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INTERNATIONAL CONFERENCE

SUSTAINABLE MOBILITY

5-6 MARCH

2026

The INTEC International Conference brings together academics, researchers, policymakers and industry experts to discuss innovative approaches and collaborative solutions for a sustainable future in engineering and mobility. The conference will be hosted by POLIS University in Tirana, Albania, and co-organized by partners from across the EU as part of the Erasmus+ CBHE Project 101081873-ERASMUS-EDU-2022-CBHE-STRAND-2.

INTEC International Engineering Competence Centres to push sustainable mobility development in Albania and Montenegro
Project Reference: 101081873-ERASMUS-EDU-2022-CBHE-STRAND-2

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02

REVIEW OF THE EVOLUTION OF INTERNATIONAL SHIP ENERGY EFFICIENCY REGULATIONS AND THE ALBANIAN CONTEXT

DOI: 10.37199/c41001002

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Abstract

Maritime transport is a sector that contributes to global greenhouse gas (GHG) emissions. Within this framework, the maritime sector has responded to the global trend of reducing emissions, reflected in several regulations aimed at promoting more environmentally friendly development within the sector. Since air emissions from ships are strongly related to the concept of ship energy efficiency the International Maritime Organization (IMO) has progressively developed a comprehensive regulatory framework to improve ship energy efficiency and reduce greenhouse gas emissions. From the introduction of the Energy Efficiency Design Index (EEDI) and the Ship Energy Efficiency Management Plan (SEEMP) to operational measures such as the Energy Efficiency Operational Indicator (EEOI), the Energy Efficiency Existing Ship Index (EEXI), and the Carbon Intensity Indicator (CII), these instruments have evolved from voluntary guidance to mandatory and increasingly stringent requirements. This paper provides a concise review of this regulatory evolution and its main technical and operational issues. Additionally, the paper contextualizes these developments within Albania, where initiatives related to ship energy efficiency remain limited, presenting significant challenges. By consolidating historical and contemporary regulatory measures, this study offers a comprehensive reference for ship operators, policymakers, and researchers, supporting the transition toward low-carbon maritime transport.

Keywords: energy efficiency, IMO regulations, maritime transport, EEDI, EEOI, EEXI.

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I. INTRODUCTION

Maritime transport plays a fundamental role in global trade and accounts for more than 80% of world trade transport by volume. At the same time, maritime transport represents a significant source of greenhouse gas (GHG) emissions because of the fuel consumption associated with the main ship propulsion and auxiliary systems. According to the Third and Fourth IMO Greenhouse Gas Studies, maritime transport contributes approximately 2–3% of global CO_2 emissions. (IMO, 2014; IMO, 2020).

The strong correlation between ship fuel consumption, propulsion performance, and emitted air pollutants has placed ship energy efficiency at the center of international regulatory attention. It must be emphasized that the ship energy efficiency is a multidimensional concept, that include hull form design, propulsion system efficiency, operational practices, and fleet management strategies.

In order to address the growing environmental concerns and international climate commitments, the International Maritime Organization (IMO) has progressively developed a comprehensive regulatory framework aimed at improving ship energy efficiency and reducing GHG emissions from maritime transport. This framework has evolved over time, transitioning from voluntary guidelines and technical recommendations toward mandatory and stringer regulatory instruments. The introduction of the Energy Efficiency Design Index (EEDI) and the Ship Energy Efficiency Management Plan (SEEMP) marked a significant shift integrating energy efficiency considerations into ship design and operational management. More recently, the Energy Efficiency Existing Ship Index (EEXI) and the Carbon Intensity Indicator (CII) have extended regulatory control to the existing fleet, emphasizing continuous performance monitoring and compliance.

Early studies primarily were focused on quantifying fuel consumption and estimating emissions of carbon dioxide, nitrogen oxides, and sulfur oxides from international shipping. Corbett and Koehler (2003) provided one of the first comprehensive global assessments of emissions from ocean-going vessels, highlighting the significant contribution of shipping to air pollution. Subsequent studies refined emission inventories by incorporating improved fleet data and operational profiles (Endresen et al., 2007; Buhaug et al., 2009).

