within social sciences.

To contribute to sustainability is part of the vision of the university: "We act and work together with society to create a more sustainable world. Together with a wide range of partners we create knowledge and strive to make it more accessible." The point of departure is the Brundtland definition of sustainability and its social, economic and ecological dimensions, and additionally the global sustainability goals. In 2019, the university signed a climate framework for Swedish universities and university colleges, to work with decreasing the emissions of greenhouse gases from its operations and to contribute to a decrease of emissions through its education and research.[15]

In Sweden, most universities are public agencies, which, according to law, are mandated to have an environmental management system and to report to the government about their work and results every year[16]. The work is also governed by an internal university policy for sustainability, a guideline for environmental management, and sustainability and environmental goals.

The main environmental impacts are identified in an environmental review at least every fifth year. Based on this assessment, environmental goals are decided for research and education (broad integrated goals), and for impacts from campus operations such as business travel, consumption and use of resources, waste and use of materials, and operational electricity, with the end year set at 2030. These are followed up on each year and updated at least every three years. Impacts are measured in different ways[17]:

- Business travel: kilo co_2/full-equivalent staff
- Consumption: kilo co_2e for the purchase of technical products, furniture/inventories and catering, percentage of sustainability labelled products in some categories. Percentage of the total value of procurement which environmental requirements.
- Waste: kilo total waste (total and per full-time equivalent staff), kilo hazardous waste (total and per full-time equivalent staff)
- Operational electricity: total kWh, kWh/m^2, kWh/full-time equivalent staff.

[15] See here for more information: https://www.slu.se/en/collaboration/samverkansprojekt/higher-education-institutions-climate-network/

[16] https://www.naturvardsverket.se/vagledning-och-stod/miljomal-och-miljoledning/miljoledning-i-staten/ (in Swedish).

[17] For more information see here: https://www.hv.se/en/meet-university-west/about-university-west/sustainable-development/This-is-how-we-work-with-sustainability/.

1.10 Main findings

The review of the STARS EU universities' current work with decreasing negative green impact and increasing positive green impact shows both similarities to build on and differences, which can constitute challenges for cooperation but also provide opportunities to learn from each other.

Similarities and Differences

All partners institutions share some similarities in their approach to sustainability. They all integrate sustainability into their strategic plans and align with the UN Sustainable Development Goals (SDGs), and many of the universities have sustainability policies and strategies where environmental targets and action plans are included. The review shows very similar areas of the main environmental impact of the universities which are worked with. These are education, research, and organisational operations such as waste management, energy use, water use, construction/reconstruction, consumption and resource management. In conclusion, there is a common focus on reducing environmental impact from university operations and a strong emphasis on education and research as drivers for sustainability.

Regarding the differences, they lie in four key aspects: scope and maturity, legal context, strategic priorities and academic offer. Some institutions have already advanced sustainability frameworks, whereas others are still at an earlier stage of implementation. The legal context varies significantly: some universities operate under national mandates for environmental management, while others pursue those initiatives voluntarily. The strategic priorities differ, with some universities focusing primarily on campus operations, while others, such as UMLP, place greater emphasis on socio-ecological transition and community engagement. The academic offer also shows variations: for example, IPB and PK prioritise specialised programs in renewable energy and environmental engineering, whereas other partners integrate sustainability more broadly across their curricula.

Strengths and Challenges

The alliance can benefit from the strong institutional commitment to sustainability across all partners, which provides a solid foundation for joint initiatives. Several universities already offer specialised programs and host research centres dedicated to sustainability (such as IPB and PK), promoting the creation of opportunities for knowledge sharing and innovation. In addition, all the partners have already experience in integrating sustainability into curricula and operational practices, and their regional influence is a strength to mobilise stakeholders and drive systemic change beyond the academic sphere. The universities also show different focus areas and areas of strength depending on university priorities and national context.

Table 1 - Focus areas in the review

Focus areas	Universities
Reducing carbon footprint with emissions targets	Hanze University of Applied Sciences University Marie and Louis Pasteur University of La Laguna University West
Develop waste management	Hanze University of Applied Sciences Bragança Polytechnic University Aleksandër Moisiu University of Durrës
Environmental management system	University West (not certified)
Buildings and energy	Silesian University in Opava Cracow University of Technology
Focus on specialised environmental education and research	Hanze University of Applied Sciences Bragança Polytechnic University Aleksandër Moisiu University of Durrës

Despite these strengths, we can point out significant challenges. Maturity and resources are uneven across institutions, with differences in size, funding, and legal obligations potentially hindering harmonisation. Monitoring can be an issue in some countries due to the absence of standardised reporting. Regulatory diversity adds complexity, as national policies and compliance requirements vary widely. Also, ensuring active engagement from the entire STARS EU community will require a coordinated approach.

2. STARS EU Self-Assessment on Environmental Sustainability

As part of the development of the STARS EU Green Impact Plan, a self-assessment process was carried out with the aim of directly collecting information on institutional practices related to environmental sustainability within the partner institutions of the STARS EU alliance, establishing an initial diagnosis.

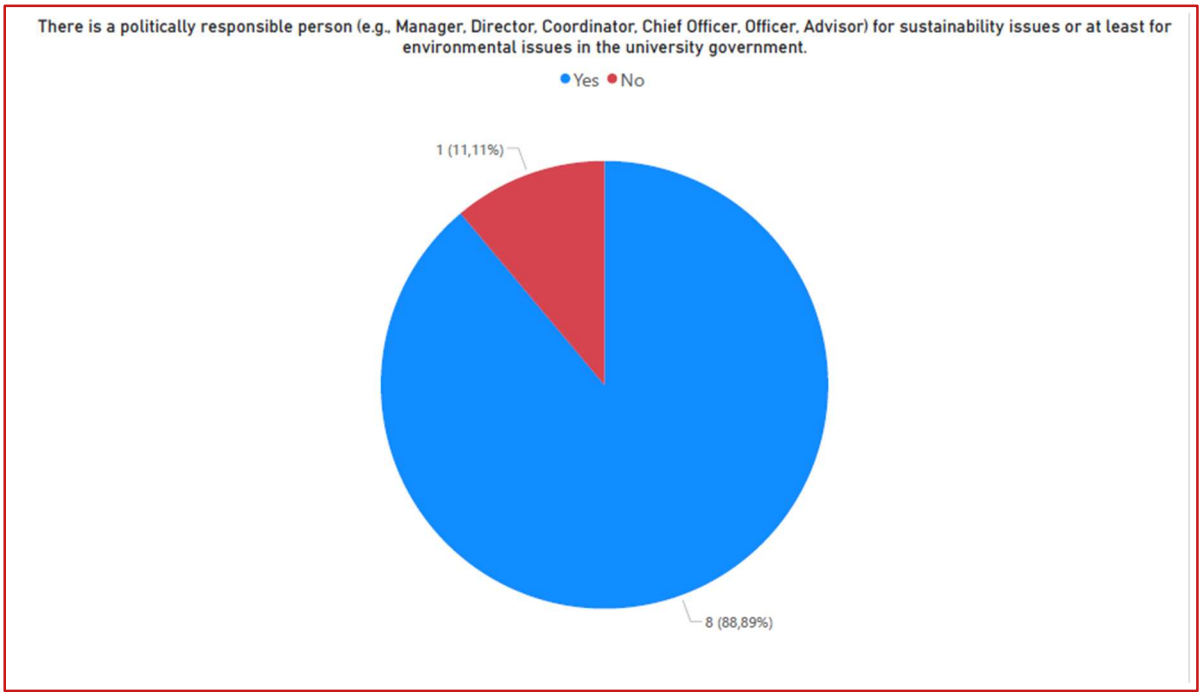
This section presents the results obtained through the applied questionnaire.

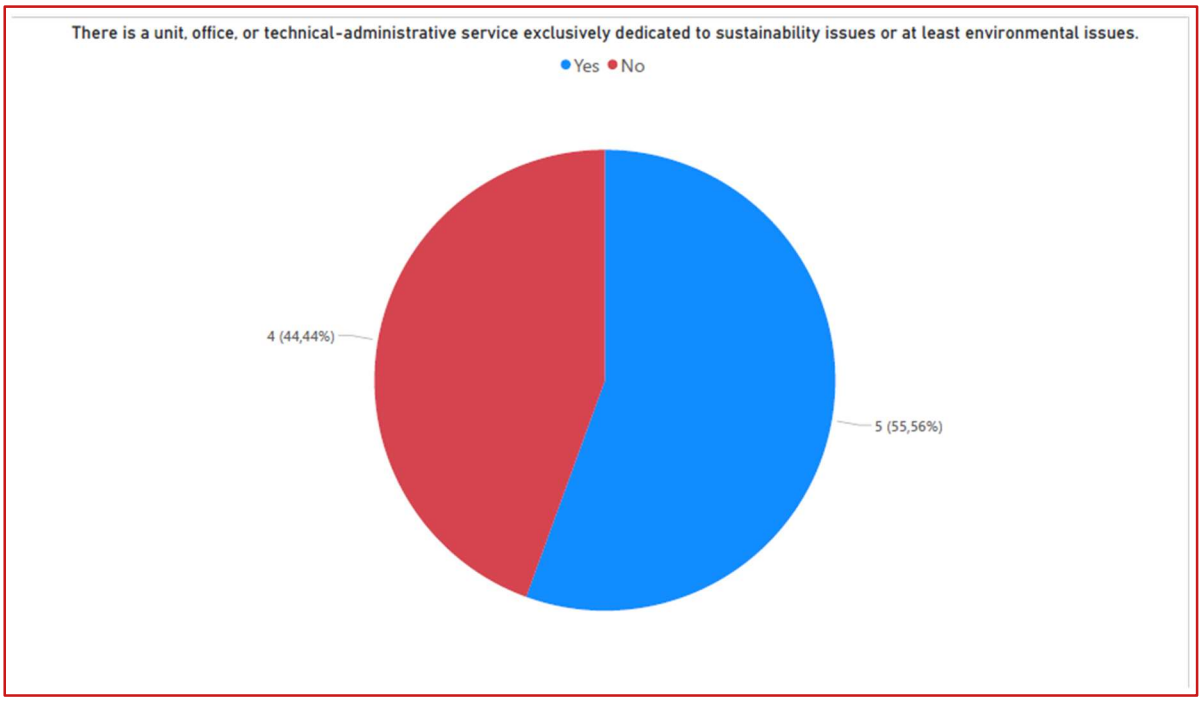
Data collection was conducted with the active collaboration of the partner institutions, which responded to general questions regarding sustainability policies, engagement of the academic community, teaching and research practices, management of buildings and resources, mobility, sustainable procurement, and environmental impact assessment.

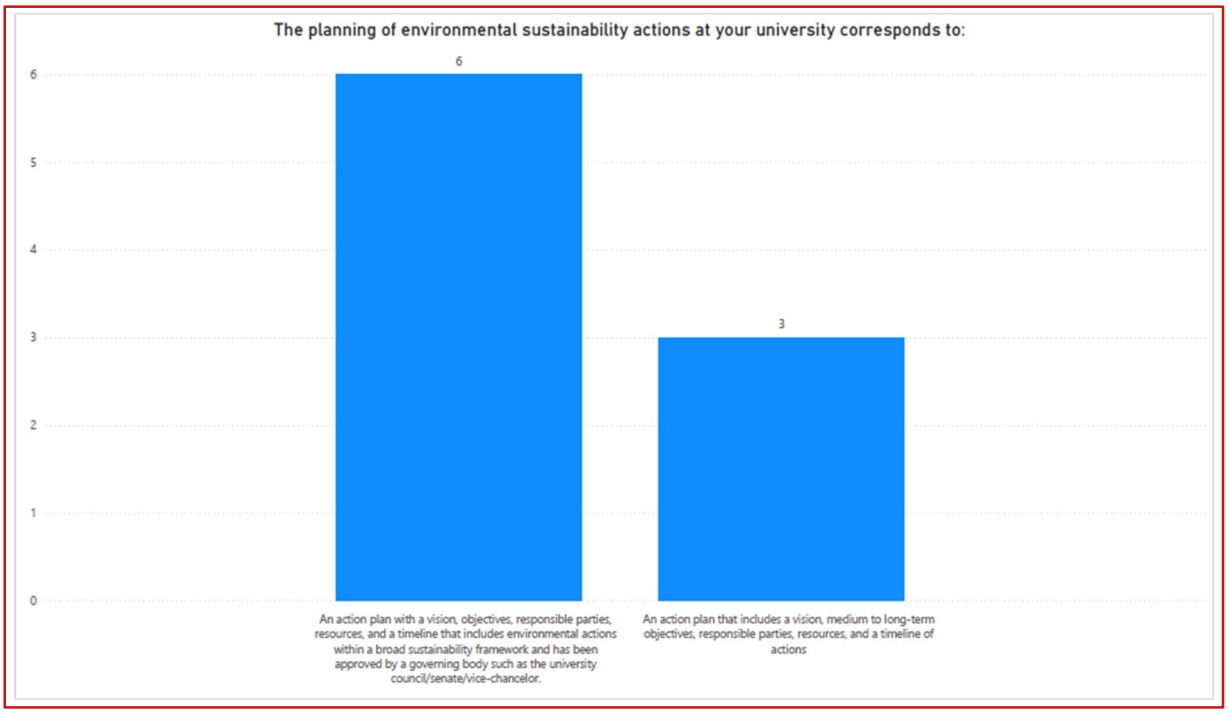
Based on the responses provided by the partners, it is possible to gain an overview of the current state of policies, actions, and structures related to environmental sustainability in these higher education institutions.

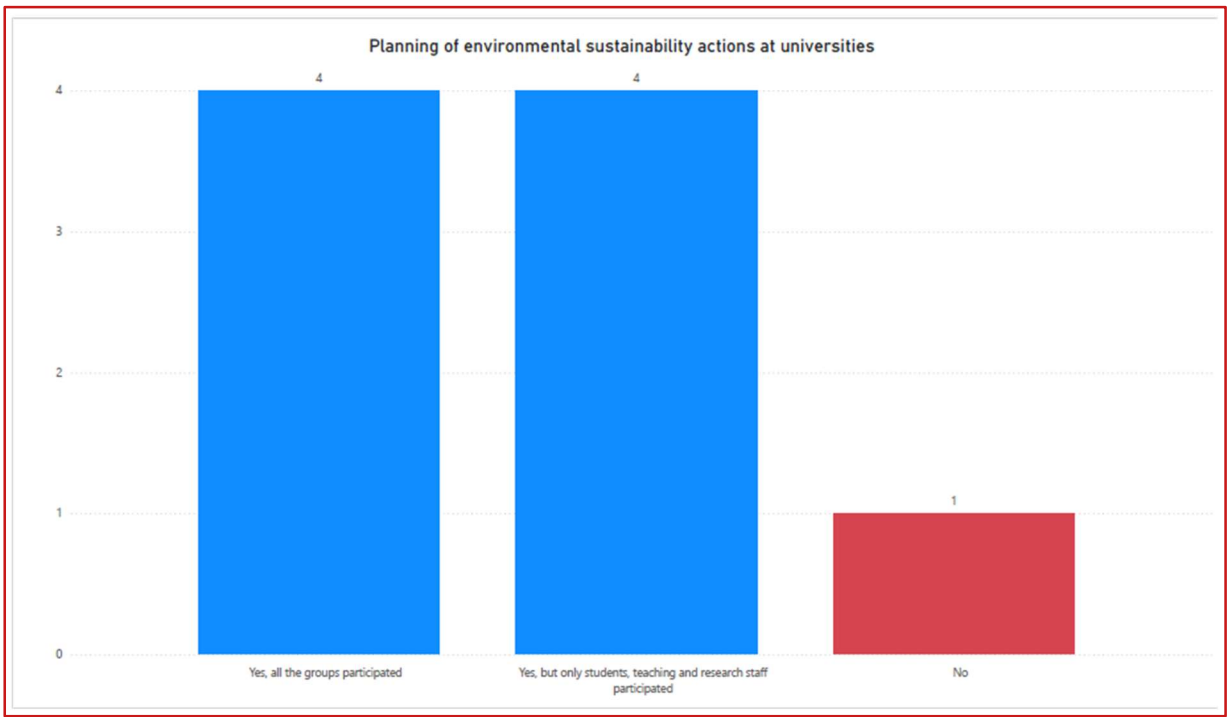
This diagnosis provides an essential foundation for the identification of areas for improvement, recognising existing good practices, and fostering synergies among partner institutions, thereby contributing to the development of a joint and effective environmental impact plan that strengthens the collective commitment to sustainability.

Sustainability Policy






The planning of environmental sustainability actions at your university corresponds to:
6
3
0
1
2
3
4
5
6
An action plan with a vision, objectives, responsible parties, resources, and a timeline that includes environmental actions within a broad sustainability framework and has been approved by a governing body such as the university council/senate/vice-chancelor.
An action plan that includes a vision, medium to long-term objectives, responsible parties, resources, and a timeline of actions


Planning of environmental sustainability actions at universities
4
4
1
0
1
2
3
4
Yes, all the groups participated
Yes, but only students, teaching and research staff participated
No

Notes:

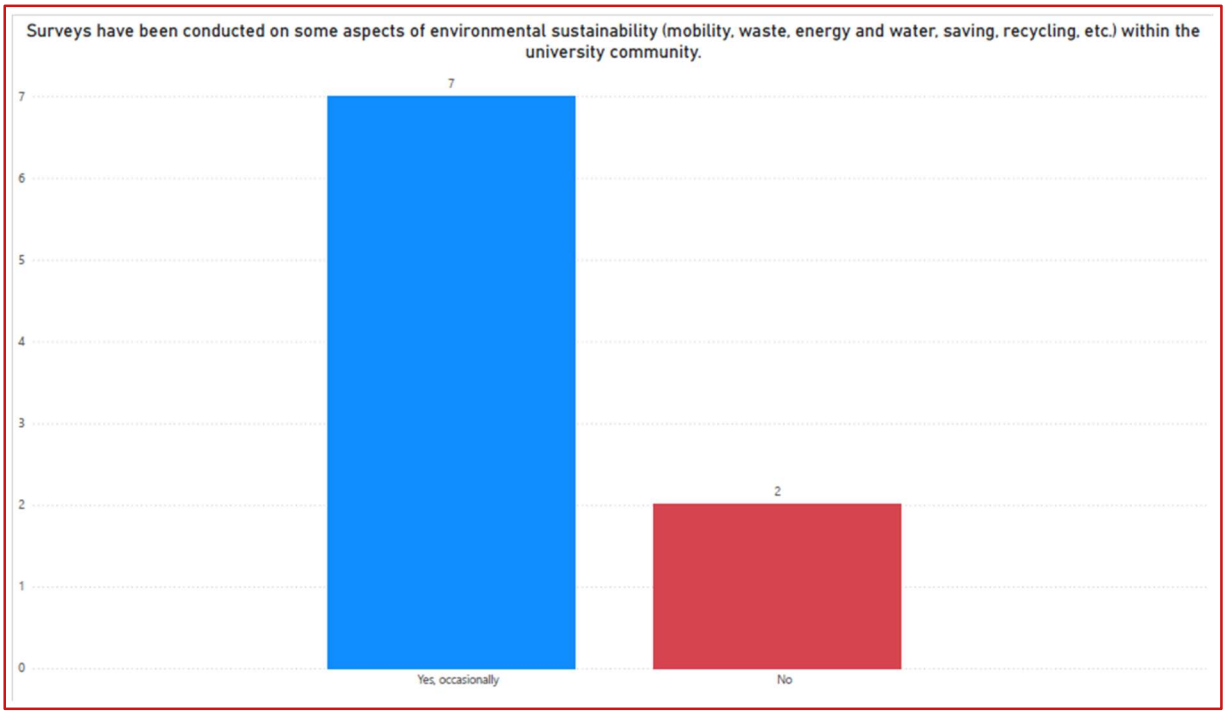
Only one partner lacks a political representative for sustainability in its governance structure.

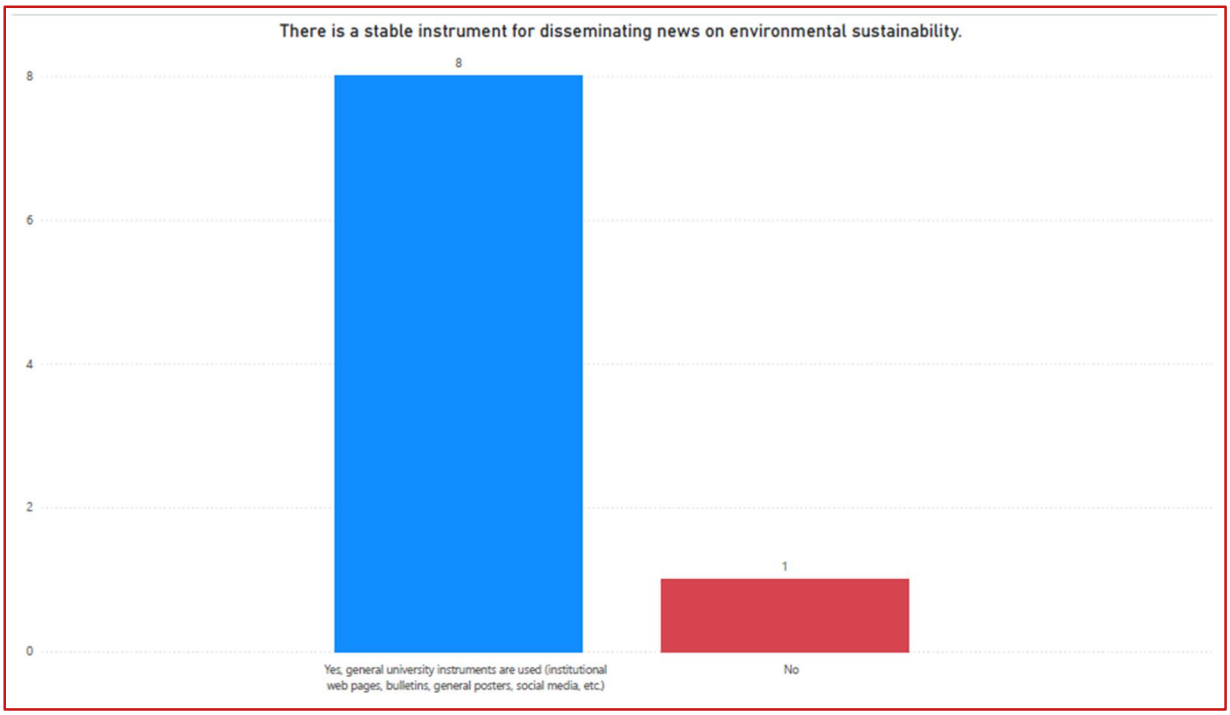
Additionally, at only one partner institution, the planning of environmental sustainability actions does not involve different university groups.

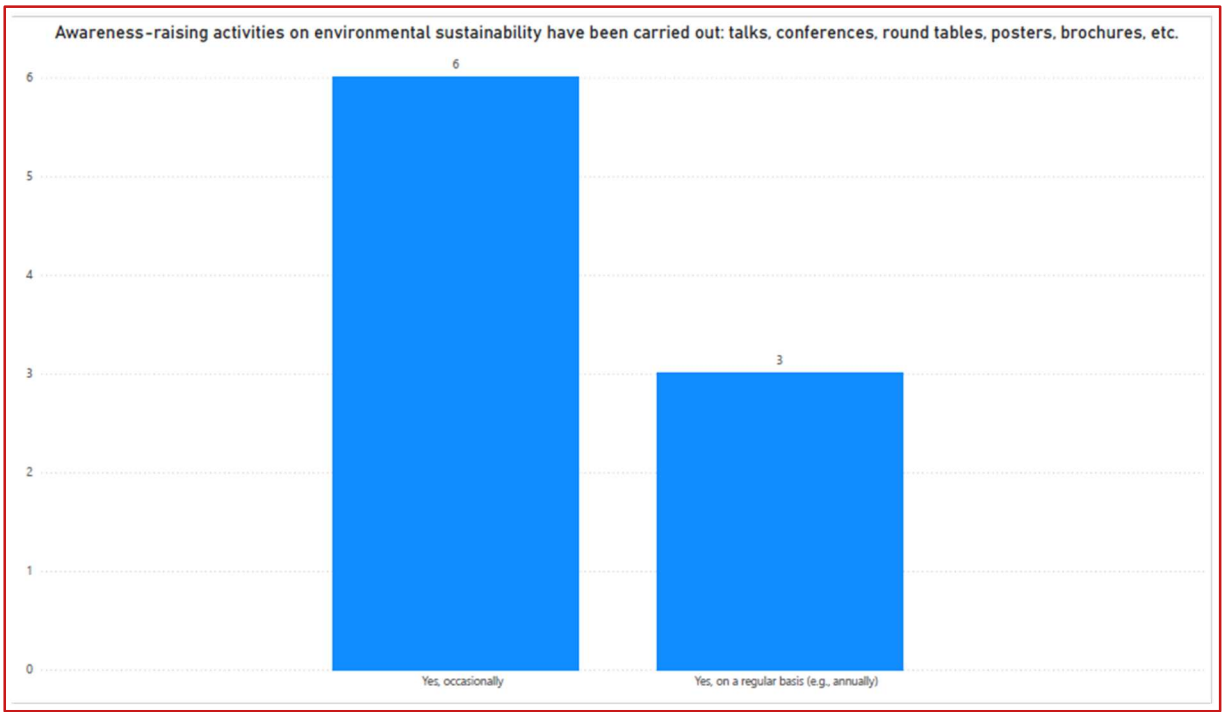
Two partners currently have their action plans awaiting final approval from the governing body.

One institution has already integrated sustainability into its vision, established a sustainability policy, and incorporates sustainability and ecological considerations into relevant processes.

