European Net Zero Investment Plan

30 investments priorities by 2030 for sustainable mobility

PLATFORM FOR electromobility

The Platform for Electromobility supports the overall shift in European policy priorities established the European Green Deal. The Deal acts as a valuable long-term compass, particularly in light of the pending elections and the appointment of a new Commission. In 2023, two pivotal pieces of legislation supporting the shift - the Net Zero Industrial Act and the Critical Raw Materials Act - were enacted. However, while these measures are welcome first steps, they call for a complementary initiative: a robust **European Net-Zero Infrastructure Investment Plan**.

A comprehensive Net Zero Investment Plan is essential if the EU Green Deal is to be implemented effectively within an appropriate timeframe. European companies and industries will require additional financing in order to transition to net zero, particularly given the support provided by competitors such as the US and China. Whether it is an "Investment Plan for Jobs and Clean Technologies", an "Investment Plan for the Green Transition", a "major investment plan to fund green industries and infrastructure" or a "massive investment spending plan for the creation of green jobs and the transformation of industry, transport and energy" - by the European People's Party, the Party of European Socialists, the European Greens and The Left, respectively, **it is clear that investment stands as a cross-partisan priority.**

As outlined in our EU election manifesto, a significant investment plan post-elections is essential for ensuring the successful implementation of the Green Deal. This will benefit individuals, the climate and businesses alike, targeting sectors crucial to achieving Net Zero goals. Without deployment of high-speed charging infrastructure for electric trucks, a high quality and interoperable rail network as well as integrated recycling facilities, **the Green Deal will remain simply a paper tiger**. It is imperative that we make these and other long-term, easily accessible investments. Ensuring legacy of the Green Deal with a large investment plan must take centre stage during the upcoming European elections. It is the **democratic moment** that would legitimise such a leap forward.

At the Platform for Electromobility, our focus is on identifying priorities for the sustainable transport sectors as a whole, ensuring they work synergistically while avoiding duplication or contradictory expenditure. This document offers an overview of the required investment priorities for the myriad sectors that will constitute tomorrow's clean mobility ecosystem. We therefore aim to support policy makers in **determining the content and priorities** of such a cross-partisan investment plan.

Below, 30 investment priorities in seven areas have been identified, in order to respond to three policy imperatives: deploying hard infrastructure, implementing industrial policy and supporting the shift to zero-emissions vehicles. Those priorities are closely intertwined, build on each other and create valuable synergies.

While financial considerations are paramount, they must not be the sole focus. The Green Deal also requires further legislative measures for proper implementation, such as industrial policy reforms, corporate fleet mandates and electricity market design overhauls. We have chosen to refrain from delving into financial arrangements, in order to maintain focus on our area of expertise: sustainable mobility.

Methodology - Results are based on a preliminary questionnaire, distributed on a voluntary basis to the members of the Platform for Electromobility. The preliminary findings have been discussed and debated within each of the Platform's six thematic working groups. The final outcomes have been validated by all members following the Platform's Memorandum of Understanding validation processes.

