Cleaner EU mobility, accelerating across bumpy political terrain

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This series explores how EU policymakers, national road operators, and academic experts are shaping strategies to accelerate road decarbonisation

As Europe works to meet its Green Deal and Fit for 55 objectives, road transport stands at the heart of the continent's decarbonisation challenge. The path to cleaner mobility raises complex questions about financing, policy coordination, and technological readiness, ranging from the future of fossil-fuel vehicles to the urgent need for massive infrastructure investment.

This series explores how EU policymakers, national road operators, and academic experts are shaping strategies to accelerate road decarbonisation – ensuring that climate ambition translates into sustainable, equitable, and economically sound transport solutions.

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Backtracking is the real risk to EU road transition, warns Green MEP

Xhoi Zajmi | euractiv.com

[Credit: Kai Tegethoff, MEP [Photo: Laurie DIEFFEMBACQ]

MEP Kai Tegethoff's warning is clear: the true danger for Europe's mobility shift is hesitation, not ambition

As the European Parliament enters a new phase of transport law-making, the implementation of the Green Deal has become the central test for EU road-decarbonisation policy.

Among the lawmakers shaping this debate is Kai Tegethoff, a member of the Parliament's transport committee (TRAN), representing the Greens/EFA group. He joined Parliament in 2024 as co-rapporteur for his group on files related to vehicle emissions and charging infrastructure.

He spoke with Euractiv about the consequences of policy backtracking, the risks posed by fragmented infrastructure planning and the political choices needed to align competitiveness, cohesion and climate ambition.

EV: You have warned that delaying the 2025 CO^2 targets "scrambles the signal for the industry". As the Green Deal moves into implementation, what is the main political risk to keeping road decarbonisation on track?

KT: The biggest political risk is the growing normalisation of backtracking once implementation becomes difficult. If policymakers start reopening or postponing agreed CO^2 standards under industry pressure, the forward-looking trajectory becomes a stop-and-go process. That weakens credibility, undermines investor confidence, and shifts the political focus from accelerating the transition to managing delays.

It also signals that EU climate legislation is negotiable rather than binding, which risks hollowing out the Green Deal just as we enter the decisive decade of implementation.

If this logic spreads beyond road transport, the entire Green Deal becomes a set of shifting commitments rather than the predictable framework Europe needs to attract investment, drive innovation and strengthen competitiveness.

At a time when Europe urgently needs to secure leadership in clean mobility, such backtracking would crowd out investment in the European value chain, reduce consumer trust, and delay the moment when Europeans can access affordable, European-made electric cars – ultimately increasing our dependence on China.

A credible decarbonisation path requires sticking to the rules we agreed and ensuring full and timely compliance, rather than reopening files whenever pressure mounts.

EV: Parliament debates vehicle standards, but infrastructure may become the real bottleneck. Does the EU need a long-term roadmap for decarbonising road infrastructure beyond AFIR?

KT: CO^2 standards must remain stable because they determine the pace of electrification, and therefore how quickly Europe must deploy recharging infrastructure. Weakening the 2035 target would not only slow vehicle decarbonisation; it would also disrupt investment planning for grids and charging networks.

AFIR is absolutely essential for the transition, but its credibility relies on strong implementation, coordinated grid connections, full interoperability and clear long-term signals from the CO^2 standards.

Yes, the EU now needs a long-term roadmap for decarbonising road infrastructure itself – covering digitalisation, low-emission design, climate resilience and modernisation – so that Europe's roads can support large-scale electrified mobility. This would allow road infrastructure to complement a transport system where rail and public transport take on more long-distance demand, while local and regional mobility becomes clean and smart.

EV: Europe's transport infrastructure gap is widening. Which specific tools or commitments should Parliament support to ensure the road network does not fall further behind global competitors?

KT: Europe's infrastructure gap is increasingly a gap in modernisation, not in physical capacity. The priority is to prepare roads for large-scale electrification through charging hubs, strong grid connections, digital traffic management and proper maintenance. These are the foundations of Europe's competitiveness in clean transport.

Parliament should therefore secure stable, long-term funding for charging deployment and grid reinforcement, especially where fiscal constraints slow national investments. Closing the post-2025 funding gap is essential to keep AFIR implementation on track.

At the same time, EU spending must prioritise road safety, digitalisation and low-emission design, rather than capacity expansion that would lock in higher costs and emissions. Strengthening TEN-T rail and cross-border public transport is equally important, as it improves the efficiency of the entire transport network and reduces pressure on roads.

EV: Fairness is central to the mobility transition. How should the EU balance cost-sharing between citizens, governments and industry, and what safeguards are needed to avoid mobility inequalities?

KT: Fairness starts with being honest about responsibility. Weak ambition makes mobility more expensive, not more affordable. Citizens should not pay the price for years of delayed investment by parts of the automotive industry.

The EU's role is to keep ambition high and provide certainty so that industry can invest and scale up clean-vehicle production – because scale is what drives prices down, as we saw with wind and solar. Weakening targets would only delay that moment and keep mobility costs high.

Cost-sharing must therefore be clear. Industry should invest in innovation and production under stable CO^2 standards. Public authorities should finance enabling infrastructure and provide targeted support for households that would otherwise be left behind – not bail out laggards.

France's social-leasing scheme for EVs is a good example: by offering low-income households an electric car for €100 per month, it expands access without inflating system-wide costs.

Citizens should not be expected to shoulder the transition. Over time, clean mobility must become the cheaper, easier and more accessible option. No policy should increase everyday mobility costs for low-income households or reduce their access to essential mobility services.

EV: Is AFIR implementation being treated as a strategic priority, or are we risking another delay cycle? What monitoring or enforcement measures could accelerate rollout?

KT: AFIR implementation is clearly uneven. Today, more than 60 per cent of public charging points are concentrated in just three Member States, while others lag far behind. Without decisive action, this imbalance risks creating another multi-year deployment delay similar to what we saw with renewables permitting.

To avoid this, the EU must prepare for the post-2025 financing gap. AFIF needs to be properly funded in the next CEF and in the new competitive fund so that charging rollout and grid reinforcement can continue at the pace required by AFIR and the CO^2 standards.

Parliament should also push for annual Commission progress assessments and for earlier use of enforcement powers when implementation stalls. Without sustained support and tighter oversight, deployment will slow precisely where it needs to accelerate.

EV: Some Member States use long-term concessions to modernise roads. Are concessions or PPPs a viable decarbonisation tool, or do they risk locking in outdated models?

KT: Private capital can play a role in modernising Europe's road network, but only if concession models are fully aligned with the decarbonisation trajectory. Long-term contracts must be compatible with electrification, digitalisation and evolving CO^2 standards.

PPPs can be appropriate in some cases, but they require strong safeguards: open access for charging operators, full interoperability, transparent pricing, and flexibility to upgrade infrastructure as technology and regulatory requirements evolve.

When designed with these conditions, PPPs can meaningfully support maintenance, safety upgrades and electrification. But they must remain firmly anchored in Europe's climate and equity objectives; otherwise, they risk locking in outdated models that slow the transition.

EV: Road decarbonisation will reshape regional mobility. How can EU policy ensure the shift to zero-emission mobility strengthens cohesion rather than widening gaps between regions or income groups?

KT: The transition to clean mobility will strengthen cohesion only if it is designed as a transformation of mobility systems, rather than simply replacing combustion cars with electric cars for those who can afford them.

EU policy must start from the reality that mobility options vary widely across Europe, and that low-income households and rural regions already spend a disproportionate share of their budget on transport. If clean-mobility policies ignore this, they will deepen social and territorial divides.

To avoid this, clean mobility must be deployed everywhere and for everyone. EU funds should specifically target gaps outside major cities, supporting rural charging networks, affordable shared and public transport, and cross-regional coordination.

At the same time, the EU must avoid policies that raise mobility costs without alternatives in place. If everyday mobility becomes more expensive for those who depend on their cars, the transition will create divides instead of closing them.

The upcoming MFF negotiations offer a crucial opportunity to use cohesion funds, CEF and other instruments to close infrastructure gaps and improve service quality between regions and income groups. Cohesion must be a built-in objective of road decarbonisation – not an afterthought.