Engagement and Awareness of the Community






Awareness-raising activities on environmental sustainability have been carried out: talks, conferences, round tables, posters, brochures, etc.
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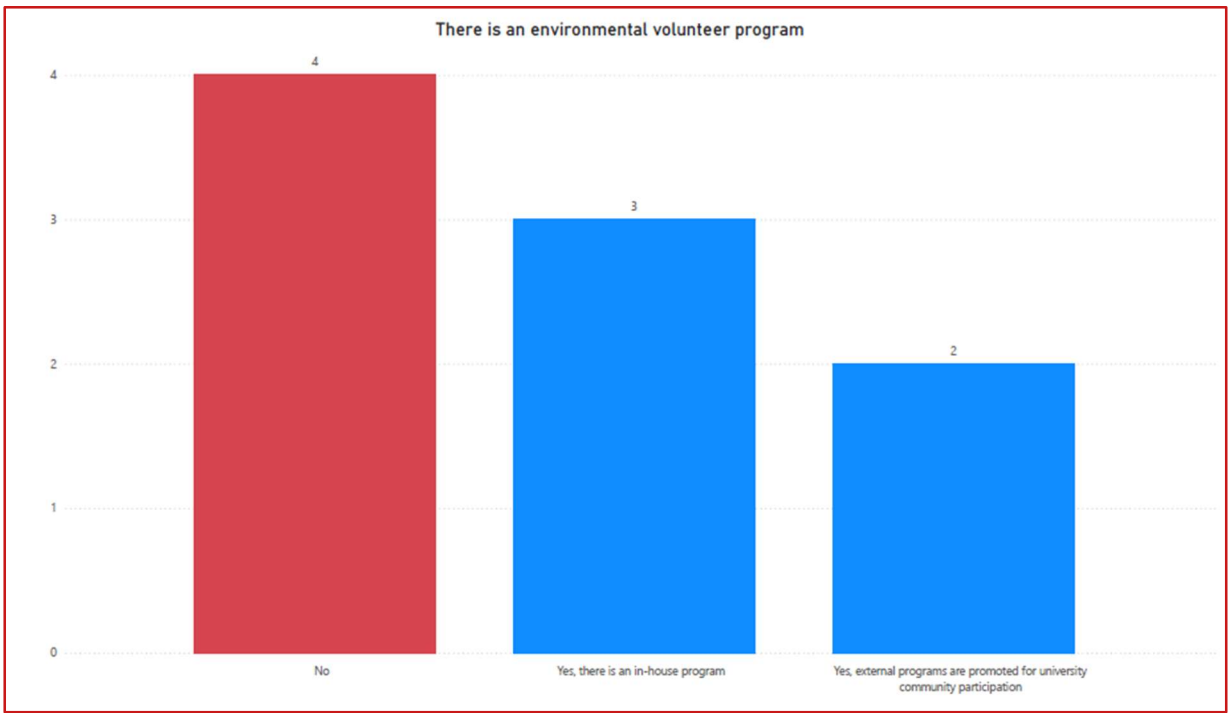
6
Yes, occasionally
Yes, on a regular basis (e.g., annually)


There is an environmental volunteer program
4
3
2
0
1
2
3
4
No
Yes, there is an in-house program
Yes, external programs are promoted for university community participation

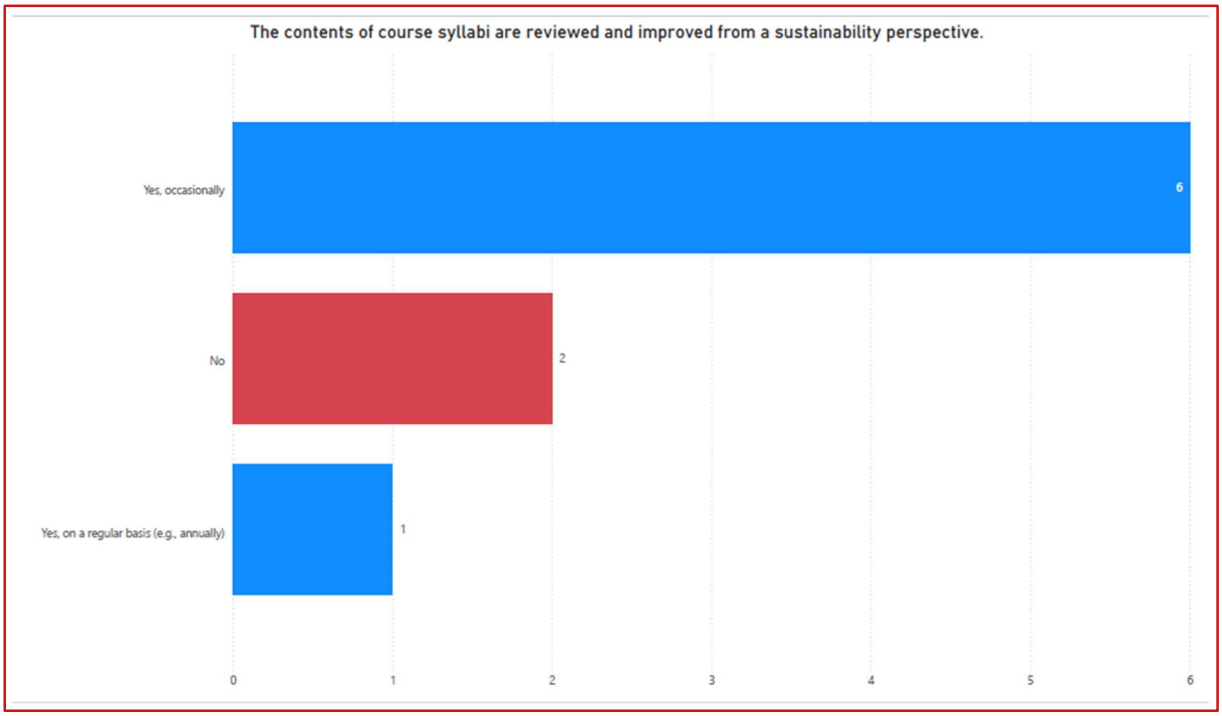
Notes:

Only one partner lacks a stable instrument for disseminating news on environmental sustainability.

All partners reported that awareness-raising activities on environmental sustainability have been carried out, either regularly or occasionally.

Four partners do not have an environmental volunteer program.

Teaching


The contents of course syllabi are reviewed and improved from a sustainability perspective.
Yes, occasionally
6
No
2
Yes, on a regular basis (e.g., annually)
1
0
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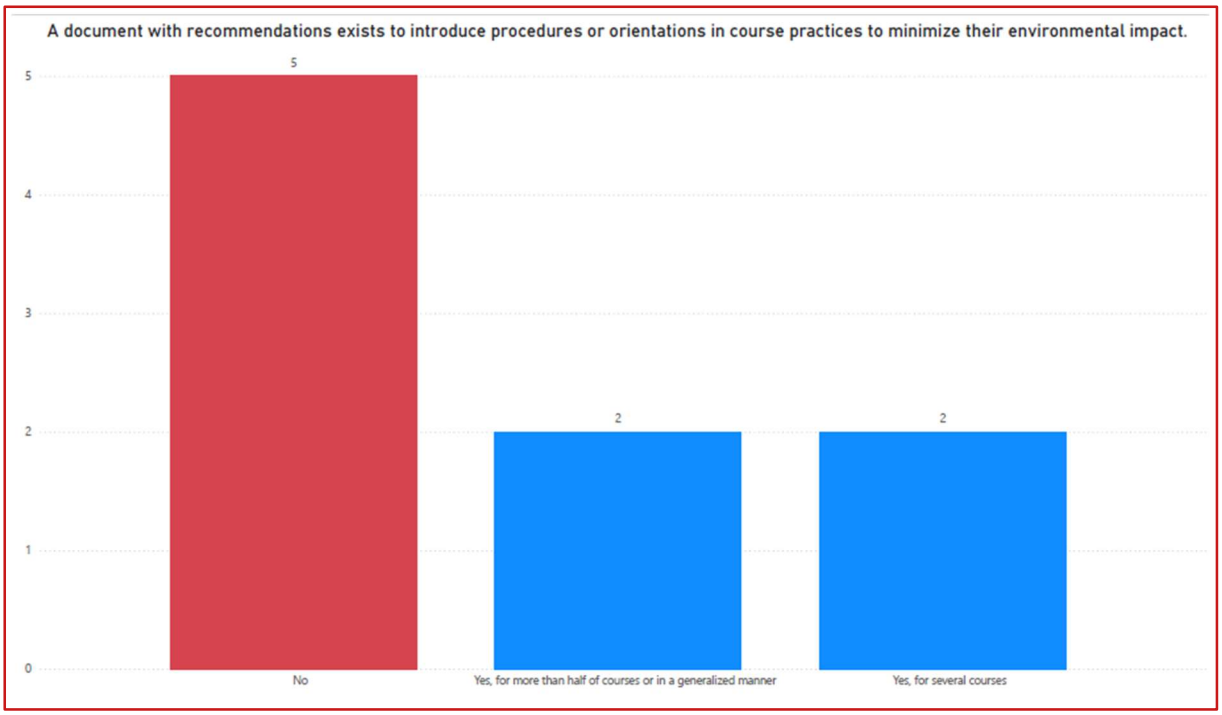
6


A document with recommendations exists to introduce procedures or orientations in course practices to minimize their environmental impact.
5
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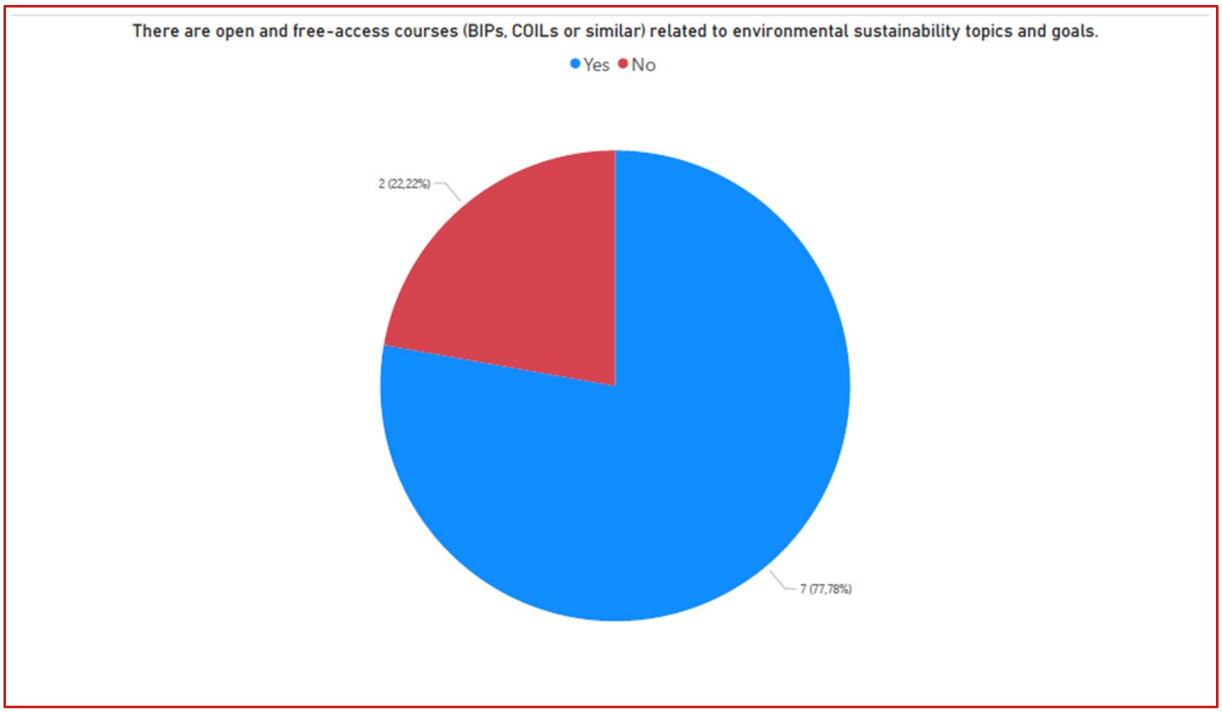
No
Yes, for more than half of courses or in a generalized manner
Yes, for several courses



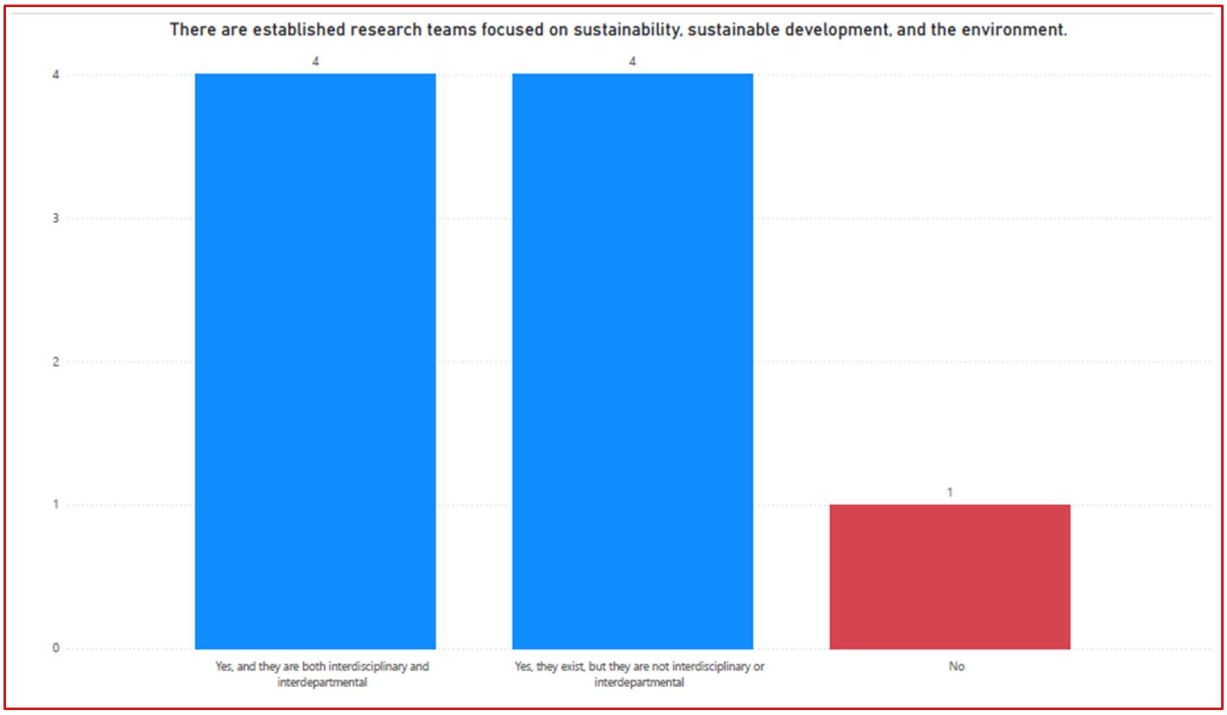
Notes:

Two partners stated that they do not review course syllabi from a sustainability perspective.

Two partners comment that, although they do not have a formal document with recommendations, they provide introductory training for teachers covering the basics of global environmental and social challenges.

Two partners reported that they do not offer open and free-access courses related to environmental sustainability topics and goals.

Research


There are established research teams focused on sustainability, sustainable development, and the environment.
4
4
1
0
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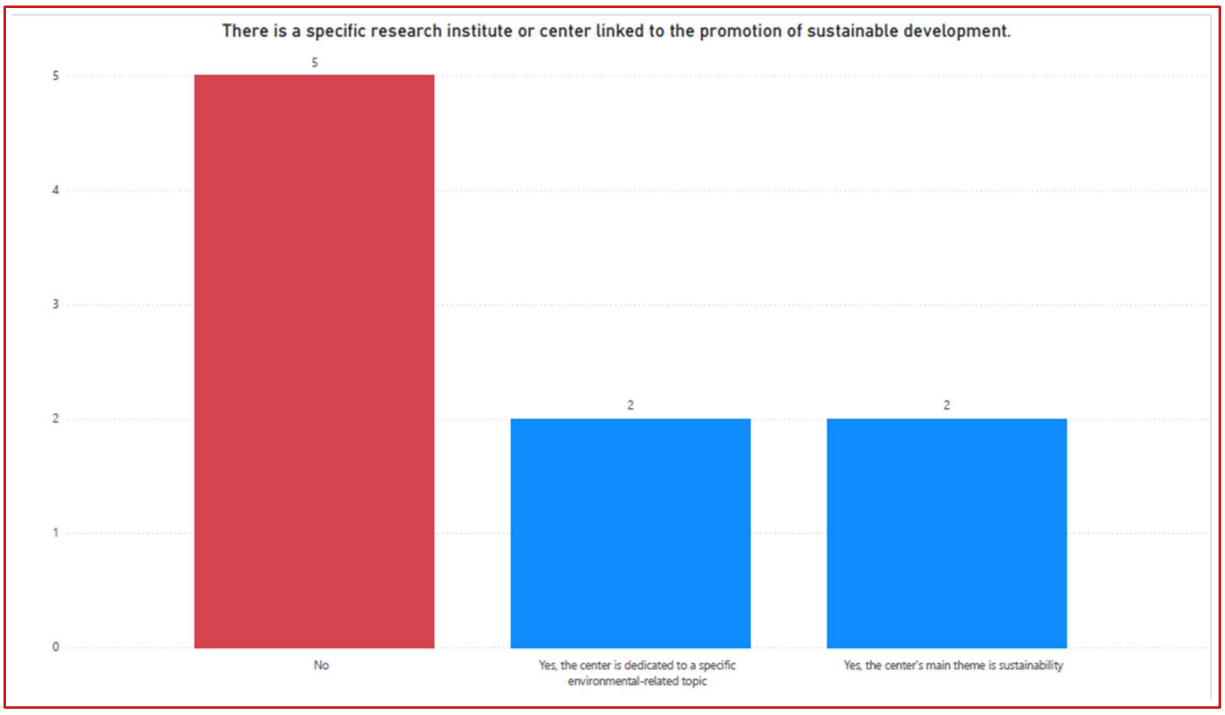
Yes, and they are both interdisciplinary and interdepartmental
Yes, they exist, but they are not interdisciplinary or interdepartmental
No


There is a specific research institute or center linked to the promotion of sustainable development.
5
2
2
0
1
2
3
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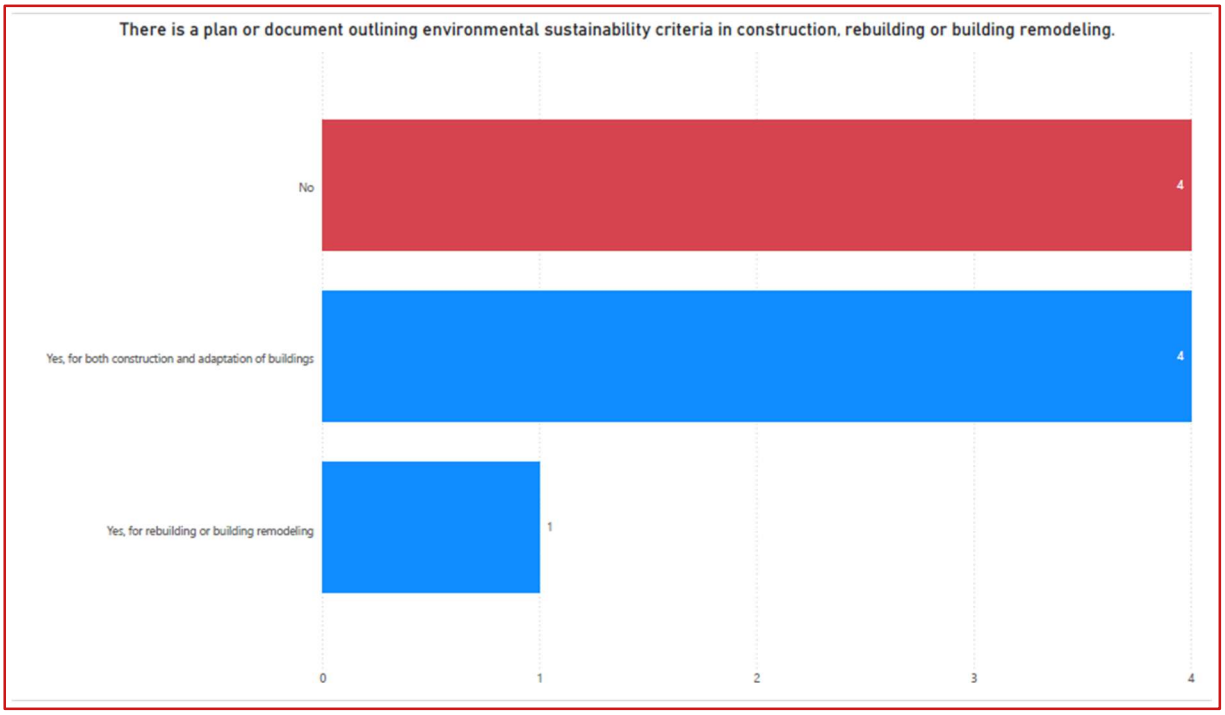
5
No
Yes, the center is dedicated to a specific environmental-related topic
Yes, the center's main theme is sustainability

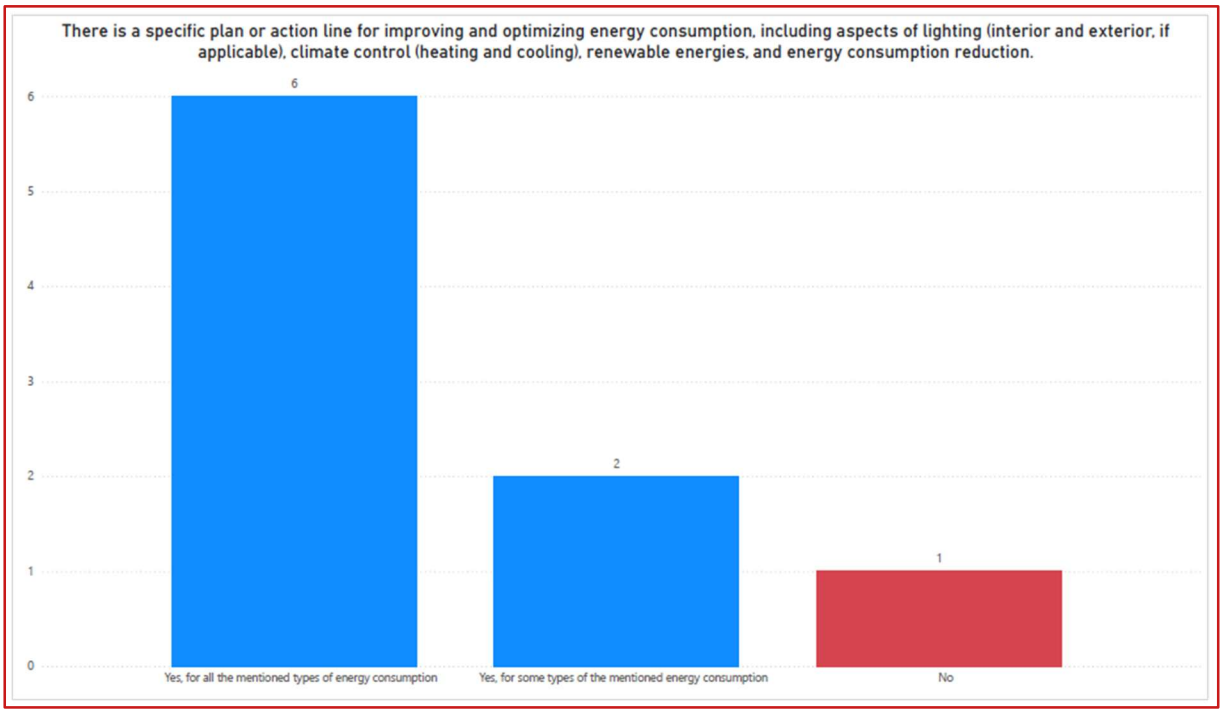
Notes:

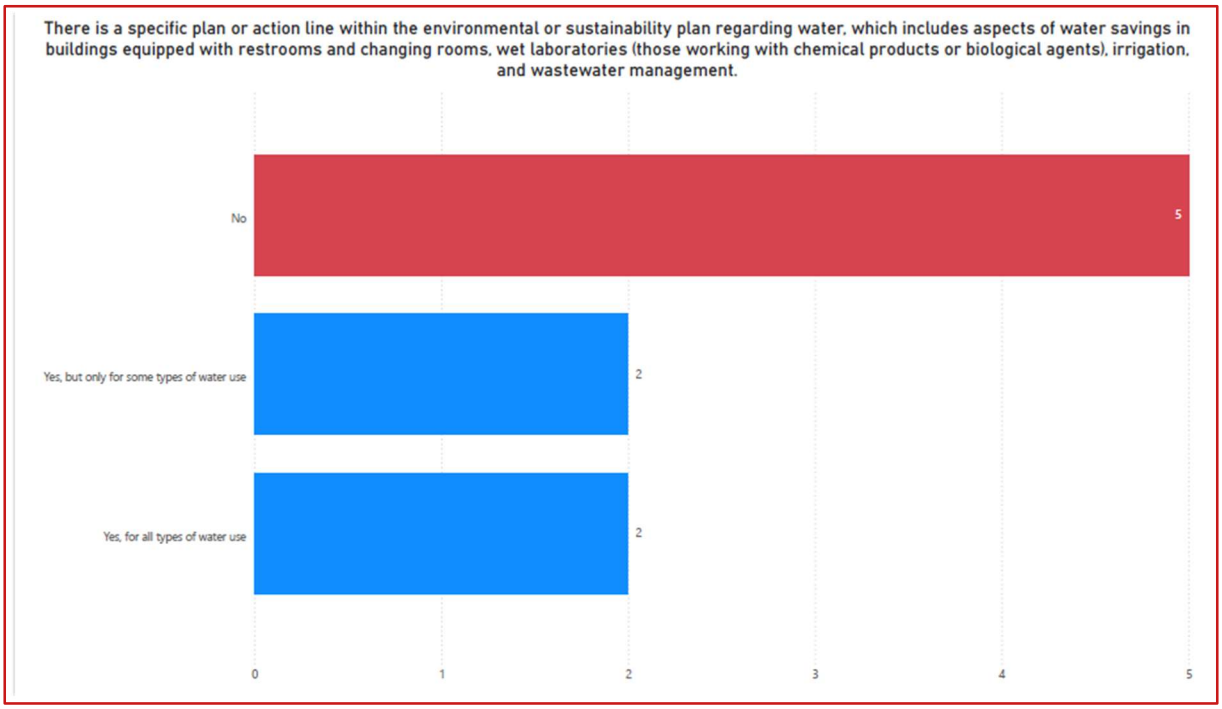
Eight partners have established research teams focused on sustainability, sustainable development, and the environment.