1/ Investing in energy and transport **infrastructure** to enable the Green Deal

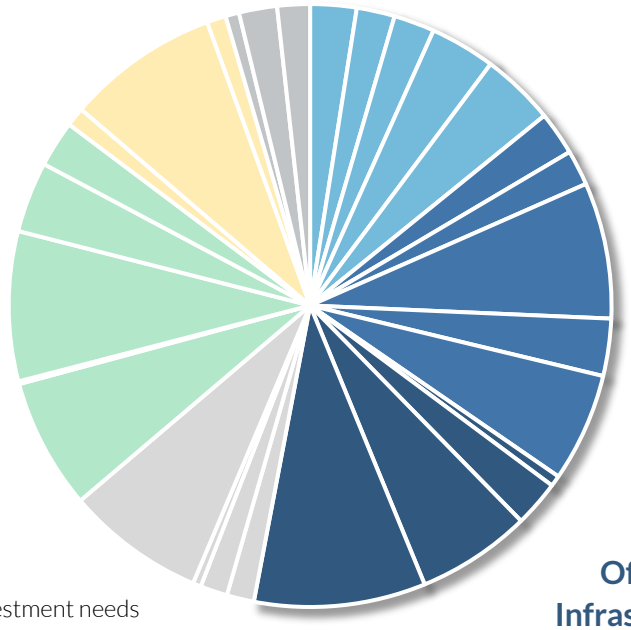
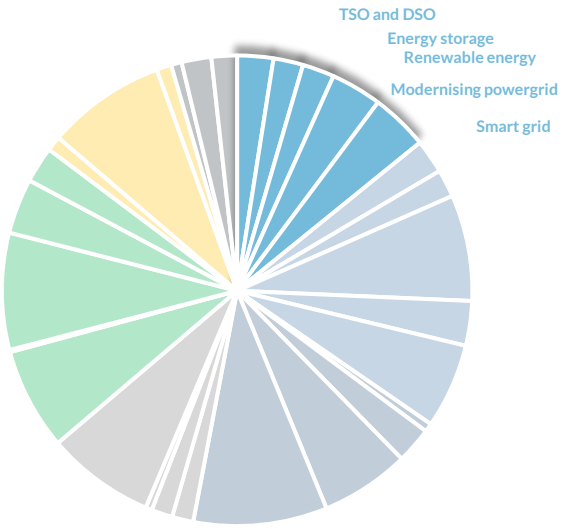


Chart 1. Share of investment needs dedicated to infrastructures deployments



Area 1 : Energy Infrastructures (14.5%)

1. TSO and DSO Expansion/Upgrade

Expanding and upgrading TSO and DSO infrastructure is imperative for meeting the growing demand for electricity and facilitating the widespread adoption of electric transport. These upgrades are essential for supporting charging infrastructure for both light-duty vehicles (LDVs) and heavy-duty vehicles (HDVs), as well as for enhancing maritime and inland port grids. Reinforcing connections to the national grid for shore-side electricity will boost energy resilience and promote cleaner transport options.

2. Energy Storage Solutions

Energy storage solutions play a crucial role in relieving grid congestion and accelerating the integration of renewable energy sources. Investing in such technologies will enhance grid flexibility, mitigate the variability issues associated with renewables, and support the transition to a more-sustainable and resilient energy system. Prioritising energy storage solution development and deployment is essential for ensuring grid stability and promoting renewable energy deployment.

3. Development of Renewable Energy Sources

The electrification of transport is impossible without decarbonised electricity. Expanding carbon-free energy sources is fundamental to achieving energy security, reducing greenhouse gas emissions and advancing the energy transition. Europe must prioritise the development of wind, solar and hydro – as well as other renewable and decarbonised energy sources - if it is to diversify the energy mix and decrease reliance on fossil fuels.

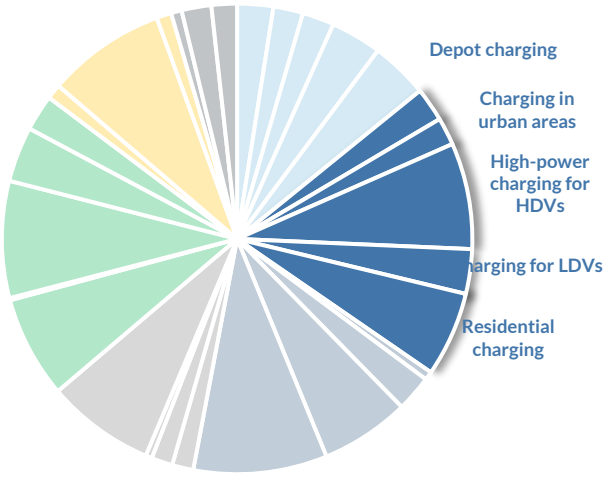
4. Modernising the Grid

Digitising and modernising the grid are essential for improving demand-supply management and streamlining the process for creating new grid connections. Through embracing digital technologies, Europe can enhance grid reliability, optimise energy distribution and support the integration of distributed energy resources. Modernising the grid will also provide the foundations for future advancements in smart grid deployment and enable realisation of benefits such as vehicle-o-grid (V2G) capabilities.