ARTICLE

Defending Sustainable Mobility: The Risks of Toll Abolition in Portugal

European Association of Operators of Toll Road Infrastructures (ASECAP)

[Photo credit: Ascendi-APCAP]

Portugal is facing a critical moment for the future of its motorway network.

Portugal's Toll Road Policy Shift

Portugal is facing a critical moment for the future of its motorway network. Recent legislative developments, particularly the enactment of Law n.º 37/2024 and discussions regarding the State Budget for 2026, have introduced profound challenges for the toll road sector, raising important questions about the future of infrastructure funding and the principles of user-pay and polluter-pay systems.

A Populist Measure with Heavy Fiscal Costs

Approved in August 2024 and effective as of January 1, 2025, Law n.º 37/2024 abolishes tolls on approximately 769 kilometers of interior motorways—roads that generated €175 million in annual toll revenue and carried an average of 13,000 vehicles per day. Presented as a measure to promote territorial cohesion and stimulate regional economies, the toll elimination was passed by Parliament against the government's recommendation. The decision, however, comes with a heavy fiscal price.

The immediate impact is a €175 million annual shortfall in direct revenue for the state and concessionaires. But the true cost goes far beyond lost toll income. The government must now compensate concession companies for lost earnings under existing contracts—funds that will have to come directly from taxpayers. Maintenance, operation, and safety costs, once self-financed through toll revenues, will now rely entirely on the national budget.

A Burden Shifted from Users to Taxpayers

The user-pay principle—long recognized as the fairest and most efficient way to finance road infrastructure—is being replaced by a system in which all taxpayers, including those who do not use motorways, must subsidize the cost for those who do.

This represents a profound reversal in fiscal logic. Instead of a sustainable, self-funding model, Portugal risks adopting a fully state-dependent system that increases public spending at a time of tight budgetary constraints. The result will likely be reduced capacity to invest in road maintenance, safety programs, and environmental initiatives.

In practical terms, every euro lost in toll revenue must now be diverted from other public priorities—education, healthcare, public transport, or social

programs. The apparent short-term benefit to drivers in specific regions could, therefore, translate into long-term costs for society as a whole.

Economic and Social Side Effects

Beyond the budgetary burden, toll abolition brings secondary economic and social effects. Increased traffic volumes are expected to raise maintenance costs, accelerate road degradation, and increase accident risks—all of which will again fall on the public purse.

These traffic volumes will necessitate the widening of several motorway stretches due to the decrease in the regulatorily defined level of service. The capital expenditure required for these widening works is, with this abolition, transferred to the State budget, which has neither planned for nor has the capacity to accommodate such investments.

Moreover, this policy risks widening social inequalities. Toll-free access primarily benefits private vehicle owners, while citizens relying on public transport see no advantage—potentially undermining the sustainability of public mobility systems. The removal of tolls also weakens incentives for eco-friendly travel and contradicts the polluter-pay principle, a cornerstone of EU environmental policy.

Meanwhile, heavy goods transport currently using railways will likely shift to the cheaper road transport mode, despite its environmental externalities. This is the opposite of the sustainable transport policies pursued by the European Union. This is particularly critical in Portugal, which in the past decade has made the largest investment effort to modernize its railway network, failing to achieve the cost-benefit ratios underlying this investment plan.

Industry Reaction and European Context

According to Manuel Melo Ramos, President of APCAP, the Portuguese Motorway and Bridges Association, the decision is not only financially damaging but also structurally inconsistent with European best practices. Portugal's motorway network extends over 3,300 kilometers, with 74% still tolled—a system that has enabled decades of safe, high-quality infrastructure without overburdening taxpayers.

Unlike Spain, where toll removals occur after concession expirations, Portugal's decision interferes mid-contract, forcing the government into costly rebalancing negotiations. As Manuel Melo Ramos emphasized, "The issue is not public rejection of tolls—Portuguese citizens have long accepted tolling as the price of modern mobility—but a political shortcut that jeopardizes financial sustainability.

"He also warned of a growing European trend toward toll abolition driven by short-term popularity rather than rational policy. "Removing tolls may win votes, but it undermines the very foundation of responsible infrastructure funding," he noted. Without stable revenue sources, motorway networks risk underfunding, deterioration, and reduced investment capacity.

Reasserting the Value of Toll Roads

Toll motorways represent more than a payment system—they embody a contract of responsibility between users, operators, and the state. Through the user-pay and polluter-pay principles, tolls ensure that those who benefit from the infrastructure contribute fairly to its upkeep and modernization.

They provide predictable, ring-fenced funding for road safety improvements, climate resilience, and technological upgrades such as digital tolling and low-emission corridors. Removing this mechanism risks underfunding maintenance, reducing service quality, and delaying the transition to sustainable mobility.

APCAP's Call for Policy Reconsideration

The Portuguese Motorways and Bridges Association (APCAP) is engaging with political forces to underline the real costs of Law n.º 37/2024 and similar initiatives, promoting balanced alternatives that preserve fairness and fiscal responsibility. Nevertheless, all opposition parties represented in Parliament are competing to abolish tolls on regional stretches according to their own local political pressures.

The debate should not be about whether tolls are popular, but whether Portugal can afford to abandon a proven, sustainable funding model for its critical infrastructure.

Conclusion: Sustainability Must Prevail Over Populism

The abolition of tolls may appear to deliver immediate relief to certain regions, but it threatens to destabilize Portugal's infrastructure system, weaken public finances, and compromise environmental commitments. Sustainable mobility requires consistent, fair, and responsible funding—not short-term political gestures.

Portugal's success over the past three decades was built on a balanced approach to infrastructure: shared responsibility between the state, users, and private partners. Preserving that balance is essential for the future.

The shortfall of toll revenues will translate into a shortfall in the entire transport ecosystem's capacity for self-financing and will compromise infrastructure development—namely the completion of the motorway network, the construction of missing links that still do not exist, and investments in innovation, digitalization, autonomous-vehicle infrastructure, and resilient upgrades that Portugal urgently needs.

As Manuel Melo Ramos concluded, "If we fail to defend the user-pay principle today, we may lose not just tolls—but the ability to sustain safe, efficient, and green motorways for tomorrow."

ARTICLE

Investment gaps and lack of readiness threaten EU net zero ambitions

Xhoi Zajmi | euractiv.com

Europe's road to decarbonisation is stalling as investment gaps and national delays deepen

Road transport remains the sector most resistant to Europe's decarbonisation efforts. While emissions are falling in energy and industry, those from cars, vans and especially heavy-duty vehicles continue to rise in several Member States. Yet 2025 brought renewed political clarity in Brussels, even as questions grew about affordability, infrastructure and competitiveness.

In March, Transport Commissioner Apostolos Tzitzikostas reaffirmed the EU's commitment to its vehicle standards. "We stick to the 2035 targets," he said after the Commission granted additional flexibility for meeting the 2025 milestone.

The pressure surrounding fleet regulation is evident, but the direction of travel – a shift to zero-emission vehicles (ZEVs) – remains intact.

Market losing momentum

Despite political insistence, Europe's ZEV market is showing signs of fragility. Uptake of battery-electric vehicles (BEV) remains uneven and, in many Member States, too slow to support large-scale electrification.

Analysts warn that reopening the 2035 mandate would undermine long-term planning, with one study estimating that abandoning it could put up to one million jobs in the auto sector at risk.

Industry groups share these concerns. More than 150 companies have urged EU institutions not to dilute rules, arguing that uncertainty already weakens investor confidence.

For road operators and concessionaires, who plan on multi-decade cycles, predictable regulation is essential. Yet EU-level clarity does not resolve national discrepancies, where charging deployment, permitting and political timelines still vary widely.

Measuring emissions

A key development in 2025 lies beyond vehicle standards. In November, Parliament and Council negotiators agreed on a harmonised EU-wide methodology for calculating transport emissions. Based on ISO 14083:2023, it replaces a patchwork of incompatible national methods with a single, comparable framework for freight and passenger services.

Rapporteur Antonio Decaro described the agreement as "an important step forward for the transparency and reliability of environmental data". Co-rapporteur Norbert Lins argued it would make emissions reporting "more accurate" and easier for SMEs. Although not mandatory, the method is expected to become a reference for operators, investors and regulators.

For concessionaires, this matters. As Europe moves towards electrified mobility, regulators are likely to rely increasingly on consistent emissions data when shaping toll differentiation, investment priorities and corridor performance indicators. A harmonised approach also improves cross-border coordination, long hampered by inconsistent reporting.

