



# BOOK OF PROCEEDINGS

# 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

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Project Partners:



**INTEC International Conference**  
February 2026  
POLIS University, Tirana, Albania

**INTEC**>>>



**ISBN 9789928347268**

**DOI: 10.37199/c41001000**

**Copyrights @POLIS Press**

**INTEC International Conference**  
February 2026  
POLIS University, Tirana, Albania

**INTEC**>>>



Co-funded by the  
Erasmus+ Programme  
of the European Union

### **Partner Universities**

Project Coordinator: FH JOANNEUM Gesellschaft mbH (FHJ), Austria  
Frankfurt University of Applied Sciences (FRA-UAS), Germany  
University of Split (US), Croatia  
POLIS University (POLIS), Albania  
Polytechnic University of Tirana (PUT), Albania  
University of Vlore "Ismail Qemali" (UV), Albania  
University of Montenegro (UOM), Montenegro  
Adriatic University Bar (FSKL), Montenegro  
University of Donja Gorica (UDG), Montenegro  
AVL List GmbH (AVL), Austria  
Gama Auto d.o.o. (GA), Montenegro  
NVO Alfa Centar (AC), Montenegro

### **Conference Chair**

DI Daniela Wenzl  
Dr. Elona Karafili  
Dr. Flora Krasniqi

### **Conference Keynote Speaker**

DI Horst Pflügl, AVL List GmbH (AVL), Austria  
MSc. Mine Bushi, General Directorate of Road Transport Services in Albania

### **Scientific Committee**

Prof. Emeritus Dr. Nataša Gospić, Adriatic University Bar (FSKL), Montenegro  
Prof. Dr. Bhavin Kapadia, FH JOANNEUM Gesellschaft mbH (FHJ), Austria  
Assoc. Prof. Dr. Ivan Tolj, University of Split (US), Croatia  
Prof. Dr. Kristofor Lapa, University of Vlore "Ismail Qemali" (UV), Albania  
Prof. Dr. Damir Sedlar, University of Split (US), Croatia  
Prof. Dr. Boško Ilija Matović, University of Montenegro (UOM), Montenegro  
MA Adrian Millward-Sadler, FH JOANNEUM Gesellschaft mbH (FHJ), Austria  
Dr. Anis Sulejmani, Polytechnic University of Tirana (PUT), Albania  
Dr. Enkelejd Mëhilli, University of Vlore "Ismail Qemali" (UV), Albania  
Dr. Blenard Xhaferraj, Polytechnic University of Tirana (PUT), Albania  
Dr. Elona Karafili, POLIS University (POLIS), Albania  
Dr. Flora Krasniqi, POLIS University (POLIS), Albania  
Dr. Ivana Ognjanović, University of Donja Gorica (UDG), Montenegro

**Organizing Committee**

DI Daniela Wenzl  
Dr. Keti Hoxha  
Dr. Flora Krasniqi  
Dr. Elona Karafili  
MSc. Sadmira Malaj  
MSc. Sindi Doce  
MSc. Glejdi Fejza

**TABLE OF CONTENTS**

**1. POLITICAL AND REGULATORY FRAMEWORK .....9**

***RENEWABLE ENERGY PROCUREMENT (CPPA) AND TRANSPORT ELECTRIFICATION:  
EUROPEAN PERSPECTIVES AND ALBANIAN CHALLENGE ..... 10***

***REVIEW OF THE EVOLUTION OF INTERNATIONAL SHIP ENERGY EFFICIENCY  
REGULATIONS AND THE ALBANIAN CONTEXT ..... 20***

***THE EUROPEAN GREEN DEAL AND ITS NATIONAL IMPLEMENTATION: FROM STRATEGY  
TO PRACTICE ..... 30***

***THE CURRENT STATUS OF AUTONOMOUS VEHICLE TECHNOLOGY ADOPTION IN THE  
BALKAN REGION ..... 42***

***INTEGRATING EVENT DATA RECORDER (EDR) TECHNOLOGY INTO SUSTAINABLE ROAD  
SAFETY FRAMEWORKS WITHIN THE EUROPEAN GREEN DEAL ..... 56***

***INFRASTRUCTURE READINESS FOR SUSTAINABLE MOBILITY: EU FRAMEWORKS AND THE  
CASE OF ALBANIA..... 70***

***FROM PREDICTION TO REGULATION: EVIDENCE PRODUCTION APPROACHES IN  
AUTONOMOUS MOBILITY RESEARCH AND THEIR POLICY IMPLICATIONS..... 82***