5. Smart Grid Deployment/V2G

Supporting smart grid deployment, particularly for V2G applications, is essential for optimising grid operations and leveraging the potential of electric vehicles as grid assets. Smart charging technologies enable EVs to be part of demand response programmes, thus helping balance supply and demand on the grid. Investing in smart grid infrastructure will allow for the efficient use of resources, minimise grid constraints and facilitate the transition to a more flexible and resilient energy system without heavy investment in infrastructure.

Area 2: Charging Infrastructures (21.0%)



6. High-Power Charging Infrastructure for HDVs

HPC infrastructure along motorway networks is critical for facilitating the transition to electric HDVs. While the available solutions are technically mature, it will require significant investment to kickstart the transformation. By prioritising the installation of HPC stations, Europe can ensure compliance with regulatory requirements (notably AFIR) and substantially reduce GHG emissions from the transport sector. Public money must be directed towards meeting the real needs of drivers and fleets, which is to be able to charge during rest times.

7. Depot Charging Infrastructures for HDVs and Buses

Depot charging plays a vital role in electrifying trucks and buses, as a significant portion of these vehicles return to depots at the end of each day. Europe should explore opportunities for local depot-based renewable energy production support sustainable charging solutions. Depot charging infrastructure will both reduce emissions and enhance energy resilience.

8. Charging Infrastructures for LDVs

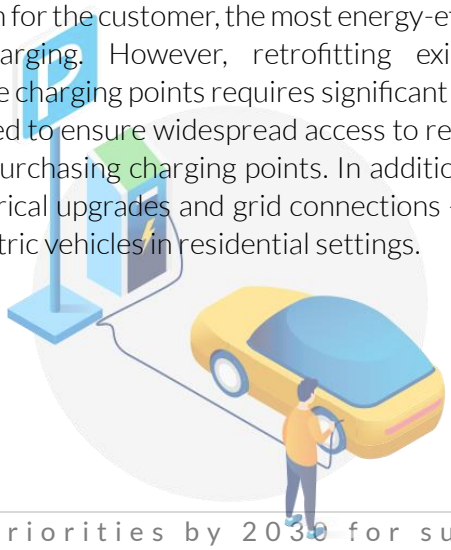
Overcoming barriers, such as high purchase prices and insufficient availability of charging points, is crucial for the widespread adoption of electric LDVs. This will require comprehensive investments to ensure adequate charging infrastructure coverage both nationally and regionally.

9. Charging Infrastructures in Urban Areas

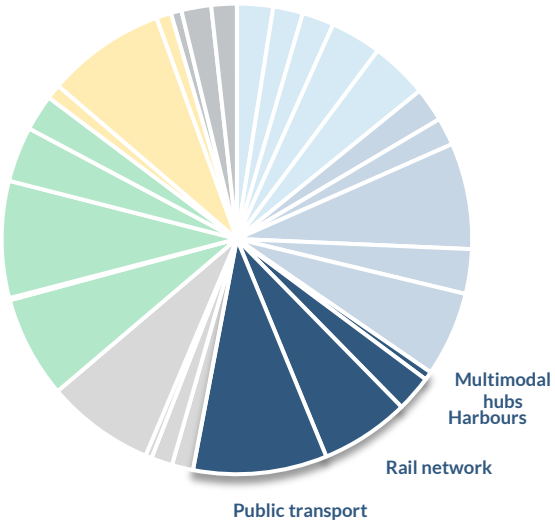
Urban areas need a greater density of charging networks to meet the growing demand for electric vehicles, particularly among residents without access to private parking spaces. Public charging points are pivotal in enabling urban dwellers to switch to electric transportation.