Barriers, gaps and risks

Even with clearer EU signs, infrastructure operators warn that investment conditions remain difficult. Stakeholders highlight "policy-induced investment risk", driven by uncertainty over how quickly Member States will deploy charging infrastructure, reinforce grids or incorporate clean mobility requirements into concession models.

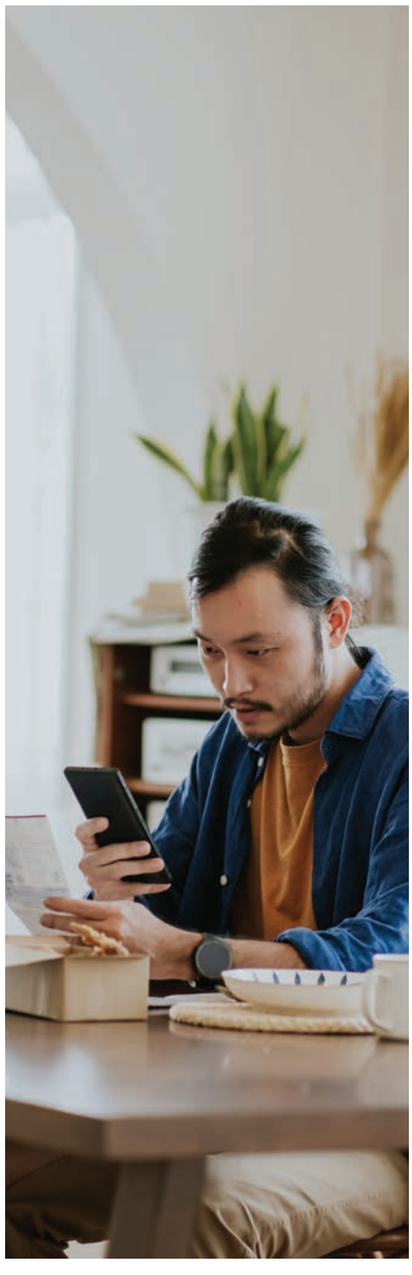
The transition demands substantial capital: high-power charging stations, upgraded substations and modernised traffic management systems all require significant upfront investment. Operators argue that inconsistent national approaches, slow permitting and fragmented support schemes complicate financial planning.

Road-charging reform is increasingly viewed as part of the solution. Analyses suggest that differentiated tolling and user-pays mechanisms could generate revenue for clean mobility infrastructure if properly reinvested.

Such systems could align freight behaviour with climate objectives while helping motorway operators finance charging corridors and hydrogen refuelling. The challenge lies in ensuring that revenues remain tied to decarbonisation rather than diverted elsewhere.

Fairness concerns

Member States now face the task of aligning their planning with the EU's long-term goals. Achieving widespread ZEV deployment will demand rapid growth in high-power charging, grid reinforcement at motorway level and better coordination with logistics hubs. Without credible national roll-out plans, the 2035 target risks outpacing the infrastructure meant to support it.



Fairness concerns add further complexity. Electricity prices, unequal access to charging points and cost pressures on small hauliers risk fuelling resistance if left unaddressed. Policymakers warn that without targeted support, the transition could become a two-speed process, with well-served corridors moving ahead while peripheral regions fall behind.

A defining year

For toll-road operators, 2025 represents both an opportunity and a test. Their networks sit at the centre of Europe's mobility system and will play a decisive role in enabling the shift to zero-emission transport.

To succeed, operators will need to adapt concession models, integrate charging and alternative fuel infrastructure, and adopt the new emissions measurement tools shaping future investment decisions.

Alignment with EU objectives is becoming essential for long-term operational and financial resilience. The broader question is whether Member States can match EU-level ambition with coherent planning and timely investment – and whether Europe's road networks can evolve fast enough to support a mobility system compatible with climate neutrality.

If 2025 marks anything, it is the shift from legislative aspiration to practical delivery. Decarbonising Europe's roads will require not only cleaner vehicles but a fundamental rethink of how mobility is financed, managed and measured.

ARTICLE

EU's transport transition stumbles on implementation, not ideas

Xhoi Zajmi | euractiv.com

Delaying Europe's road transport transition would sharply raise costs and undermine the continent's climate ambitions

Road transport has become a stress test for Europe's credibility, as efforts to cut emissions enter a decisive phase. Considered the EU's most entrenched climate challenge, it is the only sector where emissions are rising even as electricity, buildings and industry gradually bend their trajectories downwards.

Most passenger cars and nearly all trucks still run on fossil fuels, and with vehicle lifespans stretching well over a decade, every year of delay shapes the emissions profile of the 2030s. The risk is no longer simply missing targets but locking in a decade of additional pollution with long-term consequences for every other part of the economy.

Electrification for the win

A new life-cycle assessment from the International Council on Clean Transportation (ICCT) finds that battery-electric passenger cars sold in the EU already outperform petrol and diesel vehicles on emissions, even when accounting for manufacturing and the current electricity mix.

As the power sector decarbonises further, the advantage widens – making electric vehicles a more robust long-term investment for consumers, industry and governments alike.

In freight, traditionally viewed as the hardest segment to transform, the economics are shifting just as quickly. A total cost of ownership study shows battery-electric trucks becoming cost-competitive with diesel across many routes this decade, especially once fuel, maintenance and charging are fully incorporated into cost comparisons. What once looked technologically distant has become a near-term market reality.

Additional academic work underscores that zero-emission trucks are not only technically feasible but increasingly commercially rational. Across long-haul operations, battery-electric and hydrogen fuel-cell trucks can compete with diesel in both lifetime emissions and costs when supported by appropriate infrastructure.

Strengthening the energy system

Recent research suggests that electrification brings benefits beyond the transport sector. A 2025 modelling study covering 33 European countries finds that full electrification of land transport is cost-optimal even without strict climate constraints.

By coordinating electric-vehicle charging with renewable energy production, Europe can reduce the need for stationary battery storage and lower energy-system costs. The authors estimate that vehicle-to-grid flexibility could minimise investments otherwise needed to stabilise the grid.

This interdependence between transport and electricity policy is often overlooked. Electric mobility does not only depend on a clean power system; it actively helps create one. As wind and solar expand, EV charging becomes an instrument for balancing demand and integrating variable generation – a system advantage that internal combustion vehicles simply cannot offer.

The costs of delay

A companion analysis from the same research community highlights the risks of moving too slowly. The study finds that postponing large-scale electrification could increase system-wide costs by around €126 billion per year by shifting the decarbonisation burden onto buildings, industry and agriculture.

These sectors would be forced to compensate for missed reductions in road transport, creating political tensions and demanding far steeper interventions later.

Concerns about the pace of Europe's transition have also been raised by its institutions. The European Court of Auditors has warned in its dedicated report on electric-vehicle charging that infrastructure remains "unevenly deployed" across member states, complicating cross-border travel and undermining the EU's climate ambitions.

The European Environment Agency likewise notes that transport emissions continue to rise, despite reductions in every other major sector, reinforcing the urgency of structural change.

Together, these findings suggest that hesitation does not buy time – it raises costs, weakens Europe's industrial strategy and risks widening gaps between member states.

From possibility to delivery

The research points to a relatively clear direction: Europe does not lack technologies, pathways or economic justification for decarbonising road transport. What remains is aligning policy delivery with scientific and economic evidence.

Electrification must accelerate in parallel with the wide-scale deployment of charging infrastructure, particularly for heavy-duty vehicles. National implementation of EU regulations, including new CO2 standards and the Alternative Fuels Infrastructure Regulation, will determine whether the transition succeeds or stalls.

At the same time, transport policy cannot focus on vehicles alone. Urban planning, public transport and active mobility investments remain essential to reduce demand and improve accessibility. Studies consistently show that electrification, while necessary, will not on its own deliver the emissions cuts required for 2030.

Europe faces a strategic choice. The evidence points to a pathway that is technologically mature, economically rational and systemically beneficial – provided it is pursued with urgency. Whether the EU seizes that opportunity will shape not only its climate trajectory, but also its competitiveness, energy security and social cohesion in the years ahead.