***REVIEWING THE EUROPEAN GREEN DEAL IN ENERGY, MOBILITY AND INDUSTRY ..... 98***

**2. TECHNOLOGICAL INNOVATIONS ..... 107**

<b><i>AUTOMOTIVE COOLING SYSTEMS SUSTAINABILITY: A FOCUS ON THE EXPANSION TANK</i></b> .....	<b>108</b>
<b><i>EMPIRICAL COMPARATIVE STUDY OF STRUCTURAL CFRP SANDWICH STRUCTURE INSERTS FOR OUT-OF-PLANE LOADS</i></b> .....	<b>118</b>
<b><i>LIQUID COOLING SYSTEMS FOR ELECTRIC VEHICLE BATTERIES: IMPROVING SAFETY, PERFORMANCE AND SUSTAINABILITY</i></b> .....	<b>132</b>
<b><i>DESIGN AND DEVELOPMENT OF A CONSTANT-VOLUME COMBUSTION CHAMBER FOR OPTICAL INVESTIGATION OF HYDROGEN AND WATER INJECTION UNDER ENGINE-LIKE CONDITIONS</i></b> .....	<b>138</b>
<b><i>ANALYSIS OF BATTERY CHARGING AND DISCHARGING BEHAVIOR FOR ELECTRIC VEHICLE APPLICATIONS</i></b> .....	<b>148</b>
<b><i>IMPACT OF HEAT PUMP SYSTEMS ON WINTER ENERGY USE AND DRIVING RANGE IN BATTERY ELECTRIC VEHICLES</i></b> .....	<b>158</b>
<b><i>THE ROLE OF INTERMODAL TRANSPORTATION FOR THE SUSTAINABLE MOBILITY</i></b> .....	<b>166</b>
<b><i>EMISSION REDUCTION OF MARINE PROPULSION SYSTEMS IN SECA ZONES THROUGH THE INTEGRATION OF HYDROGEN TECHNOLOGIES</i></b> .....	<b>176</b>
<b><i>A COMPREHENSIVE ANALYSIS OF VENTILATION SYSTEM FOR ENHANCED ENERGY EFFICIENCY IN MARINE PROPULSION APPLICATIONS</i></b> .....	<b>190</b>
<b><i>DESIGN AND TOPOLOGY OPTIMIZATION OF A LIGHTWEIGHT CHAIN SPROCKET FOR ELECTRIC MOTORCYCLE APPLICATIONS</i></b> .....	<b>200</b>
<b>3. ECONOMIC AND BUSINESS PRESPECTIVE</b> .....	<b>211</b>
<b><i>FEASIBILITY OF ELECTRIC BUS DEPLOYMENT IN MONTENEGRO: A CASE STUDY OF BUDVA</i></b> .....	<b>212</b>
<b><i>MANAGING RENEWABLE ENERGY RESOURCES AS A FOUNDATION FOR SUSTAINABLE MOBILITY TRANSITIONS</i></b> .....	<b>224</b>
<b>4. SOCIAL AND ENVIRONMENTAL IMPACT</b> .....	<b>231</b>
<b><i>SMART MOBILITY TECHNOLOGIES AND THEIR IMPACT ON URBAN SUSTAINABILITY: INSIGHTS FROM EUROPEAN AND WESTERN BALKAN CITIES</i></b> .....	<b>232</b>

<b>THE DISAPPEARING SQUARES: SOCIAL AND ENVIRONMENTAL IMPACTS OF URBAN MOBILITY PLANNING IN DURRËS.....</b>	<b>244</b>
<b>THE CITY THAT DEMANDS CONTINUOUS MOVEMENT: THE DISAPPEARANCE OF THE RIGHT NOT TO MOVE WITHIN THE FRAMEWORK OF SUSTAINABLE MOBILITY.....</b>	<b>256</b>
<b>COMPARISON OF LIFECYCLE EMISSIONS OF A SUV WITH FUEL CELL AND BATTERY ELECTRIC POWERTRAINS.....</b>	<b>264</b>
<b>BETWEEN RHETORIC AND REALITY: DISCURSIVE FRAMINGS, GREENWASHING AND OUTCOMES IN SUSTAINABLE MOBILITY.....</b>	<b>272</b>
<b>TOWARDS SUSTAINABLE TRANSPORT: A COMPARATIVE ANALYSIS OF ELECTRIC VEHICLE ADOPTION IN MONTENEGRO AND ALBANIA.....</b>	<b>284</b>
<b>LINKING MORPHOLOGY, PERCEIVED SAFETY, AND SUSTAINABLE MOBILITY IN POST-SOCIALIST URBAN CONTEXTS .....</b>	<b>296</b>
<b>REIMAGINING THE CITY THROUGH GREEN MOBILITY STRATEGIES: THE CASE OF TIRANA .....</b>	<b>304</b>
<b>5. CONTROVERSIES AND CHALLENGES .....</b>	<b>313</b>
<b>THE ADOPTION OF ELECTRIC VEHICLES IN ALBANIA: A COMPARATIVE STUDY WITH OTHER WESTERN BALKAN COUNTRIES .....</b>	<b>314</b>
<b>APPLICATION OF QUALITY TOOLS IN THE ANALYSIS OF FACTORS INFLUENCING THE DEVELOPMENT OF ELECTROMOBILITY IN MONTENEGRO.....</b>	<b>326</b>
<b>6. CASE STUDIES AND GOOD PRACTICES .....</b>	<b>335</b>
<b>CHILDREN PATHS AS AN URBAN REGENERATION STRATEGY: NAIM FRASHËRI'S CASE STUDY.....</b>	<b>336</b>
<b>7. FUTURE SCENARIOS.....</b>	<b>345</b>
<b>GENAI LITERACY AS A TRANSVERSAL SKILL FOR EMERGING PROFESSIONALS: IMPLICATIONS FOR SUSTAINABILITY-CRITICAL KNOWLEDGE WORK .....</b>	<b>346</b>
<b>CYBERSECURITY VULNERABILITIES IN ELECTRIC VEHICLE OPERATING SYSTEMS: A GLOBAL AWARENESS ANALYSIS.....</b>	<b>362</b>

