## Position Paper

Brussels, 22.09.2025

# EU Emissions Trading System

**CER aisbl** – **COMMUNITY OF EUROPEAN RAILWAY AND INFRASTRUCTURE COMPANIES**
Avenue des Arts 53 – 1000 Bruxelles | T: +32 (0)2 213 08 70 | E: contact@cer.be | www.cer.be

# EU Emissions Trading System

## Summary

The 2026 reform of the EU Emissions Trading System (EU ETS) offers a pivotal moment to align carbon pricing with Europe's 2040 climate ambition, especially by supporting the modal shift toward low-carbon transport. Electrified rail, as the cleanest mass transport mode, should be prioritized through strategic use of ETS revenues to fund infrastructure, innovation, and affordability measures. At the same time, the reform must address transport fairness by directing revenues to mitigate transport poverty and ensure accessible, sustainable mobility for all. A balanced ETS reform can thus drive deep decarbonization, innovation, and social inclusion across Europe's transport sector.

- The EU ETS should increase the pace of emissions reductions and expand to cover all transport modes to promote modal shift toward low-carbon options like rail.
- Rail's low carbon intensity and high electrification rate make it essential for cost-effective, large-scale decarbonisation in transport.
- ETS revenues, including from ETS 2 and the Social Climate Fund, must be earmarked to accelerate rail infrastructure, digitalisation, and zero-emission technologies.
- Policies must safeguard affordability and accessibility of sustainable transport to prevent exacerbating transport poverty, especially in vulnerable and rural communities.

# 1. Introduction

The upcoming 2026 reform of the EU Emissions Trading System (EU ETS) mark a critical moment for aligning EU climate policy with the interim 2040 target of a 90% net reduction in greenhouse gas (GHG) emissions compared to 1990 levels. European railways advocate for a strengthened EU ETS that better reflects the decarbonization potential of the transport and energy sectors, especially the railway sector including rail supply industry, which is the most electrified and lowest-emission mode of mass transport. By acknowledging the modal disparities and rewarding zero-emission transport, the ETS can drive equitable and effective climate action.

# 2. The Role of the EU ETS in Transport Decarbonisation and the Path to 2040

EU ETS is broadly on track to achieve its 2030 target of a 62% reduction, which is well beyond the EU Fit for 55 ambition. The EU Green Deal of climate neutrality, nevertheless requires maintaining of such ambition and furthermore to meet the interim 2040 target, the ETS must further adjust decarbonization levels:

- **Increase the Linear Reduction Factor (LRF)**: The ETS cap must decline at a faster rate to deliver deeper emissions cuts by 2040.
- **Expanded Scope to Support Modal Shift**: Integrate all major transport modes within the ETS while promoting modal shift toward sustainable options like rail.

## 2.1. Rising Carbon Prices: Implications for Low-Carbon Transport

Market forecasts anticipate a significant increase in EU Allowance (EUA) prices over the coming years:

- **Price Trajectory:** EUA prices are expected to average €70 per metric ton in 2025, rising to €80-90 in 2026, and potentially reaching €145 by 2030. Prices could approach €175 by 2035 if current policy parameters remain unchanged.
- **Market Dynamics:** The anticipated price increase is driven by the tightening supply of allowances and the exhaustion of cheaper emissions abatement options. This will lead to rising electricity costs of electric railways and underscores the importance of strategic investments in low-carbon technologies and infrastructure.

These insights highlight the EU ETS's critical role in driving emissions reductions and the need for continued reforms to ensure its effectiveness. The projected increase in carbon prices and thus electricity costs for railways further emphasizes the importance of investing in sustainable transport solutions, such as electrified rail, to achieve the EU's climate targets. There are number of key studies both on passenger and freight, showing the carbon avoidance of rail, which lowers the total cost of decarbonisation in transport.

## 2.2. Ensuring Modal Fairness: The Case for Rail

The ongoing inclusion of transport in the EU ETS through ETS 2 (for road transport) and maritime ETS, more comprehensive rules on aviation marks a welcome shift in climate policy. Yet, concerns remain about disparities in how different transport modes are treated, particularly rail.

- Over 80% of rail traffic in the EU is electrified, and rail accounts for less than 1% of transport GHG emissions.
- Unlike road or aviation, rail often already operates on decarbonized electricity grids, making it future-ready and less reliant on offset mechanisms. At the same time, electric rail transport has been included in economic terms into the ETS 1 and therefore pays its share to lower GHG emissions within the transport sector as the electricity market is fully covered.

With average emissions of 33 g $CO_2$/pkm for passengers and 24 g $CO_2$/tkm for freight, rail remains the lowest-carbon motorised transport mode in Europe and these values largely reflect the indirect emissions through electricity consumption.[1] Using conservative assumptions for electricity use and emissions intensity, the total annual ETS-related cost for all electrified rail transport across the EU27 can be estimated €571 million per year at current ETS price of €79,36/t $CO_2$. If the carbon price increases to €110/t $CO_2$ by 2027 as projected, the annual cost of electric rail transport in the EU27 could rise to over €790 million.

