EMISSION FREE EUROPEAN UNIVERSITIES

Strategic Development of Students' Sustainability Competences in Engineering Sciences

Work Package #4 Part D

State-of-the-art analysis for universities on their way to emission neutrality

Part D – Activity 4.4a: Sustainable Mobility Challenges Workshops Hosted by IPL

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Table of Contents

Figures

About this publication

This publication presents the outcomes of Activity 4.4a – Sustainable Mobility Workshops at IPL, carried out under Work Package 4 – "University Practices Assessment and Continuous Improvement – Keeping on Track to Emission Neutrality" of the Erasmus+ Strategic Partnership project Emission Free European Universities (EFEU). Within the overall framework of WP4, this activity supported the exchange and co-creation of sustainable mobility practices among universities, municipalities, and industry stakeholders, contributing directly to the project's objectives of promoting low-carbon mobility and enhancing institutional sustainability performance in higher education.

The report documents the planning, implementation, and results of two editions of the Sustainable Mobility Challenges Workshops hosted by the Polytechnic of Leiria (IPL) in 2024 and 2025. These workshops formed part of WP4's dissemination and engagement efforts (Activity 4.4), following the analytical and modelling work completed in earlier stages—namely, the Mobility Survey (Activity 4.1), the CO_2e Computation Model and Built-in Software (Activity 4.2), and the Carbon Footprint of Teaching Calculator (Activity 4.3). In this context, the workshops served as a platform for dialogue between students, academic staff, local authorities, and private-sector representatives to translate empirical findings into actionable mobility solutions at campus and city levels.

By integrating quantitative data from the EFEU Mobility Survey with practical examples drawn from partner universities and regional stakeholders, the workshops encouraged the co-design of feasible, context-specific measures for sustainable transport. Outcomes included proposals for improved public transport integration, expansion of cycling infrastructure, development of a campus carpooling platform, and pilot concepts for a Mobility-as-a-Service (MaaS) solution for the IPL community. The initiative also strengthened institutional collaboration with the Leiria Municipality, influencing local policy directions such as the introduction of an e-bike sharing network and the creation of a digital mobility platform.

Aligned with the broader goals of WP4, this publication reflects the project's applied, participatory approach to advancing emission neutrality in higher education. It contributes to the dissemination of good practices, the reinforcement of university–city partnerships, and the promotion of behavioural change among students and staff toward more sustainable mobility choices—key steps in achieving the long-term vision of emission-free European universities.

The online version of this report can be obtained from the project's website: https://www.dhbw-stuttgart.de/efeu

1 Introduction

Sustainable mobility on university campuses represents a complex and multidimensional challenge that requires the active participation and collaboration of all key stakeholders. Students, academic and administrative staff, university management, political decision-makers, and companies operating in the mobility and transport sectors all play essential roles in shaping the environmental performance of higher education institutions. Sustainable campus mobility cannot be achieved through isolated efforts; it demands coordinated action and mutual commitment from these actors to ensure that behavioural, infrastructural, and policy changes are both effective and enduring.

It is therefore essential that these stakeholders come together to identify context-specific challenges and co-develop feasible and innovative solutions. Jointly addressing issues such as commuting habits, transport accessibility, digitalisation of mobility services, and the promotion of active and low-emission transport modes creates the foundation for systemic change. This cooperative approach fully aligns with the mission of the Emission Free European Universities (EFEU) Erasmus+ project, which seeks to enhance sustainability awareness and promote practical, evidence-based strategies for reducing greenhouse gas emissions within higher education environments. The EFEU project places particular emphasis on fostering understanding, co-creation, and dissemination of solutions that can accelerate the transition of European universities toward emission neutrality.

In this context, the workshop format was selected as an effective tool to initiate and sustain collaborative change processes between universities, municipalities, and mobility providers. Workshops create structured spaces for dialogue, enabling stakeholders to exchange experiences, integrate academic research with policy-making, and translate data-driven insights into local mobility solutions. They also provide opportunities for students to engage as active contributors to sustainability transitions, thus reinforcing the educational dimension of the EFEU project. Through participatory methods, such workshops promote awareness, stimulate behavioural change, and facilitate the transfer of best practices across institutional and regional boundaries.