***CYBERSECURITY CHALLENGES IN MODERN VEHICULAR COMMUNICATION NETWORKS***  
..... **372**

***MAPPING DISTANCE AND TIME: LEVERAGING ISOCHRONE INTELLIGENCE IN EMERGING CITIES***..... **382**

***THE HISTORICAL DEVELOPMENT OF ARTIFICIAL INTELLIGENCE AND ITS INFLUENCE ON THE JOB MARKET IN AUTOMOTIVE ENGINEERING*** ..... **394**

***GREEN TRANSITION IN ALBANIA: CHALLENGES AND FUTURE ACTIONS***..... **406**

***OPTIMIZING PUBLIC TRANSPORT CORRIDORS USING AI-BASED SCENARIO MODELLING: A CASE STUDY ON TIRANA’S RING ROAD*** ..... **414**

***USE OF AI IN THE PROCESS OF GREEN TRANSFORMATION AND IMPACT ON PUBLIC HEALTH***..... **426**

***EFFECTS OF TECHNICAL TRAFFIC CALMING MEASURES***..... **432**

***CAN AI DEVELOP ITS OWN “TASTE” AUTOMOTIVE DESIGN?***..... **440**

***THREAT LANDSCAPE AND MULTI-LAYERED PROTECTION MECHANISMS FOR AUTONOMOUS AND ELECTRIC VEHICLE SYSTEMS*** ..... **448**

***DEVELOPMENT OF A RISK ASSESSMENT MODEL FOR THE TRANSPORT OF HAZARDOUS MATERIALS USING ALOHA AND GIS SOFTWARE TOOLS***..... **460**

***DEVELOPMENT OF AN AUTOMATIC TRAFFIC SIGN DETECTION SYSTEM USING YOLOV8***  
..... **470**

03

**THE EUROPEAN GREEN DEAL AND ITS NATIONAL IMPLEMENTATION: FROM STRATEGY  
TO PRACTICE**

**DOI: 10.37199/c41001003**

**Blerina BEKTASHI**

POLIS University, Albania  
[blerina\\_bektashi@universitetipolis.edu.al](mailto:blerina_bektashi@universitetipolis.edu.al)

**Andi BEKTASHI**

POLIS University, Albania

**Abstract**

*The European Green Deal is believed by many scientific researchers to be the European Union's last hope against climate change and environmental degradation. It addresses the need to transition to a more sustainable economy and market, with the long-term goal of achieving climate neutrality by the year 2050. Although it sets out ambitious requirements and objectives, as well as broad regulatory directions at the EU level, such as the agreement to reduce emissions by 55% by 2030 and 90% by 2040, its real impact depends on how these goals are interpreted and implemented within national political and regulatory systems. In theory, this deal seems like a simple, straightforward solution to the problem of climate change; however, as many of us know from personal experience, with big changes come even bigger waiting times and bureaucracy levels. This paper analyzes how the European Green Deal turns from an optimistic green dream into a nationwide effort, and eventually the reality the younger generations will live in. This paper will pay particular attention to the complex relationship between EU-level government structures and domestic policy-making processes and how they manage find a common ground and speed up legal procedures. It examines the institutions and instruments that regulate the processes, legislative measures, and institutional arrangements that shape implementation in the key sectors of the European economic sector, such as energy, infrastructure and transport, agriculture, and biodiversity protection. The analysis brings to attention the importance of political commitment, cooperation between nations, administrative capacity, and regulatory coherence in influencing both the speed and effectiveness of implementation. It also looks into the challenges that come with the differences in economic structures between advanced and emerging economies, different long-lasting governmental traditions, and national priorities among Member States that more often than*