With increasing policy attention on climate change, the literature progressively shifted toward the development of ship energy efficiency performance indicators, that express relationships between transport work and fuel consumption, applicable to design and operational aspects of the vessel. Design-oriented indices are focused on the intrinsic efficiency of the hull of the ship and the propulsion system under predefined conditions. In this frame IMO has formalized the Energy Efficiency Design Index (EEDI). On the other hand, operational indicators reflect real-world performance and are influenced by speed, loading conditions, and voyage planning. The Energy Efficiency Operational Indicator (EEOI), introduced by the IMO as a voluntary metric, has been

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widely applied in academic studies to assess operational efficiency and emission intensity (Faber et al., 2012).

Beyond IMO instruments, the literature contains numerous alternative indicators tailored to specific vessel categories. Fuel consumption per nautical mile and emissions per hour of operation are frequently used for ferries, fishing vessels, and port service craft, where transport work is difficult to define in conventional ton-mile terms. Installed power per displacement and speed–power relationships are long-established metrics in naval architecture, employed to evaluate hull efficiency and propulsion performance during the design stage (Winnes & Fridell, 2010; Larsson & Raven, 2010; Molland et al., 2011; FAO, 2012).

Despite the increasing maturity of the IMO regulatory regime, its applicability remains largely limited to ships of 400 gross tonnage (GT) and above engaged in international voyages. Consequently, a substantial number of small vessels operating in coastal waters, short-sea shipping routes, and domestic services fall outside the scope of mandatory energy efficiency regulation. These vessels, including ferries, fishing vessels, port service craft, and workboats, are particularly relevant in regional and national contexts, where their cumulative environmental impact and energy consumption may be significant. This regulatory gap is especially relevant for countries with predominantly small-scale maritime sectors, such as Albania. The Albanian maritime fleet is characterized by a limited number of large ocean-going vessels and a prevalence of small and medium-sized ships operating on short routes and within port areas. Although Albania has formally adopted international maritime conventions, practical implementation of energy efficiency measures for ships remains limited, particularly for vessels under 400 GT.

By consolidating regulatory developments and academic contributions, this study aims to support policymakers, ship operators, and researchers in advancing the transition toward low-carbon maritime transport.

II. METHODOLOGY

This study adopts a systematic review methodology to examine the evolution of international ship energy efficiency regulations and to contextualize their implementation in Albania. The method synthesizes academic literature, international maritime policy documents, and national regulatory sources to provide a comprehensive understanding of the topic.

The research followed a three-level analytical framework:

1. Regulatory Evolution Analysis – following the chronological development of IMO measures, from MARPOL Annex VI to the implementation of the CII.

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2. Literature Synthesis – reviewing and integrating findings from recent peer-reviewed studies on ship energy efficiency and emission reduction strategies.
3. Contextual Assessment – analysis of the ship energy efficiency framework within the Albanian context.

The objective is to identify convergence and gaps between international requirements and Albanian practice, emphasizing policy, operational, and technical dimensions.

III. RESULTS

This section discusses the results of the international evolution of ship energy efficiency regulation and the Albanian context. The evolution of regulations regarding ship energy efficiency can be divided in four main phases:

Phase I (1997–2005): Foundation of Environmental Regulation. This phase began with the establishment of MARPOL Annex VI in 1997, marking the first international effort to reduce ship emissions. It initially aimed to limit SO_x and NO_x pollutants.

Phase II (2008–2013): Introduction of Energy Efficiency Standards. During this phase, main instruments regarding ship energy efficiency were introduced, including the Energy Efficiency Design Index (EEDI) and Ship Energy Efficiency Management Plan (SEEMP) through MEPC.203(62) in 2011. Jimenez et al. (2022) observed that this period changed the way shipbuilders approached ship design, leading them to adopt energy efficiency measures such as decarbonization measures, emissions reduction strategies, speed management, and alternative energy sources. Issa et al. (2022) emphasized that SEEMP can be implemented in various ways, such as improvement of the speed of the vessel, changing the course to avoid rough weather, hull cleaning in dry dock, and adding heat recovery methods.

