

Sustainable transport: Redefining tomorrow

Lighthouse Europe

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ANALYSIS

The transport sector, contributing almost 30% of the EU's greenhouse gas emissions¹, is a central point of attention for EU policy makers when addressing climate change. Through its commitments to ambitious emission reduction targets, the EU has taken a leading role in setting environmental strategies for transport, both domestically and globally. Technology emerges as a driver of change in this sector, offering solutions and paving the way for a more resilient, sustainable, and equitable future.

EU Sustainable transport strategies with challenges ahead

A bit of context

As a key element of the Green Deal, the EU's transport policy strives to deliver safe, efficient, and green mobility solutions while fostering a competitive industry that creates jobs and drives growth. It not only covers infrastructure but encompasses all modes of transport, the entire value chain, as well as passenger rights and safety. The **Sustainable and Intelligent Mobility Strategy**, introduced in **December 2020** by the European Commission, outlines 82 initiatives to transform the transport system by **reducing emissions by 90% by 2050**. This includes the **'Fit for 55' package**, adopted in **October 2023**, which aims to achieve climate neutrality by **reducing GHG emissions by 55% by 2030**. These measures involve revising texts such as the Renewable Energy Directive, the ReFuelEU Aviation, and a border carbon adjustment mechanism. The transition to sustainable mobility has seen significant progress, with measures taken to reduce emissions both within the EU and globally. By **extending the scope of the EU Emissions Trading System to cover aviation and maritime transport**, the EU has encouraged international action, prompting states to set more ambitious targets for zero-emission vehicles and aircraft by 2050. Key legislative proposals currently under discussion within EU institutions, such as CountEmissionsEU and the Passenger Rights Package, will significantly influence the EU's progress toward its climate and mobility goals.

¹ Source European Environment Agency
<https://www.eea.europa.eu/en/analysis/indicators/greenhouse-gas-emissions-from-transport>

Challenges hindering sustainable transport goals

Despite a [15.5% reduction](#) in emissions in the energy and industry sectors in 2023 compared to 2022, the EU's climate targets remain highly ambitious, and member states' plans do not appear on track to meet them. A significant challenge lies in the national implementation of EU directives. Although exemptions exist such as for international aviation, maritime, and freight, **fragmented policies hinder coherent and effective implementation**. As the majority of EU legislative texts are being finalized, member states must now transpose them into national legislation without creating a fragmented European market.

Moreover, many challenges persist to attain sustainability goals and to implement perfectly those goals:

- concerns remain concerning the practical availability of vehicle batteries, their end-of-life disposal, and the necessary renewable fuels for powering automobiles, aircraft, and vessels.
- Uncertainties remain in the political landscape -in light of the upcoming European elections- which question the priorities that could be given to transport and climate in the next EU's strategic agenda.
- Lastly, investment is crucial for transitioning to sustainable transport systems. The EU cannot bear alone the cost and must, alongside private, national, and local actors, engage in realizing this transition.

Leveraging technology and innovation

Innovation and technologies: drivers for the development of sustainable transport

Digitalization and new technologies are driving the development of innovative and sustainable mobility models, reshaping global value chains. **Progress** in artificial intelligence, the Internet of Things, cloud computing, and 5G networks have driven the digital transformation of mobility, **paving the way to innovative transport solutions** such as connected trucks and driverless delivery systems. Mobility services powered by digital platforms are revolutionizing travel behaviors, while data from autonomous vehicles and digital-driven behaviors such as e-commerce and teleworking are reshaping traditional travel patterns. Smart urban mobility solutions, like on-demand fleets of electric cars, offer opportunities to reduce carbon emissions and promote eco-friendly transport systems. **Successful implementation**, however, **requires** not only **adequate infrastructure, regulatory frameworks, and security measures but also societal acceptance**.

Innovative green logistics aims to minimize environmental impact while efficiently managing goods, using strategies such as optimizing transport routes and embracing circular economy principles such as reuse, recycling, and resource recovery. These approaches not only reduce costs, emissions, and waste but also improve customer satisfaction and competitiveness. However, challenges such as coordination and lack of information between stakeholders remain. **Technology and innovation are essential to meet current and future mobility needs** while mitigating environmental impacts. This period of transition offers

many opportunities to introduce innovative ideas into the transport sector, combining technology, sustainability and innovation.

How to achieve sustainable mobility transformation?

Need for a paradigm shift in mindset towards transport

Promoting a truly sustainable transport model requires more than just introducing alternative solutions; it demands a **fundamental change in our approach to mobility and transport philosophy**. Regardless of the environmental benefits of technology, sustaining current travel patterns would still result in significant environmental harm. It is crucial to overhaul these travel patterns to align them with our planet's ecological limits. All **stakeholders must commit to this transition** at various levels: public authorities guiding the evolution of transport systems, companies innovating to develop, use, and adapt new technologies to the sector, and citizens adapting their behavior. This **paradigm shift applies across the whole transport sector** from international trade to logistics and also tourism. **The entire value chain has to be reshaped**, while preserving Europe's competitiveness and sovereignty. As the EU approaches a decisive turning point with the European elections, the new balance of power in the next Parliament in Brussels will bring new interests that will significantly shape the EU's priorities in its upcoming strategic agenda 2024 - 2029.

Towards a unified voice in the EU

This transition requires commitment at all decision-making levels: European, national, regional, and local. All industrial and service providers involved in the transport value chain have to take actions and share expertise and best practices. Moreover, recent geopolitical events have highlighted the urgency of accelerating the energy transition, emphasizing the **need for a sustainable European transport network to strengthen European energy sovereignty**. As the European elections approach, stakeholders need to unite to make their voices heard and contribute to shape the EU's policy agenda.

It is time to create a **cross-industry coalition of like-minded players that would speak as one voice. This would help to shape and accelerate the transition to intelligent, sustainable transport in the EU**. Such a network would foster a much needed collaboration between stakeholders, institutions, and member states, while promoting environmentally friendly standards throughout the whole value chain. This collaboration is key to accelerate progress towards a greener future.

Next steps

Technology holds promise for reshaping the transport landscape, but achieving sustainable goals requires a fundamental shift in our approach. However, the **EU's high dependence** on other regions for key technologies like AI, cloud computing, and semiconductors **remains a concern.** However, solutions exist.

First step would be to unify Europe's diverse mobility ecosystems to harness its potential while avoiding fragmentation. This would happen by having stakeholder collaborate to establish common standards, infrastructure, and governance frameworks.

Second step, would be to find a solution to invest seriously in connected mobility, new technologies and infrastructure, encompassing cloud computing, 5G connectivity, AI, smart car chips, and advanced automotive operating systems.

Last steps would be to put all efforts to make sure that the technologies and solutions applied to future sustainable transports are European and bring value to the EU economy on the long term. Local technologies, processes and patents in that sector contribute to a **resilient and competitive EU economy.** This is why the new mandate should prioritize implementing recent measures in transport and the environment, rather than introducing new regulations.

Contact us

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