30

*not might go against these changes, which can lead to uneven results and regulatory fragmentation. In addition, the paper considers the role of financial support and monitoring mechanisms, including EU funding schemes like NextGenerationEU and Horizon Europe as well as reporting requirements, in promoting compliance and policy alignment. In conclusion, this study argues that while the European Green Deal offers a strong strategic and legal foundation, its success ultimately depends on the ability of the European nations to once again prove their unity and come together against this terrifying problem with effective national translation, cross-sector coordination, and flexible regulatory frameworks capable of responding to changing environmental and socio-economic conditions.*

**Keywords:** European Green Deal, climate neutrality, national implementation, regulatory, policy coordination

## **I. INTRODUCTION**

The European Green Deal is the European Union's solution to the climate problem. It aims to cut emissions by at least 50% by 2030, rising towards 55%, while legally binding the 2050 neutrality goal through the European Climate Law. It pushes forward a clean transition that protects people and planet, is economically sound and socially fair (commission.europa.eu). The European Green Deal's way of dealing with these problems revolves around creating a new economic system where products are reused, repaired and recycled, reducing waste and conserving resources as well as pushing for cleaner, more sustainable and energy-efficient industries that thrive in the EU and global markets (European Commission, 2024; Hereu-Morales, 2024).

This is quite a big ambition and we need to know if the European Union is on the right path and if the objective is realistically fulfillable if we continue like this. Another issue that might arise is that countries with smaller economies tend to have less efficient legislatures and less resources than the bigger economies. That might make them lag behind and slow down the process for the whole union.

This paper addresses three main research questions:

- How close is the EU to meet its 2030 and 2050 climate goals, and which sectors lead this progress?
- Which institutional, economic, and political factors explain the differences in implementation among member states?
- What policy and governance measures can close implementation gaps and speed up the transition to climate neutrality?

This paper will answer these questions by analyzing the changes in EU policy and EU-wide net greenhouse gas emission levels, as well as how the progress is going in less developed EU member countries, and what's causing the difference in progress compared to the rest of the union. With these answers, we will be able to discuss what changes might be necessary and draw a conclusion.

## **II. METHODS**

This research follows a mixed-method approach. It is based on qualitative comparative case studies with quantitative analysis of secondary data. To see the changes over time in greenhouse gas emissions in different industries and in different member countries, we analyzed official EU data sources and graphs from the European Environment Agency (eg. The EU Greenhouse Gas Emissions: Sectorial progress towards 2030, Projected emissions in the effort sharing sectors in 2030 compared to Member States' national targets, and Progress towards achieving 2030 climate and energy targets in the EU-27) as well as data from the Our World Data Organization, and compared them to the European Green Deal goals.

Based on performance, two Member States were chosen as case studies for a thorough comparative analysis:

- Finland was chosen as a high-performing case because of its early policy adoption, high penetration of renewable energy, steady emission reductions, and robust institutional capacity.
- Malta was chosen as a lagging case because of its rising emissions in important industries, geographical and economic specialization-related structural limitations, and difficulties implementing policies despite commitments.

After doing these comparisons and analyzing the results, we analyzed the issues that are slowing down the least effective country and the factors that are speeding up the countries that are doing well. Then we came up with conclusions regarding how realistic it is for the European Union to successfully achieve the goals set by the European Green Deal and what's causing some countries to lag behind in progress.

This research has also a number of limitations. First, evaluation of implementation process at local level is difficult due to dependency on secondary data. Second, although the case study selection is useful for analysis, it does not fully capture the variety of Member State context. Third, policy changes and ongoing initiatives are not taken into consideration as the data used in the analysis are from early 2025. Last but not least, it is incorrect to attribute changes in emissions exclusively to the European Green Deal because other factors like COVID-19, energy price fluctuations, and economic cycles have also had an impact.

### III. RESULTS

A set of graphs were analyzed to understand overall EU progress towards climate targets. The first graph analyzed was Our world Data Annual CO<sub>2</sub> emissions graph, where we compared the emissions of the European Union and every member state in 1990 with their emissions in 2024 (Figure 1).

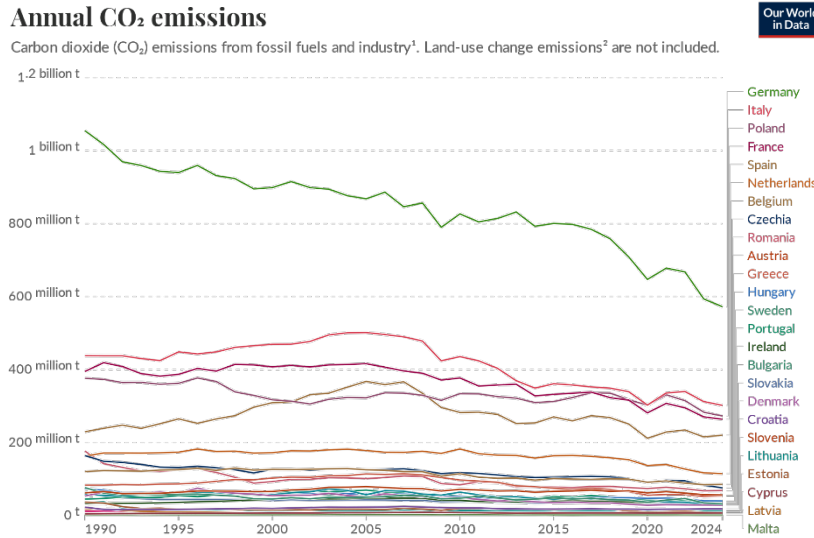


Figure 1. Net greenhouse gas emissions and projections in the EU (1990-2050).