This report documents the implementation and results of Activity 4.4a – Sustainable Mobility Workshops within Work Package 4 (WP4): University Practices Assessment and Continuous Improvement – Keeping on Track to Emission Neutrality. WP4 focuses on identifying, evaluating, and disseminating sustainable practices across higher education institutions, with particular attention to mobility-related emissions and institutional strategies to reduce them. The activity builds on previous WP4 outputs, including the Mobility Survey (Part A), the CO_2e Computation Model (Part B), and the Carbon Footprint of Teaching Calculator (Part C). As a dissemination and engagement component, the workshops (Part D) translate these analytical findings into practical action by fostering collaboration between universities and local authorities. The outcomes of this activity also contribute directly to Part E of WP4—the Guide of Good Sustainable Mobility Practices—by providing real-world insights and examples of stakeholder cooperation.

Through this series of workshops, the EFEU consortium demonstrates that universities can serve as catalysts for broader urban sustainability transitions. By linking research-based knowledge with participatory governance and local implementation, these activities not only advance institutional emission reduction strategies but also strengthen the universities' role as active partners in achieving the European Green Deal and the United Nations Sustainable Development Goals (particularly SDG 11: Sustainable Cities and Communities, and SDG 13: Climate Action).

2 Sustainable Mobility Co-Creation Workshops – Collaborative Approaches to Emission-Free Campus Mobility

2.1 Workshop Concept and Design

Within the framework of *Work Package 4 – University Practices Assessment and Continuous Improvement – Keeping on Track to Emission Neutrality* of the *Emission Free European Universities (EFEU)* Erasmus+ project, the Polytechnic of Leiria (IPL) organised two editions of the **Sustainable Mobility Co-Creation Workshops** in collaboration with the **Leiria City Council**, the private company **PRF**, and representatives of the EFEU consortium. These workshops were conceived as participatory platforms to engage diverse stakeholders in identifying sustainable transport solutions tailored to the institutional and regional context of Leiria.

The workshops aimed to promote dialogue and collective problem-solving between students, university management, faculty, municipal representatives, and private-sector partners. Their overarching purpose was to translate the analytical outcomes of preceding WP4 activities—namely, the *EFEU Mobility Survey* and the *CO_2e Computation Model*—into actionable strategies to reduce mobility-related emissions. Through co-creation methods, participants were invited to discuss real-world challenges, exchange best practices from European partner universities, and generate feasible, locally adaptable solutions.

Preparation for the workshops involved integrating quantitative data from the EFEU Mobility Survey (Activity 4.1), which provided insight into commuting patterns and associated carbon emissions, and aligning discussions with the **Leiria Municipal Mobility Strategy 2025–2030**, focusing on public transport expansion, cycling infrastructure, and digital mobility services. The co-creation framework was structured around five phases: (1) contextual introduction and framing, (2) inspiration through best practice examples, (3) presentation of local data and strategies, (4) participatory group discussions, and (5) consolidation of proposals for institutional and municipal consideration. This structured yet flexible approach ensured meaningful stakeholder input and facilitated the translation of shared knowledge into implementable measures.

2.2 Implementation and Stakeholder Engagement

Two workshop editions entitled “Sustainable Mobility Challenges” were hosted at IPL—the first in May 2024 (Figure 1) and the second in April 2025. Both sessions adopted a co-creation format combining expert presentations, interactive group work, and plenary discussions.

Figure 1: Advertising poster for the 1st Sustainable Mobility Challenges Workshops

The 2024 edition involved mainly second- and third-year engineering students, while the 2025 (Figure 2) edition was directed towards first-year students, ensuring diversity in perspectives and ideas across cohorts.

Figure 2: Advertising poster for the 2nd Sustainable Mobility Challenges Workshops

Each event was opened by IPL leadership and moderated by senior representatives of the institution—**Vice-President João Pedro Silva** for the 2024 edition and **Professor Luís Serrano** for the 2025 edition. The **Leiria City Council** was represented by **Councillor Luís Lopes**, responsible for Mobility, Environment, and Civil Protection, who presented the city's strategic objectives and infrastructure projects. The private sector was represented by **Hugo Antunes** from **PRF**, a company renowned for its expertise in hydrogen mobility technologies and refuelling operations during the Dakar Rally. The EFEU consortium was represented by **Rui Ruben**, who presented comparative results from the EFEU Mobility Survey conducted across the four partner universities (**Fehler! Verweisquelle konnte nicht gefunden werden.**).