ARTICLE

French motorways face carbonisation dilemma when toll contracts expire

Xhoi Zajmi | euractiv.com

As France approaches the end of its concession contracts, it faces a key test of how it will fund the road-network upgrades needed for decarbonisation

Despite representing just a small fraction of France's road network, concessioned motorways play an outsized role in national mobility, carrying nearly half of all freight and a significant share of passenger transport over more than 9,330 kilometres.

In line with the European Union's climate-neutrality goals, France's national mobility strategy – including the Mobility Orientation Law – aims to accelerate the shift towards sustainable transport by modernising infrastructure and supporting low-carbon mobility.

But as several concession contracts approach expiry in the early 2030s, France faces an increasingly political debate over how to finance the substantial investments needed to decarbonise and climate-proof one of Europe's most heavily used road networks.

Backbone of the economy

Road transport remains the dominant mode of mobility in France, with more than 85 per cent of all travel taking place on roads. This trend is unlikely to change, according to the French Motorway companies association, ASFA.

Speaking to Euractiv, Executive Director Christophe Boutin says that even a doubling of rail freight would only marginally reduce motorway traffic, illustrating the continued centrality of these networks for mobility and logistics.

He recalls the COVID-19 years as evidence of their strategic role; while other transport modes were paralysed, motorways remained operational and kept supply chains moving.

Upgrades needed

France's decarbonisation challenge mirrors that of the EU writ large. Transport is the country's largest emitting sector, accounting for 31 per cent of total emissions, with motorway traffic responsible for around seven per cent.

While decarbonisation is unavoidable, it requires enormous upfront investment: infrastructure must be redesigned to accommodate electric trucks, reinforced to withstand climate impacts, and equipped to support new mobility services.

Concessionaire estimates indicate that €27 billion will be required on the existing concessioned network alone, including €9.3 billion for low-carbon mobility and €1.7 billion for shared mobility development.

A further €8.4 billion would support climate resilience and environmental integration, €5.6 billion would improve traffic flow, €1.4 billion would support green energy production, and €0.9 billion would fund local development projects.

The sector aims to install photovoltaic panels across motorway areas by 2035, with ASFA estimating this could generate enough electricity to power all electric vehicles using the national motorway network.

Delivering investments

France's concession system – under which infrastructure reverts to the State at the end of each contract – is described by operators as essential to delivering large-scale investment without burdening taxpayers.

According to ASFA, tolling ensures users in transit contribute to infrastructure funding, respecting user-pays and polluter-pays principles, while keeping financing off the public balance sheets. Boutin argues that revenue generated through concessions helps maintain a consistently high-quality motorway network.

The association also maintains that concession contracts are the most effective mechanism for transferring traffic and operational risks – such as the 2008 financial crisis, the 'yellow vests' movement, or post-Ukraine war construction cost pressures – to private operators rather than the state.

However, the model has long been politically sensitive in France, with critics questioning the profitability of concessionaires and calling for greater transparency, particularly given past controversies.

Rethinking the model

ASFA warns that the Eurovignette Directive, which will apply once current concessions end, will reshape how toll revenues can be used.

Stricter alignment between toll revenues and the infrastructure on which they are collected could, the association argues, reduce financial transfers and threaten investment levels if concession scopes are not broadened.

Under these circumstances, ASFA says France will need to rethink the model. Options include expanding concession scopes to adjacent networks, which could remain toll-free but be financed by tolled sections, and integrating external cost charges that the association estimates could generate €200 million annually by 2035. Longer-term contracts, ASFA argues, would also provide more predictable investment pathways.

Decisive policy moment

Public attitudes towards road transport sit within a paradox. While a large majority of citizens (88 per cent) consider road transport essential, 38 per cent view it as a source of pollution and nuisance, according to a recent survey.

Despite this, many respondents acknowledge that the sector is making efforts towards sustainability, with six in ten saying companies are working to reduce their environmental impact.

With forecasts pointing to the continued dominance of road transport, and as France weighs how best to structure the post-2030 concession landscape, the country has become a test case for how Europe will finance the transformation of its road networks.

Future decisions – whether to extend, redesign or replace concession contracts – will shape not only toll levels or motorway quality, but also the EU's ability to meet its climate commitments while maintaining mobility and economic cohesion.

Brussels vows to press ahead with road decarbonisation despite political pushback

Xhoi Zajmi | euractiv.com

The Commission plans to defend its climate targets, address investment shortfalls in road infrastructure and reconcile ambitions for shifting traffic to greener modes.

The European Commission has insisted it will maintain its course on cutting emissions from road transport, pledging a pragmatic but firm approach as the bloc enters a decisive decade for the sector.

With the 2035 ban on sales of new petrol and diesel cars looming, signals from several member states have stirred doubts over whether the transition will hold. Against this backdrop, the Commission's transport spokesperson, Anna-Kaisa Itkonen, told Euractiv how Brussels plans to defend its climate targets, address investment shortfalls in road infrastructure and reconcile ambitions for shifting traffic to greener modes.

EV: Road transport remains the largest source of transport emissions in the EU. With the 2035 phase-out of combustion engines approaching, how is the Commission ensuring that road decarbonisation stays on track, regardless of shifting Member State positions?

AKI: We need to look at the broader context in which this conversation takes place: the 2035 carbon targets, which the Commission is currently preparing for. Despite discussions, our direction is very clear. As President von der Leyen and many Commissioners have repeated: we are staying the course. Our overall decarbonisation targets remain the same because they are essential for Europe's competitiveness – including for the automotive industry.

The legislation, as it stands, requires all new cars sold in Europe from 2035 to be zero-emission. Before proposing any adjustments, we held a public consultation – which we do for all such work – and we accelerated it because there is huge interest.

Stakeholders provided suggestions, for example, a possible limited role for certain carbon-neutral fuels, or a continued role for plug-in hybrids or range extenders. We are now assessing all these inputs and preparing a proper impact assessment, which is required before any proposal. We are firmly committed to technology neutrality.

Road transport is indeed responsible for a large share of transport emissions, so all sectors must contribute. That is why we are accelerating the work, as the President said in September. We will bring forward the proposal as soon as possible.

EV: While stakeholders await this proposal, associations representing toll road operators – like ASECAP – argue that Europe won't reach its climate targets unless road infrastructure itself becomes greener, smarter and more resilient. They also argue that tolling is one of the best ways to finance this transformation. Does the Commission plan to integrate infrastructure decarbonisation more explicitly into the Green Deal and Fit for 55 implementation phase? Do you see tolls playing a role?

AKI: The Commission cannot comment on individual associations or their positions, but what I can say is that the road transport sector is undergoing a significant transformation, as are many other sectors.

Electrification, for example, requires major investment: deploying charging infrastructure, adapting to increasingly high costs from climate-related extreme events, and ensuring resilience. Tolling is an important instrument because it creates the revenue streams needed for such investment.

EV: I've heard contrasting examples from Member States. In Spain, tolls were abolished and associations there say this is depleting public budgets. In Greece, concessions are being renewed with climate targets integrated, and they say the model is working well.

Between these two extremes, do you see a risk that financing differences could delay road decarbonisation and climate targets?

AKI: These are national choices in areas that fall within Member State competence. The EU has a directive on this topic, and Member States are free to decide whether to levy tolls for the use of roads or not. If they decide to levy tolls, then they must follow the rules of the Directive.

While tolling is an important instrument that could secure the necessary revenue, its use is not mandatory. Our role is to set the legislative framework; Member States decide how to transpose and apply it.

EV: On the topic of financing, many stakeholders say this is the biggest barrier to modernising the road network. In countries where tolling is limited or politically sensitive, does the Commission see a bigger role for the user-pays and polluter-pays principles?

AKI: The Eurovignette Directive already regulates tolls and user charges, and it is based on the polluter-pays and user-pays principles. We view favourably the implementation of tolls on European roads, to strengthen the principle that those who use roads pay for them. It reduces the burden on national budgets and can accelerate the deployment of alternative fuels infrastructure.

There is always room for improvement, of course. But we already have instruments in place, and the Commission remains agile and ready to act if needed. Financing is often the stumbling block – many reforms ultimately come down to money.

EV: Turning to modal shift, the EU seeks to support a better balance between transport modes, including increased use of rail and public transport. In France, associations argue that even in the best-case scenario, road transport will still be dominant.