10. Residential Charging

The residential sector is central to decarbonising the LDV fleet, as a majority of charging events take place at private residences. Furthermore, the installation of a controllable charging station is the most economical solution for the customer, the most energy-efficient for the grid, and promotes off-peak/super-off-peak charging. However, retrofitting existing buildings and electrical installations to accommodate charging points requires significant investment. Europe should assist with the renovations required to ensure widespread access to residential charging infrastructure, and support consumers in purchasing charging points. In addition, financial support for building-related costs - such as electrical upgrades and grid connections - is essential for encouraging the widespread adoption of electric vehicles in residential settings.



Area 3: Off-road infrastructures (18.9%)



11. Rail Network & 12. Multimodal Hubs

The electrification of the Trans-European Transport Network (TEN-T) rail network by 2030, 2040 and 2050 presents a significant infrastructure challenge; one that will require substantial investments. Unfortunately, such investment in rail infrastructure has been sorely lacking over the past two decades. To address this, increased investment is imperative, with priority for three key areas. First, maintenance of existing infrastructure is paramount for ensuring optimal track conditions, enabling higher speeds and improving services. Second, upgrading existing network infrastructure - including implementing the European Rail Traffic Management System (ERTMS) signalisation and addressing bottlenecks - are crucial for enhancing efficiency and capacity. As acknowledged by former Italian Prime Minister Enrico Letta in his report "The future of the Single Market", massive investments are needed to support the establishment of a comprehensive, pan-European high-speed rail network, *"seamlessly linking all EU capitals and major urban centres"*, with the aim "to *significantly elevate rail's role in long-distance passenger transportation, aiming to capture more than 50% of the market share"*. The achievement of this initiative is presented as "*a cornerstone in the EU's journey towards enhanced connectivity, economic growth, and environmental sustainability, underscoring its profound importance for the future of the European Union"*. According to the latest analysis by Institut Rousseau, an annual investment of 47 billion euros between 2024 and 2030 is required for the development of rail infrastructures to complete the TEN-T core network.

13. Public Transport

Public transport - including urban rail infrastructure such as metros, trams and light rail vehicles – has a pivotal role to play in achieving Europe's climate objectives. These systems combine high capacity, energy efficiency and safety with minimal land use, making them indispensable components of sustainable mobility. The revised TEN-T Regulation mandates that 430 major cities along the network develop Sustainable Urban Mobility Plans (SUMPs) to promote zero- and low-emission mobility. Accordingly, there must be adequate funding allocated to support alternative fuel infrastructure solutions for urban rail, ensuring that charging infrastructure is also available at key locations such as terminuses and bus stops as well as at depots. In fact, the new TEN-T mandates that airports with an annual passenger traffic volume of more than 12 million passengers shall be connected to the TEN-T railway network, including the high-speed network, allowing for long distance rail services.

14. Harbours

Upgrading maritime and inland port grids, along with their connections to the national grid, is essential for powering Shore-Side Electricity (SSE) infrastructure in European ports. Starting with ferry, container and cruise ship terminals by 2025, and extending to all other terminals by 2035, SSE infrastructure will ease the transition to cleaner maritime transportation. By prioritising investments in port electrification, Europe can reduce emissions from the shipping sector and promote sustainable port operations, in alignment with its climate objectives.