As the EU revises the ETS Directive and prepared for ETS 2 implementation, coherence across carbon pricing systems is essential. Carbon prices should gradually converge across all modes to ensure fair and consistent decarbonisation incentives. If rail diesel be included in the ETS 2, appropriate support mechanisms must be considered to prevent adverse effects on the competitiveness of rail transport in order to not penalise regional and low-volume lines that lack viable alternatives. Any such inclusion should be phased, conditional on parallel funding for electrification, rolling stock upgrades, or hydrogen/battery solutions to avoid reverse modal shift to road (passenger and freight) and negative social impacts in underserved regions.

Aviation is the most climate-intensive form of transport, with emissions projected to exceed pre-pandemic levels in 2025, reaching 195.2 million tonnes of $CO_2$- 4% higher than in 2019. Despite its significant emissions, aviation has long benefited from free allowances and limited scope within the EU ETS. While the phase-out of free allowances marks progress, further steps are needed to ensure climate fairness. The revision of the Energy Taxation Directive offers a critical opportunity to end outdated fossil fuel tax exemptions, such as the kerosene tax exemption and to promote fair competition by aligning taxation with environmental impact. Furthermore, some NGOs strongly advocate for extending the EU ETS to cover all flights departing from the European Economic Area (EEA), addressing the bulk of aviation emissions currently outside the system.[2]

## 3. Rewarding Modal Shift and System Efficiency

In 2023, the EU ETS generated revenues of €43.6 billion, with revenues of €33 billion allocated directly to Member States. Since June 2023, EU Member States are obliged to use all relevant ETS revenue to support climate action and energy transformation. Despite legal obligations to channel all relevant revenues toward climate action, there is currently no clear mechanism to prioritise or reward modal shift from high-emission modes to cleaner alternatives such as rail. Instruments funded by the ETS - including the Innovation Fund, Modernisation Fund, and forthcoming Social Climate Fund show limited emphasis on

[1] EEA GHG Efficiency Indicators https://www.eea.europa.eu/publications/rail-and-waterborne-transport
[2] T&E Polluter pays? A large share of Europe's aviation emissions remain unpriced https://www.transportenvironment.org/articles/airline-emissions-soar-to-pre-covid-levels

system efficiency or mode-based performance. To ensure climate and economic efficiency, ETS revenues and linked funds must rather support structural shifts and not just incremental decarbonisation within carbon-intensive sectors.

The ETS reform should incentivize modal shift from high-emission transport (aviation, road) to rail:

- Rail Infrastructure & Rolling Stock: Allocate a significant portion of ETS revenues to electrification of regional lines, cross-border interoperability, modernization of rolling stock, and expansion of freight infrastructure (e.g. feeder lines, terminals, tracks for overtaking).
- Fair Modal Shift Support: Establish a Sustainable Transport Adjustment Fund to invest in rail competitiveness and reduce aviation reliance where feasible.
- Innovation Support: Allocate a significant portion of the Innovation Fund to invest in zero-emission rail propulsion technologies, such as hydrogen and battery-electric systems, for non-electrified routes.

A more coordinated and earmarked use of ETS revenues for rail investment across Member States would deliver multiple strategic benefits. First, it would accelerate the decarbonisation of transport by incentivising modal shift toward the most energy-efficient and low-carbon mode. An example of such a high-impact European project is the European **high-speed rail (HSR)** masterplan: under an ambitious 2050 scenario, up to 5 billion tonnes of $CO_2$ could be avoided by 2070, even accounting for infrastructure emissions. These avoided emissions, valued at average ETS price (€95-120/t$CO_2$), equate to over €500 billion, which could finance more than 95% of the investments of HSR network.

Second example is to use the ETS revenues for digitalisation of rail through the deployment of **Digital Automatic Coupling (DAC)** across freight rail, which could save 140 million tonnes of $CO_2$ over 30 years, while also enhancing productivity and enabling a higher rail freight share. Since such projects at the EU level are capital-intensive and require policy-driven scale-up make it a good example of the focus of the Innovation Fund, Modernisation Fund, or other ETS-linked instruments and should be prioritised. Without such directed support, rail's potential to structurally decarbonise EU transport will remain underleveraged.

Despite disbursing €19.1 billion since 2021, the Modernisation Fund has allocated only less than 3% of its budget (€550 million) to rail decarbonisation in 3 Member States (Czechia, Estonia and Romania) just a fraction compared to the €4.2 to €6.8 billion directed toward fossil gas and waste incineration, investments misaligned with EU climate goals.[3] The Fund must urgently redirect support toward zero-emission rail technologies and stop subsidising outdated, polluting infrastructure.