How is the Commission balancing modal-shift goals with the urgent need to decarbonise the roads that Europeans rely on every day?

AKI: All transport modes need to become more sustainable – it is not one against the other. We cannot dictate to people what mode to use.

Rail is a cornerstone of our strategy because it is one of the cleanest modes of transport. Just recently, we presented the High-Speed Rail Action Plan, aimed at connecting major European cities with faster links, making rail more attractive than flying on medium-distance routes. There have been more than €100 billion in investments to improve rail infrastructure in the last decade.

As for roads, they account for around a quarter of total EU greenhouse gas emissions. That is why we are working on the carbon standards for cars and heavy-duty vehicles. We also have major decarbonisation initiatives in aviation and maritime – RefuelEU Aviation and FuelEU Maritime – and the Sustainable Transport Investment Plan.

Our approach is holistic and comprehensive: all modes must decarbonise, and at the same time we must maintain Europe's competitiveness.

EV: In that aspect, how central is the road sector to the broader competitiveness agenda of the second von der Leyen Commission?

AKI: Absolutely central. Roads are essential for citizens, workers, industry, supply chains, the functioning of the Single Market. A well-connected and decarbonised road system is hugely important for competitiveness. Because this transition has never happened at such a scale, it must be managed pragmatically to ensure citizens and industries stay on board.

EV: Looking ahead, what is the Commission prioritising to ensure that European roads – and vehicles – contribute to climate neutrality, resilience and sustainable economic growth?

AKI: We are in the middle of a huge transition, and financing is one of the core challenges. In the next Multiannual Financial Framework, the Commission has proposed €51 billion under the Connecting Europe Facility for transport infrastructure. This covers all modes, because all modes must become more sustainable.

Competitiveness and the clean transition can coexist and reinforce one another – and we already have evidence that emissions can fall while production grows. Our goal is a pragmatic, flexible, well-managed transition. We want Europe to lead globally and to accompany citizens and industry through this change in a stable way.

It is not just the Commission coming up with ideas for Member States – this is a two-way street carried out in close collaboration with national authorities, stakeholders, industry and politicians. A well-functioning transport system lies at the very core of the internal market, and strengthening that system is fundamentally part of the EU's work to enhance and complete the Single Market.

INTERVIEW

EU can learn from Greek road concession model, says motorway chief

Xhoi Zajmi | euractiv.com

The Greek model demonstrates how smart concessions deliver safer roads with impact on public finances

Greece's motorway system has gained recognition as a standout concession success story. Hellastron, which brings together eight motorway concessionaires – soon nine – oversees more than 2,300 kilometres of strategic roads nationwide.

Euractiv spoke with Hellastron's Manos Vrailas. He explained the transformation he's witnessed from the first-generation projects to the current digital and climate-ready network, offering insights into how the model works and why it may hold lessons for Europe.

EV: Greece was once seen as a difficult environment for infrastructure investment, especially during the debt crisis years. What changed to allow the concession model to take root?

MV: The turning point came when Greece began to apply the concession model in a coherent and credible way. We started with two landmark projects in the early 2000s: the Attica Motorway and the Rio-Antirrio Bridge. Both were awarded as concessions, proved technically and financially successful, and demonstrated that Greece could deliver long-term public-private partnerships.

A crucial point is that concessions in Greece are not ordinary contracts; each one is a law voted in Parliament. This provides legal certainty for investors and lenders and transparency for citizens, because any modification requires a change-of-law process. Over time, this created a stable framework.

The Attica Motorway illustrates this well. When its original 25-year term expired, the state re-tendered the operation and maintenance. The new contract brought an upfront payment to the state of around €3.5 billion. For investors, this was a powerful vote of confidence. For the state, it represented a major inflow without increasing public debt.

EV: Greece now has one of the safest motorway networks in Europe. To what extent is this linked to the concession model?

MV: I would say directly. Twenty years ago, many routes that are now motorways were single-lane roads with extremely high accident rates. Today, these motorways are at least dual carriageways with tunnels, bridges, proper emergency lanes and a central reservation. They are monitored 24/7, maintained systematically and managed with modern traffic technologies.

The impact is clear. Only about 7 per cent of road fatalities in Greece occur on these motorways. On these key corridors, fatalities have fallen by more than 80 per cent since 2010. People feel safer; they see incidents handled quickly, and they appreciate that the network is kept to a consistently high standard. That is why tolls, even if not loved, are widely accepted in Greece.

EV: Beyond safety, what have been the wider economic impacts of the motorway programme?

MV: The effect has been transformative, especially for a mountainous country like Greece. I remember the Athens-Ioannina trip taking 11 hours. Today it takes around three and a half hours, and you can travel there and back the same day. That changes everything: regional development, tourism, investment and labour mobility.

A Greek government study estimated that every euro invested in motorways generates around €1.8 in GDP.

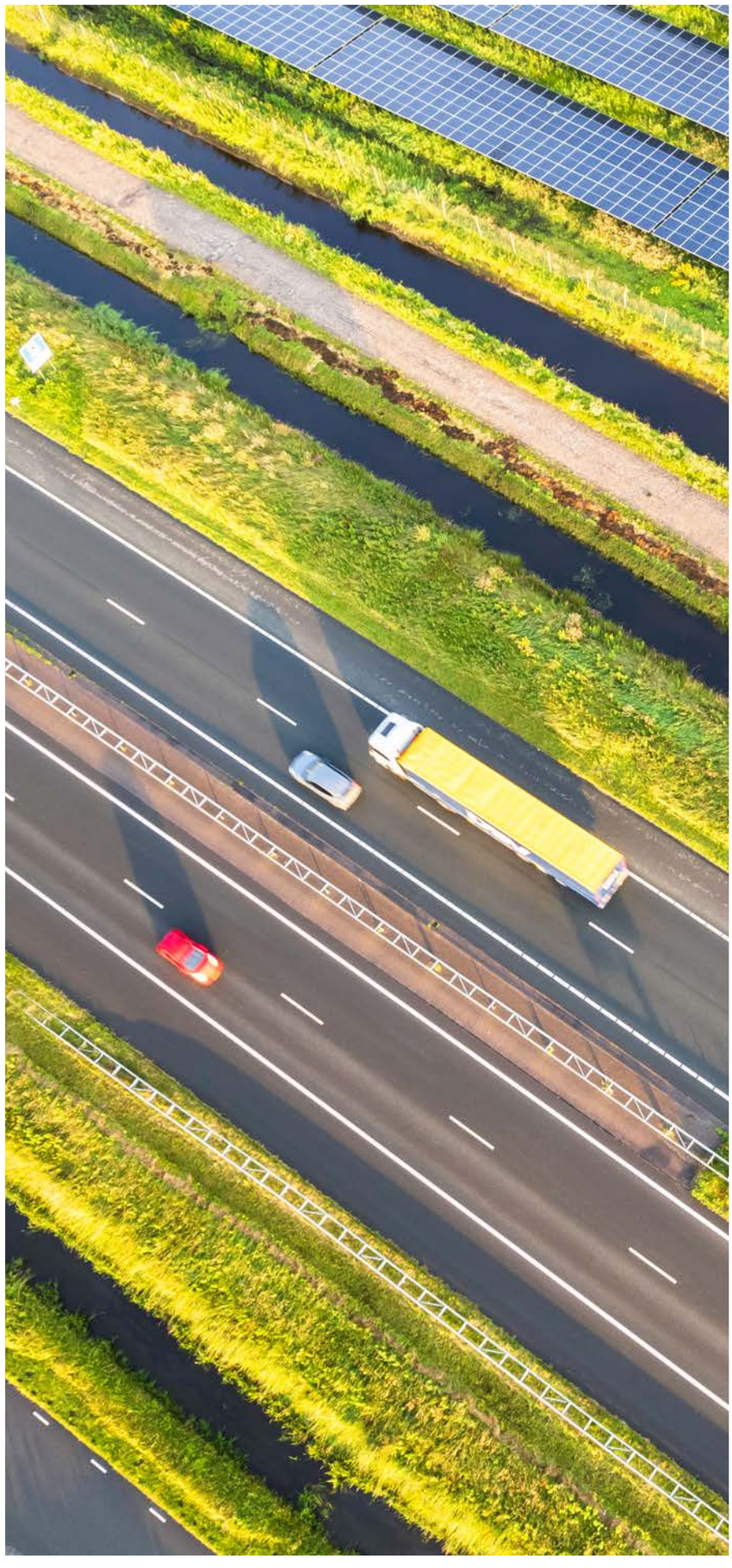
We see this through new factories, logistics hubs, increased tourism and the integration of regions that were previously isolated. Crucially, this has not burdened the state budget.

