MARKET INSIGHTS

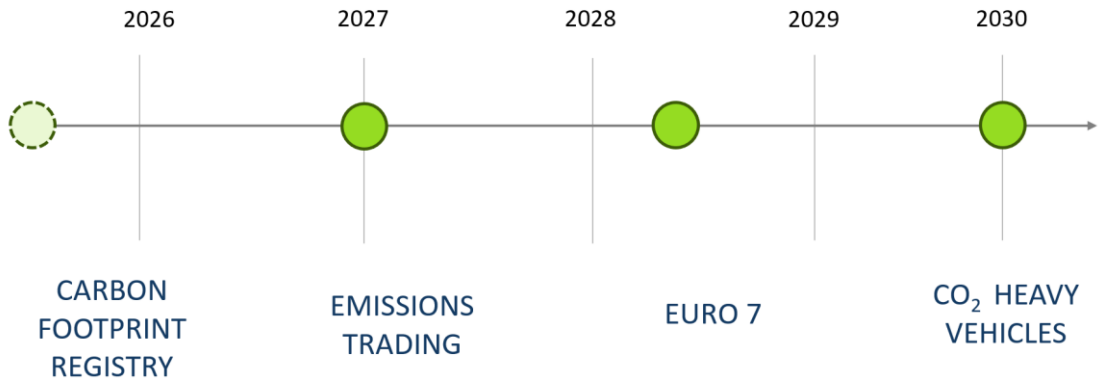
"New legislative changes affecting the maritime and port transportation sector" [1]

The government has approved the update of the National Integrated Energy and Climate Plan (PNIEC) 2023-2030, maximizing the drive towards ecological transition. According to the PNIEC, the target for reducing greenhouse gas emissions intensity in transportation has been increased to 16.4%, with a goal of 5.5 million electric vehicles by 2030. Additionally, there is a focus on shifting modal transport towards public transportation and rail, while maintaining low emission zones in major cities. Furthermore, the aim is for 28% of energy in transportation to come from renewable sources, with an increase in the use of Renewable Fuels of Non-Biological Origin (RFNBO), advanced biofuels, and biogas rising from 2.1% to 17.26% by 2030

Analysis of the Fundación Valenciaport

In recent months, significant legislative changes have been implemented that affect the maritime transportation sector, aimed at accelerating the energy transition and reducing greenhouse gas emissions and atmospheric pollutants. These new regulations are designed to promote the adoption of alternative fuels, regulate the pollutant emissions of vehicles, improve energy efficiency, include greenhouse gas emissions from the transportation sector in the EU Emissions Trading System, and require the calculation and reporting of the carbon footprint for transportation companies.

Figure 1. Timeline for the implementation of the new energy transition regulations.



Source: Own elaboration

[1] Original news published by "El Español" and available at: https://www.elespanol.com/invertia/empresas/energia/20240925/transporte-industria-edificios-agricultura-foco-nuevo-pniec-descarbonizacion-co2/888411600_0.html

In this context, it is essential for maritime transportation companies to be aware of and adapt to the new requirements to remain competitive and aligned with European, national, and regional environmental commitments. Below, we summarize the main updates in legislation regarding this matter, as well as their potential implications for the maritime transport sector.

New infrastructure for Alternative Fuels

A crucial aspect for the adoption of low-carbon technologies is the sufficient availability of supply chains for renewable energy sources, minimizing the operational impacts of this transition. In the case of maritime transportation, this means having an adequate number of public access electric charging points and sufficient power, as well as a suitable number of distribution points for other low-carbon fuels. **The Alternative Fuels Infrastructure Regulation** (AFIR) aims to achieve this goal throughout the European Union. The most recent version of this legislation is **Regulation 2023/1804**, published in the Official Journal of the European Union in September 2023, which repealed Directive 2014/94/EU.