Similarly, the Innovation Fund has largely focused on energy-intensive sectors, with €2.4 billion going to carbon capture projects and €1.2 billion to hydrogen in 2023–2024 alone.[4] While this shift underscores hydrogen's role in decarbonising industry, it also presents an opportunity to support hydrogen and battery-electric trains on non-electrified rail lines—where innovation funding is still lacking.

[3] CER assessment based on data from https://www.modernisationfund.eu/investments-2/
[4] CER assessment based on data from https://cinea.ec.europa.eu/programmes/innovation-fund/innovation-fund-project-portfolio_en

The ETS Directive (revenues and carbon pricing) must also encourage deeper integration of low-carbon energy in transport:

- Power Purchase Agreements (PPAs) and low-carbon hydrogen use for non-electrified lines should receive ETS-linked incentives.
- The ETS reform should be consistent with the Renewable Energy Directive mandate carbon intensity disclosure for transport fuels, favouring rail operators that source 100% low-carbon electricity.

## 4. Ensuring a Just and Balanced Transition

Mobility is a fundamental right that enables access to jobs, education, and essential services. Yet, many EU citizens continue to face transport poverty due to a lack of affordable, reliable options. Rail offers a climate-friendly, socially inclusive solution and should be at the heart of public transport systems. To ensure equitable access and support the EU's social and environmental goals, we must prioritise investment in high-quality, accessible rail-based mobility.

The expansion of the EU ETS to cover road transport (ETS 2) could exacerbate transport poverty if not designed equitably. Low-income and rural households are most vulnerable to fuel price increases. On the other hand, public rail services offer an affordable alternative but require investment to be accessible and attractive.

CER suggests the policy makers to:

- Protect affordable mobility through targeted ETS 2 support measures or compensation for public rail services.
- Encourage public and private investment in zero-emission rolling stock and digital rail traffic management via Innovation Fund grants.
- Prioritize Social Climate Fund (SCF) spending to support/co-finance public and rail transport for vulnerable users.
- Fund zero-emission public fleets and infrastructure in deprived and landlocked regions, where poor connectivity makes it particularly difficult for inhabitants to access clean public transport.

ETS 2's success depends on two pillars: equitable redistribution of revenues and complementary policies to reduce fossil fuel demand. The ETS 2 , including the SCF, will raise €296 billion in revenues between 2026 and 2032. With a $CO_2$ price of €100, €534 billion euros will be raised.[5] This presents a unique opportunity for the EU economy: allocating a portion of ETS 2 and SCF revenues to expand affordable, efficient rail services - especially in underserved regions – not only support green growth and regional cohesion, but it also helps prevent transport poverty. Mobility is a human right, and the most effective guarantee it for all is through a well-functioning public transport system. By prioritising investment in rail, the EU can drive modal shift to foster social inclusion, climate action, and economic resilience simultaneously. Supporting infrastructure upgrades, fare subsidies, and intermodal connectivity ensures that fossil fuel-heavy modes fully pay for their carbon costs while promoting equitable access to clean mobility.

[5] T&E How to turn the ETS2 implementation into a success https://www.transportenvironment.org/articles/eus-new-carbon-tax-ets2-a-eur300bn-opportunity-to-help-transition-european-citizens-away-from-fossil-fuels

## 5. Conclusions

The ongoing reform of the EU ETS is crucial to recalibrate Europe's climate strategy for transport by embedding the principles of efficiency, fairness, and technological leadership. To meet the 2040 target of a 90% net emissions reduction, the ETS must not only incentivize emissions cuts within sectors, but also actively enable modal shift in transport from carbon-intensive modes to low-carbon solutions like rail. Electrified rail, already the least carbon-intensive form of mass motorised transport, must be strategically leveraged as an enabler of system-wide decarbonisation. This calls for using ETS revenues, including from ETS 2 and the SCF, not just to decarbonise high-emitting modes incrementally, but to structurally shift the transport system toward cleaner alternatives, affordable for all.

A reformed EU ETS must ensure that carbon pricing works hand in hand with social and modal fairness. This requires earmarking revenues for projects that deliver maximum emissions reduction per euro spent, such as rail electrification, high-speed networks, digitalisation, and innovation in zero-emission rail propulsion. It also requires safeguarding affordable access to sustainable mobility, especially for vulnerable households at risk of energy and transport poverty. If designed correctly, the reformed ETS can become a key enabler of both climate ambition and social cohesion - transforming Europe's transport system into one that is not only cleaner, but fairer and more resilient. Rail sector is ready to support a well-designed and robust ETS, which is a vital tool for driving climate neutrality, energy efficiency and long-term competitiveness across the EU economy.