Construction is financed largely by lenders and private investors, with targeted public support where necessary. The state does not add debt to build or maintain these assets; instead, it receives upfront concession fees, collects taxes and VAT, and benefits from wider economic growth.

EV: Critics argue that tolls can be socially unfair, particularly in less affluent regions. How do you respond to that?

MV: Tolls in Greece are harmonised and indexed to inflation. The base rate is roughly €0.06 per kilometre and applies across all concession motorways. Citizens know exactly what they are paying for: a transparent tariff and a consistently high level of service.

Nobody enjoys paying, but there is an important distinction between user-pays and taxpayer-pays. The "user pays, polluter pays" principle is fairer



and more sustainable. In most cases, a parallel road remains available for drivers who prefer not to pay. What we see time and again is that once people experience the safety and time savings of the motorway, they choose it and accept the toll.

EV: The VOAK motorway in Crete has been described as a "new generation" concession. What makes it different?

MV: VOAK is indeed a third-generation project. It is a 280-kilometre motorway along the north axis of Crete – an island with difficult terrain, an outdated existing main road and therefore very high accident rates. The project, valued at around €2 billion, could never have been financed through a traditional public-works budget.

It differs in several ways. It integrates recent EU directives on emissions, anticipating that heavy goods vehicles could pay differentiated tolls depending on their Euro class. Tolling will be entirely distance-based and the concessionaire must prepare the motorway for future tolling systems such as free-flow or satellite. And the contract embeds ESG and climate-resilience requirements from the outset.

The financing is also innovative. VOAK combines private capital with support from the EU Recovery and Resilience Facility. Strategically, VOAK closes the last major gap in Greece's motorway network.

EV: How is Greece adapting its concession network to EU climate and digital objectives?

MV: For the newest concessions, like VOAK, alignment with EU objectives is already integrated: possible emission-based charging, preparation for free-flow tolling, EV-charging infrastructure and stricter environmental standards. For older concessions, adapting to new EU requirements will require legislative amendments and political decisions.

Greece is already investing heavily in resilience, because we have already experienced the effects of climate change. Recent floods caused billions of euros in damage, overtopping certain motorway sections that were properly built. Resilience is therefore essential.

At the same time, the EU requires a rapid expansion of high-power charging infrastructure along the network and access to alternative fuels. Compliance with these guidelines requires significant investments.

In my view, the only realistic way to finance this level of investment – without overstretching public budgets – is to extend and strengthen the concession model rather than move away from it.

EV: Should concession proceeds or expertise also support road-safety upgrades beyond the concession network?

MV: Conceptually, yes. Concession companies have the expertise, systems and personnel to operate and maintain complex assets such as tunnels and bridges, to monitor networks continuously and to respond rapidly to incidents. Extending that know-how beyond the tolled network would save lives.

The constraint is financial. Banks have not yet been fully repaid, and investors have not completed their returns on the second-generation concessions. You cannot ask concessionaires to spend money outside their network without altering the underlying contract. That is why we recommend and support longer concession terms.

Contract extensions would create the financial space to invest more in safety, climate resilience and digitalisation across the whole network – without raising tolls.

EV: Finally, what key lesson should European policymakers take from the Greek experience with concessions?

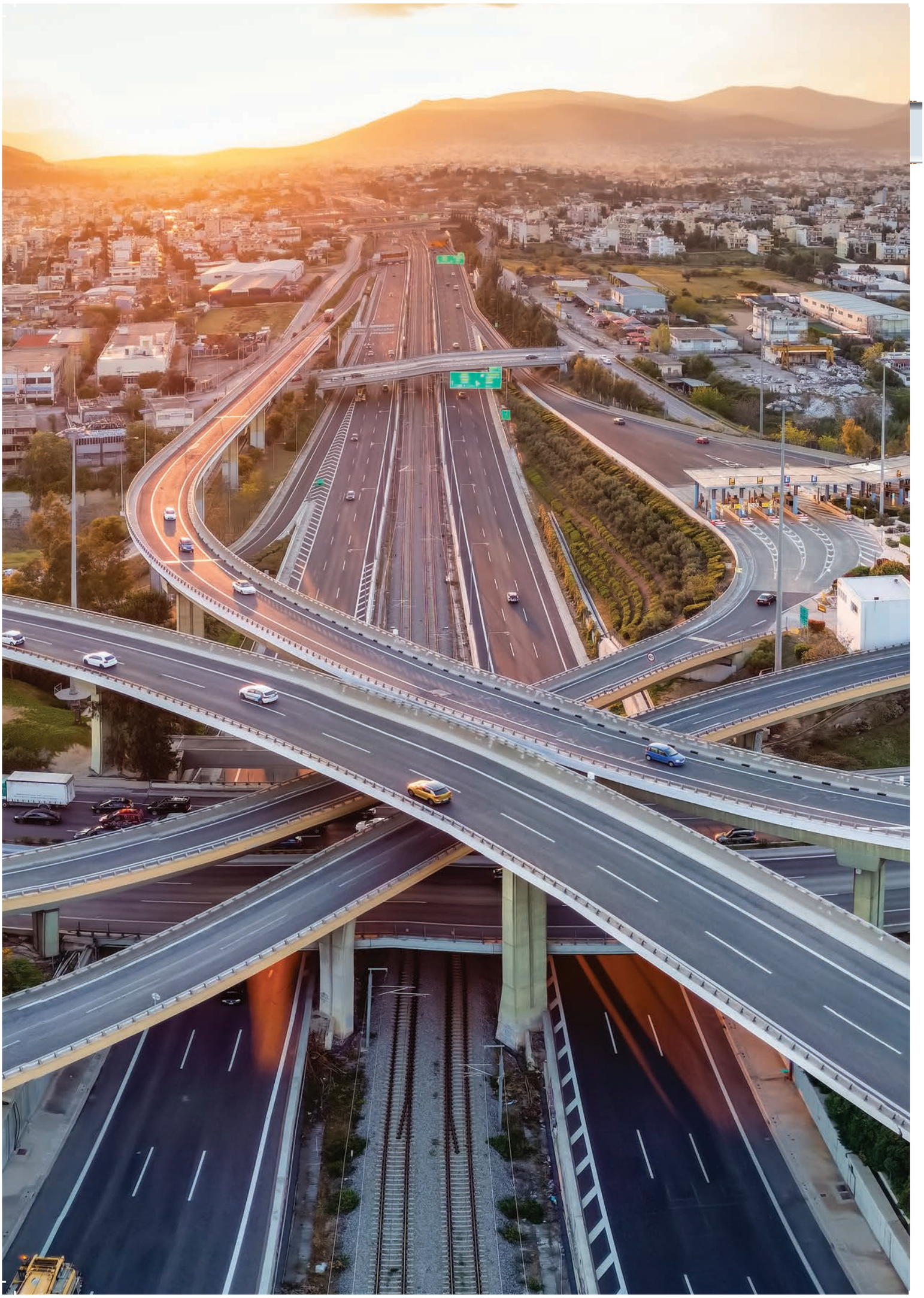
MV: In Greece, concessions are not just a financing tool; they are a public-service delivery model. They save lives, support economic growth and reduce fiscal pressure.

The state pays nothing from its annual budget to build, operate and maintain these motorways, yet receives significant upfront payments and regular tax revenues.

Citizens enjoy safer, faster and more reliable journeys. Investors and lenders have clear rules and legal certainty.

At a time when Europe needs enormous investment in defence, the energy transition and digital infrastructure, it cannot put everything back on the public balance sheet. It does not need to reinvent the system – just refine and scale what already works.

If we follow the principles of "user pays, polluter pays", and design concessions with transparency and long-term incentives, they can become a cornerstone of Europe's green and digital transition.



ARTICLE

Regulation is stifling road decarbonisation investments

Xhoi Zajmi | euractiv.com

Europe can decarbonise its roads if it invests now, with much of the cost offset by sustainable economic returns

Europe's climate and mobility ambitions are converging on a hard reality: the continent's road network must undergo a profound transformation if the European Union is to meet its decarbonisation targets.