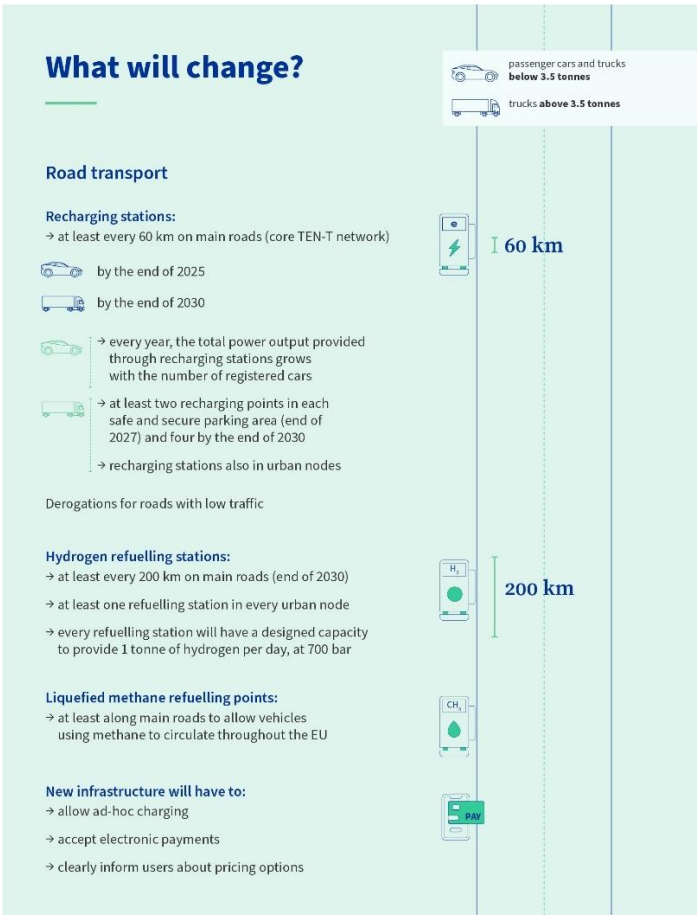
The regulation defines obligations for Member States to coordinate the achievement of specific infrastructure objectives for various modes of transport. To this end, Member States will submit to the Commission a plan detailing how they will fulfill this commitment in a document called the National Action Framework, with the initial proposal required to be submitted by December 31, 2024, at the latest.

For each mode, low-carbon technologies are considered among those deemed most suitable or needing regulatory reinforcement by the Commission. For maritime transportation, options such as electric, hydrogen, and liquefied natural gas (LNG) are included, although biofuels and synthetic fuels (mentioned in the Renewable Energy Directive, also known as **RED III**) or captured CO2 are not specified. The following targets are established:

- Electric charging points for trucks every 60 km on the core transport network by 2030.
- Hydrogen refueling stations at 700 bar with a capacity of 1 ton per day, every 200 km on the core transport network by 2030.
- An adequate number (not specified) of LNG refueling points, allowing vehicles using this fuel to move freely throughout the union.

While the targets set are insufficient for a complete replacement of conventional diesel in road transport, they do outline the expectations of the Commission and aim to act as a driving force for projects to achieve the energy transition in the transport sector. Additionally, the publication of National Action Frameworks will serve as a crucial source of information for maritime transport companies when planning their decarbonization processes.

Figure 2. Infographic summary of the AFIR for maritime transportation.



Source: https://www.consilium.europa.eu/en/infographics/fit-for-55-afir-alternative-fuels-infrastructure-regulation/

Pollutant Emissions (EURO 7)

The main objective of EURO standards is to control gaseous pollutant emissions from vehicles in Europe. The primary source of these emissions comes from the combustion process in engines, which produces species that can affect human health, such as carbon monoxide (CO), unburned hydrocarbons (HC), nitrogen oxides (NOx), and particulate matter (PM). However, there are other potential sources of pollutant emissions, such as vapors from the fuel system or particles from brakes and tires.

Traditionally, the focus of these standards has been on the homologation and certification of vehicles, enabling manufacturers to ensure that a new vehicle can meet the regulatory limits under specified conditions. The regulations have been successful in achieving reductions in emissions and improvements in air quality, becoming increasingly stringent (lower pollutant limits) based on what was realistically achievable with available technology.

However, by design, the standards had areas for improvement that the new version addresses, specifically the need for:

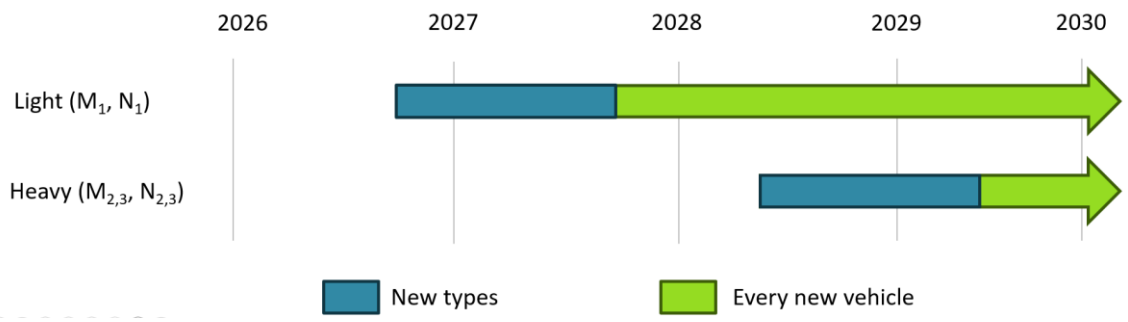
1. Greater Simplicity: Previous standards differentiated between light and heavy vehicles (e.g., **EURO 6** for light vehicles and **EURO VI** for heavy vehicles) and by type of engine, with different regulated species and limits based on vehicle type. To address this, the new standard is unified across vehicle types, with limits that are independent of the engine and fuel used.
2. Better Correlation Between Homologation Conditions and Real-World Driving Behavior: To improve representativeness, real-world driving conditions have been added as a requirement for the homologation cycle, and continuous emissions monitoring throughout the vehicle's lifecycle has been introduced.