Four institutions within the alliance have a dedicated research institute or centre promoting sustainable development, either focused on a specific environmental topic or with sustainability as its main theme.

Buildings, Urban Planning, Energy and Water







Notes:

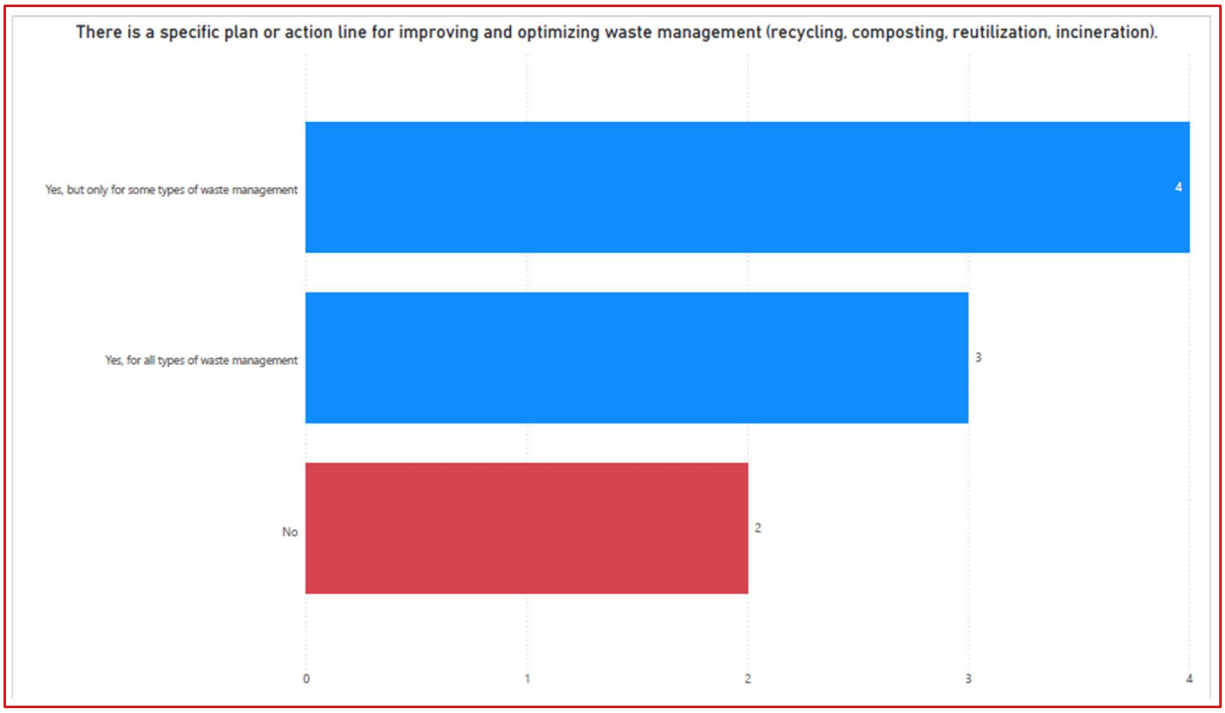
More than 50% of the partners reported having a plan or document outlining environmental sustainability criteria in construction, rebuilding or building remodelling (plus one partner that is currently working on defining such a plan).

Six institutions also have a specific plan or action line for improving and optimising energy consumption, including aspects of lighting, climate control, renewable energies, and energy consumption reduction.

One partner stated that they do not have a specific plan for environmental issues; instead, they use their environmental management system to work systematically with identifying major environmental impacts, formulate polices, goals, guidelines and routines and implement specific actions when needs are identified during the annual PDSA cycle.

Two partners indicated that they have a specific plan or action line within their environmental or sustainability plan regarding water, which includes aspects of water savings in buildings equipped with restrooms and changing rooms, wet laboratories (those working with chemical products or biological agents), irrigation, and wastewater management.

Waste


There is a specific plan or action line for improving and optimizing waste management (recycling, composting, reutilization, incineration).
Yes, but only for some types of waste management
4
Yes, for all types of waste management
3
No
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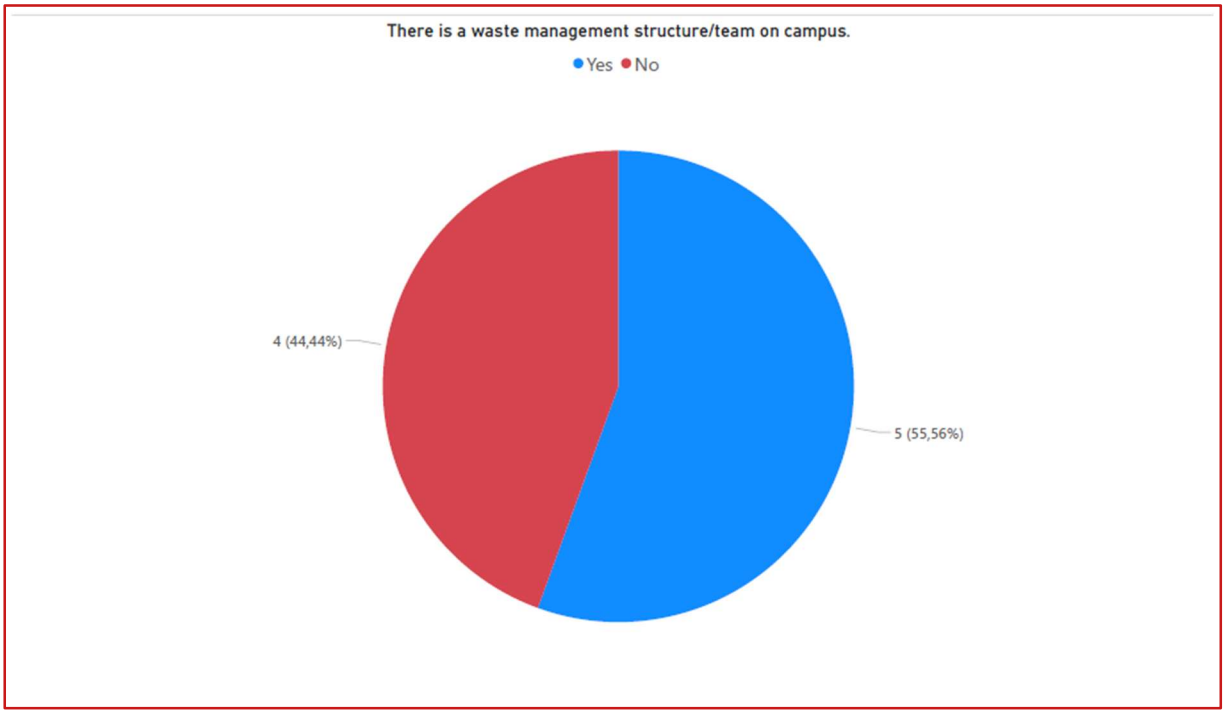
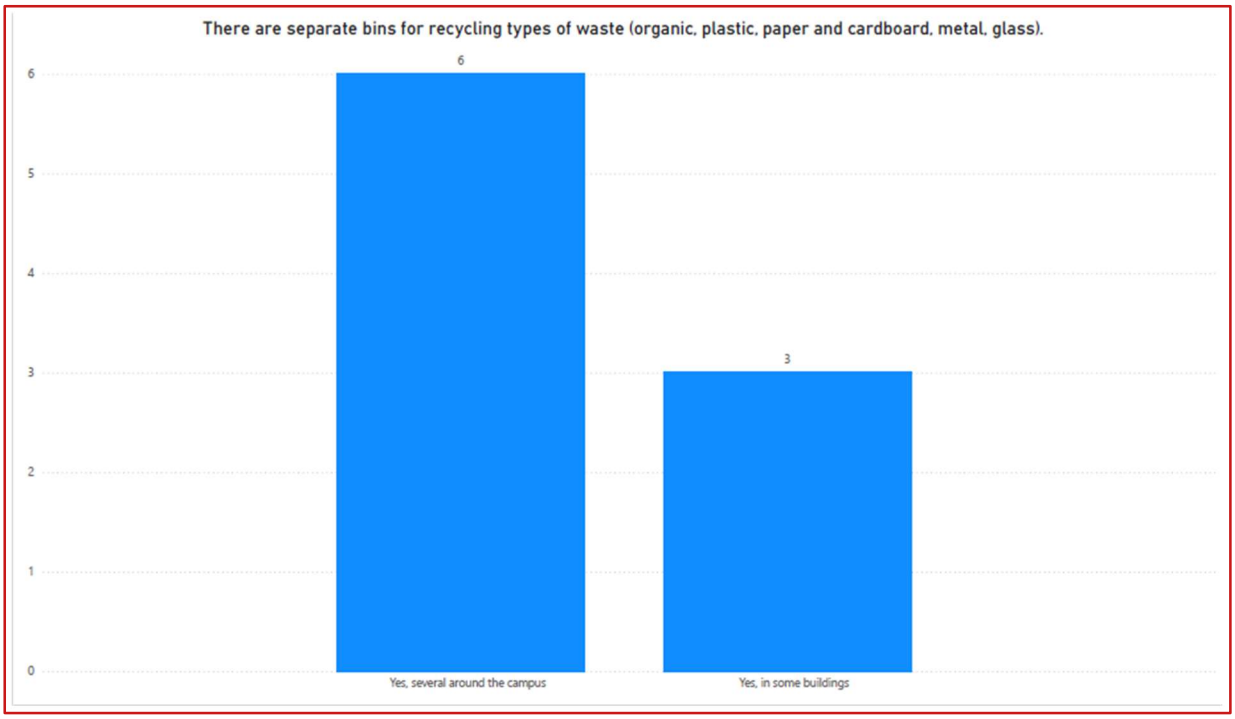
0
1
2
3
4


There is a waste management structure/team on campus.
Yes
No
4 (44,44%)
5 (55,56%)



Notes:

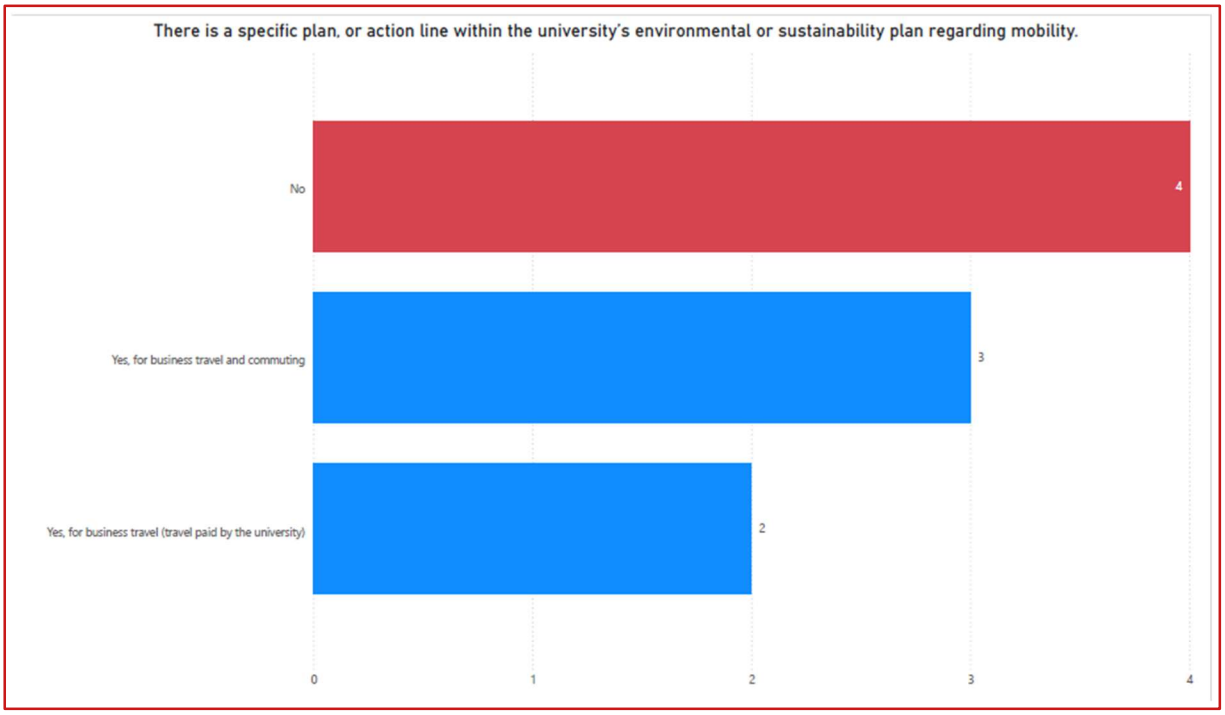
Approximately 78% of the partners reported having a plan, a specific plan or action line for improving and optimising waste management (recycling, composting, reutilization, incineration).

Five institutions have a dedicated waste management structure or team on campus. One partner mentioned not having a centralised waste management team because responsibilities are distributed across faculties and services.

All partners stated that they provide separate bins for recycling types of waste (some only in certain buildings, while others have several bins distributed across the campus).

One partner commented that the institution sets waste management goals and monitors activities and results annually. For 2025, they defined the implementation of a new routine for waste sorting, and for 2026, the challenge is to develop metrics for residual waste.

Mobility


There is a specific plan, or action line within the university's environmental or sustainability plan regarding mobility.
No
4
Yes, for business travel and commuting
3
Yes, for business travel (travel paid by the university)
2
0
1
2
3
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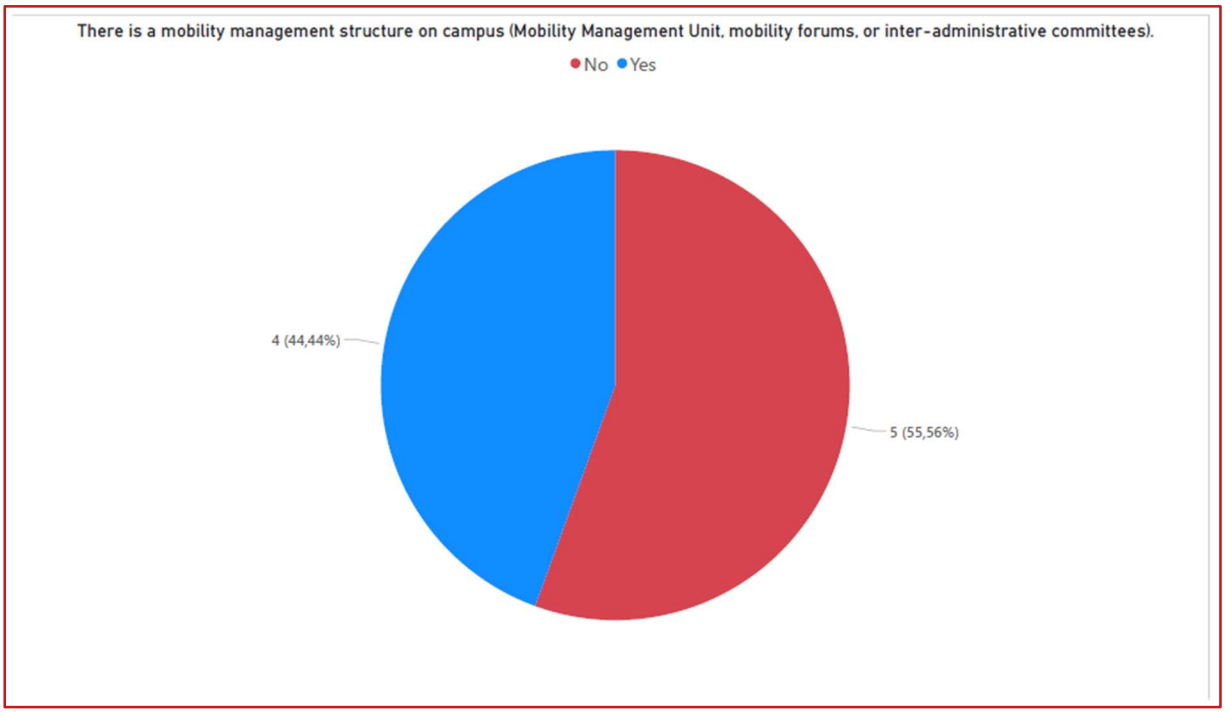
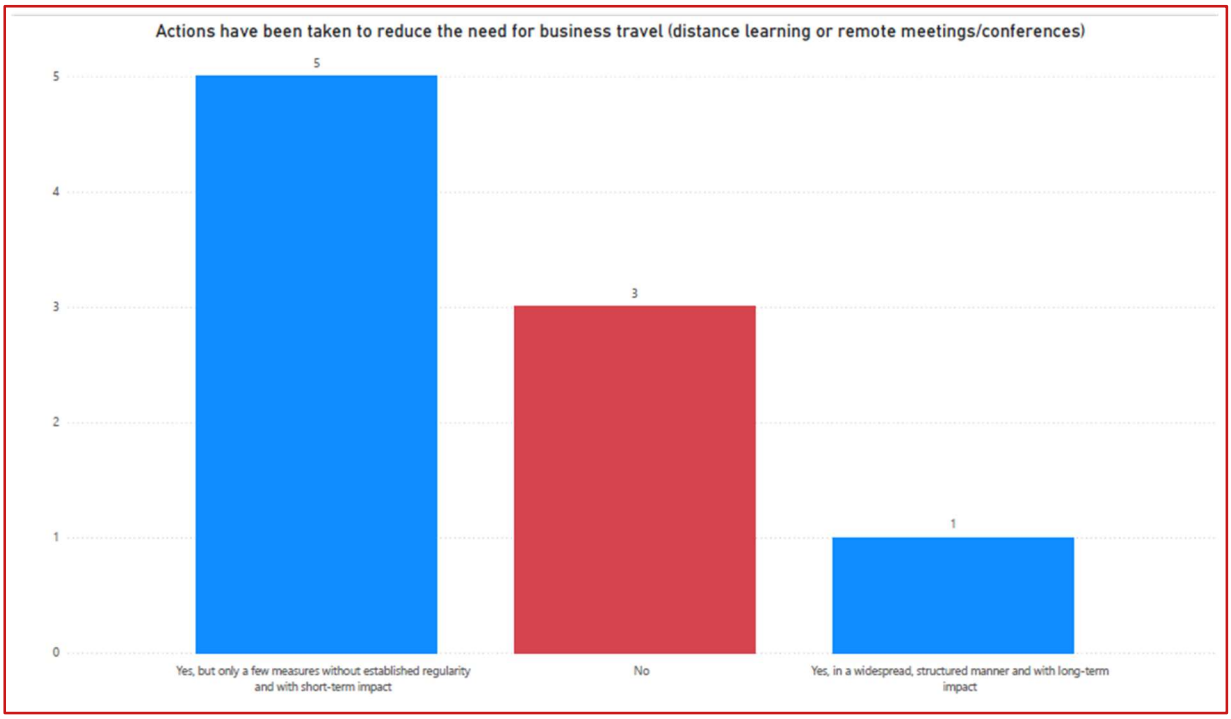

There is a mobility management structure on campus (Mobility Management Unit, mobility forums, or inter-administrative committees).
No
Yes
4 (44,44%)
5 (55,56%)


Actions have been taken to reduce the need for business travel (distance learning or remote meetings/conferences)
5
3
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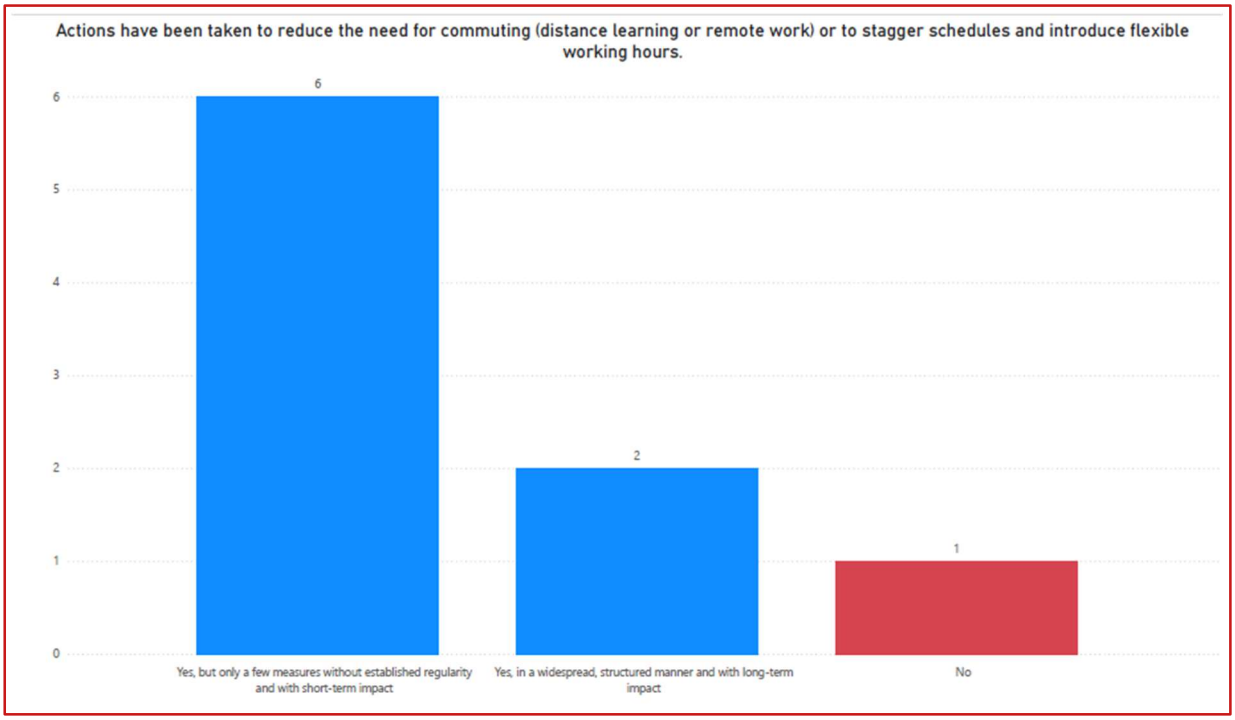
Yes, but only a few measures without established regularity and with short-term impact
No
Yes, in a widespread, structured manner and with long-term impact


Actions have been taken to reduce the need for commuting (distance learning or remote work) or to stagger schedules and introduce flexible working hours.
6
2
1
0
1
2
3
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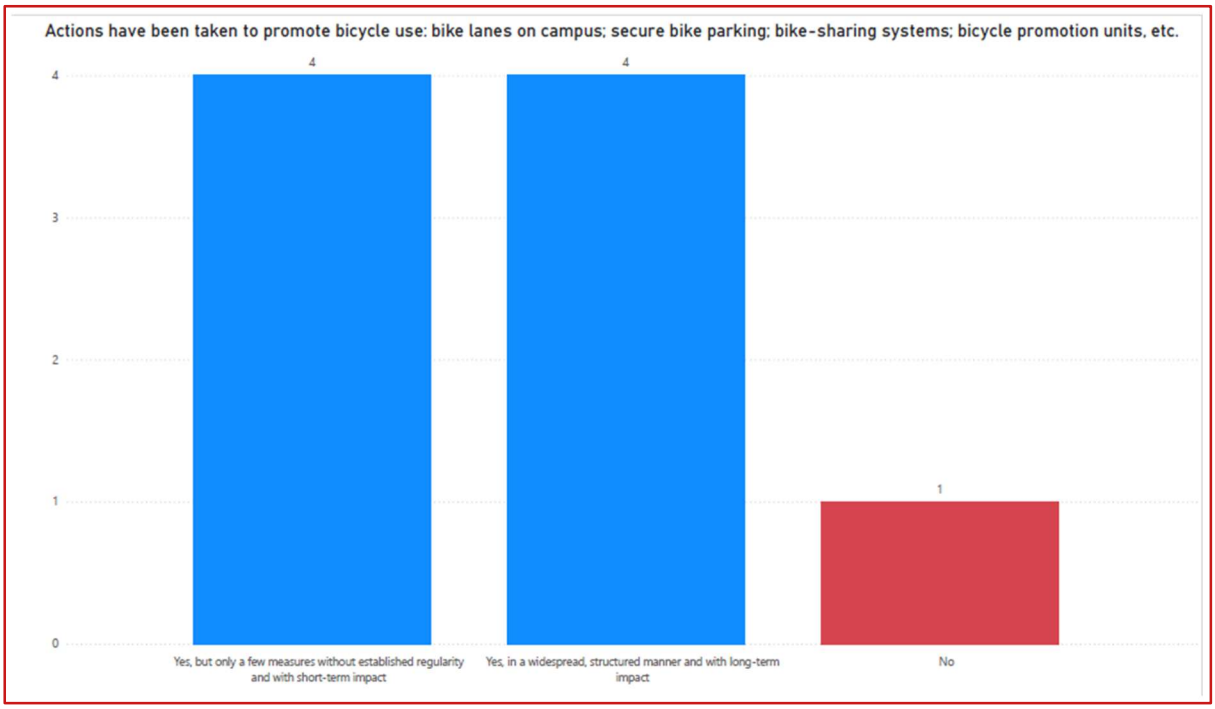
5
6
Yes, but only a few measures without established regularity and with short-term impact
Yes, in a widespread, structured manner and with long-term impact
No