Road transport remains the backbone of mobility and trade in the Union, but it is also the sector responsible for the majority of transport-related emissions. Demand for freight and passenger mobility has risen steadily over the past two decades, placing growing pressure on motorway infrastructure.

Yet investment has declined, leaving operators facing mounting challenges linked to climate adaptation, digitalisation, safety upgrades and the deployment of alternative fuels infrastructure.

The approaching expiry of multiple concession contracts could also weaken the financial stability of the system if user-based funding mechanisms are not renewed.

Sustainability, safety, digitalisation

A study by PwC, commissioned by ASECAP, quantifies the scale of investment needed to modernise Europe's motorways – and argues that, under the right regulatory conditions, much of the cost could be recovered through economic returns.

The report estimates that upgrading the network across ASECAP countries will require about €71.8 billion over the next decade, with sustainability-related projects representing almost 70 per cent of the total.

These investments include charging and hydrogen refuelling stations, dynamic charging systems for heavy-duty vehicles, and a major shift towards lighting optimisation and photovoltaic panels, which the report notes can deliver energy savings of up to 75 per cent.

Safety enhancements and digitalisation – such as predictive maintenance systems, intelligent transport services and improved communication networks – account for the remainder. The study also identifies carpooling and reserved lanes as additional measures that can reduce congestion and cut emissions.

Potential to generate billions

According to the PwC study, the investment needs identified are based on conservative assumptions drawn from survey data across European concessionary associations, meaning actual requirements could be higher. Yet the analysis also finds that much of the total cost could be offset by the economic value generated through the investments themselves.

The report calculates that the planned upgrades would generate €72.7 billion in added value across the EU economy and around €21 billion in public revenue. These economic impacts arise from direct value generated by construction and infrastructure companies, indirect

activity throughout supply chains, and induced effects from household spending by workers involved.

The study clarifies that the €71 billion investment figure reflects intermediate goods, while the €72.6 billion represents the value added generated, and that the modelling is based on Eurostat's FIGARO input-output tables.

However, the PwC report emphasises that these outcomes depend heavily on regulatory certainty.

Concessionary companies will only commit to major upgrades if policies provide a stable framework that incentivises investment and allows operators to recover costs through toll revenues and long-term operational visibility.

Without predictable long-term returns, the report warns, investment at the scale needed to support the EU's climate goals will not materialise.

Tolls, indispensable financing tools

This brings the debate to the question of road charging and the 'polluter pays' principle. The report argues that tolling remains the most realistic and sustainable mechanism for financing motorway decarbonisation, particularly as public budgets tighten.

Citing established EU environmental policy, the study notes that applying the Polluter Pays Principle ensures that those who generate pollution bear the cost of preventing and remedying the harm caused – rather than shifting that responsibility to taxpayers.

In practical terms, tolling ensures that those who use the infrastructure most – and generate the greatest environmental impact – contribute proportionally to its maintenance and upgrading. Yet the report observes that tolls are not widely accepted socially, creating challenges for their implementation.

It argues that taxpayers require a clearer understanding of how much of the general budget currently supports road maintenance and how their tax burden could be reduced if road users – and polluters – meet these costs directly. Improving public communication is described as essential for building acceptance of measures that are ultimately more equitable.

Investments for decarbonisation

Although sustainability investments dominate the spending needs, the study emphasises that the core technologies required – charging networks, smart lighting, photovoltaic installations, free-flow tolling – already exist.

The report concludes that the main barrier to deployment is not technological but regulatory, noting that the benefits of these technologies would be immediate but require regulatory stability in the short, medium and long term.

If member states opt to remove tolls, the report cautions, the result would be a widening investment gap, as public capital alone would be insufficient to fund the necessary upgrades.

As the EU moves forward with carbon-based toll differentiation under Directive 2022/362, the debate over who pays for road decarbonisation – and how – will intensify.

The PwC study adds weight to the argument that the motorway network can support the green transition, but only if Europe embraces financing models that align environmental responsibility with economic sustainability.

INTERVIEW

Spain can't afford to keep its roads toll-free, says construction leader

Xhoi Zajmi | euractiv.com

Spain's free-road model is draining public funds and undermining its green transition, warns SEOPAN President Julián Núñez

Since 2018, Spain has brought more than a thousand kilometres of motorways back under public management, abolishing tolls across key routes. However, the move has raised questions about sustainability, financing, and long-term competitiveness.

Julián Núñez, president of SEOPAN, the Spanish Association of Construction and Infrastructure Concession Companies, spoke with Euractiv to discuss how the removal of tolls has increased congestion and emissions, straining public finances.

Núñez also outlines a model based on moderate tolling and public-private partnerships that, in his view, could secure stable investment, improve safety, and support Spain's contribution to Europe's green transition.

EV: Spain has reverted to public management for more than a thousand kilometres of motorways since 2018. How did this impact emissions, congestion, and competitiveness? What is at stake with this shift?

JN: The first effect of the toll removal has been a sharp rise in traffic. It increased by 39.7 per cent for light vehicles and 89.2 per cent for trucks, representing a total rise of 48.9 per cent. This surge came not only from drivers switching from parallel free roads, but also, in some corridors such as the AP-7, from a shift away from rail.

This brought new challenges: more congestion, faster road wear, higher fuel consumption, more pollution, lower service quality, and longer travel times. When tolls are abolished, road transport becomes cheaper than high-speed rail, encouraging more vehicles on the road.

By 2029, three more concession contracts covering 527.4 kilometres will expire. If the current no-toll policy continues, only four per cent of Spain's high-capacity road network will remain tolled. The public budget will then face even higher costs. While other countries channel public funds into competitiveness drivers such as research or innovation, Spain is spending inefficiently on roads.

EV: The model doesn't sound environmentally sustainable, but what about the fiscal side? How has this affected Spain's ability to attract more investment and meet its climate targets?

JN: It's not sustainable at all – economically, fiscally, or environmentally. The government lost €409.8 million per year in tax revenue once private concessionaires stopped operating, and now it faces €89.7 million in additional annual maintenance costs. So, we have lower revenues and higher expenses.

The current maintenance deficit in Spain is estimated at €13 billion. At the same time, we must invest heavily in decarbonisation, digitalisation, climate adaptation, road safety, and even dual-use infrastructure. Yet the resources are not there.

Environmentally, there are no incentives for users to buy cleaner vehicles or shift to greener modes such as rail. Only 10 per cent of Spain's high-capacity roads are tolled, meaning road use is effectively free, while users of other modes pay to use infrastructure: €690 million in rail, €515 million in maritime, and €2.24 billion in airports each year.

The result is clear: road transport carries 95.8 per cent of freight and 84.1 per cent of passengers, while rail carries only 1.2 per cent and 7.3 per cent respectively. Compared to other European countries, Spain's dependence on roads is disproportionately high – a model that is fiscally and environmentally unsustainable.

EV: Considering this, and the EU's green objectives, does Spain's approach risk setting back the bloc's decarbonisation agenda?

JN: Absolutely. To meet decarbonisation goals, we must encourage cleaner transport, particularly rail. By abolishing tolls, Spain has done the opposite – making road transport even more dominant.

We also lack the funds to deploy an extensive electric charging network. Spain has the third-largest highway system in the world, requiring billions in investment for charging infrastructure. Without a sustainable funding model, who will pay for it? Our current system works against the Green Deal's objectives.

EV: Given these challenges, what is your solution? How can Spain finance its network while driving innovation and competitiveness?

JN: We don't have to reinvent the wheel. Most European countries charge for road use through tolls or vignettes. Spain should do the same. We propose a moderate toll system across our 13,000 kilometres of interurban motorways, below the European average: €0.03 per kilometre for light vehicles and €0.14 for heavy vehicles.

Our model, already submitted to the government and the European Commission, would generate over €18 billion in motorway investments. Out of this, around €11.5 billion would be directed to several key areas: €870 million would upgrade the existing network, €1.8 billion would strengthen road safety, and a further €540 million would help develop secure parking areas. The largest share – about €3.7 billion – would go towards building a nationwide electric vehicle charging infrastructure.

If renewable energy supply is included, the total investment would rise to nearly €6 billion.