Furthermore, considering the state of technology, the **EURO 7** regulation has also updated pollutant limits and introduced new species. The newly considered species, nitrogen dioxide (NO2) and ammonia (NH3), are primarily produced in post-treatment systems for pollutants, representing a new paradigm by dissociating the source of gaseous pollutants from combustion processes. In this regard, limits have also been established for emissions from tires. Lastly, requirements for the durability of batteries for electric vehicles are also included.

The new **EURO 7** standard poses a technological challenge for manufacturers of internal combustion engine vehicles, needing the implementation of a greater number of sophisticated exhaust gas post-treatment systems. This will have two direct consequences for users: higher vehicle prices (which will increase the attractiveness of alternative technological options to combustion engine vehicles) and greater complexity, with implications regarding the likelihood of breakdowns, repair costs, and maintenance needs. However, the greatest impact on users is likely to be related to the continuous measurement of NOx, NH3, and PM emissions, where exceeding limits—regardless of whether the cause is excessive production or measurement error—will lead to restrictions or even immobilization of vehicles, significantly affecting operations.

The **EURO 7** regulation has undergone a lengthy negotiation process, during which the implementation timeline has been somewhat relaxed compared to earlier versions, mainly to facilitate the development of the required technological innovations. For the port road transport sector (dominated by N3 vehicles), the new standard will take effect in mid-2029, meaning it will not have an immediate impact in the very short term.

Figure 3. EURO 7 Regulation Timeline



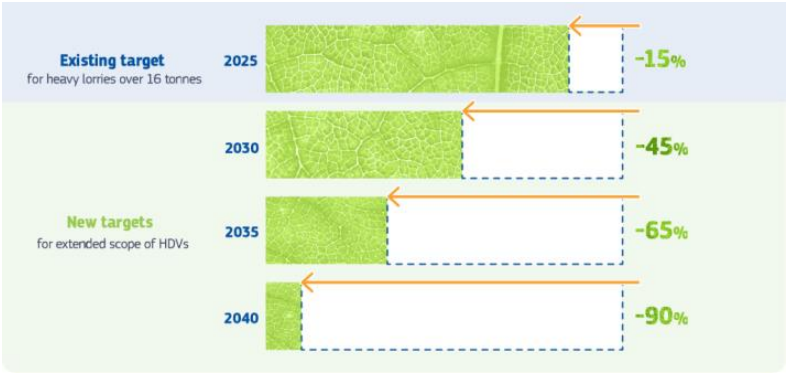
Source: Own elaboration

Tools for Reducing Emissions in the Sector: CO2 Emission Limits in Heavy Transport and Emission Trading Scheme (ETS2)

The legislative approach to reducing greenhouse gas (GHG) emissions from road transport has taken a dual focus: on one hand, the vehicle fleet, and on the other, encouraging the use of low-emission GHG options. Specific legislation has been developed for each of these approaches.

Regulation 2024/1610, which reinforces CO2 emission standards for new heavy vehicles and establishes reporting obligations, was published in May 2024. It modifies the previous Regulation (EU) 2018/858 and repeals Regulation (EU) 2018/956. This regulation defines specific targets for vehicle manufacturers concerning the GHG emissions of vehicles produced within a given timeframe relative to a reference. This reference varies depending on the type of vehicle and the calculation method, although the regulation itself specifies how to determine it. The following illustration shows the reduction levels outlined in the regulation.

Figure 4. Reduction Targets for Manufacturers as Outlined in Regulation 2024/1610



Source: Reducing CO_2 emissions from heavy-duty vehicles - European Commission

It is possible to meet the obligations set forth in the regulation through a combination of improving existing vehicles and modest production of zero-emission vehicles by 2025. However, the reduction levels required by 2030 will necessitate a significant increase in

zero-emission vehicle production. This will enhance the availability of zero-emission vehicles, but it may also lead to higher prices across manufacturers' catalogs. Finally, it is important to note that achieving carbon neutrality is possible by changing the fuel source without altering the vehicle, for instance, by using bio-LNG or carbon-neutral diesel. The regulation does not clarify how this option will be considered, though some alternatives are available.

The European Union Emissions Trading Scheme (EU ETS) aims to promote the cost-effective and efficient reduction of GHGs. This system sets a maximum cap on the volume of emissions that companies under the scheme can produce, which must acquire or receive individual emission allowances that permit them to emit a specified amount of GHGs. This cap gradually decreases over time, aiming for a progressive reduction in emissions to meet the EU's climate commitments. The EU ETS was established in 2005 under **Directive 2003/87/EC** for high-energy-consuming industries, energy producers, and airlines.