2/ Invest for competitive, sustainable, European transport industries

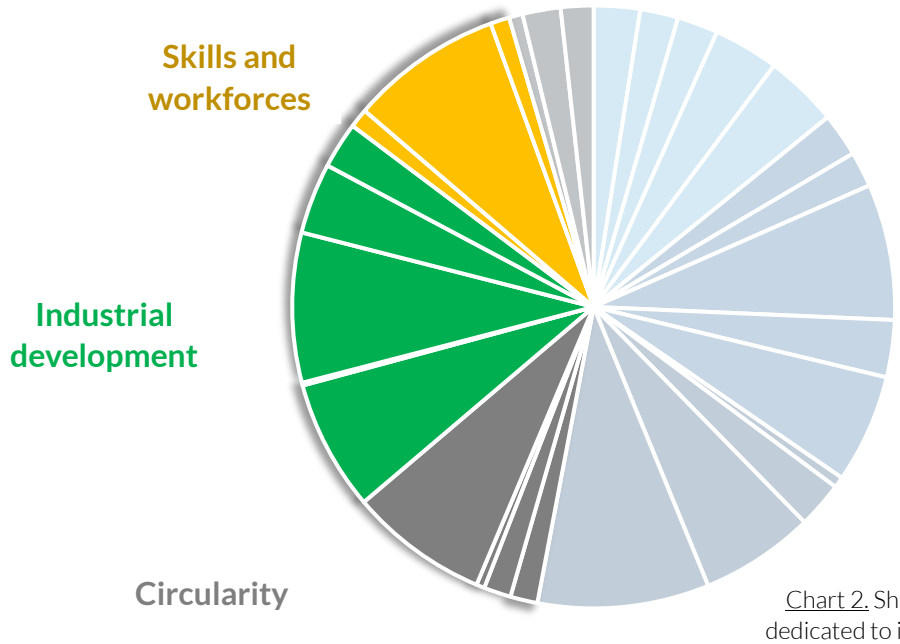
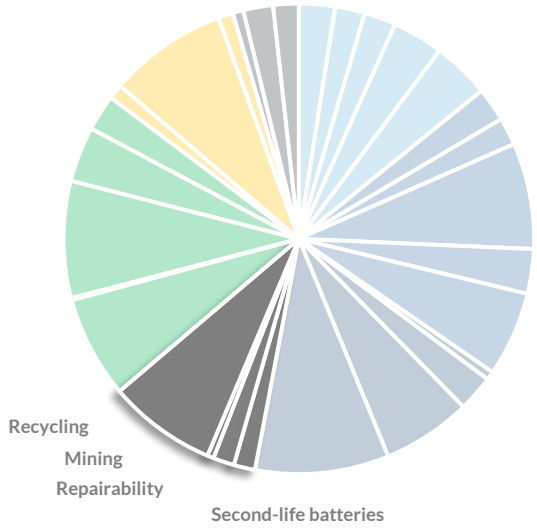


Chart 2. Share of investment needs dedicated to industrial developments

Area 4: Invest to create a circularity value chain (10.0%)



15. Recycling

Investing in integrated recycling and repurposing facilities, in order to collect, dismantle and recover valuable metals from these sources, is essential for reducing reliance on primary mining and enhancing resource sustainability. By prioritising development of recycling infrastructure, Europe can establish a robust supply chain for critical metals and promote circular economy principles in the battery industry, ultimately contributing to the continent's energy transition goals. Developing the EU's recycling capabilities is paramount to retaining valuable materials within Europe and reducing dependency on imports. Incentivising the colocation of battery manufacturing and recycling facilities can streamline material flows, minimise environmental impact and use resources more efficiently.

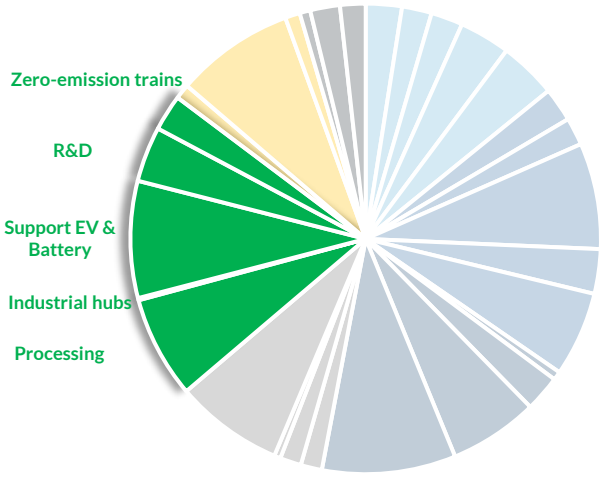
16. Mining, Remining and Urban Mines

Europe possesses a valuable resource in its so-called 'urban mines'. These include used batteries and waste materials, which can be effectively leveraged to secure essential metals for battery production.