Phase III (2014–2020): Operational and Performance Integration. The SEEMP Part II update (MEPC.282(70)) in 2016 has required mandatory collection of fuel consumption data, enabling assessment of the global fleet efficiency. During this phase, technological innovations intensified. Perčić et al. (2022) described a comprehensive vessel model that evaluates energy efficiency over the entire fuel life cycle, showing that alternative power systems, especially full electrification, can offer lower emissions and higher efficiency than traditional diesel options. Battaglia et al. (2024) conducted an in-depth literature review and identified trends in maritime energy efficiency and proposed a structured set of Key Performance Indicators to measure the success of green innovations and support sustainability in shipping.

Phase IV (2021–Present): Comprehensive Decarbonization Framework. The IMO's Initial GHG Strategy from 2018 and the MEPC.328(76)/336(76) resolutions represent a commitment to long-

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term decarbonization through EEXI and CII. EEXI retrofits design efficiency standards to older ships, modernizing the existing fleet, while CII introduces annual operational ratings from A to E based on carbon intensity. These changes indicate a global shift toward monitoring performance and aiming for continuous improvement.

The formal inclusion of energy efficiency into the international maritime regulatory framework began with the MARPOL Annex VI amendments in 2011. These amendments introduced mandatory energy efficiency measures for ships and took effect in 2013, becoming the first global climate regulation that applies to an entire industry.

The Energy Efficiency Design Index (EEDI) is central to this regulatory framework. The EEDI measures theoretical CO_2 emissions per unit of transport work for a ship under standard design conditions. It is expressed in grams of CO_2 per tonne-nautical mile and is calculated using propulsion power, specific fuel consumption, carbon emission factors, and reference speed. By setting increasingly strict EEDI requirements over successive phases, the regulation encourages improvements in hull design, propulsion efficiency, and the use of energy-saving technology.

In addition to the EEDI, the Ship Energy Efficiency Management Plan (SEEMP) focuses on operational energy efficiency. Unlike the EEDI, which applies only to new ships, the SEEMP is relevant for all ships over 400 GT. It provides a framework to monitor energy use, identifying ways to improve efficiency, and promote best operational practices. While the SEEMP does not set specific performance targets, it is essential for raising awareness and building a culture of energy efficiency in shipping companies.

In parallel with mandatory measures, the IMO developed voluntary instruments aimed at monitoring operational performance. The Energy Efficiency Operational Indicator (EEOI) was introduced as a practical tool to evaluate air emission intensity of ships during operation (IMO, 2009). The EEOI relates total CO_2 emissions to transport work performed over a given period and can be applied to individual voyages or aggregated over longer time frames. EEOI allows ship operators to track trends in operational efficiency, evaluate the effectiveness of energy-saving measures, and benchmark performance across fleets. Consequently, the EEOI has been widely adopted in academic studies and industry reports, particularly for assessing speed reduction strategies, voyage optimization, and loading practices (Faber et al., 2011).

Recognizing that a significant portion of future emissions could come from the existing fleet, the IMO introduced additional measures to extend regulatory control beyond new buildings. The Energy Efficiency Existing Ship Index (EEXI), adopted in 2021 and entering into force in 2023, applies EEDI-like requirements retroactively to existing ships of 400 GT and above (IMO, 2021).

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The EEXI assesses the technical efficiency of ships based on installed power and design parameters, requiring compliance through technical modifications such as engine power limitation, propulsion upgrades, or energy-saving devices.

In parallel, the Carbon Intensity Indicator (CII) was introduced as an operational measure to monitor and regulate annual carbon intensity performance. The CII gives ships a rating from A to E based on their carbon intensity relative to predefined thresholds. Ships rated D or E must implement corrective action plans, establishing a direct link between operational performance and regulatory requirements.

The combined introduction of EEXI and CII strengthens the IMO energy efficiency framework. For the first time, existing ships must meet both technical and operational efficiency requirements, reflecting a move toward life-cycle-based regulation. However, concerns exist about using speed reduction as a primary compliance strategy and its broader economic and safety impacts (Lindstad & Eskeland, 2016).