Source: European Environment Agency (2025), adapted by the authors, CC BY 4.0.

The second graph that we analyzed was the Progress towards achieving the 2030 climate and energy targets in the EU-27 interactive chart. It shows the emissions over time of the European Union and estimates how much the emissions will be in the future if we continue like this and if we make some changes.

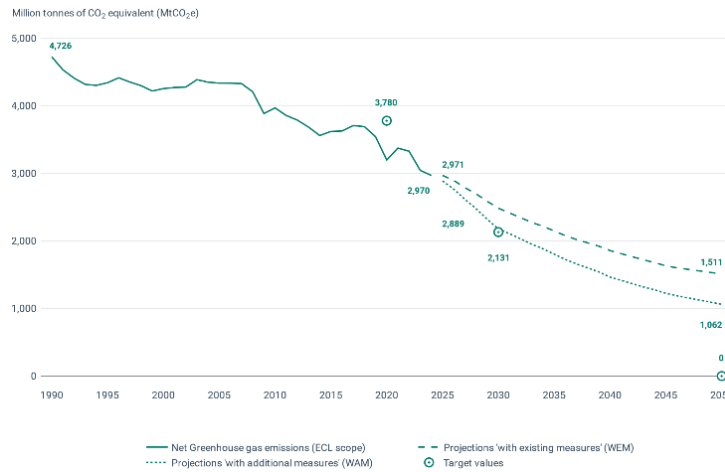


Figure 2. European emissions and goals

Source: European Environment Agency (2025), adapted by the authors, CC BY 4.0.

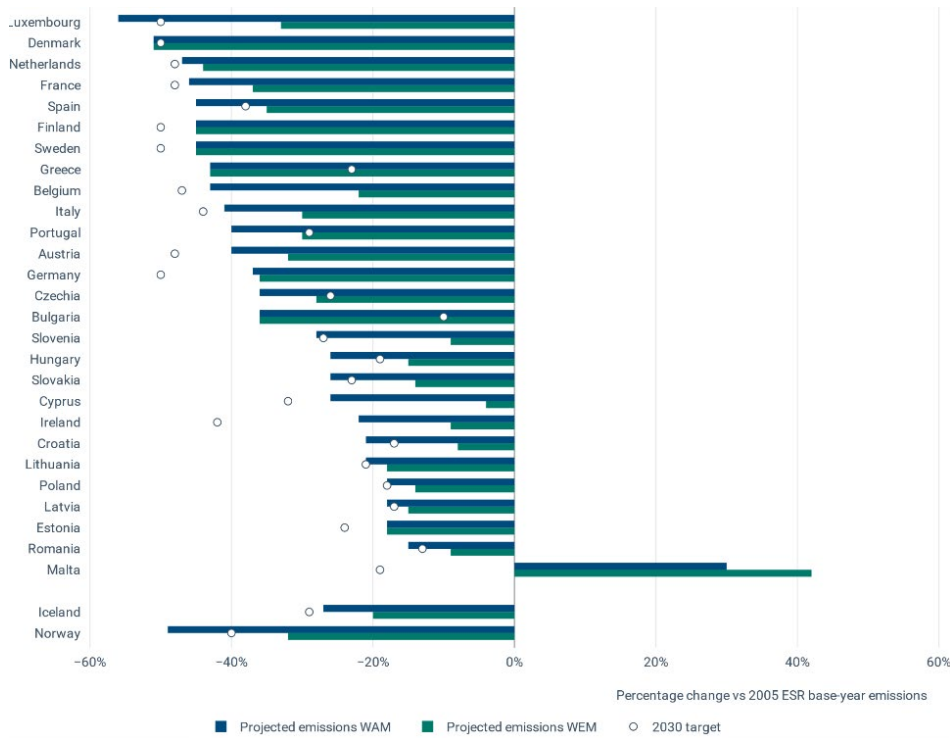
The third graph that we studied was the EU Greenhouse Gas Emissions: Sectorial progress towards 2030 (Figure 3). It helps us understand the spread of emissions in the primary economic sectors and how close they're getting to the target.



Figure 3. Emissions by sector.