17. Second-Life Batteries and 18. Repairability

Maximising the lifespan of batteries is essential for addressing the limited availability of raw materials within the EU. Embracing second-life battery programmes and implementing robust repairability requirements for both batteries and EVs can extend their usefulness and promote a thriving second-hand market. By incentivising reuse and repair of batteries and vehicles, Europe can reduce waste, lower its environmental footprint and unlock economic opportunities in the circular economy.

Area 5: Invest in 'Made-in-Europe' manufacturing (14.9%)



19. Processing

Efficient and sustainable processing methods are integral to the preparation of raw materials for manufacturing components central to the emobility industry, such as batteries. This encompasses transforming raw materials – via various processes - into the specific forms required for producing batteries and other components. Ensuring the environmental responsibility of these processes is paramount for establishing a stable and ethical supply chain for the EV sector.

20. Research and Development

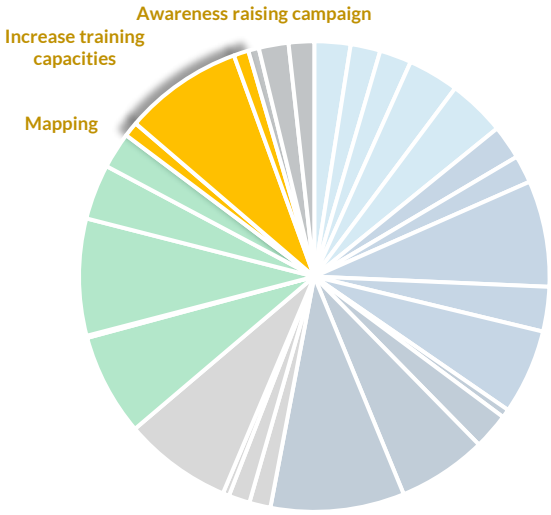
Funding is essential to advance battery R&D for e-mobility. Transitioning away from per- and polyfluoroalkyl substances (PFAS) is imperative for achieving full sustainability and futureproofing the industry. R&D funding, particularly for PFAS alternatives and battery development, is crucial for driving innovation and improving environmental performance. Strategic investment in R&D to consolidate European technology champions will enhance the competitiveness of European industries in the global market.

21. Support for EV & 22. Battery Manufacturing

The development of battery production is crucial for reducing European industry's dependence on Asia and the USA. Additionally, it presents an opportunity to create attractive employment opportunities. Supporting the growth of battery manufacturing not only strengthen Europe's industrial base but also fosters innovation and economic growth. By investing in EV and battery manufacturing, Europe can become a leader in sustainable transportation and create a booming ecosystem of green technologies. In addition, it offers an opportunity to create attractive employment opportunities.

23. Zero-Emission Trains: Refurbishment or 24. Manufacturing

The lack of rolling stock in Europe presents a significant barrier to expansion, particularly for new market entrants and operators seeking to launch innovative rail services. Refurbishing, retrofitting and manufacturing new rolling stock that meets the evolving needs of passengers, such as comfortable night trains and high-quality internet connectivity, is essential for accelerating behavioural change and promoting the widespread adoption of zero-emission trains. It is worth mentioning that the European Smart and Sustainable Mobility Strategy rail objectives are set at doubling by 2030 and tripling by 2050 high-speed rail traffic and increasing by 50% by 2030 and doubling by 2050 rail freight traffic. Achieving these ambitious goals, which are interlinked with the completion of the EU TEN-T rail network and the EU 2040 emissions reduction target, will require a considerable increase in the EU's production capacity of (very) high-speed and freight rolling stock by 2050.



Area 6: Invest in skills and workforce (10.5%)

Developing a skilled workforce is essential for successfully decarbonising the transport sector. Addressing skills shortages, promoting job creation and enhancing training capacity are key priorities requiring coordinated efforts from the EU institutions, Member States and industry stakeholders.