Furthermore, the regulatory framework remains largely the same across different ship types and operating profiles, which could affect its effectiveness in some situations. The exclusion of vessels under 400 GT shows a limitation in the current system, leaving a significant part of the maritime sector without energy efficiency regulations. This issue is especially important for national and regional fleets, where small vessels dominate and operations differ greatly from large ocean-going ships.

These considerations provide the basis for the subsequent analysis of energy efficiency indicators applicable to small vessels and their relevance to the Albanian maritime sector.

Albania ratified MARPOL Annex VI in 2020 (Low nr 9/2020 date 03/02/202). However, practical implementation remains limited. The Albanian maritime sector has relatively few large ocean-going vessels and many small and medium-sized ships that operate along the coast and in domestic services. Maritime activities are mainly focused along the Adriatic and Ionian coasts, with major ports like Durrës, Vlorë, Sarandë, and Shengjin serving key roles in passenger transport, short-sea shipping, fishing, and port services.

The national fleet structure reflects Albania’s geographical and economic characteristics. Passenger ferries operating on short international routes, fishing vessels, tugboats, pilot boats, and various port service craft represent the majority of active vessels. Many of these vessels are under the 400 GT limit and are not covered by mandatory IMO energy efficiency regulations. As a result, energy efficiency considerations for this segment are largely driven by operational cost concerns rather than regulatory compliance. Fuel consumption remains a major operational expense for Albanian ship operators, particularly in the context of fluctuating fuel prices. However, systematic monitoring of energy efficiency and emissions is not yet common practice across the sector.

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IV. DISCUSSION

The results show a steady global trend toward better maritime energy efficiency and reduced carbon intensity. They also highlight significant differences between developed and developing maritime nations. The IMO's regulatory path, from EEDI and SEEMP to EEXI and CII, shows an evolution in governance that balances technical design standards with operational performance monitoring. However, this trend poses challenges for smaller economies like Albania, where institutional capacity and infrastructure are still underdeveloped.

The international maritime community has increasingly adopted a systems-based approach to decarbonization. The EEDI and EEXI are strict design regulations that impact ship construction and retrofitting. In contrast, the SEEMP and CII serve as flexible operational frameworks that focus on behavior and monitoring.

Technological innovation is key to maritime decarbonization. Research indicates a clear shift toward alternative fuels, digital optimization, and hybrid propulsion systems. Perčić et al. (2022) propose integration of life-cycle assessment models that account for both upstream and downstream emissions of alternative fuels.

Albania is a member of the International Maritime Organization and has accepted most international conventions related to maritime safety and environmental protection, including MARPOL. At the national level, there is no specific regulatory framework to address ship energy efficiency beyond international requirements. Energy efficiency factors are not routinely included in fleet management practices, port operations, or maritime policies. Responsibilities related to environmental monitoring, maritime administration, and port management are scattered, making coordinated action more difficult.

The lack of specific guidance or incentives for small vessels is a structural limitation. While there are compliance mechanisms for larger ships involved in international trade, smaller operators do not have the regulatory drivers or technical support to implement energy efficiency measures.

The Albanian maritime sector faces several challenges in improving ship energy efficiency. First, the fleet is relatively old, especially for small commercial and fishing vessels. Older ships typically show lower propulsion efficiency and limited compatibility with modern energy-saving technologies. Second, data gaps and limited digitalization hinder performance monitoring and benchmarking. Without reliable fuel consumption and operational data, even basic energy efficiency indicators are hard to use consistently. Third, financial limitations and a lack of technical expertise make it difficult for small operators to invest in retrofitting or renewing their fleets. Without clear regulatory signals or economic incentives, improvements in energy efficiency may be seen as less urgent than immediate operational needs. At the same time, there are some opportunities that could facilitate the progress. The relatively small size of the national fleet allows for targeted and manageable

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interventions, such as pilot projects focusing on specific vessel categories. Furthermore, alignment with European Union environmental policies and funding mechanisms could support capacity building and technology adoption.