Source: European Environment Agency (2025), adapted by the authors, CC BY 4.0.

The fourth and final graph that we studied was the projected emissions in the effort sharing sectors in 2030 compared to Member States' national targets graph. It shows how much this chart shows whether each EU country is expected to meet its 2030 climate target for everyday sectors like transport, buildings, agriculture, and waste (these are called effort-sharing sectors because each country is responsible for its own reductions there).



*Figure 4. Effort Sharing Sectors*

*Source: European Environment Agency (2025), adapted by the authors, CC BY 4.0.*

After analyzing the results, we can see that Malta is the country with the worst performance in the European Union because the country's emissions have gone up instead of down. Even though Malta has approved and applied many policy changes to reduce CO2 emissions, the recent greenhouse gas (GHG) trajectory reveals a continuous upward trend in emissions in key sectors. According to the Climate Action Progress Report 2025, Malta's net GHG emissions in 2024 were 2.2 MtCO<sub>2</sub>-eq, which is nearly 2% above pre-pandemic levels even though the country has seen a 3.1% yearly decrease in the past 2 years. Surprisingly, the primary source of emission growth is not domestic energy production, which has declined drastically, but transport-related activities, especially international mobility (EEA, 2025; European Commission, 2024).

The international aviation and maritime sector contributed a stunning 77% of Malta's total emissions in 2024. The emissions in the international aviation and maritime sector have seen an increase of more than 200% during the 2005-2024 period. This huge increase reflects Malta's strategic position as a connector between the European Union and eastern trading routes, as well as the economic reliance on port-based services, air transport, and tourism.

Malta's second-largest contributor to CO<sub>2</sub> emissions is the domestic road transport sector. Emissions from this sector have gone up by 118% in the 1990-2024 period. This increase in CO<sub>2</sub> emissions in the domestic road transport sector has come as a consequence of high car ownership, a small number of public transport alternatives, and dispersed urban development. Waste emissions have also gone up rapidly and have seen a 155% rise in the 1900-2024 period. Meanwhile, Malta's Land Use Change and Forestry (LULUCF) sector provides small mitigation because of the country's small size, registering net emissions rather than removals in 2024.

To address these results, Malta's government has intensified its policy changes and financial interventions, especially in transport and energy efficiency. Malta has generated over 0.23 billion € in ETS auction revenues in the 2013-2024 period and has reported that it has spent on climate and energy-related purposes. In 2024 alone, Malta has invested 22 million euros in electric vehicle purchases and scrappage schemes. Malta's government has also guaranteed feed-in tariffs for small-scale renewable electricity producers and electricity tariff incentives to motivate and reward low-emission consumption. The European Union has also supported Malta's green change by funding the government. Malta invested 69% of its Recovery and Resilience Facility (RRF) and 32% of cohesion policy funds towards climate action. The funds were reported to go towards sustainable transport hubs, renewable deployment in households, building retrofits, and water-energy efficiency projects. Something that has raised questions about the management of these funds is the fact that the 2025 assessment notes that Malta did not quantify emission reduction impacts for its reported policies and measures. This is a huge problem because it limits transparency and policy evaluation.

On the other side of the spectrum, one of the countries that had the best performance in the European Union's effort to cut down CO<sub>2</sub> emissions was Finland. Finland stands out among the European Union's nations because its greenhouse gas emissions levels have consistently maintained a downward trajectory on the charts. That's because the effort to change is supported by one of the most ambitious and credible climate policy frameworks in Europe, if not the world.

Unlike other countries where emissions reductions are often times different depending on the sector, Finland's government has decided to follow a stricter policy where climate neutrality is embedded into the law and is the same for every sector. Finland's government has fully committed

to reaching the net-zero emissions target by 2035, that being the earliest legally binding target among EU member states.

According to the EU climate monitoring reporting of the past few years, Finland has successfully achieved a reduction of its total greenhouse gas emissions by more than 40% compared to the 1990 levels while maintaining economic growth. This economic growth shows a clear sign of decoupling of emissions from GDP.

The crown jewel of Finland's green change is surely the energy system. Finland has managed to progressively replace fossil fuels with cleaner alternatives like renewable power as well as nuclear power, resulting in a low-carbon power supply system (Tijanić, 2025; Pisani-Ferry et al., 2023; Ottomano Palmisano et al., 2025) where wind, hydropower, bioenergy, and nuclear energy account for the majority of the energy generated.

Another area where Finland shines is their strong performance in energy efficiency. Their architecture choices allow Finnish people to heat their homes with minimal waste, which results in Finland recording relatively low emissions per capita from heating despite the country's cold climate. In the transport sector, while emissions are still a challenge but Finland has taken measures like expanding biofuel mandates and supporting electric vehicle uptake.

Finland's circular economy strategy is also a key factor in the country's success. It further strengthens the country's green deal performance as the first country to adopt a national circular economy roadmap. It has significantly reduced waste generation growth and has achieved record-high recycling rates compared to the EU average.