25. Mapping training needs and training capacities

The EU institutions and Member States must undertake a comprehensive skills mapping exercise to identify gaps and assess the needs for jobs and skills in various sectors. This should encompass both the traditional and new skills required to deliver decarbonisation. Based on the gaps identified, tools should be developed to publicise available training opportunities and instigate new training programmes where necessary.

26. Increasing existing training capacity

To meet the growing demand for skilled workers, there should be investment in increasing training capacity, including improving Vocational Education and Training (VET) schools and recruiting suitably qualified teachers. Urgent action is needed to address the time required to adequately train workers, in order to ensure the steady supply of skilled labour for industries transitioning to sustainability. By enhancing training infrastructure and resources, Europe can build a workforce with the ability to advance the energy transition. Initiatives such as the 'Net-Zero Academy' can serve as role models for supporting skills development initiatives across Europe.

27. Awareness Campaigns

Investment in awareness campaigns is crucial for attracting greater numbers of workers to technical jobs and education, particularly in those sectors undergoing energy transition. Such campaigns should target young people, to cultivate their long-term interest and engagement in sustainable professions. By raising awareness of the opportunities available in decarbonisation sectors, Europe can inspire the coming generation of skilled workers and drive innovation in clean technologies.

3/ Support the roll-out of zero-emissions vehicles cross all modes

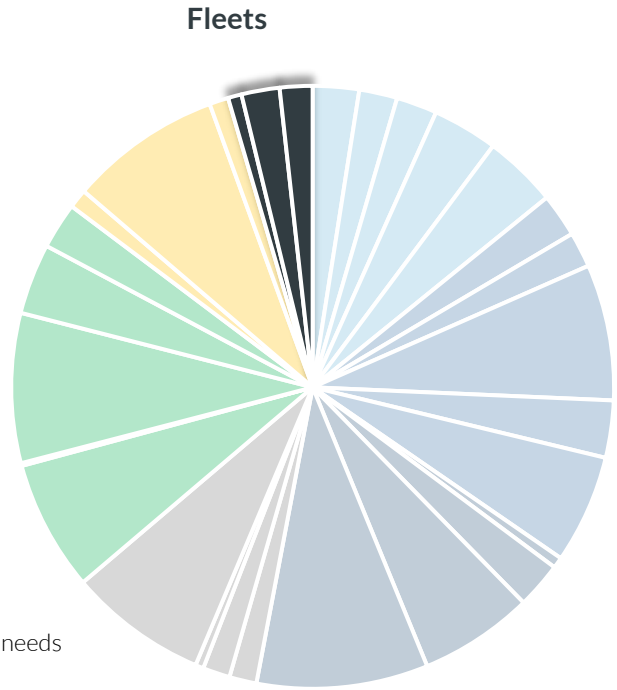
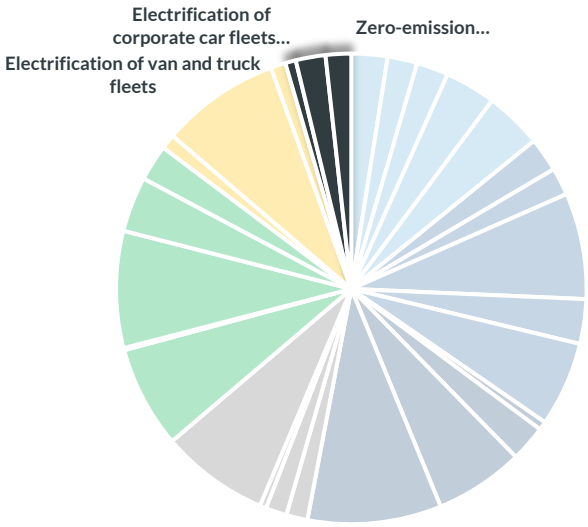


Chart 3. Share of investment needs dedicated to ZEV roll-out.