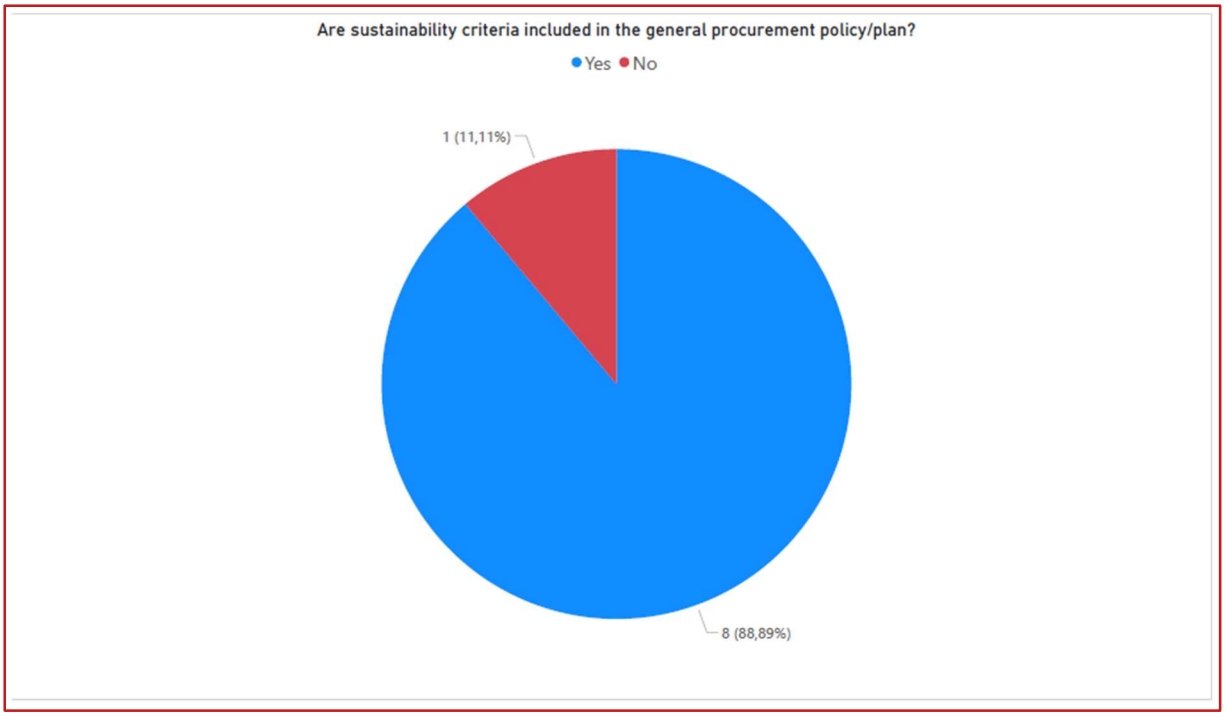
Notes:

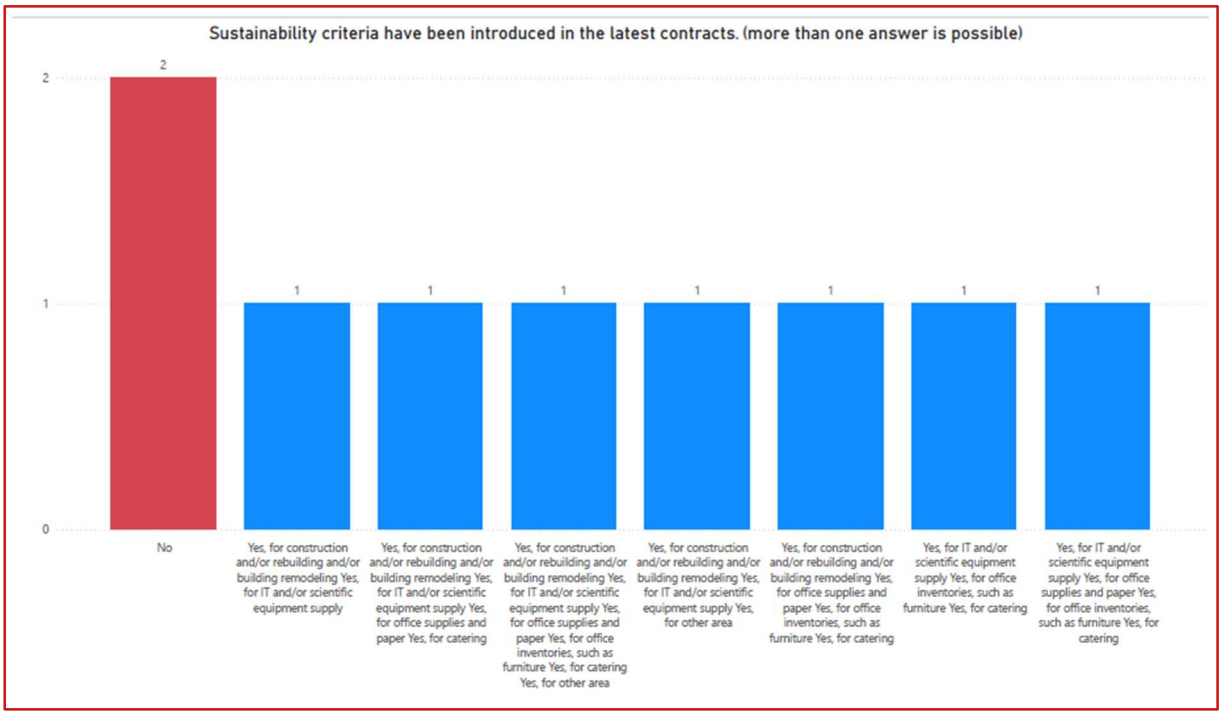
One institution reported having a new policy regarding travel, and therefore, it is now more attractive to commute by bike.

Another partner stated that actions have been implemented, such as changing the rules for business travel, developing checklists to support the decision on travelling, updating the webpage that supports business travel, and establishing an inter-administrative committee for business travel. Opportunities for remote work have also been introduced.

A third university indicated that actions have been taken to promote bicycle use (bike lanes on campus, secure bike parking, and a bikesharing system), and a fourth partner explained that its mobility plan is under development. This plan aims to improve student and staff mobility within and to the campuses. It includes a diagnosis of transportation issues, the setting of goals related to sustainable development, as well as specific actions to enhance mobility.

Green Procurement





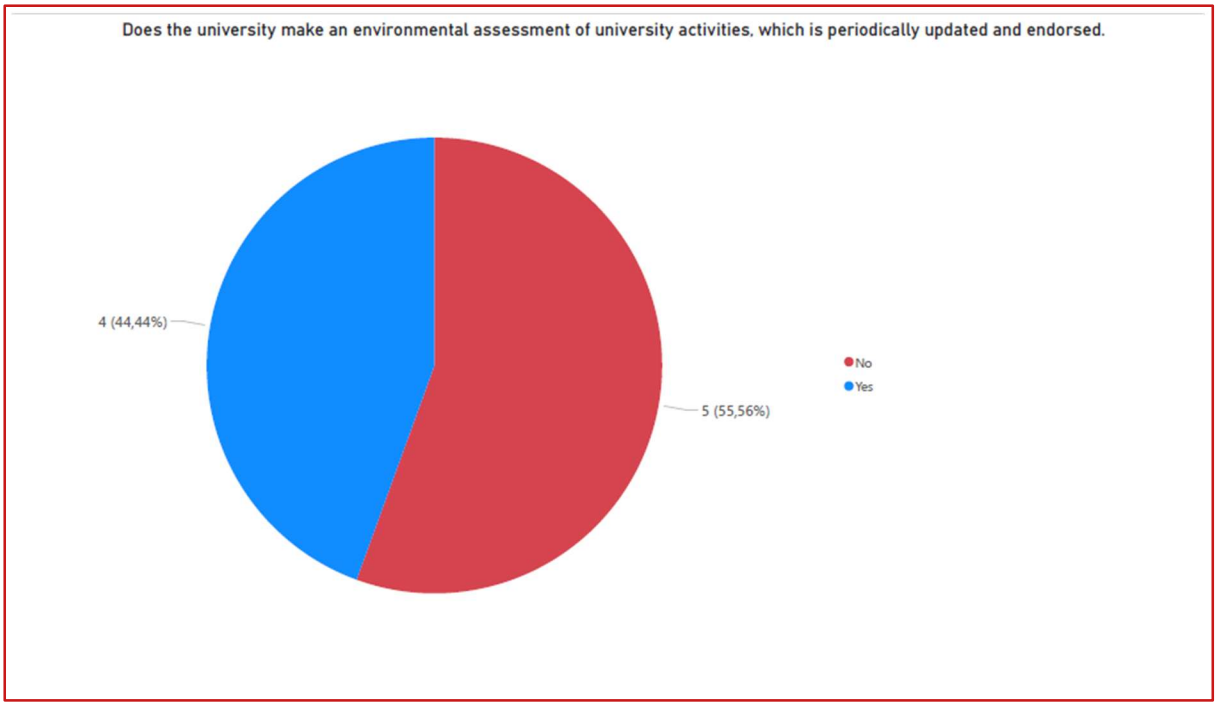
Notes:

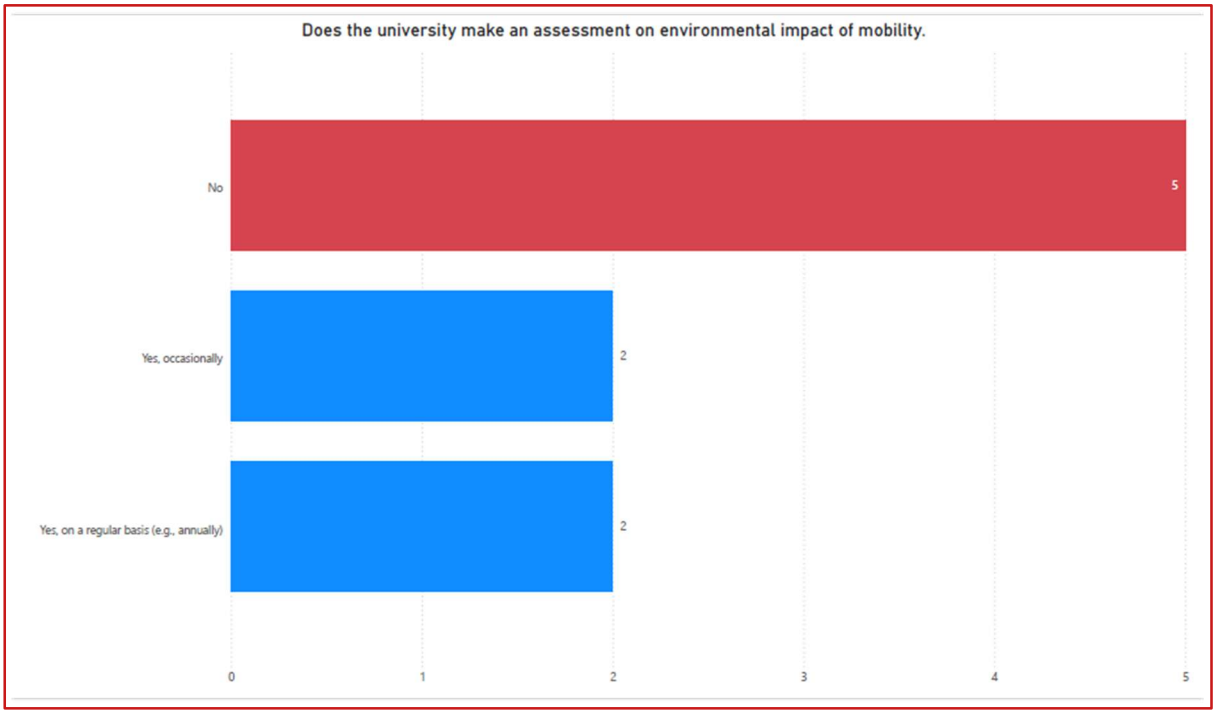
Only one partner acknowledges that its general procurement policy/plan does not include sustainability criteria.

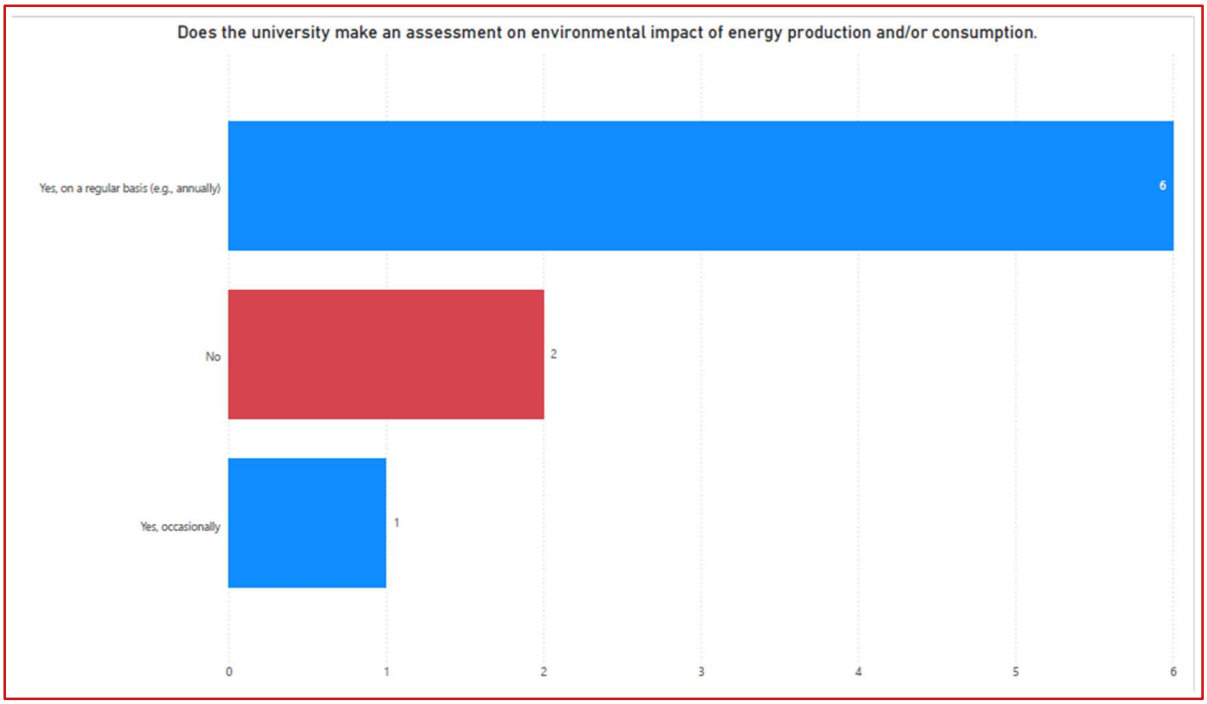
Sustainability criteria have been introduced in the latest contracts by most of the partners:

- Six institutions have introduced sustainability criteria in IT and/or scientific equipment supply.
- Five institutions have introduced sustainability criteria in construction and/or rebuilding and/or building remodelling contracts.
- Five institutions have introduced sustainability criteria in office supplies and paper.
- Five institutions have introduced sustainability criteria in catering contracts.

Environmental Impact of Activities






Does the university make an assessment on environmental impact of energy production and/or consumption.
Yes, on a regular basis (e.g., annually)
6
No
2
Yes, occasionally
1
0
1
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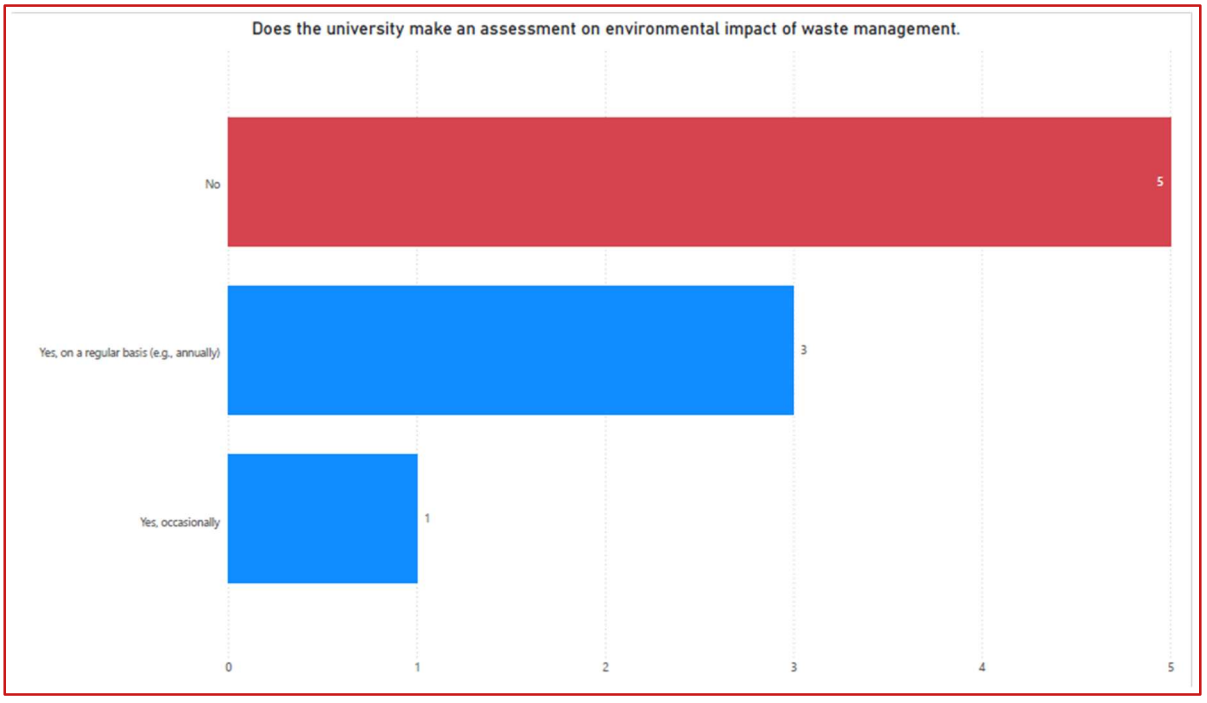
4
5
6


Does the university make an assessment on environmental impact of waste management.
No
5
Yes, on a regular basis (e.g., annually)
3
Yes, occasionally
1
0
1
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3
4
5

Notes:

More than 50% of the partners within the alliance make an environmental assessment of the institution's activities, which is periodically updated and endorsed.

On a regular basis:

- Two institutions assess the environmental impact of mobility.
- Six institutions assess the environmental impact of energy production and/or consumption.
- Three institutions assess the environmental impact of waste management.

One partner explained that any environmental assessment is done through their environmental management system.

3. Green Impact Assessment

At the STARS EU project meeting in Bremen, November 2024, the steering group for WP7 decided which areas to focus on in the Green Impact Assessment. The assessment is delimited by the impacts from campus operations and travel, since the impact from research and education is included in other work packages (WP3, WP4, the TIGs).

The main areas chosen for this assessment are buildings, waste, business travel, and consumption. The reason for choosing these areas is that they are known to have the main environmental impacts for most universities and are relevant for all partner universities in STARS EU. One area which has been excluded is the use of chemicals, mainly because the existence of laboratories with chemicals differs very much between the universities – some have a lot of laboratories using chemicals, while others have very few such laboratories.

During the spring of 2025, a tool for assessment was discussed and developed in the coordinating group for task 7.3. The assessment is both quantitative and qualitative, first an evaluation of the extent of the green impact, and second, an assessment of how the universities currently work with reducing negative and increasing positive environmental impacts from its operations in these areas. The result from the quantitative assessment is preliminary, since some data is still missing and the quality of it will need further corroboration.

3.1 Buildings

The chapter on campus buildings has been prepared in accordance with the concept of sustainable construction, considering measures aimed at reducing the negative impact of buildings on the environment. In addition to the care for the natural environment, expressed in the reduction of energy and water consumption, resource-efficient use of raw materials and waste reduction, recommendations are also made regarding the comfort of the internal environment, i.e. appropriate conditions for building users. An important aspect included in the study is also the mitigation of the effects of climate change, including the reduction of the urban heat island effect, drought, increased surface runoff and flash floods, through measures relating to the building's surroundings, in particular greenery and rainwater management on the university campus.

Issues concerning buildings have been divided into characteristic thematic groups:

a) Energy

The energy consumed by buildings should be reduced. This is in line with the concept of sustainable development and contributes to environmental protection, improved air quality and increased energy security. Reducing the energy consumption of buildings from fossil fuels is facilitated by minimising heat loss through infiltration and ventilation, the use of renewable energy sources, and the use of intelligent building management systems.

The technologies on which future heating and cooling generation will be based are heat pumps, low-temperature heating systems, electric heating and energy-efficient district heating systems linked to cogeneration (using renewable energy sources, waste energy and biofuels). This is driven by the European Union's aim of achieving climate neutrality by 2050. Buildings should be low-energy buildings, entirely from renewable sources or waste heat. They should be equipped with performance monitoring systems, including energy consumption. Existing buildings should undergo deep thermo-modernisation, involving the use of cost-optimal thickness of thermal insulation, replacement of window frames, as well as improving the efficiency of the building's installations, and upgrading the heat source. The optimum insulation thickness should be based on an analysis of investment costs in combination with energy effects, understood as savings in energy consumption as a result of using a certain thickness of insulation. Waterborne central heating systems should be based on low-temperature systems. To minimise energy consumption, devices should be used to monitor and regulate indoor air quality and energy consumption for central heating, DHW, lighting, and the supply of other electrical consumers.

b) WATER

b.1) RAINWATER

The proper management of rainwater is crucial to adaptation to climate change.

The main pillar of action taken is to retain as much rainwater as possible at the point of precipitation. Retaining rainwater brings a number of benefits, including: reducing the load on sewerage and drainage systems, thereby reducing the risk of flooding and waterlogging; using the ground as a natural water reservoir, counteracting the effects of drought and creating favourable conditions for the maintenance and development of green areas; regulating the microclimate in the immediate surroundings; and reducing the migration of pollutants into surface waters. All these factors result in an improved quality of life for people and animals in the area. In turn, human action in the sphere of building infrastructure that allows rainwater to be collected for economic purposes makes it possible to reduce tap water consumption.

b.2) TAP WATER

Saving tap water not only helps to conserve a capturable dynamic water resource but also reduces the energy expenditure for treating the water and pumping it through the water pipe system. It also often reduces the use of coagulants, disinfectants or other substances used in the treatment process. In Poland, saving potable water is additionally encouraged by: low dynamic resources per capita compared to the European average, preferential use of groundwater of good quality for drinking purposes, and the anticipated need to change the structure of water consumption in a way that favours agriculture to a greater extent (resulting from climate change leading to higher average annual air temperature and longer dry periods). The concept of introducing water conservation for drinking water in public buildings was based on the assumption that, to achieve satisfactory environmental results while minimising costs, low-cost and efficient methods of reducing water consumption should first be used wherever possible. Only after this has been achieved should methods with a longer payback time be considered.

c) GREENERY

Greenery in urban plots, in the surroundings of public buildings and integrated with buildings, performs a number of important functions in the urban space: it purifies the air, regulates air and ground humidity, reduces the urban heat island effect through transpiration and shading, helps to retain rainwater, reduces or delays the discharge of water into sewers, reducing peak loads on the sewer network and the risk of flooding, increases infiltration at the site of rainfall, and enhances the biodiversity of urban ecosystems. In the context of climate change, greenery reduces the CO2 content of the air, and by regulating the microclimate and helping with water retention, it has both mitigation and adaptation functions. Greenery is also important for our physical health - air quality, space for movement and recreation, and mental health - reducing stress, tension and fatigue.

The requirements for shaping the green environment of buildings should lead to an increasing environmental resilience for the city. Increasing the environmental quality and comfort of local green zones within urban plots and building surfaces has an important impact on improving the quality of life and health of residents in the wider urban environment as well. To this end, linking green infrastructure measures to sustainable mobility policies and social spaces is key.

Methodology

The proposed methodology for a consortium of nine universities aims to conduct an ecological assessment of campus buildings by combining qualitative assessments and quantitative measurements in a way that allows for comparisons and the formulation of recommendations.

Qualitative assessments aim to provide a detailed estimate of the current energy efficiency of buildings and to identify practices and solutions related to drinking water conservation, rainwater utilisation, increased retention and optimal greening of campuses. In practice, this means a systematic review of both architectural and construction features and technical (partition insulation, window parameters, building tightness, type and condition of heating, cooling and ventilation systems, presence of heat recovery systems, control and automation), as well as operational practices (maintenance schedules, energy saving policies, consumption monitoring, educational programmes for users). In the area of water management, the assessment includes the identification of water-saving solutions (aerators, low-flow fittings, automatic flushing systems), the existence and operation of installations using rainwater or grey water, strategies for irrigating green areas and elements of retention infrastructure (reservoirs, infiltration areas, permeable surfaces). From the point of view of greenery, the following are examined, among other things: the proportion of biologically active areas, tree and shrub plantings, green roofs and walls, elements supporting biodiversity, and solutions mitigating the urban heat island effect.