The Land Use, Land-Use Change and Forestry (LULUCF) sector is also closely monitored by the state, securing its balance by actively managing through adaptive forest policies. This results in a relatively constant level of forest carbon sinks.

Finland's people are also to be credited because the country is blessed with benefits from high institutional capacity and public trust, meaning that carbon pricing, energy taxation and regulatory measures face little to no resistance from the people and are applied smoothly and consistently across every sector.

Finland's strong performance on the European green deal doesn't come as a result of a single policy success but a well-planned and coherent long-term governance model, where ambition, implementation, and social acceptance allow dreams to turn into reality producing a sustained and measurable positive change in emission levels across the country.

#### **IV. CONCLUSION**

By watching the graphs provided to us by official sources, we can confidently say that the European Union has been doing a great job until now in reducing CO<sub>2</sub> emissions and was able to do way better than the 2020 target but estimates show that the union will have to take even more drastic changes if they want to hit the 2030 target and unless some new revolutionary technology comes out the dream of achieving climate neutrality by the year 2050 will have to remain a dream for a bit longer. This doesn't discredit the union's work and the impact of the European Green Deal because if we keep going like this, we would have decreased the CO<sub>2</sub> emissions in the EU from 4726 million tons in 1990 to only 1,511 million tons by 2050, and it can go as low as 1062 tons if we make some changes! In Figures 1, 2 and 3, we can see the graph that shows these changes.

In addition to emission trends, the European Green Deal promotes structural transformation in agriculture through the expansion of organic farming (Muska et al., 2025).

Sector-wise, the energy supply sector has been the vanguard of the European Green effort and has reduced its emissions by nearly 50 %, and if it continues like this, it will go from the sector with the biggest emissions to a sector that emits as much CO<sub>2</sub> as the others. The other sectors with noticeable positive change are the industry and the building sectors who both are steadily cutting their emissions down. The agriculture sector in the other hand, was from the start so close to the target that it has already achieved it 7 years before the deadline. The only sectors that are facing problems are the domestic transport sector, whose changes are minimal compared to the other sectors, and the LULUCF sector that stands for Land Use, Land-Use Change and Forestry, and it covers how land and forests interact with carbon—including forests, cropland, grassland, wetlands, and changes such as afforestation, deforestation, or land conversion. The LULUCF sector, even though it is a carbon sink and absorbs more CO<sub>2</sub> than it releases, has had an increase in CO<sub>2</sub> emissions, and that's caused by deforestation. We can see all of this information in Figure 3.

In Figure 4, we can see how every EU member state is doing regarding the changes and if they're close to achieving the objectives set by the European Green Deal. After analyzing the graph a clear pattern emerges when comparing countries that are on track with those that are off track in the effort-sharing sectors: countries performing well (e.g., Sweden, Denmark, Finland, Netherlands, Luxembourg) tend to have early and consistent climate policies, high renewable energy penetration, strong public transport systems, higher fuel and carbon taxes, and higher administrative capacity to design and enforce measures at national and local level; they also generally have higher incomes, which makes investments in building renovation, electrification, and clean mobility more feasible.

In contrast, countries performing poorly or at risk (e.g., Malta, Poland, Hungary, Bulgaria, Romania, Cyprus, parts of Southern and Eastern Europe) often share structural constraints such as higher

dependence on fossil fuels (especially coal or oil), older vehicle fleets, slower building renovation rates, weaker public transport, and limited fiscal or institutional capacity to implement additional measures beyond existing ones; in some cases, political resistance to climate policies and concerns about social costs further delay action.

In short, the European Union should also focus on financing the poorer members, especially on building clean energy production facilities, creating and maintaining a clean and efficient public transport fleet, and subsidies for individuals from those poorer countries that buy electric vehicles, and in exchange, those countries would raise their taxes on oil and other fossil fuels.

In Malta's case, the country has shown considerable progress in energy decarbonization and climate protection financing, even though the CO<sub>2</sub> emissions project a 70% overshoot compared to a linear trajectory toward climate neutrality by 2050. That's because the majority of Malta's CO<sub>2</sub> emissions come from the international aviation and maritime sector, as well as the domestic road transport sectors.

Malta's government has taken considerable action on these sectors too with the help of EU funding, but the change isn't great enough, and something that has raised questions about the management of these funds is the fact that the 2025 assessment notes that Malta did not quantify emission reduction impacts for its reported policies and measures. This is a huge problem because it limits transparency and policy evaluation. The evidence from 2023-2025 suggests that without stronger interventions like transport measures, accelerated modal changes, and enhanced land-use mitigation, Malta's emission reductions will remain insufficient to meet EU climate targets.