From a policy perspective, the introduction of simplified energy efficiency indicators for small vessels, such as fuel consumption per nautical mile or per hour of operation, could provide a pragmatic starting point. These indicators require limited data, are easy to interpret, and can raise awareness among operators. Over time, such measures could be complemented by more advanced indicators and voluntary performance targets, allowing for a gradual and reasonable integration of energy efficiency considerations into the Albanian maritime sector.

V. CONCLUSION, RECOMMENDATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Based on the findings of this study, several recommendations can be formulated. First, Albanian policymakers should consider the development of adaptive energy efficiency frameworks tailored to small vessels, drawing on indicators already established in the literature. Second, capacity building in data collection and performance monitoring should be prioritized, since reliable operational data are a prerequisite for any meaningful assessment. Third, pilot projects focusing on specific vessel categories or routes could serve as testbeds for technical and operational solutions, including hybridization and partial electrification.

From a research perspective, further research work is needed to refine composite and multi-criteria energy efficiency indicators that balance simplicity, comparability, and analytical robustness. Empirical studies based on real world operational data from small vessels would significantly expand the data base and support the decision-making process. In addition, future research could explore the integration of small-vessel energy efficiency measures into regional and port-level emission reduction strategies.

In conclusion, while international ship energy efficiency regulation has made substantial progress over the past decade, its effectiveness will ultimately depend on the ability to address all segments of the maritime sector. By linking international regulatory developments with context-specific analyses, this document contributes to a more inclusive and practical understanding of energy efficiency in maritime transport, supporting the transition to a more sustainable and low-carbon future.

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International conference on sustainable mobility

Agenda

Project title: International Engineering Competence Centres to push Sustainable Mobility Development in Albania and Montenegro
Acronym: INTEC

Work package	
WP11	**International conference**
TASK	
11.4	Coummunity Building Events

Dates	05.03.-06.03.2026
City	Tirana
Meeting venue	POLIS University Entrance Hall
Address	Rr. Bylis 12, Kodi Postar 1051, Kutia Postare 2995, Tirana, Albania

05.03.2026	
Entrance Hall, POLIS University	
8:30 – 9:00	**Registration**
9:00 – 9:30	**Opening Performance**
Welcome session – Auditorium A5 (Ground floor)	
9:30 – 10:00	**Opening Remarks** **Dr. Elona Karafili** (Vice Rector, POLIS University) **Dr. Flora Krasniqi** (Head of Office of Projects and Internationalization, POLIS University) **DI Daniela Wenzl** (INTEC Project Coordinator)
Auditorium A5 (Ground floor)	
10:00 –11:00	**Keynote speakers** **DI Horst Pflügl AVL** Collaborative Research for sustainable Mobility **DPSHTRR Representative** – (General Directorate of Road Transport Services in Albania)
11:15 – 11:30	**Coffee break (Moving into parallel sessions)**

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11:30	SESSION 1: POLITICAL AND REGULATORY FRAMEWORK AULA B1	SESSION 2: TECHNOLOGICAL INNOVATION AULA B4
11:30 – 11:45	**Opening Session:** Prof. Emeritus dr Nataša Gospić (FSKL)	**Opening Session:** Associate Prof. Ivan Tolj (US)
11:45 – 12:00	**Integrating Event Data Recorder (EDR) Technology into Sustainable Road Safety Frameworks within the European Green Deal** Eriselda Alimeti, Parid Milo, Mentor Çejku, Anis Sulejmani, Odhisea Koça	**Empirical Comparative Study of Structural CFRP Sandwich Structure Inserts for Out-of-Plane loads** Imre Kovács
12:00 – 12:15	**Infrastructure Readiness for Sustainable Mobility: EU Frameworks and the Case of Albania** Ervin Kalemaj, Parid Milo, Mentor Çejku, Anis Sulejmani, Odhisea Koça	**The Role of Intermodal Transportation for the Sustainable Mobility** Márton Kovács
12:15 – 12:30	**Review of the Evolution of International Ship Energy Efficiency Regulations and the Albanian context** Dr. Blenard Xhaferaj, Doklejda Hodaj	**Impact of Heat Pump Systems on Winter Energy Use and Driving Range in Battery Electric Vehicles** Luis Henrique Pereira Martins
12:30 – 12:45	**Renewable Energy Procurement (CPPA) and Transport Electrification: European Perspectives and Albanian Challenge** Antonio Ndoci, Anis Sulejmani, Odhisea Koça, Mentor Çejku, Parid Milo	**Liquid Cooling Systems for Electric Vehicle Batteries: Improving Safety, Performance and Sustainability** João Miguel de Almeida Ribeiro Silva
12:45 – 13:00	**The Current Status of Autonomous Vehicle**	**Analysis of Battery Charging and Discharging Behavior for Electric Vehicle Applications** Leona Markic, Luka Filipović