The inventory data used in the qualitative assessment includes a set of basic technical and functional parameters of the building: usable area and cubic capacity, year of construction and scope of modernisation works, nature of the structure and materials, type of installations (HVAC, DHW, ventilation, control systems), availability and method of utility billing (energy and

water meters, zone sub-meters), average and seasonal number of users, and the purpose of the rooms.

Quantitative measurements provide a basis for comparisons between universities and for formulating precise recommendations — they provide objective, comparable indicators of consumption and environmental pressure. Measurements should include at least: energy consumption in kWh/m²/year, broken down as far as possible into non-renewable primary energy and renewable primary energy (enabling the assessment of the share of RES in the balance), total electricity consumption in kWh/year, electricity distribution flows in the campus network (kWh) to identify points of high consumption and network losses, drinking water consumption in m3/year (data for 2024) and the amount of wastewater discharged in m3/year (2024).

For the credibility of the analyses, each of these measurements should be placed in context: data sources (invoices, main and sub-meters, periodic measurements), billing period (preferably a full calendar year), aggregation method (monthly summation, standardisation of periods) and normalisation method (kWh/m²/year, kWh/person/year, m³/m²/year, m³/person/year). Energy consumption should be broken down into end uses: heating, cooling, DHW, lighting, laboratory/IT equipment, where possible — this enables targeted recommendations. In the absence of direct measurements, it is advisable to use temporary sub-meters or estimates based on consumption profiles and design data.

The results should be presented both as raw values and as standardised indicators, which will enable the identification of areas with the greatest savings potential and the translation of measurements into specific technical and organisational recommendations.

A double approach — combining qualitative and quantitative assessment — significantly increases the chance of selecting optimal measures to improve the energy efficiency of buildings. Qualitative assessment identifies management practices, design deficiencies and opportunities for quick improvements, while quantitative measurements provide hard data that allows for prioritising interventions and estimating savings potential. Together, they enable the precise tailoring of recommendations (technical and organisational), monitoring of post-implementation effects, and reliable comparisons between universities.

Results from qualitative questions

The results of the qualitative assessment indicate significant differences. There is considerable variation in the quality of architectural and construction solutions between the campuses of individual universities, largely related to the age and history of the buildings that comprise them. Older buildings often have poorer thermal insulation, outdated windows and a lack of continuous installation upgrades, while newer buildings or those that have undergone renovation have better thermal parameters and more efficient heating and ventilation systems.

Unfortunately, a common feature of existing buildings is a general lack of modern solutions: it is rare to find high air tightness of partitions forming the external envelope of buildings and mechanical ventilation systems with heat recovery (recuperation). Heat recovery in particular

appears to be underdeveloped. Most universities, including PK, report a lack of implementation in the area of heat recovery from ventilation or wastewater, which indicates significant untapped potential for energy efficiency.

There is almost no coordinated use of rainwater or heat recovery systems from sewage and grey water. The use of aerators and touchless/timed taps varies. IPB, ULL and HV are the leaders here, confirming the comprehensive use of these solutions. MLPU and PK report partial implementation.

Photovoltaic installations and solar collectors are also sporadic and, even when they do exist, they are very few in number, which limits the potential of campuses to reduce primary energy consumption and increase energy self-sufficiency. Several universities use solar energy, but apply different models for its utilisation. The University of La Laguna (ULL) produces 7.1% of its electricity for its own needs (autoconsumption), while MLPU feeds all the energy produced in its PV installations into the grid. University West (HV) covers 0.7% of its demand from its own PV sources.

In addition, only in a very small number of cases on individual campuses are BMS systems used to optimise the automatic control of various building systems. Marie and Louis Pasteur University (UMLP) stands out in this category, reporting a 29% reduction in heat energy consumption and a 7% reduction in electricity consumption thanks to the use of advanced BMS systems.

There are very few solutions for saving drinking water — no aerator fittings, grey water recovery systems or systematic consumption reduction programmes. In practice, there is an almost complete lack of use of rainwater for irrigation or toilet flushing, as well as a lack of renewable energy sources used to heat domestic hot water (solar collectors, integrated PV-DHW systems). Meanwhile, such solutions are now standard recommendations in the design of new buildings and are effective means of reducing resource consumption and emissions.

Results from quantitative questions

Understanding the scale of each university's operations – including its size, number of staff and students – is essential for the proper interpretation of sustainability indicators. This data allows for the relativisation of results, such as energy consumption, and enables more reliable comparisons between institutions of different sizes.

Table 2 - Quantitative questions

University	Reference year	Building Area (m²)	Number of employees (FTE)	Number of students (FTE)
Aleksandër Moisiu University of Durrës (UAMD)	2024	21 242	432	16 519
Bragança Polytechnic University (IPB)	2024	86 122	1 100	10 119
Bremen University of Applied Sciences (HSB)	2024	No data	No data	No data
Cracow University of Technology (PK)	2024	88 852	1 942	11 279
Hanze University of Applied Sciences (Hanze)	2024	169 013	2 661	27 417
Silesian University in Opava (SUO)	2024	63 673	627	6 620
University of La Laguna (ULL)	2024	199 256	1 105	20 595
University Marie and Louis Pasteur (UMLP)	2024	210 000	2 500	30 000
University West (HV)	2024	37 002	605	5 600

The operational scale of the universities varies dramatically, from the compact University West campus serving 5,600 students to the extensive UMLP infrastructure for 30,000 people, which is a key factor to consider when normalising performance indicators. The above summary provides a starting point for a detailed analysis of the first thematic area: building and energy efficiency management.

Building infrastructure management is the foundation of any university's decarbonisation strategy, as it is one of the main sources of direct emissions and operating costs. This section assesses key energy and water consumption indicators to identify efficiency leaders and evaluate the degree of implementation of key green technologies on the alliance's campuses.

Table 3 – Summary of the most important quantitative data, allowing for a comparison of the results of individual institutions in terms of energy and water management

University	Total Heat Consumption (kW/year)	Percentage share of RES in energy consumption	Total Electrical Energy Consumption (kWh/year)	Water Consumption (m^3/year)
Aleksandër Moisiu University of Durrës (UAMD)	ND	N/A	968 640	24 526
Bragança Polytechnic University (IPB)	ND	99%	30 934 932	8 508
Cracow University of Technology (PK)	12 466 750	0%	7 753 565	110 051
Hanze University of Applied Sciences (Hanze)	13 280 805	ND	8 232 785	34 089
Silesian University in Opava (SUO)	4 468 100	N/A	1 508 850	ND
University of La Laguna (ULL)	ND	7%	9 618 050	83 366
University Marie and Louis Pasteur (UMLP)	16 342 376	49%	11 544 328	29 530
University West (HV)	1 490 506	99%	2 716 068	6 666

Table 4 - Consumption Indicators Normalised per 1 m2 of Building Area

University	Building Area (*m2*)	Heat Consumption (kW/m^2)	Electrical Energy Consumption (kWh/m^2)	Water Consumption (m^3/m^2)
Aleksandër Moisiu University of Durrës (UAMD)	21 242	N/A	46	1,16
Bragança Polytechnic University (IPB)	86 122	N/A	359	0,10
Cracow University of Technology (PK)	88 852	140	87	1,24
Hanze University of Applied Sciences (Hanze)	169 013	78	49	0.20
Silesian University in Opava (SUO)	63 673	70	24	N/A
University of La Laguna (ULL)	199 256	N/A	48	0,42
Marie and Louis Pasteur University (UMLP)	210 000	78	55	0,22
University West (HV)	37 002	40	73	0,18

The results of the quantitative assessment of heat energy consumption indicate significant differences between individual universities. Per 1 m² of usable floor space, on the one hand we have University West in Sweden, located in the coldest climate zone of all nine universities, with an efficiency of 40 kW/m²/year, 99% of which comes from renewable sources, and on the other hand, the Cracow University of Technology (CUT) in Poland, located in a temperate climate zone, where heat energy consumption is as high as 140 kW/m²/year, and worse still, 99% of this comes from non-renewable sources (a municipal heating network based on a coal-fired boiler room and natural gas supply for one building). The remaining universities oscillate between these two extremes, at an acceptable level of energy efficiency for existing buildings that are not the newest or most modern in terms of energy efficiency.

Electricity consumption is much more balanced than heat demand, ranging from 35 kWh/m²/year for the Polytechnic Institute of Bragança (IPB), through 45 kWh/m²/year for Aleksandër Moisiu University of Durrës (UAMD), 73 kWh/m²/year for University West (HV), to 87 kWh/m²/year for Cracow University of Technology (PK). The variation in electricity demand between universities is relatively small; the differences observed seem to result mainly from the different number and type of devices installed on individual campuses (laboratory equipment, servers, HVAC systems, etc.). Modern lighting installations in academic institutions have generally switched to energy-efficient sources everywhere, so traditional incandescent bulbs are no longer a problem in terms of electricity consumption. Electricity consumption can also be related to the total number of staff and students by calculating the demand per person, but this does not change the conclusions from the above calculation for 1 m² of usable floor space - 269 kWh/person/year for the Polytechnic Institute of Bragança (IPB), 437 kWh/person/year for the University West (HV), 586 kWh/person/year for Cracow University of Technology (PK)

The variation in tap water consumption and, consequently, the volume of wastewater discharged varies within a relatively small range, which can be explained by the similar demand for toilets and washbasins per person and the variation resulting from the possible demand for water in canteen kitchens, if any, and to a lesser extent the demand in specialised laboratories (e.g. in the chemistry department).

Main recommendations

Main recommendations, implications for work within the alliance

- Reducing the energy demand of buildings;
- Increasing the share of heating systems using renewable energy sources;
- Increasing the use of thermal energy stores;
- Using modern solutions on a wider scale to protect against excessive insolation;
- Ensuring the comfort of the indoor environment in buildings;
- Proper management of rainwater (primarily through blue-green infrastructure solutions, due to their high effectiveness in adapting to climate change);
- Reducing the consumption of water to meet drinking water parameters in buildings;

- Using greenery and nature-based solutions in the building environment and integrated into the building;
- Increasing the proportion of the plot's biologically active area on native land, especially with meadow greens and shrubs;
- Disseminating green parking, shelters and sustainable mobility infrastructure;
- Increasing the accessibility of public, pedestrian and multi-purpose semi-public spaces of urban plots;
- Using materials and processes with a low carbon footprint;
- Increasing the share of recycled and recyclable materials in the construction of new public buildings;
- Using material solutions with environmental declarations;
- Allowing the free flow of air in the building environment through the preservation of air corridors;
- Paying particular attention to the possible need for studies, feasibility studies, legal analyses and analyses of potential risks, in relation to preparatory activities undertaken for construction projects;
- Visible information, education and environmental promotion activities.

The Santa Apolónia campus of the Polytechnic Institute of Bragança developed a smart microgrid that integrates multiple renewable energy sources—such as photovoltaic panels, wind turbines, pico-hydro systems, and biodiesel units. This system operates in both grid-connected and islanded modes, enhancing resilience and sustainability while serving as a real-world educational and research platform. It incorporates advanced energy management, electric vehicle charging, and bidirectional power converters to enable Grid-to-Vehicle (G2V) and Vehicle-to-Grid (V2G) functionalities, reducing carbon emissions and promoting innovation in distributed generation and storage.

3.2 Waste

Managing waste in universities is crucial to shaping a culture of sustainability, as internal practices will influence students' and future professionals' behaviour. Universities generate a wide range of waste categories, from everyday unsorted waste to hazardous lab materials and old electronics. Without a clear plan, this can lead to pollution, health risks, and unnecessary costs. Good waste management means having clear policies, proper bins, and procedures to ensure practices like recycling, composting and safe disposal. It also creates learning opportunities that promote sustainable practices by students and staff. Beyond the campus, universities can lead by example, showing how to reduce waste, cut carbon emissions, and embrace circular economy principles. Overall, waste management helps protect the environment, reduces resource consumption, and promotes a shared responsibility.

Waste refers to any material or substance discarded after its primary use, requiring proper management to avoid environmental and health impacts. Within institutional contexts, waste is classified into several streams based on its origin and characteristics. General or residual waste includes non-recyclable materials that typically end up in landfills or incineration. Hazardous waste comprises substances that pose risks due to chemical, biological, or physical properties, such as laboratory chemicals or medical waste, and demand specialised handling. Organic waste consists of biodegradable materials like food scraps and garden waste, collected separately, which can be composted or processed through anaerobic digestion. Packaging waste covers materials used for wrapping or protecting goods, including plastics, paper, cardboard, metals, and glass, often targeted for recycling. Electronic waste (e-waste) refers to discarded electrical and electronic equipment, which contains both valuable components and hazardous substances, requiring certified recycling processes. Construction and demolition waste originates from building activities and includes concrete, wood, metals, and glass, which are often recyclable but need sorting. Other specialised streams include medical waste from healthcare activities, industrial waste from manufacturing processes, and bulky waste such as furniture or large appliances. Understanding these categories is essential for designing effective waste management strategies that prioritise circular economy, including action to promote reduction, reuse, recycling, and safe disposal.

Methodology

The waste management assessment process combines quantitative and qualitative evaluations to measure and improve campus sustainability.

The qualitative questions focus on the existence and implementation of waste management practices in STARS EU Universities. They address whether there is a formal waste management policy, a designated officer or team, and the availability and clarity of labelled bins for different waste types in accessible locations. The questions also explore infrastructure for composting, hazardous waste handling, and recycling, including accepted materials, e-waste management, and monitoring compliance. Additional aspects include initiatives to reduce single-use plastics, promote digital alternatives, provide refillable water stations, and

restrict plastic items. Engagement and education are considered through awareness campaigns, training, workshops, student-led initiatives, and waste audits. Operational practices such as food waste separation, composting, donation of leftovers, and use of compost products are assessed, along with the repair or recycling of electronics. Finally, governance and transparency are examined through data recording, reduction targets, public reporting, penalties for non-compliance, budget allocation, external services, and cost monitoring.

Since May 2019, all Hanze UAS buildings have been equipped with strong cardboard bins for four different types of waste. The paper section (marked 'paper') is recognisable by its slot. The bins for plastic and tins and cans (marked 'plastics') have a large round opening, which is also found on the ones for residual waste (and also marked 'residual waste'). The fourth type of bin has four round openings and is intended for cardboard cups (marked 'cups').

Quantitatively, the indicators cover diverse fields including waste generation, management, and environmental impact. Waste generation includes total waste and per capita estimates, calculated by dividing total waste by campus population. Waste is categorised into unsorted, hazardous, packaging, organic, e-waste, construction and demolition, and other specific streams, all measured in tons. Management indicators track amounts sent for recycling, composting, reuse, incineration with energy recovery, and other valorisation options, along with total valorised waste. Corresponding percentages show the share of each option and the overall valorisation rate. Environmental impact is assessed through the carbon footprint of waste (CO_2e/year), based on national emission factors. Finally, safety is monitored via the hazardous waste proper disposal rate, ensuring compliance with mandatory records.

Table 5 – Waste Management Quantitative Assessment Indicators

Indicator	Purpose and Method
Total Waste Generated* (tons/year)	Measures the total amount of waste produced on campus *Methods*: Internal accounting or estimates by sampling and surveys
Waste Generation Per Capita (kg/person/year)	Derivative of the previous, I can easily acknowledge from an individual point of view. Total Waste (kg)÷Total Campus Population
Unsorted Waste (Ton)	Amount of unsorted waste
Hazardous Waste Production (Ton)	Amount of such waste categories
Packaging Waste Production (Ton)	Amount of such waste categories
Organic Waste Production (Ton)	Amount of such waste categories
E-Waste Production (Ton)	Amount of such waste categories
Construction and Demolition Waste (Ton)	Amount of such waste categories
…. Production (Ton)	Add additional categories if needed
Waste sent for Recycling (Ton)	Amount sent for management. When sent for Municipal waste management the output fractions may be considered
Waste Sent for Composting (Ton)	Amount sent for management. When sent for Municipal waste management the output fractions may be considered
Waste sent for Reused (Ton)	Amount sent for management. When sent for Municipal waste management the output fractions may be considered
Waste sent for Incineration with Energy production (Ton)	Amount sent for management. When sent for Municipal waste management the output fractions may be considered
Other waste valorisation option	Amount sent for management. When sent for Municipal waste management the output fractions may be considered
Total Waste Valorisation (Ton)	Amount sent for management. When sent for Municipal waste management the output fractions may be considered
% of Waste sent for Recycling	Fraction from the total amount of waste sent for valorisation
% of Waste Sent for Composting	Fraction from the total amount of waste sent for valorisation
% of Waste sent for Reused	Fraction from the total amount of waste sent for valorisation
% Waste sent for Incineration with Energy production (Ton)	Fraction from the total amount of waste sent for valorisation
% Other waste valorisation option	Fraction from the total amount of waste sent for valorisation
% of waste Valorisation	Sum of percentages
Carbon Footprint of Waste (CO_2e/year)	GHG emissions estimates *Methods*: Estimates based on emission factors. - Depends on national methods
Hazardous Waste Proper Disposal Rate (%)	Percentage of hazardous waste (chemicals, medical waste) disposed of safely. *Methods*: Internal mandatory records

The qualitative questions focus on the existence and implementation of waste management practices in STARS EU Universities. They address whether there is a formal waste management policy, a designated officer or team, and the availability and clarity of labelled bins for different waste types in accessible locations. The questions also explore infrastructure for composting, hazardous waste handling, and recycling, including accepted materials, e-waste management, and monitoring compliance. Additional aspects include initiatives to reduce single-use plastics, promote digital alternatives, provide refillable water stations, and restrict plastic items. Engagement and education are considered through awareness campaigns, training, workshops, student-led initiatives, and waste audits. Operational practices such as food waste separation, composting, donation of leftovers, and use of compost products are assessed, along with the repair or recycling of electronics. Finally, governance and transparency are examined through data recording, reduction targets, public reporting, penalties for non-compliance, budget allocation, external services, and cost monitoring.

Results from qualitative questions

The qualitative assessment, supported by institutional data from eight STARS EU Universities, reveals significant variability in waste management practices. Only Hanze University have formal waste management policies and designated teams, while most institutions operate without specific policies. Waste separation infrastructure is generally present, but labelling and placement are inconsistent, and in some cases, operational aspects need improvement, including waste segregation practices. Composting facilities are absent across all campuses, and food waste is often treated as general waste, with only isolated practices such as animal feeding or external municipal composting.

E-waste handling is more structured in universities with IT service contracts (e.g., University West), though designated disposal areas are rare, and repair practices are limited to warranty cases. Recycling bins are widely available, but accepted materials and labelling vary, and awareness campaigns are scarce, with only a few institutions reporting active initiatives. Compliance monitoring is mostly delegated to contractors or municipalities, with limited internal audits.

Waste reduction strategies, such as digitalisation and restrictions on single-use plastics, are unevenly implemented. While some universities promote digital alternatives and have guidelines for reducing plastics, others lack formal bans or infrastructure like refillable water stations. Community engagement is minimal, with few student-led initiatives, workshops, or involvement in waste audits, despite occasional participation in sustainability events.

Dining services show partial efforts toward sustainability, including reusable utensils and adjustable portions in some institutions, but food donation and on-site composting remain rare. Monitoring and reporting practices are inconsistent: only a few universities record waste data or set reduction targets, and public disclosure is uncommon. Budgeting for waste management is often informal, with costs absorbed into general operations and reliance on municipal services without dedicated oversight. Overall, the findings highlight the need for cohesive

policies, infrastructure upgrades, compliance monitoring, and stronger community involvement to advance campus sustainability.

Results from quantitative indicators

The analysis of waste generation across six of the nine universities shows significant disparities in overall production, including both per capita generation and valorisation practices. Combined, the institutions generated approximately 1,946 tons of waste in 2024, serving a total population close to 90,000 users. This results in an average per capita waste generation of roughly 21,6 kg per user year, though individual campuses vary widely.

Unsorted waste represents the largest share of total waste, followed by organic waste and construction debris. Hazardous waste and e-waste appear in smaller but critical proportions, reflecting specialised academic and research activities. The presence of construction and demolition waste in some institutions significantly influences overall totals, indicating infrastructure projects taking place in 2024 as a major contributor.

Valorisation practices, including recycling, composting, reuse, and energy recovery, remain uneven. While some universities achieve high recovery rates through structured recycling programs and partnerships, others report minimal diversion from disposal, resulting in an overall valorisation of approximately 777 tons. Composting and reuse initiatives are rare, and energy recovery is limited, underscoring missed opportunities for circular economy practices.

These differences highlight systemic gaps, such as institutions with strong policies and infrastructure demonstrate higher valorisation and lower per capita waste, while others rely heavily on municipal services with limited internal oversight. Overall, the data emphasise the need for harmonised strategies, investment in segregation and valorisation infrastructure, and stronger institutional commitment to sustainability.

Main findings and recommendations

The findings reveal that there are still notable gaps in waste management across most of STARS EU Universities, underscoring the need for more cohesive and formalised waste management strategies. Sustainable waste management is still hurdled by Infrastructure and operational weaknesses, particularly in composting, e-waste disposal, and bin labelling, these are aspects that require urgent attention.

Community engagement remains limited, suggesting the need for broader sustainability initiatives that include educational campaigns and student involvement. To improve data reliability, standardised protocols for waste measurement and reporting must be established. Finally, while institutions demonstrate a willingness to pursue sustainable practices, scaling composting, reuse, and recycling efforts will be essential to enhance circularity and reduce environmental impact.

Data collection on waste management varies greatly between universities, creating major comparability issues. Reporting formats are inconsistent, as data collection and waste characterisation have many differences depending on the context. Data completeness is uneven, as hazardous and e-waste are often tracked better than other streams, while recycling and composting figures are sometimes missing or based on contractor reports. These inconsistencies highlight the need for standardised protocols, clear indicator definitions, and centralised reporting to ensure reliable benchmarking and informed decision-making.

To address these challenges, recommendations include:

- Development of institution waste policies;
- Investment in infrastructure upgrades;
- Implementation of awareness and training programs;
- Establishment of clear monitoring and reporting systems;
- Allocation of dedicated budgets for waste management.

3.3 Travel

The assessment focuses on business travel rather than commuting, as universities possess more effective means to influence business travel. Business travel is defined as travelling paid for by each alliance partner.

Climate reviews conducted by universities in Sweden show that business travel accounts for a substantial proportion of their overall carbon footprint—between 15 to 30 percent. This is because of the international nature of academia, with a strong norm of internationalisation as a mechanism for disseminating knowledge and giving rise to new ideas and innovations. A significant share of this international engagement occurs through academic air travel. At Swedish universities, aviation is the dominant source of emissions of carbon from business travel, contributing between 77 per cent and over 99 per cent of the total emissions from business travel.

Since the norm of internationalisation through academic flying is so integrated in academic culture, it is also complicated to reduce carbon emissions from it (Academic flying 2022).[18] This is also true for the STARS EU, where travel is an important part of developing the alliance. Examples of how to decrease the carbon footprint from business travel are to use digital meeting options when possible, including the organisation of hub conferences spread over multiple regions.[19] Another is to decrease the number of travels by those who fly the most, since many studies show that it is often a small part of university staff who give rise to most of the total carbon footprint (about 20 per cent give rise to about 80 per cent of the footprint).

In this assessment, we examine the way universities within the STARS EU alliance address the environmental impact of business travel. As part of this work, we collaborated with Work Package 6 to collect quantitative data on travel conducted through the Erasmus+ program.

Methodology

A benchmark was conducted within the alliance to identify methods for measuring the environmental impact of business travel. Among the participating universities, only two currently report that they have emission reduction targets and calculate the carbon footprint of their business travel. A larger group of universities monitor business travel as an indicator of internationalisation, either by tracking costs associated with mobility or other types of mobility-related statistics.

The lack of readily accessible data has made it difficult to estimate travel-related carbon emissions within the timeframe of this assessment. Developing systems to measure the carbon

[18] Bjørkdahl (red.) (2022). *Academic Flying and the Means of Communication [Elektronisk resurs]*. 1 Springer Singapore https://link.springer.com/content/pdf/10.1007/978-981-16-4911-0.pdf

[19] Perga,Marie-Elodie; Dittmar,Thorsten; Bouffard, Damien & Kritzberg, Emma. 2024. The elephant in the conference room: reducing the carbon footprint of aquatic science meetings. *Limnology and Oceanography Letters* 9, 2024, 499–505 (https://aslopubs.onlinelibrary.wiley.com/doi/10.1002/lol2.10402)

footprint of travel is time-intensive, particularly when travel bookings are decentralised and relevant data is fragmented.

Only two universities in the alliance report having a primary contracted travel agency through which business travel is booked. The remaining universities that have answered rely on decentralised booking systems, where staff independently order travel through agencies of their own choosing. As a result, obtaining the necessary data for calculating emissions, such as the type of transport used and the distance travelled, is both challenging and time-consuming.

Therefore, the choice was made to use the most accessible and relevant travel data for the alliance. Within STARS EU there is ongoing work to develop common methods to count physical and digital mobilities within work package 6. One source for this is the Erasmus+ Beneficiary module where mobilities, including the distance of travel, type of transport and sustainable transport, are registered. The indicators and the data used are described in Table 6.

Table 6 - Indicators for green impact of travel using Erasmus+ Beneficiary module[20]

Mandatory indicators for students and staff	Variables needed to calculate indicators
- % green mobilities - Total kilometres travelled - Total kilo Co_2e - Total kilometres travelled/mobility - Total kilo Co_2e/mobility - % digital mobility (included in next step)	- Year of travel: Date for departure, e.g. travels during 2024=travels which started in 2024 - Number of mobilities - Number of green mobilities - Km by aviation, train, car, bus, unknown - kg Co_2e coefficient per transport type

These data can be used to estimate the climate impact of travel within Erasmus+, using coefficients for kilogram carbon dioxide equivalents per kilometre. If there are no national coefficients available, it is possible to use other sources, such as DEFRA or Travel and climate[21].