In 2023, a new emissions trading scheme (EU ETS2) was created, including emissions from fuel combustion in buildings, road transport, and other sectors through **Directive (EU) 2023/959.** Due to the large number of small emitters in these sectors, directly regulating the entities emitting GHGs as done in the EU ETS is not feasible. For technical viability and administrative efficiency, the point of regulation will be located at earlier stages of the supply chain, specifically at the fuel dispatch stage for consumption in these sectors. In this context, the regulation will directly impact fuel suppliers, serving as a lever to promote the supply of renewable energy (electricity and fuel). The impact on land transport companies will be indirect, potentially affecting fuel prices in the future.

EU ETS2 is set to begin in 2025. In the initial years, regulated entities will be required to obtain a permit to emit GHGs and report emissions for the years 2024 to 2026. From 2027, the issuance of emission allowances and compliance obligations for these entities will come into effect. However, there is a possibility of postponing its implementation to 2028 if exceptionally high energy prices are recorded.

Estimation and Registration of Carbon Footprint

The Carbon Footprint, Compensation, and CO2 Absorption Projects Registry was established through **Royal Decree 163/2014.** It is affiliated with the Spanish Office of Climate Change (OECC) in the Ministry for Ecological Transition and the Demographic Challenge (MITECO) and aims to gather the efforts of companies, administrations, and other Spanish organizations in calculating, reducing, and compensating for the GHG emissions generated by their activities. This is a voluntary registry where organizations can calculate and register their carbon footprint. The calculation must include Scope 1 and Scope 2 emissions, while Scope 3 emissions are optional but recommended. In addition to calculating the footprint, organizations must develop reduction plans and track their progress. If it is not possible to reduce all emissions, there is an option to offset them by investing in CO2 absorption projects, such as sustainable forest management or ecosystem restoration, promoted at the national level and approved by MITECO.

Currently, there is a **draft Royal Decree** to modify the Carbon Footprint Registry, stemming from the Climate Change and Energy Transition **Law 7/2021**. The main innovation is the obligation for a specific group of organizations to calculate and report their carbon footprint, as well as to develop a reduction plan. Registration of the carbon footprint will be mandatory for Scope 1 and Scope 2 emissions, while Scope 3 emissions will be progressively included for non-SME companies, being voluntary for others. The defined emission reduction plan must include at least a quantified reduction target over a five-year horizon, along with measures to achieve it. Organizations subject to this obligation are defined by **Law 11/2018** on non-financial information and diversity and must meet at least two of the following criteria:

- Employ more than 250 people.
- Generate over 40 million euros in revenue.
- Have assets exceeding 20 million euros.

Mechanisms for coordination and monitoring with autonomous communities will be established to ensure interoperability between regional carbon footprint registries and the national registry, provided the registration requirements are compatible. **The draft Royal Decree** indicates that the obligations established therein will come into effect on January 1, 2025, referring to the carbon footprint of 2024, although it has not yet been approved.

At the regional level, **Law 6/2022** on climate change and ecological transition in the Valencian Community stipulates that large and medium-sized enterprises conducting their activities wholly or partially in the region must calculate and annually verify the carbon footprint corresponding to all their activities in the Valencian Community to progressively reduce their GHG emissions. The law establishes the Valencian Registry of Climate Change Initiatives, registration for which will be mandatory for private heavy goods and passenger transport companies with fleets exceeding 10 units in the section on carbon footprint calculation and reduction. To do this, companies must calculate and report their carbon footprint annually and develop and implement emission reduction plans, submitting them to the Conselleria. This Registry will be coordinated and interoperable with the MITECO Carbon Footprint Registry, and it is stipulated that the obligations related to carbon footprint calculation will come into effect on January 1, 2025, although the Valencian Registry has not yet been launched.

Conclusions

Various legislative initiatives will be activated in the coming years aimed at promoting the energy transition in the road transport sector, in line with the broader EU decarbonization objectives. Most of these will have an indirect impact on companies in the sector, driving up costs for traditional fossil fuel-based technological alternatives and promoting the use of low-emission GHG technological options (e.g., electric or hydrogen options). The most significant direct impact will come from the new legislative framework that will require companies to measure their carbon footprint, register it, and define a decarbonization plan for each reporting period. This action will raise awareness and

motivation, helping companies adapt to the energy challenges that lie ahead in the coming years.

In this regard, it is crucial to stay informed about changes in legislation related to the energy transition and to monitor the direct and indirect consequences that arise from them. Anticipating these regulations will not only facilitate adaptation to new long-term requirements but may also yield benefits such as economic savings and provide a competitive edge in an increasingly sustainability-oriented market.