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	Technology Adoption in the Balkan Region Darjana Lopičić, Oliver Popović, Miloš Ilić, Bojan Kocić	
13:00 – 14:00	**Lunch**	
14:00 – 14:15	**Reviewing the European Green Deal in Energy, Mobility and Industry** Veselinka Calasan, Ivana Ognjanovic	**Automotive Cooling Systems Sustainability: A Focus on the Expansion Tank** Ana Inês Barbeiro Casimiro
14:15 – 14:30	**The European Green Deal and its National Implementation: From Strategy to Practice** Blerina Bektashi, Andi Bektashi	**Design and Development of a Constant-Volume Combustion Chamber for Optical Investigation of Hydrogen and Water Injection Under Engine-like Conditions** Julius Hollerith, Prof. Dr. Bhavin Kapadia
14:30 – 14:45	**From Prediction to Regulation: Evidence Production Approaches in Autonomous Mobility Research and Their Policy Implications** Sadmira Malaj	**Emission Reduction of Marine Propulsion Systems in SECA Zones Through the Integration of Hydrogen Technologies** Motalleb Miri, Ivan Radaš, Marija Mandić, Ivan Tolj
14:45 – 15:00	**Questions and Discussion**	**A Comprehensive Analysis of Ventilation System for Enhanced Energy Efficiency in Marine Propulsion Applications** Sara Blašković, Gojmir Radica, Jakov Šimunović

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<table>
<tr><td>15:00 - 15:15</td><td></td><td>Design and Topology Optimization of a Lightweight Chain Sprocket for Electric Motorcycle Applications
Teo Čolović, Ivo Marinić-Kragić</td></tr>
<tr><td rowspan="2">15:15 - 15:30</td><td>SESSION 3: ECONOMIC AND BUSINESS PRESPECTIVES + CASE STUDIES AND GOOD PRACTICES
Aula B1</td><td rowspan="6">Questions and Discussion</td></tr>
<tr><td>Opening Session:
Dr. Anis Sulejmani (PUT)</td></tr>
<tr><td>15:30 - 15:45</td><td>Managing Renewable Energy Resources as a Foundation for Sustainable Mobility Transitions
Deivi Sinanaliaj, Martin Bektashi</td></tr>
<tr><td>15:45 - 16:00</td><td>Feasibility of Electric Bus deployment in Montenegro: A Case Study of Budva (Erasmus+ INTEC / IECC Context)
Anastasija Mrkajic, Vinko Nikic.</td></tr>
<tr><td>16:00 -16:15</td><td>Children Paths as an Urban Regeneration Strategy: Naim Frasheri Study Case
Dejvi Dauti</td></tr>
<tr><td>16:15 - 16:45</td><td>Questions and Discussion</td></tr>
</table>

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International conference on sustainable mobility

Agenda

Project title: International Engineering Competence Centres to push Sustainable Mobility Development in Albania and Montenegro
Acronym: INTEC

Work package	
WP11	**International conference**
TASK	
11.4	Coummunity Building Events

Dates	05.03.-06.03.2026
City	Tirana
Meeting venue	POLIS University Entrance Hall
Address	Rr. Bylis 12, Kodi Postar 1051, Kutia Postare 2995, Tirana, Albania