[20] Beneficiary module guide - Erasmus+ & European Solidarity Corps guides - EC Public Wiki

[21] Defra (2025) *Greenhouse gas reporting: conversion factors 2025.* Available: https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2025 [2025-11-03]
Travel and Climate (2024) Methodology Report for www.travelandclimate.org, Version 4.1. Available: Methodology-Report-for-Travel-and-Climate-Version-4-1.pdf [2025-11-03]
General principles for greenhouse gas emission accounting of travels: https://ghgprotocol.org/sites/default/files/2022-12/Chapter6.pdf
Since we only know the mode of transport, the coefficient will be very rough, for example, we do not know how many segments a flight consists of, the cabin class or what kind of car that has been used.

Qualitative questions - Policies and targets for business travel

The universities have also answered questions about their work on reducing the negative environmental impact from travel.

Five of the universities have policies or rules for business travel, while the rest either do not have such policies/rules or have not answered. At three of the universities with policies or rules, these also include rules/guidelines for green travel.

University Marie and Louis Pasteur (UMLP) has a restriction for air travel which only authorises buying flight tickets if it takes more than 5 hours to get to the destination by train, and it also has an internal fee on flights which is dedicated to green actions in the university (50€/t eCO2). Hanze has a new policy regarding travel where travelling by plane is only allowed for distances longer than 700 kilometres.

The Polytechnic Institute of Braganca (IPB) promotes green travel in accordance with Erasmus+ program guidelines, encouraging participants to choose sustainable transportation methods such as trains, buses, or carpooling over air travel, and provides financial support to compensate for the additional costs or time involved. This initiative is part of IPB's broader institutional strategy for sustainability and environmental responsibility, aiming to reduce the carbon footprint of mobility and foster environmentally conscious citizenship.

At University West (UW), all business travel must be approved by the immediate manager prior to booking and conducted in accordance with institutional rules that emphasise sustainability as one concern. Employees are expected to prioritise travel by selecting the mode of transport based on environmental impact, time, and cost, and to always assess the possibility of digital participation before committing to travel. Additionally, air travel within the Nordic region is restricted, with a requirement to not fly but to choose train travel for journeys under 700 kilometres and, when feasible, for longer or international trips.

Four of the universities have goals for sustainable travels or mobility. The other universities do not have goals for green travel or have not answered. IPB and the Silesian University in Opava (SUO) have general aspirational goals for sustainable mobility, in the case of SUO it is integrated in their Sustainability strategy. Two universities have quantitative targets for the reduction of carbon footprints from business travel: University Marie and Louis Pasteur and University West.

- University Marie and Louis Pasteur: Reduction of co_2e- emissions by 5 percent per year
- University West: long-term goal of climate neutrality in 2045. The goal for 2030 is a reduction of 50 per cent of kilo CO2 per full year employed compared to 2018.

IPB, UMLP and UW have support for making green travels on their webpage, for example decision trees for staff and managers, while the other universities report that they do not have such support or have not answered.

Results from quantitative indicators

The data gathered so far is incomplete, with data still missing from a few universities, but some preliminary results are presented in Table 7. The data reported is from the Erasmus+ Beneficiary Module and the focus is on the percentage of sustainable mobilities, kilometre per mobility and kilo co2e per mobility. The percentage of digital mobility was not included in this first assessment but will be in the future.

Four universities have reported the percentage of all mobilities that are classified as sustainable in the Erasmus+ Beneficiary Module. Three universities report sustainable travel: IPB (2 per cent), UW (16 per cent), and UMLP (37 per cent). The other universities report no sustainable travel.

Table 7 - Mobilities within the Erasmus+ Beneficiary Module

Partner institution	Year	Sustainable mobilities/ mobility (%)	Km/ mobility	Kilo Co_2e/ mobility
Aleksandër Moisiu University of Durrës (UAMD)	2024	No data	No data	No data
Bragança Polytechnic University (IPB)	2024	2	No data	No data
Cracow University of Technology (PK)	2024	No data	No data	No data
Hanze University of Applied Sciences (Hanze)	2024	No data	No data	No data
Bremen University of Applied Sciences (HSB)	2024	No data	No data	No data
Silesian University in Opava (SUO)	2024	No data	No data	No data
University of La Laguna (ULL)	2024	0	3236	411
University Marie and Louis Pasteur (UMLP)	*2022*	37	897	17
University West (HV)	2024	16	1801	221

Three universities have reported carbon emissions from travel. Of these, the University of La Laguna has the highest carbon footprint per mobility, which is due to its location on an island - all travels are made by aviation. The University Marie and Louis Pasteur has the lowest carbon emission per mobility, partly since a major part of all travel is made by train. It is also notable that the data from UMLP is from 2022, a year when the pandemic effect on air travel where still in place.

Main findings and recommendations

The main findings from the assessment

- Four universities have explicit goals/targets to reduce the green impact from business travel of which two have quantitative emission targets.
- The preliminary analysis of the mobilities within Erasmus+ shows that a low percentage of these travels are made with a sustainable transport mode.
- The digital mobilities were not included in this assessment but will be in the next assessment.
- Most partners do not have rules or guidelines for sustainable travel, and do not give guidance for how to travel in a sustainable way
- Most partners have decentralised booking systems, which makes it hard to get good emission data.
- Sustainable travel sometimes conflicts with the goal of internationalisation or targets for increased mobilities within the STARS EU.
- Most partners are placed rather remotely in their countries which makes it harder to travel in a sustainable way to each other.

Recommendations

- Since mobility is such a high priority within the alliance, it is important to develop policies, guidelines and support for sustainable travel within the alliance.
- Measurements and targets for sustainable travel: the recommendation is to start to regularly measure and setting goals for carbon equivalents emissions, sustainable mobilities, digital mobilities and climate impact of travels within Erasmus+. Most partners have this data, which is collected and reported for other purposes by work package 6, and it covers the specific travel which is a result of the STARS EU.
- Recommendations could also be developed for how to measure the carbon emissions from all business travel, by using existing standards (GHG-protocol, ESRS) and good practices within the higher education sector.

University West – measurements/ targets

University West measures the ecological impact of all its business travels regularly and have emission targets. The results are reported to the government every year. All travels paid for by the university is reported, including travel with aviation, car, bus, train and boat. It is also an ongoing initiative among Swedish universities to recommend common methods to measure the climate impact of travels and to give guidance on how to reduce the emissions of carbon dioxide equivalents (co_2e) from travel.

University Marie and Louis Pasteur – measurements, targets and actions

Has a reduction target of 5% co_2e a year and measure their emissions based on the method of the French environmental agency (ADEME) through the research group named Labos 1point5. The university also use internal fees for high emission travels to finance and support environmental initiatives at the university.

3.4 Consumption

Consumption is defined as procurement and purchases. It is closely related to the issue of waste and resource management, since these are connected in a circular economy. The first step in the waste hierarchy, as defined in the Waste Framework Directive (Directive 2008/98/EC), has prevention of waste as its first step. The best way to achieve this is to consume less by using products longer and through buying less new products made of primary raw materials.

The procurement and purchase of energy, water, and travel are excluded from this category since these are evaluated separately.

Methodology

The assessment of green impact from consumption focuses on qualitative evaluation methods at this stage.

Questions have been posed about how the universities within the alliance work to reduce the negative environmental impact from procurement and purchases. The assessment covers institutional practices through structured questions on policy, rules, guidelines, and green targets for green procurement and purchases.

Quantitative indicators for consumption with the highest green impact are currently lacking in most of the partners, and it has not been possible to develop them for this first assessment. It is complicated to develop reliable measures of the environmental impact of consumption for the categories with the highest environmental impact, for example, IT-products, textiles, furniture/inventories, research equipment, and chemicals.

When it comes to carbon footprints, consumption belongs to scope 3 in the Greenhouse Gas Protocol, but there are also other relevant green impacts of consumption – e.g. pollution and the use of non-renewable natural resources.[22] Possible ways forward for measuring the green impact from consumption could be to focus on the carbon equivalent emission for a product category, which we know has high emissions and which is assessed as possible to affect.

When measuring the environmental impact of purchases, two main methods can be used:

- Environmental spend analysis: It combines financial procurement data with environmental metrics to calculate carbon emissions or other emissions (a factor per purchased categories * cost, e.g. Euro)
- Calculations based on the number of items bought and emission factors for different categories. (a factor per product * number of products)

[22] Amended ESRS | EFRAG

Both methods could use emission factors for the whole life cycle or for parts of the life cycle. When it comes to scope 3 in the GHG protocol it is mainly upstream emissions – emissions from the consumption of the organisation (not the production)[23], which are relevant to include:

- Purchased goods and services
- Capital goods
- Fuel- and energy-related activities (not included in scope 1 or scope 2)
- Upstream transportation and distribution
- Waste generated in operations
- Business travel
- Employee commuting
- Upstream leased assets

Results from qualitative questions

Over one-half of the partners measure the green impact of consumption/purchases in some way. The scope of measurement varies, but many of the partners use the amount of money spent on different product categories as an indicator.

Categories of goods and services for which impacts are measured are, for example, catering, IT equipment, furniture and inventories, office supplies, services, energy, water and building maintenance. Two universities measure the carbon footprint for at least some categories of goods, the coefficients used come from different sources, for example: One planet plate[24], suppliers, environmental product declarations (EPD)[25] and public authorities.

Almost all partners have central policies or rules for procurement and purchases in some respect, and there are often national legal requirements to have such policies or rules. Six of the universities include rules or guidelines for green consumption.

In La Laguna, environmental aspects are considered in procurement decisions. A formal guideline is under preparation. Areas in focus are clothing, wood and cork, construction, electricity, energy certification, vehicles, furniture, cleaning services, foods, travelling and lodging, AVAC (air conditioning), escalators and elevators, printing in outsourcing, ICT (computers), catering and food categories, and building construction.

University West include sustainability in its purchasing policy and has an internal webpage with support for sustainable purchases. Environmental impact is considered one of the evaluation criteria for contracts with suppliers in procurement and purchases. There is support for setting sustainability criteria for procurement from the Swedish national agency for procurement[26]. At the University Marie and Louis Pasteur, sustainability is a selection criterion for public service and supply contracts.

[23] Greenhouse Gas Protocol , Corporate Value Chain (Scope 3) Accounting and Reporting Standard, p. 32 https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporing-Standard_041613_2.pdf
[24] One Planet Plate - Urban Food System Toolbox For Cities
[25] EPD-Norway has changed its name to EPD-Global, powered by EPD-Norway. - LCA.no
[26] https://www.upphandlingsmyndigheten.se/en/criteria/

The Silesian University of Opava has not yet defined criteria for green procurement and has no specific methodology in place, but environmental aspects are considered in procurement decisions. Formal guidelines are under preparation.

Six of the universities have some sort of goals for reducing negative green impact from consumption/procurement. La Laguna has targets for energy and water consumption. The Silesian University of Opava has a general goal and is planning to include goals for the reduction of environmental impact from procurement in the Sustainability Strategy 2030. University West has set a general goal that the university's consumption and use of resources should contribute to good working conditions and reduced negative environmental impact. There is also a long-term climate goal for 2045 that the procurement, purchasing and use of materials must be climate-neutral or climate-negative by 2045 at the latest, with emissions as close to zero as possible. This is complemented by quantitative targets for climate impact and purchases of products with sustainability labels for IT products, furniture and catering.[27]

It is common that the procurement of universities is regulated by the government and national authorities. Six of the universities have a centralised or partially centralised organisation for procurement and purchasing. La Laguna has a central procurement and purchasing department. At the Silesian University of Opava purchases are partly centralised – large tenders are managed by the rectorate, while smaller operational purchases are handled by faculties and departments through a dynamic purchasing system. University West has a centralised organisation with procurements of framework agreements, with assigned local purchasers with the right to buy specific purchases. Staff could order some services and products themselves after approval by their closest manager, for example, business travel services and books. At the University Marie and Louis Pasteur, procurement is centralised as far as possible. The university's departments (faculties, institutes, etc.) have their own budgets for purchasing goods and services, but centralised contracts are increasingly being offered to pool services and control clauses, including environmental ones.

Main findings and recommendations

The main findings from the assessment

- Over half of the universities track the environmental impact from consumption to some extent, and a few calculate carbon footprints using emission coefficients.
- Most universities have central procurement policies which are often legally required; six include green guidelines, and some are currently developing formal methods.
- Six universities set goals to reduce procurement impact, ranging from energy and water targets to climate-neutral purchasing by 2045.

[27] Reduction of carbon dioxide emissions by 30 percent per full-time equivalent by 2030, compared to base year 2024 for IT products, Furniture, Catering
The proportion of purchases with sustainability labels will be as follows by 2030: 1) Catering: 60 percent organic (EU organic/KRAV or equivalent); 2) IT products: 100 percent sustainability-labelled computers and monitors; 3) Furniture: 100 percent sustainability-labelled

- Procurement is usually centralised or partly centralised, with variations in structure across institutions.

Recommendations

- Identify the product categories and services that have the greatest green impact
- Focus on consumption with the biggest impact, specifically in respect to climate impact and resource efficiency/circular economy.
- Find good guides for how to include sustainability criteria in procurement contracts and find methods to control them during the contract period. Work with including environmental impact in procurement contracts.
- Work with reuse and recycling of products/material with a high environmental impact.

4. Green Impact Assessment the way forward Green Impact Plan

A Green Impact Plan is a strategic framework, implemented at institutional and STARS EU alliance levels to assess, reduce, and monitor the ecological footprint of universities' operations and activities. It focuses on effective behavioural changes, resource efficiency, and sustainable practices, including areas such as energy use, waste management, green mobility, and sustainable consumption. It is built based on standardised measurement protocols, strong stakeholder engagement, and a continuous evaluation to achieve a long-term commitment to environmental impact reduction.

The development of a robust and realistic Green Impact Plan for STARS EU, whose members operate across highly diverse geographical, climatic, regulatory, and institutional contexts, requires a methodological approach.

After conducting a survey covering various sustainability indicators (such as buildings, waste, travel, water, energy and consumption), we identified significant challenges in collecting consistent and comparable data. This difficulty is further compounded by the fact that environmental regulations vary widely across countries, making the data collection methodology even more complex. For instance, waste management may fall under the responsibility of the university, the local municipality, or, in some cases, selective waste collection systems may not exist at all. This diversity of STARS EU institutions needs to be recognised in the work with the Green Impact Plan, to ensure that assessment and actions are aligned with each partner's context and capacities.

The main finding of the assessment in this report suggests that the STARS EU Green Impact Plan should be designed to achieve three essential outcomes: high environmental standards, ensure participation across all partner institutions and flexibility to accommodate their differences.

1 - High environmental standards

The STARS EU Green Impact Plan should set ambitious environmental goals to position the alliance as a benchmark for its common environmental actions. These actions must reflect the best practices in higher education and align with international frameworks such as the UN Sustainable Development Goals (SDGs) and the European Green Deal.

To achieve this, the plan must be clearly structured and include a shared vision and guiding principles; strategic objectives linked to achievable targets; initiatives for the short, mid and long term; and measurable indicators.

The planning process will be structured along a continuous improvement cycle: define the actions, implement the actions, assess the results, and then identify gaps and opportunities for enhancement. This evaluation will inform the revision and refinement of the plan, ensuring that strategies remain relevant, effective, and aligned with relevant standards and institutional priorities.

2 - Ensure participation across all partner institutions

The plan must originate from a wide support from the STARS EU Community, therefore there will be initiatives to collect inputs from STARS EU Members. Participation will be considered in three different stages: Planning, Approval and Implementation. On the Planning stage, actions may include activities such as benchmarking, thematic focus groups, and experts' consultation. Then, before approval, the Green Impact Plan will have a public participation process, engaging the universities' communities from all STARS EU. Finally, during the implementation stage, active participation will promote a high level of environmental awareness and ensure commitment to the actions implemented.

Active participation of the university community in environmental awareness campaigns is essential for the successful implementation of the Green Impact Plan. The purpose of these initiatives is to foster shared responsibility, encourage sustainable behaviours, and create a common language around environmental objectives in the STARS EU alliance. By involving students, academic staff, and administrative teams, the campaigns not only increase knowledge and visibility of sustainability priorities but also empower individuals to take an active role in shaping a more environmentally conscious campus. This collective engagement ensures that the Plan is not merely a framework, but a living process supported by informed actions, collaboration, and continuous improvement.

3 - Flexibility to accommodate their differences

The STARS EU Green Impact Plan cannot be conceived as a closed document. Instead, it should remain open and flexible to enable the integration of the plurality of the nine STARS EU partners. Although the common purpose should remain as the guideline, there should be room for different focuses and priorities, aligned with the universities' priorities and needs.

The Environmental Impact Plan follow-up should be continuous with yearly assessments focusing on monitoring the roll-out of actions, and the main results. The plan should be reassessed and reformulated regularly, for example, every third year.

5. Annexes

5.1 Environmental Sustainability Survey

STARS EU Self-Assessment on Environmental Sustainability

Presentation

As part of the responsibilities of the task team assigned to develop the STARS EU Green Impact Plan, we are collecting information to support the plan's objectives.

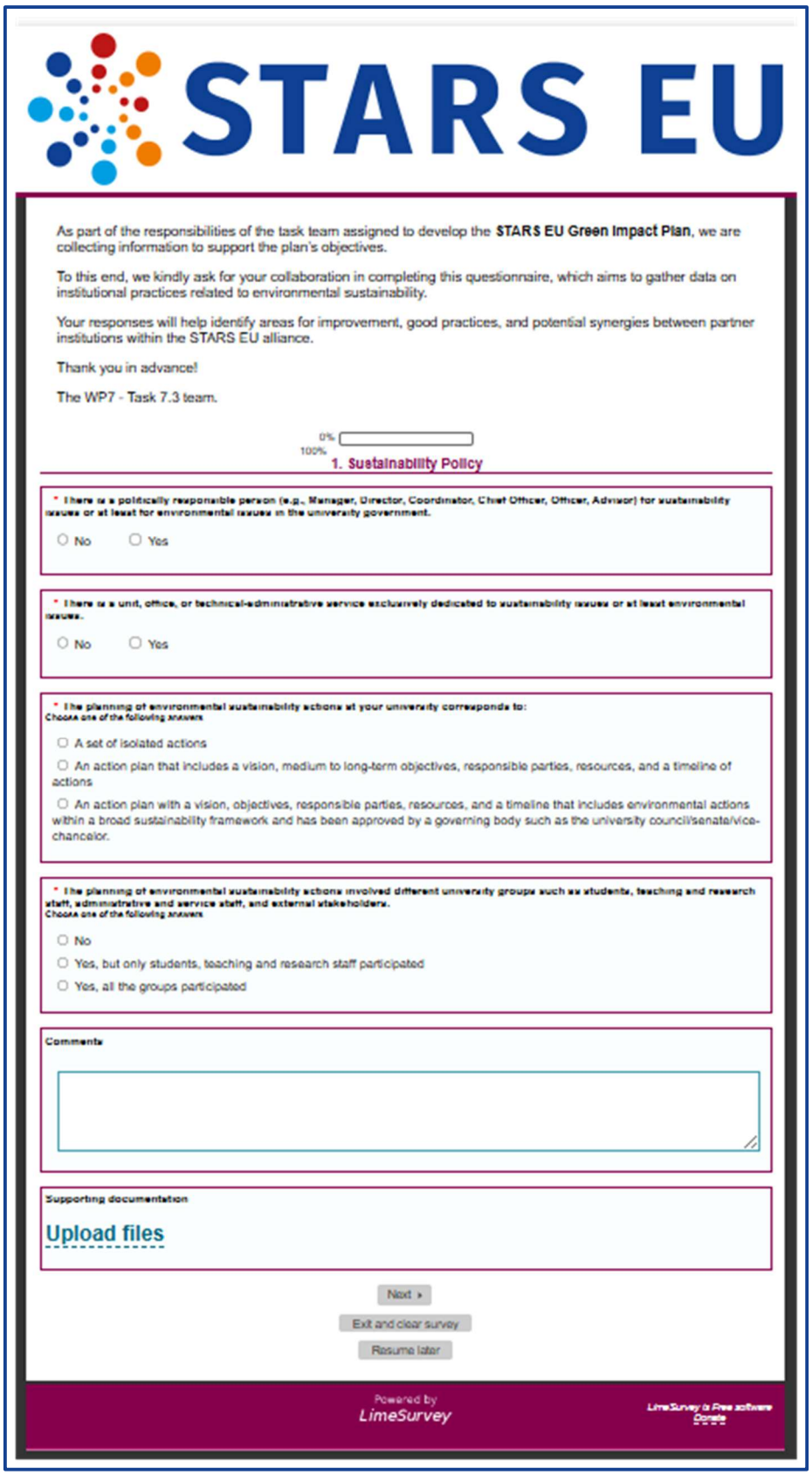
To this end, we kindly ask for your collaboration in completing this questionnaire, which aims to gather data on institutional practices related to environmental sustainability.

Your responses will help identify areas for improvement, highlight good practices, and explore potential synergies between partner institutions within the STARS EU alliance.

For each question, please select the answer that best reflects the reality of your institution. If none of the options are suitable, choose the one that comes closest and use the comment box to provide any relevant information you consider important.

Thank you in advance!

The WP7 - Task 7.3 team.



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Thank you in advance!

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1. Sustainability Policy

* There is a politically responsible person (e.g., Manager, Director, Coordinator, Chief Officer, Officer, Advisor) for sustainability issues or at least for environmental issues in the university government.

○ No ○ Yes

* There is a unit, office, or technical-administrative service exclusively dedicated to sustainability issues or at least environmental issues.

○ No ○ Yes

* The planning of environmental sustainability actions at your university corresponds to:
Choose one of the following answers

○ A set of isolated actions

○ An action plan that includes a vision, medium to long-term objectives, responsible parties, resources, and a timeline of actions

○ An action plan with a vision, objectives, responsible parties, resources, and a timeline that includes environmental actions within a broad sustainability framework and has been approved by a governing body such as the university council/senate/vice-chancelor.