Figure 3: Welcome panel for the 1st edition workshop. From left to right: Luis Lopes (Leiria City Councillor); Carlos Capela (Faculty Director); João Pedro Silva (IPL Vice-President / Moderator); Rui Ruben (EFEU/IPL); Hugo Antunes (PRF Company).

The workshops featured a balanced composition of over 80 participants, including students (Figure 4), academic staff, local government representatives, and industry professionals. Group discussions focused on identifying barriers to sustainable mobility—such as car dependency, limited public transport coverage, and safety concerns for cyclists—and prioritising potential interventions based on feasibility and impact. Participants were guided to co-design and propose realistic measures aligned with Leiria's ongoing sustainability agenda and the EFEU project's emission neutrality objectives.

Figure 4: View on the 2nd edition workshop.

2.3 Results and Lessons Learned

The workshops yielded a comprehensive set of proposals for advancing sustainable mobility at both institutional and municipal levels. Among the main measures identified were:

- Strengthening integration between campus and city **public transport systems**, including timetable synchronisation and real-time information access;
- **Expansion of cycling infrastructure** and installation of secure bicycle parking facilities on campus;
- Development of a **campus-wide carpooling platform** for students and staff;
- Exploration of a **Mobility-as-a-Service (MaaS)** platform to integrate various transport options under a unified system;
- Introduction of **incentives for electric vehicle (EV) use and active mobility** (cycling, walking);
- Launch of **communication and awareness campaigns** to promote behavioural change and highlight the benefits of sustainable commuting.

Several of these outcomes were subsequently reflected in the **Leiria Mobility Plan** and contributed to ongoing urban initiatives, including the implementation of an **e-bike sharing network** and the development of the **Mobis digital mobility platform**. The workshops also reinforced IPL's institutional commitment to sustainability, leading to new internal discussions on timetable consolidation and the potential adoption of four-day teaching schedules to reduce commuting frequency.

Key lessons learned include the importance of grounding discussions in empirical data, ensuring the participation of diverse stakeholder groups, and maintaining regular dialogue between universities and municipalities to monitor progress. The workshops demonstrated that local mobility solutions are most effective when they are co-created by those directly affected—students, staff, and residents—supported by public policy and private innovation.

2.4 Analytical and Impact Aspects

Quantitatively, the activity achieved participation of **over 80 individuals** across two sessions, representing a broad spectrum of stakeholders—students, faculty, municipal officers, and private-sector partners. Qualitatively, the workshops succeeded in transforming the abstract goals of emission reduction into concrete, community-driven action proposals. The discussions strengthened IPL's role as an active contributor to local climate initiatives and elevated the visibility of the EFEU project within the regional sustainability network.

The co-creation process also enhanced **student sustainability literacy**, encouraging them to reflect on their own commuting behaviour and to act as ambassadors for sustainable practices. Moreover, it established a durable collaboration channel between the university and the Leiria Municipality, illustrating how higher education institutions can function as catalysts for regional low-carbon transitions.

2.5 Relevance and Transferability

The Sustainable Mobility Co-Creation Workshops at IPL represent a **replicable model** for other higher education institutions aiming to combine research, education, and stakeholder engagement in pursuit of emission-neutral operations. By linking empirical data (Mobility Survey) with participatory design (Workshops) and policy-oriented dissemination (Good Practices Guide), this approach embodies the full cycle of WP4—**data collection → modelling → co-creation → policy and dissemination**.

Aligned with the **Erasmus+ priorities of sustainability, innovation, digitalisation, and multi-actor collaboration**, the workshops provide an exemplary case of how universities can bridge academic research with real-world impact. Their success highlights the value of structured stakeholder dialogue in advancing the European Green Deal objectives and demonstrates the potential of higher education institutions to act as regional laboratories for sustainable mobility solutions.

In summary, the Sustainable Mobility Co-Creation Workshops have not only contributed to achieving the goals of Work Package 4 but also established a transferable framework for participatory sustainability action—one that fosters behavioural change, institutional transformation, and community partnership on the shared path toward emission-free European universities.

3 References

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