Area 7: Invest in new, decarbonised fleets (5.7%)

28. Electrification of Corporate and Leasing Car Fleets

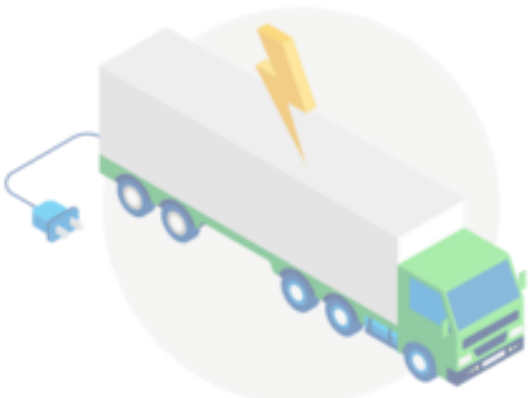
Electrification of corporate and leasing car fleets presents a significant opportunity for accelerating the transition to sustainable transport. A European 'Marshall Plan', akin to the post-COVID recovery plan, could play a pivotal role in expediting fleet renewal over a ten-year period. By providing targeted funding and incentives, Europe can encourage the widespread adoption of electric vehicles within corporate and leasing fleets, thus reducing emissions, promoting innovation and stimulating economic growth.

29. Electrification of Van and Truck Fleets

Electrification of van and truck fleets is essential for achieving ambitious climate goals and reducing emissions from the transport sector. Investing in electrification of commercial fleets can yield substantial environmental and economic benefits.

30. Acquisition of Zero-Emission Trains

As Europe transitions to zero-emission transport, there is a pressing need to acquire new zero-emission rolling stock to replace ageing diesel fleets. Given that the average lifespan of rolling stock in Europe is approximately 30 years, targeted investments in zero-emission trains will be crucial for phasing out diesel propulsion and advancing rail electrification efforts. Infrastructure managers and operators - particularly in Central and Eastern Europe where rolling stock fleets are older - stand to benefit significantly from investments in new zero-emission rolling stock. By supporting the acquisition of zero-emission trains, Europe can modernise its rail infrastructure, reduce emissions and promote sustainable mobility throughout the continent.



More about the Platform for Electromobility

The Platform for Electromobility is a unique alliance of Europe-based producers, infrastructure managers, operators, transport users, cities and environmental civil society organisations from across industries and transport modes. Our overarching goal is to reach a sustainable, multimodal transport system in which people and goods are moved across land, inland waterways, sea and air in Europe using exclusively fossil-free electricity. To reach its vision, the Platform unites all sectors constituting the electromobility ecosystem to pragmatically ensure the conditions for the full electrification of new light-duty vehicles by 2035, and build a sustainable European zero-emission transport system by collectively sharing their expertise, challenges and solutions.

For more information about the platform and its members, please visits:
https://www.platformelectromobility.eu/

Annexes

Table 1. Percentage of available funds to be distributed to each priority

Pillars	Areas	Priorities	%
Infrastructure	**Energy**	TSO and DSO	2,5
		Energy storage	2,1
		Renewable energy	2,2
		Modernising powergrid	3,6
		Smart grid	4,0
	Charging	Depot charging	2,4
		Charging in urban areas	1,9
		High-power charging for HDVs	7,5
		Charging for LDVs	3,1
		Residential charging	6,0
	Off-road	Multimodal hubs	0,6
		Harbours	2,5
		Rail network	6,3
		Public transportation	9,4
Industrial Development	**Circularity**	Second-life batteries	1,5
		Repairability	1,5
		Mining	0,4
		Recycling	7,6
	Industries	Processing	7,2
		Industrial hubs	0,1
		Support EV & Battery	8,2
		R&D	3,9
		Zero-emission trains	2,5
	Workforces and skills	Mapping training needs and training capacities	1,0
		Awareness Raising	8,4
		Existing training capacities	1,0
Fleet roll-out		Electrification of corporate car fleets and leasing fleets	0,7
		Electrification of van and truck fleets	2,1
		Zero-emission trains (acquisition)	1,8