* The planning of environmental sustainability actions involved different university groups such as students, teaching and research staff, administrative and service staff, and external stakeholders.
Choose one of the following answers

○ No

○ Yes, but only students, teaching and research staff participated

○ Yes, all the groups participated

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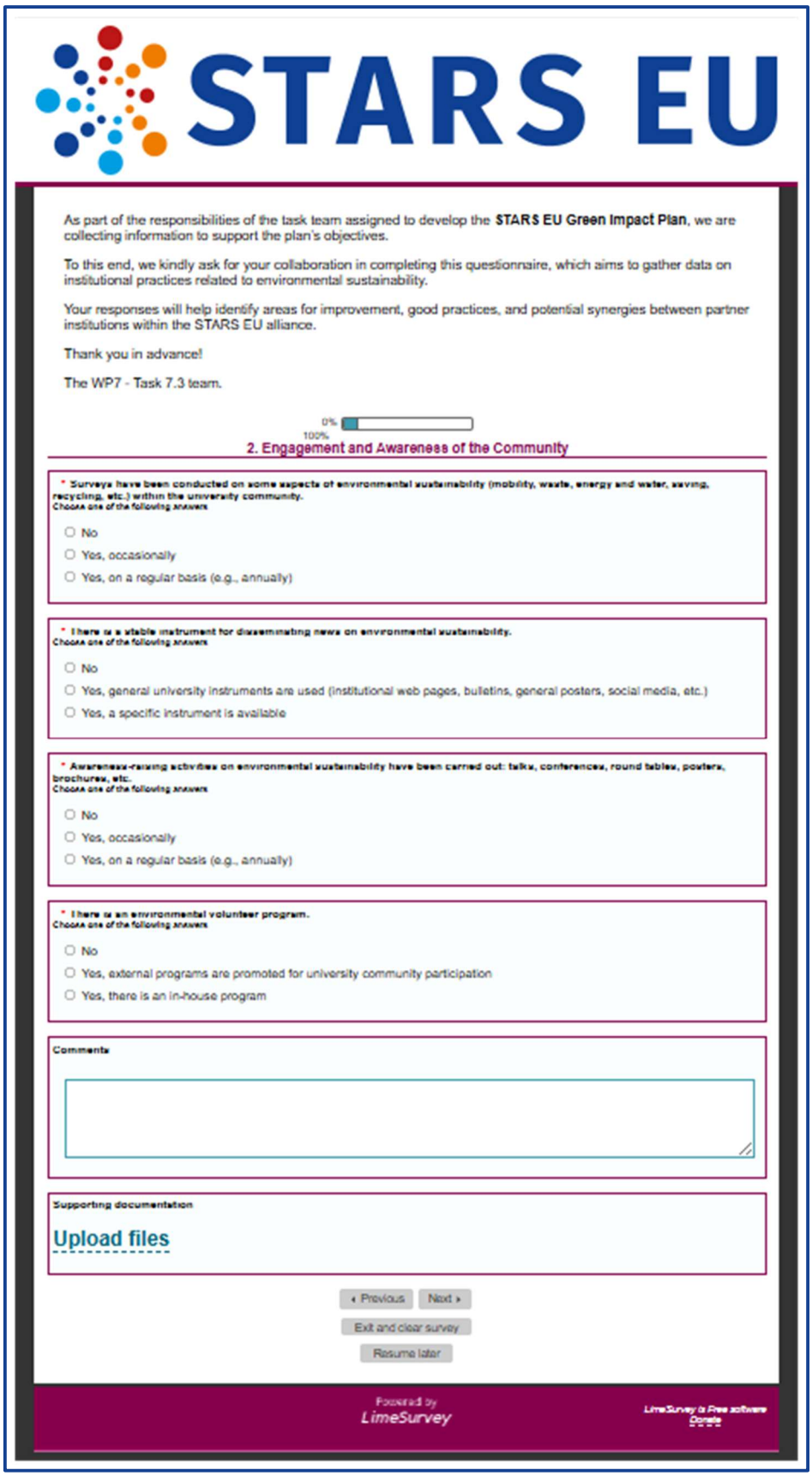

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2. Engagement and Awareness of the Community

* Surveys have been conducted on some aspects of environmental sustainability (mobility, waste, energy and water, saving, recycling, etc.) within the university community.
Choose one of the following answers

- No
- Yes, occasionally
- Yes, on a regular basis (e.g., annually)

* There is a stable instrument for disseminating news on environmental sustainability.
Choose one of the following answers

- No
- Yes, general university instruments are used (institutional web pages, bulletins, general posters, social media, etc.)
- Yes, a specific instrument is available

* Awareness-raising activities on environmental sustainability have been carried out: talks, conferences, round tables, posters, brochures, etc.
Choose one of the following answers

- No
- Yes, occasionally
- Yes, on a regular basis (e.g., annually)

* There is an environmental volunteer program.
Choose one of the following answers

- No
- Yes, external programs are promoted for university community participation
- Yes, there is an in-house program

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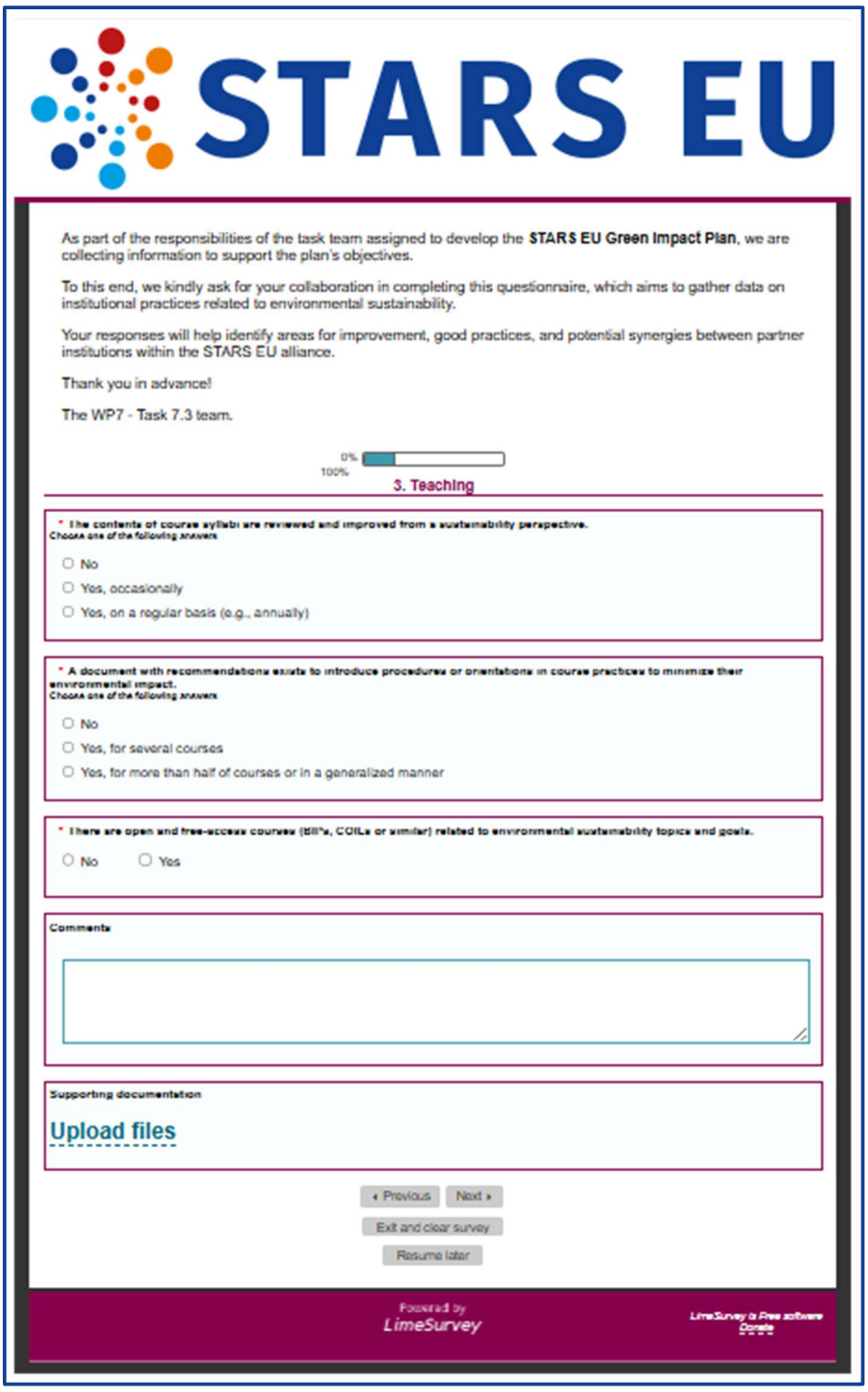
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Thank you in advance!
The WP7 - Task 7.3 team.
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3. Teaching
* The contents of course syllabi are reviewed and improved from a sustainability perspective.
Choose one of the following answers
No
Yes, occasionally
Yes, on a regular basis (e.g., annually)
* A document with recommendations exists to introduce procedures or orientations in course practices to minimize their environmental impact.
Choose one of the following answers
No
Yes, for several courses
Yes, for more than half of courses or in a generalized manner
* There are open and free-access courses (SPOCs, COILs or similar) related to environmental sustainability topics and goals.
No
Yes
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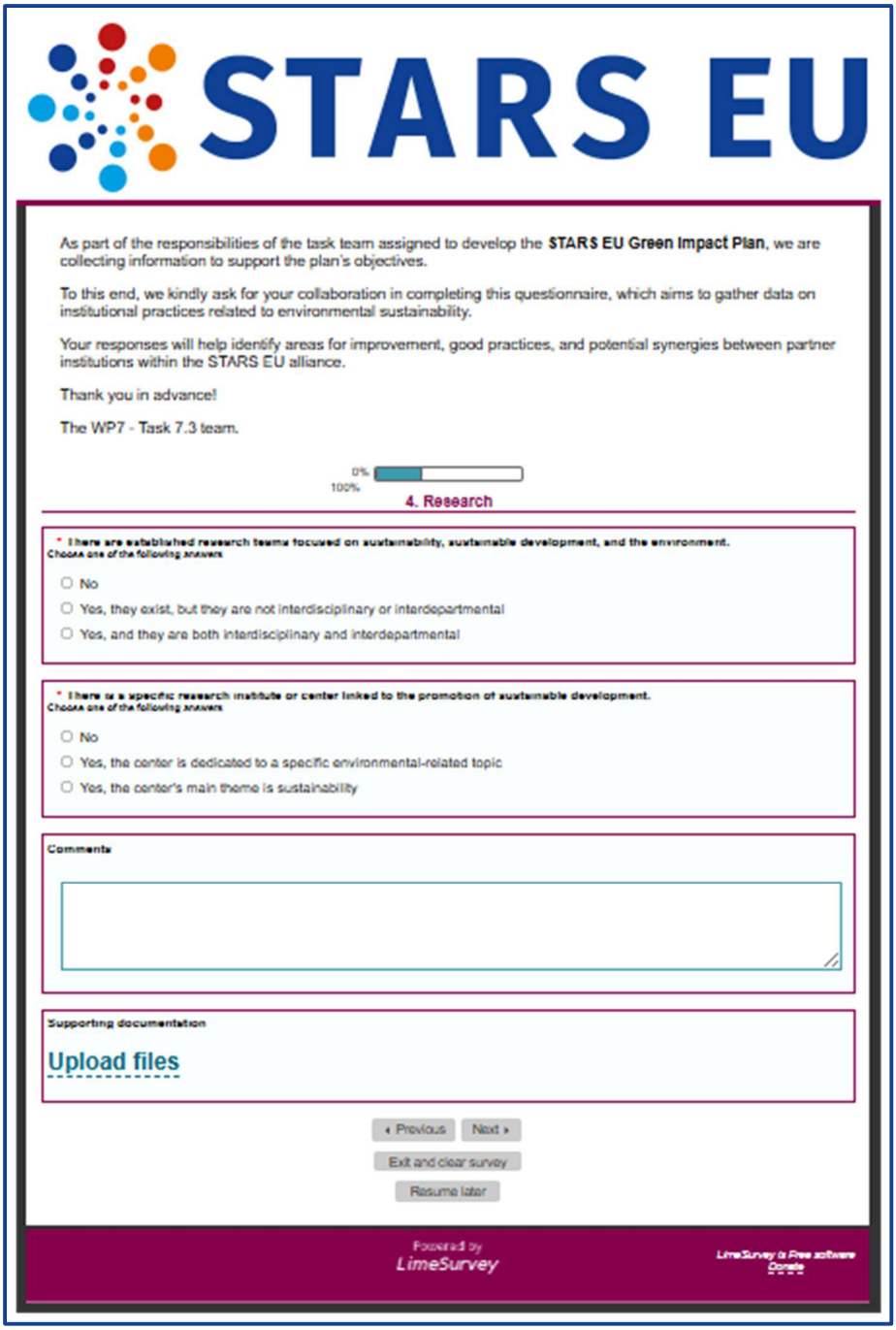
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Thank you in advance!
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4. Research
* There are established research teams focused on sustainability, sustainable development, and the environment.
Choose one of the following answers
No
Yes, they exist, but they are not interdisciplinary or interdepartmental
Yes, and they are both interdisciplinary and interdepartmental
* There is a specific research institute or center linked to the promotion of sustainable development.
Choose one of the following answers
No
Yes, the center is dedicated to a specific environmental-related topic
Yes, the center's main theme is sustainability
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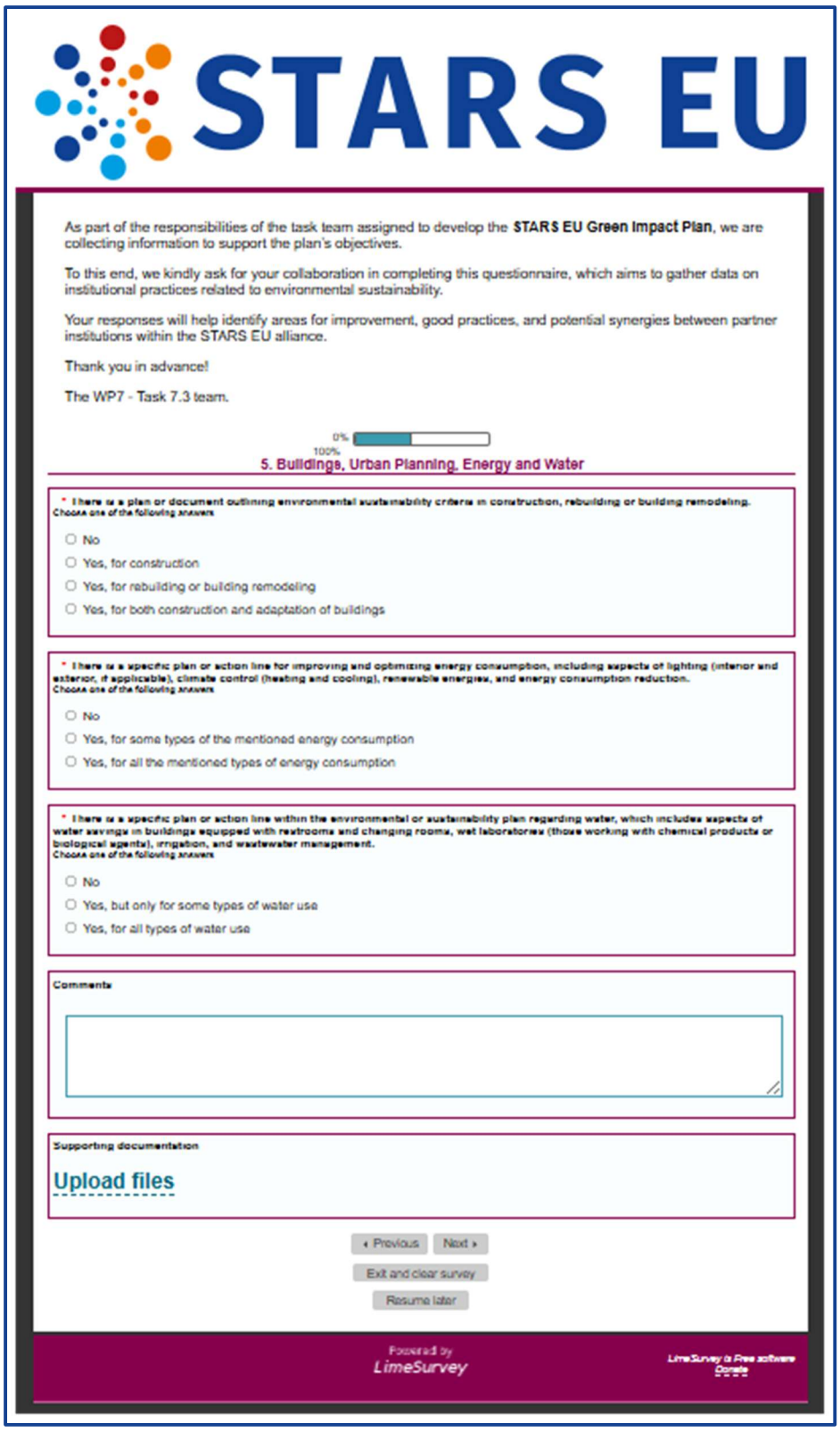

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Thank you in advance!

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5. Buildings, Urban Planning, Energy and Water

* There is a plan or document outlining environmental sustainability criteria in construction, rebuilding or building remodeling.
Choose one of the following answers

- ○ No
- ○ Yes, for construction
- ○ Yes, for rebuilding or building remodeling
- ○ Yes, for both construction and adaptation of buildings

* There is a specific plan or action line for improving and optimizing energy consumption, including aspects of lighting (interior and exterior, if applicable), climate control (heating and cooling), renewable energies, and energy consumption reduction.
Choose one of the following answers

- ○ No
- ○ Yes, for some types of the mentioned energy consumption
- ○ Yes, for all the mentioned types of energy consumption

* There is a specific plan or action line within the environmental or sustainability plan regarding water, which includes aspects of water savings in buildings equipped with restrooms and changing rooms, wet laboratories (those working with chemical products or biological agents), irrigation, and wastewater management.
Choose one of the following answers

- ○ No
- ○ Yes, but only for some types of water use
- ○ Yes, for all types of water use

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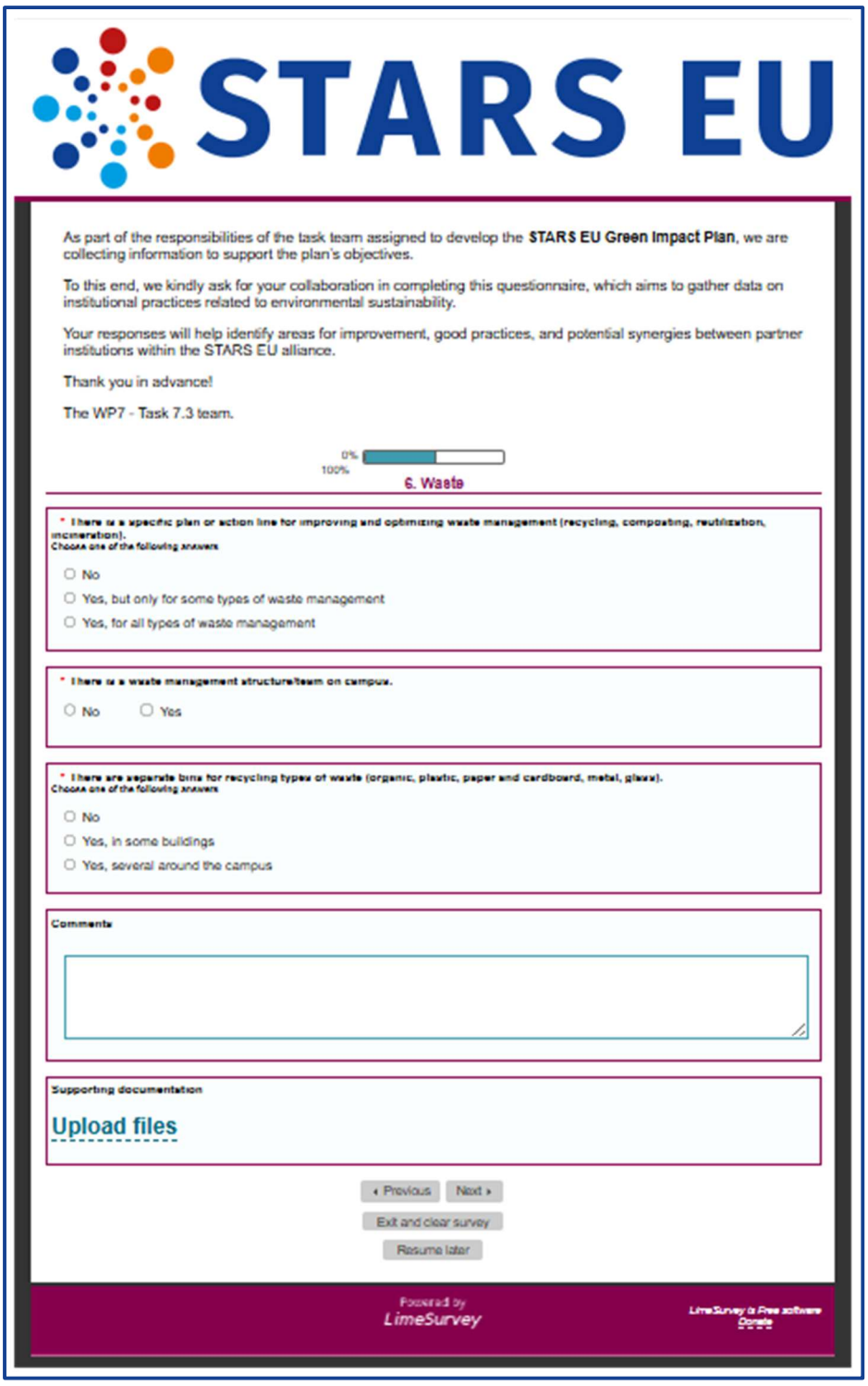

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Thank you in advance!

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6. Waste

* There is a specific plan or action line for improving and optimizing waste management (recycling, composting, reutilization, incineration).
Choose one of the following answers

- No
- Yes, but only for some types of waste management
- Yes, for all types of waste management

* There is a waste management structure/team on campus.

- No
- Yes

* There are separate bins for recycling types of waste (organic, plastic, paper and cardboard, metal, glass).
Choose one of the following answers

- No
- Yes, in some buildings
- Yes, several around the campus

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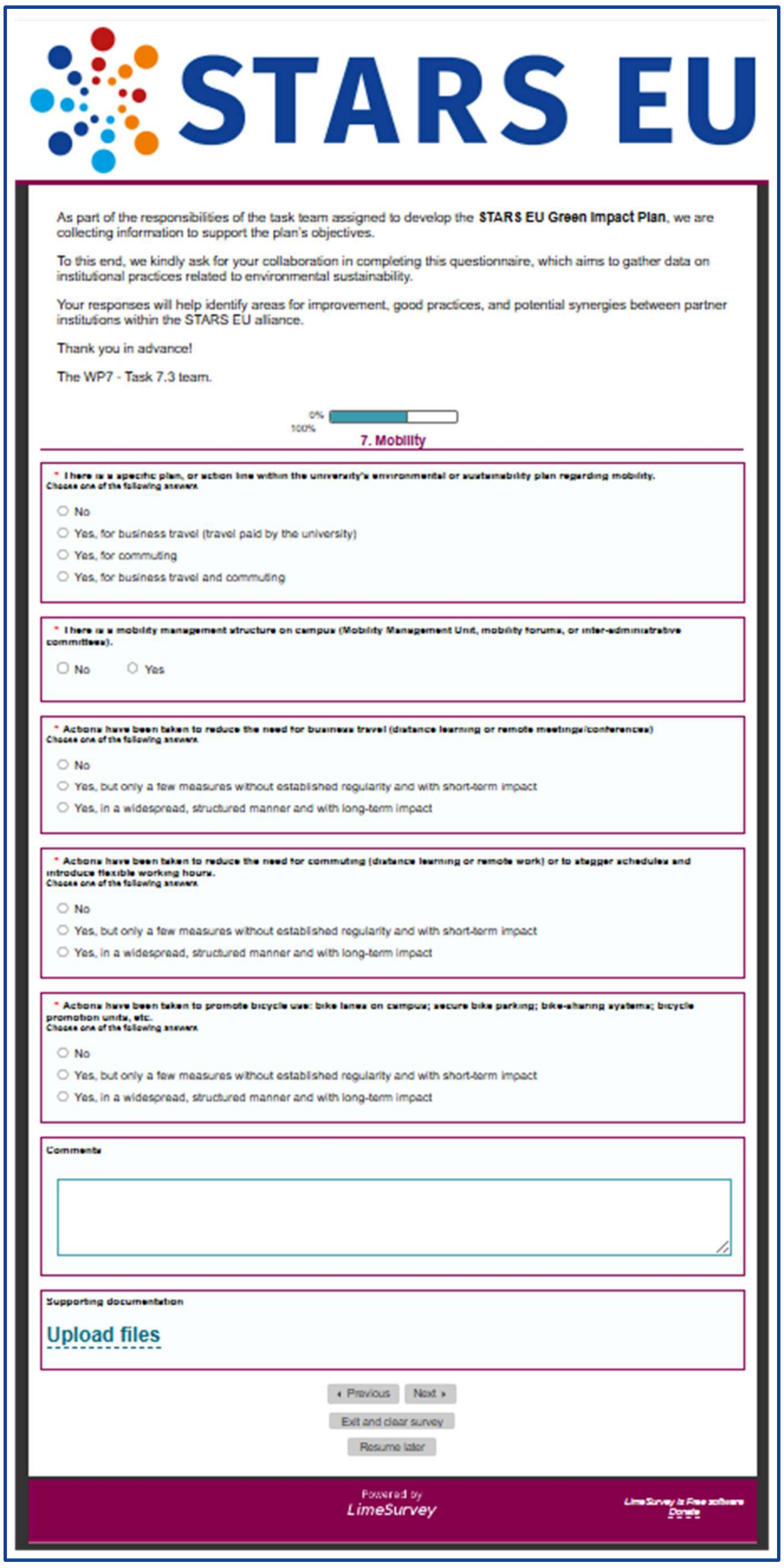

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Thank you in advance!

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7. Mobility

* There is a specific plan, or action line within the university's environmental or sustainability plan regarding mobility.
Choose one of the following answers

- No
- Yes, for business travel (travel paid by the university)
- Yes, for commuting
- Yes, for business travel and commuting

* There is a mobility management structure on campus (Mobility Management Unit, mobility forums, or inter-administrative committees).

- No
- Yes

* Actions have been taken to reduce the need for business travel (distance learning or remote meetings/conferences)
Choose one of the following answers

- No
- Yes, but only a few measures without established regularity and with short-term impact
- Yes, in a widespread, structured manner and with long-term impact

* Actions have been taken to reduce the need for commuting (distance learning or remote work) or to stagger schedules and introduce flexible working hours.
Choose one of the following answers

- No
- Yes, but only a few measures without established regularity and with short-term impact
- Yes, in a widespread, structured manner and with long-term impact

* Actions have been taken to promote bicycle use: bike lanes on campus; secure bike parking; bike-sharing systems; bicycle promotion units, etc.
Choose one of the following answers

- No
- Yes, but only a few measures without established regularity and with short-term impact
- Yes, in a widespread, structured manner and with long-term impact

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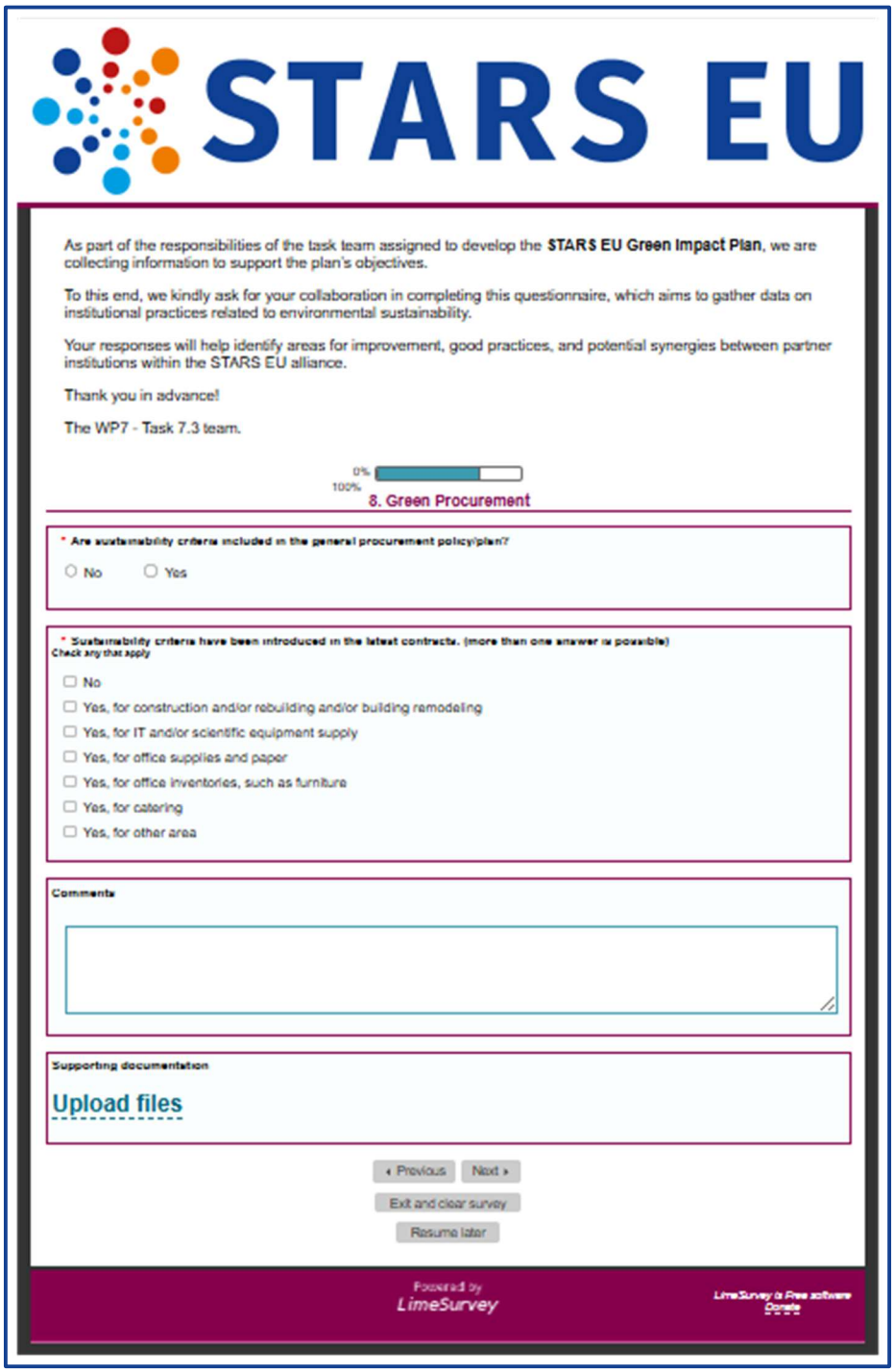

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Thank you in advance!