In the other hand, countries like Finland were able to do better because a couple of reasons like the fact that the government was able to plan long-term strategies and had the financial and manpower ability to implement the changes, as well as the social acceptance, well-thought-out architecture, and huge carbon sinks.

While there are some things that the European Union can improve, we can confidently say that the European Union as a whole has been doing a great job, and it remains the beacon of hope in the world and a leader towards a cleaner environment and a safer climate.

## **REFERENCES**

European Commission. (2024). *Assessment of the draft updated National Energy and Climate Plans (NECPs) (COM/2024/123)*. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52024DC0123>

- European Commission. (2024). *Report on the state of the Energy Union / governance follow-up (COM/2024/550)*. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52024DC0550>
- European Commission. (2024). *State of the Energy Union 2024 (COM/2024/404)*. <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52024DC0404>
- European Environment Agency. (2025, September 29). *EU greenhouse gas emissions: Sectoral progress towards 2030*. <https://www.eea.europa.eu/en/europe-environment-2025/thematic-briefings/climate-change/greenhouse-gas-emissions/eu-greenhouse-gas-emissions-sectorial-progress-towards-2030>
- European Environment Agency. (2025, November 6). *Projected emissions in the effort-sharing sectors in 2030 compared to Member States' national targets*. <https://www.eea.europa.eu/en/analysis/publications/trends-and-projections-in-europe-2025/projected-emissions-in-the-effort>
- European Environment Agency. (2025, November 6). *Trends and projections in Europe 2025 (EEA Report No. 08/2025)*. <https://www.eea.europa.eu/en/analysis/publications/trends-and-projections-in-europe-2025>
- European Environment Agency. (2025, December 10). *Monitoring report on progress towards the 8th EAP objectives 2025: Progress towards achieving 2030 climate and energy targets in the EU-27 (EEA Report No. 09/2025)*. <https://www.eea.europa.eu/en/analysis/publications/monitoring-report-on-progress-towards-the-8th-eap-objectives-2025/progress-towards-achieving-2030-climate-and-energy>
- Hereu-Morales, J. (2024). The European (Green?) Deal: A systematic analysis of environmental sustainability. *Sustainable Development*. <https://doi.org/10.1002/sd.2671>
- Institute for European Environmental Policy. (2024). *European Green Deal barometer (4th ed.)*. <https://ieep.eu/wp-content/uploads/2024/05/European-Green-Deal-Barometer-2024-4th-edition.pdf>
- Muska, A., et al. (2025). European Green Deal objective: Potential expansion of organic farming across Member States. *Agriculture*, 15(15), 1633. <https://www.mdpi.com/2077-0472/15/15/1633>
- Ottomano Palmisano, G., Rocchi, L., Negri, L., & Piscitelli, L. (2025). Evaluating the progress of the EU countries towards implementation of the European Green Deal: A multiple criteria approach. *Land*, 14(1), 141. <https://doi.org/10.3390/land14010141>

Pisani-Ferry, J., et al. (2023). A new governance framework to safeguard the European Green Deal. *Bruegel*. [https://www.bruegel.org/system/files/2023-09/PB%2018%202023\\_1.pdf](https://www.bruegel.org/system/files/2023-09/PB%2018%202023_1.pdf)

Tijanić, L. (2025). Tracking the green transition in the European Union. *Economies*, 13(2), 37. <https://www.mdpi.com/2227-7099/13/2/37>

**International conference on sustainable mobility**

**Agenda**

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

<b>Work package</b>	
<b>WP11</b>	<b>International conference</b>
<b>TASK</b>	
11.4	Community Building Events

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

<b>05.03.2026</b>	
Entrance Hall, POLIS University	
<b>8:30 - 9:00</b>	<b>Registration</b>
<b>9:00 - 9:30</b>	<b>Opening Performance</b>
<b>Welcome session - Auditorium A5 (Ground floor)</b>	
<b>9:30 - 10:00</b>	<b>Opening Remarks</b> 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)
<b>Auditorium A5 (Ground floor)</b>	
<b>10:00 - 11:00</b>	<b>Keynote speakers</b> DI Horst Pflügl AVL Collaborative Research for sustainable Mobility DPSHTRR Representative - (General Directorate of Road Transport Services in Albania)
<b>11:15 - 11:30</b>	<b>Coffee break (Moving into parallel sessions)</b>

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

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

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

## International conference on sustainable mobility

# Agenda

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

<b>Work package</b>	
WP11	International conference
<b>TASK</b>	
11.4	Community Building Events

<b>Dates</b>	05.03.-06.03.2026
<b>City</b>	Tirana
<b>Meeting venue</b>	POLIS University Entrance Hall
<b>Address</b>	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

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

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	Use of AI in the Process of Green Transformation and Impact on Public Health - Esmeralda Hamiti, Federika Alliaj, Kristi Metushi
	Opening Session: Prof. Kristofor Lapa (UV)	
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	