We also plan €2 billion for the environmental transition, such as modernising lighting systems and creating carbon sinks, alongside €1.5 billion to ensure 5G connectivity along 3,000 kilometres of road and €800 million to establish an efficient toll collection system.

Overall, this scheme would generate €38 billion over 25 years, fully covering maintenance while ensuring long-term sustainability.

We also propose harmonising toll rates nationwide. If implemented, this would yield an additional €11 billion over 25 years. The model is built on public-private partnerships with 25-year concessions, enabling faster investment, efficiency, and risk sharing. For success, we need legal certainty and a stable regulatory framework – not only in Spain but across the EU.

EV: You mentioned you've already presented this to the government. Has there been any reaction? Could Spain change course?

JN: The proposal requires agreement from both central and regional governments. It's politically sensitive, and politicians fear public backlash. Many prefer to wait for the European Commission to push for it.

Explaining it to citizens is key. For example, if families travel 3,500 kilometres per year, a €0.03 per kilometre toll equals roughly what they already pay in taxes for road maintenance – around €2 billion annually, which is less than half of what is needed.

So, users wouldn't pay more overall; they would simply pay directly for what they use, freeing up tax money for education, healthcare, or pensions.

EV: What would be the worst-case scenario if Spain fails to act?

JN: The investment deficit would keep growing by €2 billion per year. We already face a €13 billion backlog. In five years, that would reach €23 billion, undermining road safety, service quality, and Spain's image as a tourism leader. This is something we cannot accept.

We would also lose competitiveness compared to other European countries that are modernising their infrastructure. The question is: what are our priorities? Roads or essential public services? Spaniards will always choose education, pensions, and healthcare first.

If we truly believe in a united Europe, we must harmonise infrastructure financing across the bloc. This could be easier than harmonising tax policy. The EU must act decisively and establish a common framework for road charging.

EV: Finally, if you had 30 seconds in an elevator with the Spanish prime minister, what would your message be?

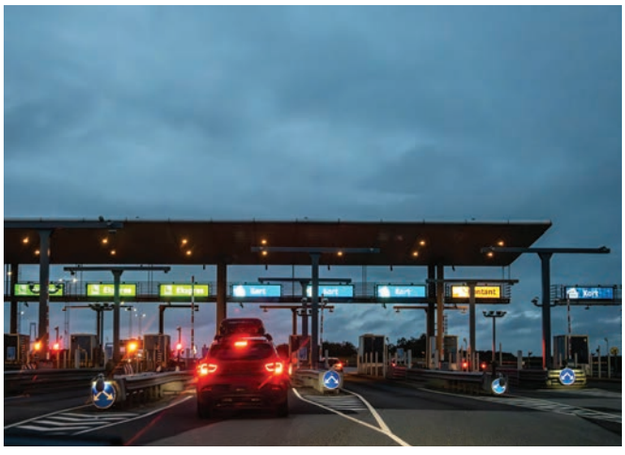
JN: Spain has the third-largest highway network in the world and depends heavily on roads. To meet the Green Deal goals by 2030, we must shift from a tax-funded model to a user-funded one. This will bring new income to decarbonise transport without burdening public finances, freeing resources for health, education, and pensions.

Europe also faces uncertainty in its car manufacturing industry. We must invest to stay competitive, encourage the uptake of electric vehicles, and digitalise our roads. Managing 27 countries is complex, but we must recover lost time and strengthen Europe's competitiveness against China and the United States.

ARTICLE

Decarbonising road infrastructure is essential for Europe's green goals

Xhoi Zajmi | euractiv.com



Decarbonising cars is only half the journey; Europe's real test lies in turning roads into engines of climate progress with intelligent systems

As Europe moves towards its 2050 climate neutrality goal, one sector continues to cast a shadow over the continent's green ambitions: road transport. Despite progress, cleaner cars alone will not deliver net zero if Europe's roads remain carbon-intensive.

Road transport is the EU's largest source of greenhouse gases, responsible for about a quarter of total emissions and nearly three-quarters of those from transport. Under the European Green Deal and the Fit for 55 package, Brussels aims to cut emissions by 55 per cent by 2030 and reach net zero by mid-century.

Central to this plan is the shift to zero-emission vehicles and the 2035 phase-out of new internal combustion engines. Yet any softening of that target risks diverting attention from another crucial element: the decarbonisation of road infrastructure.

The European Association of Operators of Toll Road Infrastructures (ASECAP) warns that even the cleanest vehicles cannot meet the EU's climate goals if the road infrastructure is not adapted to welcome them. Roads are and will remain the predominant mode of transport in the near future, due to the current higher traffic volumes. It is therefore urgent to foster and deploy green energy and act on the operations side to cut CO2 emissions. As the group puts it, "there will be no climate change limitation and mitigation without fast road transport decarbonisation."

The missing link in climate action

ASECAP, representing 130 toll road operators managing over 82,000 kilometres of European motorways, argues that Europe's road network must become a driver – not a drag – on climate action.

In its position paper Tools for Sustainable Mobility Solutions: Reaching Net Zero Carbon Mobility, the association calls for a systemic shift in how the EU tackles transport emissions.

From construction and maintenance to energy integration and digital management, roads themselves must evolve. That means using low-carbon materials, recycling asphalt, generating renewable energy along corridors and adapting networks for electric and hydrogen vehicles.

The next frontier, ASECAP says, is to turn roads into energy assets – equipped with solar panels, induction charging and wind turbines – capable of powering the mobility systems they sustain.

Modernising Europe's motorways could require investment equivalent to one-fifth of the network's current value; a cost public budgets alone cannot bear.

Tolling as a green financing tool

ASECAP's solution lies in a concept as old as European mobility itself: tolling. Far from being a relic, the user-pays model – enshrined in EU law through the Eurovignette Directive – remains one of the most reliable ways to fund infrastructure sustainably.

The association argues that the user-pays and polluter-pays principles should anchor Europe's mobility transition. By linking road use to environmental impact, tolling both finances decarbonisation and internalises pollution costs.

This ensures the transition does not depend on public spending or increase national deficits already under strain.

ASECAP also urges the EU to recognise tolling and Intelligent Transport Systems (ITS) under the EU taxonomy for sustainable activities, which defines what qualifies as 'green' investment. Inclusion would unlock private capital and allow operators to contribute more effectively to Europe's climate goals.

"Technology is still the missing piece of the sustainability strategy," ASECAP notes, arguing that combining tolling with digital innovation can turn motorways into low-carbon mobility services.

Smart pricing, real-time traffic management and connected vehicles can all cut congestion and energy use, amplifying the benefits of cleaner transport.

The risk of policy backsliding

As the 2035 fossil-fuel car phase-out faces political pressure, experts warn the debate must not slow down infrastructure decarbonisation. Even if the vehicle transition timeline shifts, the need for cleaner, smarter roads remains.

Legal uncertainty around concession renewals and calls to scrap tolls in some member states could undermine progress. Spain's 2021 decision to abolish tolls on more than 1,000 kilometres of motorway has already led to higher congestion, greater emissions and increased maintenance costs for the state.

ASECAP says such reversals contradict the Green Deal's core principles. Free roads are not free, it argues – they come at a cost: in public debt, pollution and lost opportunities for innovation.

A broader mobility transition

Decarbonising road transport extends beyond vehicles and infrastructure – it reshapes mobility itself. ASECAP envisions suburban corridors redesigned for high-occupancy and collective modes, such as carpooling, express buses and autonomous shuttles.

Combined with intermodal hubs and digital ticketing, these measures could reduce congestion, emissions and social inequality by improving access for commuters in underserved areas.

In that sense, the decarbonisation of roads is also about the democratisation of mobility. Cleaner, smarter infrastructure can connect regions more efficiently, balancing economic opportunity with environmental responsibility.

A decisive decade

Europe's road to climate neutrality runs through the asphalt of its motorways. Whether powered by electric batteries, hydrogen or synthetic fuels, the vehicles of the future will still rely on the resilience and sustainability of the roads beneath them.

The coming decade will decide whether Europe's infrastructure keeps pace with its ambitions. In ASECAP's words, "Financing better, safer and greener road transport will not happen without tolls."

As the Green Deal enters its implementation phase, the message from Europe's road operators is clear: without road decarbonisation, the EU cannot decarbonise.

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