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8. Green Procurement

* Are sustainability criteria included in the general procurement policy/plan?

No Yes

* Sustainability criteria have been introduced in the latest contracts. (more than one answer is possible)
Check any that apply

- No
- Yes, for construction and/or rebuilding and/or building remodeling
- Yes, for IT and/or scientific equipment supply
- Yes, for office supplies and paper
- Yes, for office inventories, such as furniture
- Yes, for catering
- Yes, for other area

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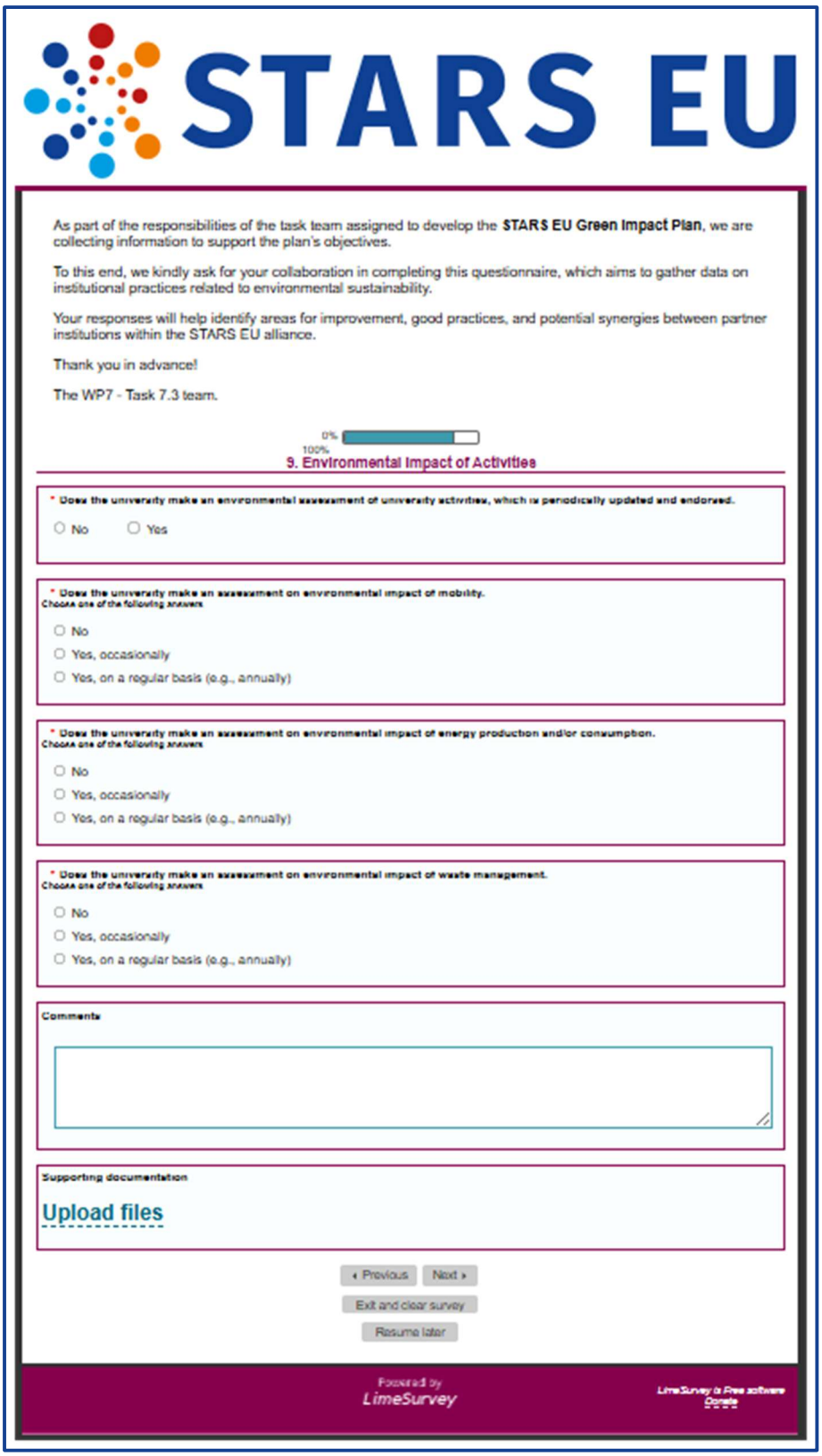

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Thank you in advance!

The WP7 - Task 7.3 team.

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9. Environmental Impact of Activities

* Does the university make an environmental assessment of university activities, which is periodically updated and endorsed.

○ No ○ Yes

* Does the university make an assessment on environmental impact of mobility.
Choose one of the following answers

○ No
○ Yes, occasionally
○ Yes, on a regular basis (e.g., annually)

* Does the university make an assessment on environmental impact of energy production and/or consumption.
Choose one of the following answers

○ No
○ Yes, occasionally
○ Yes, on a regular basis (e.g., annually)

* Does the university make an assessment on environmental impact of waste management.
Choose one of the following answers

○ No
○ Yes, occasionally
○ Yes, on a regular basis (e.g., annually)

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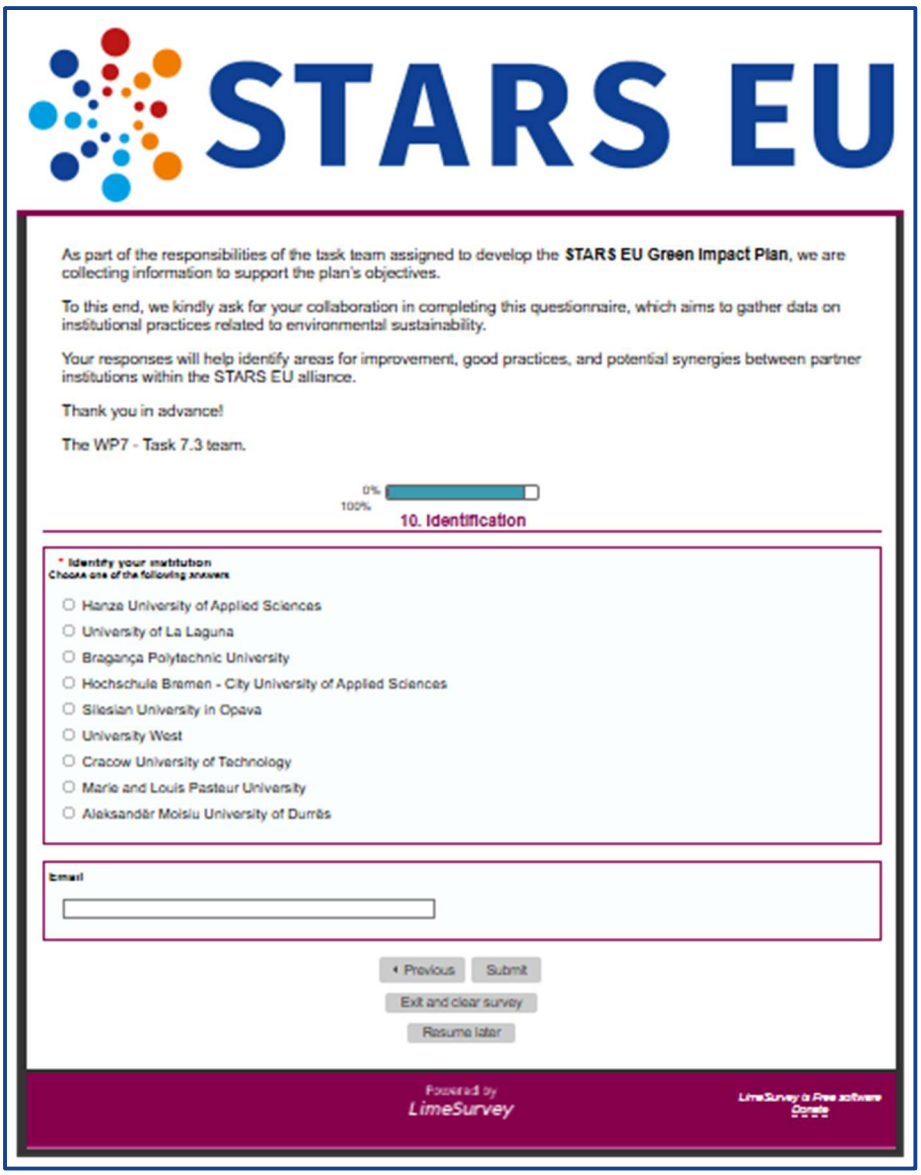
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Thank you in advance!
The WP7 - Task 7.3 team.
0%
100%
10. Identification
* Identify your institution
Choose one of the following answers
Hanze University of Applied Sciences
University of La Laguna
Bragança Polytechnic University
Hochschule Bremen - City University of Applied Sciences
Silesian University in Opava
University West
Cracow University of Technology
Marie and Louis Pasteur University
Aleksandër Moisiu University of Durrës
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5.2 Data collection

1. Qualitative information

1.1. Buildings

Does the university have a strategy for improving the energy efficiency of its buildings?

Does the building have a calculated non-renewable primary energy indicator?

Does the building have specific heat transfer coefficients for the different external partitions?

Does the building have thermal insulation, if so, of what material and how thick?

Does the building have energy-efficient windows and exterior doors? Please describe the type of windows used and their percentage size on the façade.

Does the building have any large thermal bridges in the external envelope (e.g. cantilevered balconies)?

What is the method of ventilation in the building and can the level of air tightness of the building be estimated?

Does the building have RES installations, if so, which ones and what performance?

Have carbon footprint analyses - embedded and operational - been carried out on the building?

From what sources is the building heated?

What type of internal installations are used to heat the building?

Is recuperation (heat recovery) of the ventilation air used?

Is recuperation (heat recovery) from grey hot wastewater used?

In addition to heating, does the building have cooling installations, if so, which ones and what capacity?

Does the building make use of passive heating support methods, such as solar gains through south-facing glazing, ground source heat exchangers for ventilation air, etc.?

Is heating optimised by BMS systems (Building Management Systems), AI, etc.?

To power which installations and equipment and in what proportions is electricity used in the building?

Is electricity produced from photovoltaic installations, if so, in what proportion?

Is the electricity from photovoltaic installations stored in battery storage, if so, please describe the solutions used?

Is there only a standard two-phase power supply in the building or is there also a three-phase power connection, if so, to which appliances?

Does the distribution network have differentiated tariffs depending on the time of energy consumption and, if so, is this optimized?

If there is a photovoltaic installation, is it in conjunction with a prosumer contract (feeding surplus back into the grid)?

Is the University using only water supplied from the municipal water supply, or are there other sources of usable water?

Is rainwater from roofs and flat roofs managed at the University, if so how?

Are taps, toilets and urinals with water saving systems installed in the building, if so, what water saving solutions are in place?

How is the usable hot water heated?

Is there the use of RES for water heating, if so please describe the type and percentage of participation?

Are sewers for waste water and rainwater separated?

Is the sewerage for grey water and black sewage separated, if so how is the grey sewage used?

Are there any solutions in place to reuse heat energy from wastewater?

1.2. Waste Management

Generic

Does the university have a formal waste management policy? (yes or no)

Is there a designated waste management officer or team? (yes or no)

Are there separate bins for different types of waste? Specify which ones.

Are waste bins labeled clearly? (yes, partially and no)

Are bins placed in easily accessible locations?

Are there composting facilities on campus?

Are hazardous wastes handled separately?

Recycling

Are recycling bins available on campus?

What materials are accepted in recycling bins?

Is there a recycling awareness campaign in place?

Does the university recycle e-waste?

Is paper waste separated from general waste?

Are recyclables collected by a licensed contractor?

Is the recycling process monitored for compliance?

Organic waste

Is food waste collected separately?

Is organic waste composted on-site?

If so, are compost products used in campus landscaping?

E-Waste

Is there a designated area for e-waste disposal?

Are broken electronics repaired or replaced?

Is e-waste sent to certified recyclers?

Waste Reduction

Are single-use plastics restricted on campus?

Are digital alternatives promoted to reduce paper use?

Are refillable water stations available?

Is there a ban on plastic straws or cutlery?

Are students and staff trained on waste reduction?

Campus Community Involvement

Are students involved in waste audits?

Are there waste management workshops or events?

Are there student-led waste management initiatives?

Dinning and Food Services

Are reusable utensils and plates available in cafeterias?

Are food portions adjustable to reduce waste?

Is leftover food donated or composted?

Monitoring and Reporting

Is waste generation data recorded?

Are there targets to reduce waste?

Are waste statistics made public?

Is there a penalty for non-compliance?

Budget and Resources

Is there a budget allocated for waste management?

Are external waste services hired?

Are waste management costs monitored?

1.3. Travel

Does the university already measure the green impact of travel? (Yes/No)

If no: Do you follow up travels in any other way (eg. costs, mobilities as indicator for internationalisation)?

What groups' travels are measured? (eg. staff, students, all travels paid by the university)

What type of travels are measured? (eg car, bus, aviation, train)

What measure is used? (eg kg co2, co2e, other)

Who provides the coefficients used? (e.g .government agency, other organisation)?

Do you include the high altitude effect in the co2e measure? (Yes/No)

Does the university have any policy/rules for business travel? (Yes/No)

Does the the policy/rules include rules/guidelines for green travel? (Yes/no)

If yes: exemplify the regulation (link to web page if it is possible)

Does the university have any goals for reducing negative green impact from travel (yes/no)

Is there support for green travel on the university web page for business travel? (yes/no)

How is business travel generally booked? (though a main travel agency, other ways)

1.4. Consumption

Does the university already measure the green impact of consumption/purchases (other than energy and travel/transportation)? (Yes/No)

If no: Do you follow up consumptions/purchases in any other way (eg. costs)?

Which categories of goods and services are measured?

What measures are used? (e.g. costs, number of items/services, carbon footprint)

If carbon footprint is measured: what coefficients are used?

Does the university have any policy/rules for procurement/purchases? (Yes/No)

Does the policy/rules include rules/guidelines for green procurement/purchases? (Yes/no)

If yes: exemplify the regulation (link to web page if it is possible)

Does the university have any goals for reducing negative green impact from consumption/procurement (yes/no)

If yes: what is the goal? (link to web page if it is possible)

Is there support for green procurement/purchases on the university web page? (yes/no)

How is purchases generally made? (by whom? Centralised/decentralized and so on)

2. Quantitative information

Buildings indicators

University	**Reference Year**	**Building area m2**	**Full time eqvivalent staff**	**Full time eqvivalent students**	**Non-renewable primary energy indicator** [kWh/m^2] per year	**Renewable primary energy indicator** [kWh/m2] per year
Hanze University of Applied Sciences (Hanze)						
Bragança Polytechnic University (IPB)						
Bremen University of Applied Sciences (HSB)						
University of La Laguna (ULL)						
Silesian University in Opava (SUO)						
University West (HV)						
Cracow University of Technology (PK)						
Marie and Louis Pasteur University (MLPU)						
Aleksandër Moisiu University of Durrës (UAMD)						

Buildings indicators

University	heat transfer coefficients for the different external partitions [W/(m^2K)]	% of renewable energy sources used to meet the final energy demand of the building	airtightness of the building [n50]	protection against excessive insolation [yes-no]	**Heat consumption** [kW / year]
Hanze University of Applied Sciences (Hanze)					
Bragança Polytechnic University (IPB)					
Bremen University of Applied Sciences (HSB)					
University of La Laguna (ULL)					
Silesian University in Opava (SUO)					
University West (HV)					
Cracow University of Technology (PK)					
Marie and Louis Pasteur University (MLPU)					
Aleksandër Moisiu University of Durrës (UAMD)					

Buildings indicators

University	% reduction in consumption thanks to heat recovery from the ventilation air	% reduction in consumption thanks to heat recovery from hot wastewater	% reduction in consumption thanks to BMS systems and/or AI	**Electrical energy consumption** [kWh]	% reduction in consumption thanks to BMS systems and/or AI	% of electricity produced from photovoltaic installations
Hanze University of Applied Sciences (Hanze)						
Bragança Polytechnic University (IPB)						
Bremen University of Applied Sciences (HSB)						
University of La Laguna (ULL)						
Silesian University in Opava (SUO)						
University West (HV)						
Cracow University of Technology (PK)						
Marie and Louis Pasteur University (MLPU)						
Aleksandër Moisiu University of Durrës (UAMD)						

Buildings indicators

University	**Electricity distribution (network) [kWh]**	return of energy from PV installations to the grid [kWh]	**Water consumption** [m^3/year]	solutions to reduce the volume of water outflow (aerators, water flow limiters) [yes-no]	touchless and timed taps [yes-no]	central hot water with circulation pump [yes-no]
Hanze University of Applied Sciences (Hanze)						
Bragança Polytechnic University (IPB)						
Bremen University of Applied Sciences (HSB)						
University of La Laguna (ULL)						
Silesian University in Opava (SUO)						
University West (HV)						
Cracow University of Technology (PK)						
Marie and Louis Pasteur University (MLPU)						
Aleksandër Moisiu University of Durrës (UAMD)						

Buildings indicators

University	% reuse of rainwater	% use of RES for water heating	**Wastewater discharged** [m^3/year]	% reuse heat energy from wastewater	% grey water reuse
Hanze University of Applied Sciences (Hanze)					
Bragança Polytechnic University (IPB)					
Bremen University of Applied Sciences (HSB)					
University of La Laguna (ULL)					
Silesian University in Opava (SUO)					
University West (HV)					
Cracow University of Technology (PK)					
Marie and Louis Pasteur University (MLPU)					
Aleksandër Moisiu University of Durrës (UAMD)					

Buildings indicators

University	Comments - Please describe the main methodologies and/or assumptions used for this assessment
Hanze University of Applied Sciences (Hanze)	
Bragança Polytechnic University (IPB)	
Bremen University of Applied Sciences (HSB)	
University of La Laguna (ULL)	
Silesian University in Opava (SUO)	
University West (HV)	
Cracow University of Technology (PK)	
Marie and Louis Pasteur University (MLPU)	
Aleksandër Moisiu University of Durrës (UAMD)	

Waste Management indicators

University	Reference Year	Mandatory indicators, Total Waste Production (Ton)	Number of Users (count) (staff and students) (Full time eqvivalent)	Mandatory Waste Production Per User (Kg)	Unsorted Waste (Ton)	Hazardous Waste Production (Ton)
Hanze University of Applied Sciences (Hanze)						
Bragança Polytechnic University (IPB)						
Bremen University of Applied Sciences (HSB)						
University of La Laguna (ULL)						
Silesian University in Opava (SUO)						
University West (HV)						
Cracow University of Technology (PK)						
Marie and Louis Pasteur University (MLPU)						
Aleksandër Moisiu University of Durrës (UAMD)						

Waste Management indicators

University	Packaging Waste Production (Ton)	Organic waste Production (Ton)	E- Waste Production (Ton)	Construction and Demolition Waste (Ton)	Metal Scrap (Ton)	.... Production (Ton)	Waste sent for Recycling (Ton)
Hanze University of Applied Sciences (Hanze)							
Bragança Polytechnic University (IPB)							
Bremen University of Applied Sciences (HSB)							
University of La Laguna (ULL)							
Silesian University in Opava (SUO)							
University West (HV)							
Cracow University of Technology (PK)							
Marie and Louis Pasteur University (MLPU)							
Aleksandër Moisiu University of Durrës (UAMD)							

Waste Management indicators

University	Waste Sent for Composting (Ton)	Waste sent for Reused (Ton)	Waste sent for Incineration with Energy production (Ton)	Other waste valorization option (Please specify)	Total Waste Valorization (Ton)	% of Waste sent for Recycling	% of Waste Sent for Composting
Hanze University of Applied Sciences (Hanze)							
Bragança Polytechnic University (IPB)							
Bremen University of Applied Sciences (HSB)							
University of La Laguna (ULL)							
Silesian University in Opava (SUO)							
University West (HV)							
Cracow University of Technology (PK)							
Marie and Louis Pasteur University (MLPU)							
Aleksandër Moisiu University of Durrës (UAMD)							

Waste Management indicators

University	% of Waste sent for Reused	Waste sent for Incineration with Energy production (Ton)%	% Other waste valorization option (Please specify)	% of waste Valorization	Waste For Landfill	Waste for Incineration
Hanze University of Applied Sciences (Hanze)						
Bragança Polytechnic University (IPB)						
Bremen University of Applied Sciences (HSB)						
University of La Laguna (ULL)						
Silesian University in Opava (SUO)						
University West (HV)						
Cracow University of Technology (PK)						
Marie and Louis Pasteur University (MLPU)						
Aleksandër Moisiu University of Durrës (UAMD)						

Waste Management indicators

University	Other Waste Destinations	Carbon Footprint of Waste (CO_2e/year)	% Waste For Landfill	% Waste for Incineration	% Other Waste Destinations	Hazardous Waste Proper Disposal Rate (%)
Hanze University of Applied Sciences (Hanze)						
Bragança Polytechnic University (IPB)						
Bremen University of Applied Sciences (HSB)						
University of La Laguna (ULL)						
Silesian University in Opava (SUO)						
University West (HV)						
Cracow University of Technology (PK)						
Marie and Louis Pasteur University (MLPU)						
Aleksandër Moisiu University of Durrës (UAMD)						

Waste Management indicators

University	Comments - Please describe the main methodologies and/or assumptions used for this assessment
Hanze University of Applied Sciences (Hanze)	
Bragança Polytechnic University (IPB)	
Bremen University of Applied Sciences (HSB)	
University of La Laguna (ULL)	
Silesian University in Opava (SUO)	
University West (HV)	
Cracow University of Technology (PK)	
Marie and Louis Pasteur University (MLPU)	
Aleksandër Moisiu University of Durrës (UAMD)	

Travel indicators

University	Year	Mobility (total count)	Student mobility (count)	Staff mobility (count)	Green mobilities (total count)	Green student mobilities (count)	Green staff mobilities (count)	Indicator 1: % green mobilities	Aviation (km)
Hanze University of Applied Sciences (Hanze)									
Bragança Polytechnic University (IPB)									
Bremen University of Applied Sciences (HSB)									
University of La Laguna (ULL)									
Silesian University in Opava (SUO)									
University West (HV)									
Cracow University of Technology (PK)									
Marie and Louis Pasteur University (MLPU)									
Aleksandër Moisiu University of Durrës (UAMD)									

Travel indicators

University	Aviation Kg Co2e/km (coefficiant), with high altitude effect	Aviation Kg Co2e/km (coefficiant), without high altude effect	Aviation kg co2e, with high altitude effect	Aviation kg co2e, without high altitude effect	Train (km)	Train kg co2e/km	Train kg co2e	Car (km)	Car kg co2e/km	Car kg co2e
Hanze University of Applied Sciences (Hanze)										
Bragança Polytechnic University (IPB)										
Bremen University of Applied Sciences (HSB)										
University of La Laguna (ULL)										
Silesian University in Opava (SUO)										
University West (HV)										
Cracow University of Technology (PK)										
Marie and Louis Pasteur University (MLPU)										
Aleksandër Moisiu University of Durrës (UAMD)										

Travel indicators

University	Bus (km)	Bus kg co2e/km	Bus kg co2e	Unknown (km)	Unknown kg co2e/km	Unknown kg co2e	Indicator 2a:Total km	Indicator 2b:Total kg Co2e	Indicator 3a: Total km/mob	Indicator 3b: Total kg co2e/mob
Hanze University of Applied Sciences (Hanze)										
Bragança Polytechnic University (IPB)										
Bremen University of Applied Sciences (HSB)										
University of La Laguna (ULL)										
Silesian University in Opava (SUO)										
University West (HV)										
Cracow University of Technology (PK)										
Marie and Louis Pasteur University (MLPU)										
Aleksandër Moisiu University of Durrës (UAMD)										