06.03.2026		
First Floor Hall, POLIS University		
8:30 – 9:00	Registration	
9:00– 9:15	SESSION 4: SOCIAL AND ENVIRONMENTAL IMPACT AULA B1	SESSION 5: FUTURE SCENARIOS AULA B4
9:00 – 9:15	Opening Session: Prof. Dr. Bhavin Kapadia (FHF)	Opening Session: MA Adrian Millward-Sadler (FHJ)
9:15 – 9:30	**Comparison of Lifecycle Emissions of a SUV with Fuel Cell and Battery Electric Powertrains** - Bhavin Kapadia, Alper Sayin, Sandra Eisenträger	**GENAI Literacy as a Transversal Skill for Emerging Professionals: Implications for Sustainability-Critical Knowledge Work** – Adrian Millward-Sadler
9:30 – 9:45	**Smart Mobility Technologies and their Impact on Urban Sustainability: Insights from**	**Effects of Technical Traffic Calming Measures** – Filip Perović

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	European and Western Balkan Cities – Alma Gjonaj, Vjola Ziu	
9:45 – 10:00	**The Disappearing Squares: Social and Environmental Impacts of Urban Mobility Planning in Durres –** Arjola Sava	**Cybersecurity Vulnerabilities in Electric Vehicle Operating Systems: A Global Awareness Analysis -** Aleksa Radević
10:00 – 10:15	**The City that Demands Continuous Movement: The Disappearance of the Right not to Move within the Framework of Sustainable Mobility –** Avrili Meshi	**Development of a risk assessment model for the transport of hazardous materials using ALOHA and GIS software tools –** Marko Radetić
10:15 – 10:30	**Between Rhetoric and Reality: Discursive Framings, Greenwashing and Outcomes in Sustainable Mobility –** Kejsi Veselagu	**Mapping Distance and Time Leveraging Isochrone Intelligence in Emerging Cities -** Andia Vllamasi, Erjon Cobani
10:30 – 10:45	**Reimagining the City Through Green Mobility Strategies: The Case of Tirana -** Vjola Ziu, Alma Gjonaj	**Can AI develop its Own "Taste" Automotive Design? -** Gregor Andoni, Kristjana Meço
	Coffee Break	
11:00 – 11:15	**Linking Morphology, Perceived Safety, and Sustainable Mobility in Post-Socialist Urban Contexts-** Sindi Doce	**Optimizing Public Transport Corridors Using AI-Based Scenario Modelling: A case Study on Tirana's Ring Road -** Erjon Çobani, Julian Beqiri, Merita Guri
11:15 – 11:30	**Towards Sustainable Transport: A Comparative Analysis of Electric Vehicle Adoption in Montenegro and Albania -** Radmila Milić	**Threat Landscape and Multi-Layered Protection Mechanisms for Autonomous and Electric Vehicle Systems -** Marko Asanovic, Oliver Popović, Zoran Avramović, Nataša Gospić

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11:30 – 11:45	Questions and Discussion	**Cybersecurity Challenges in Modern Vehicular Communication Networks** - Aleksandar Grgurević, Nataša Gospić, Oliver Popović
11:45 – 12:00		**Green Transition in Albania: Challenges and Future Actions** - Erik Kushta, Andi Hyka, Enea Nasto
12:00 – 12:15	SESSION 6: CONTROVERSIES AND CHALLENGES Aula B1 Opening Session: Prof. Kristofor Lapa (UV)	**Use of AI in the Process of Green Transformation and Impact on Public Health** - Esmeralda Hamiti, Federika Alliaj, Kristi Metushi
12:15-12:30	**The Adoption of Electric Vehicles in Albania: A Comparative Study with Other Western Balkan Countries** - Doklejda Hodaj, Andrea Lapa	**Development of an Automatic Traffic Sign Detection System Using YOLOv8** - Valentina Vojinović, Luka Filipović
12:30-12:45	**Application of Quality Tools in the Analysis of Factors Influencing the Development of Electromobility in Montenegro** - Jelena Šaković Jovanović, Draško Jovanović, Mirjana Grdinić Rakonjac, Marko Lučić, Miloš Perović, Aleksandar Vujović, Gordana Radulović	**The Historical Development of Artificial Intelligence and Its Influence on the job market in Automotive Engineering** - David Josef Pilgram
12:45 – 13:45	Questions and Discussion	Questions and Discussion
13:45	Lunch	

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