Strategy for the development of clean mobility

Version dated 03 March 2025

Table of contents

Warning: This document was translated by a machine translation tool and may therefore contain inaccuracies.

I. The context of the clean mobility development strategy

The clean mobility development strategy (SDMP 3) is an operational version of the national low-carbon strategy and is the **strategic reference document that defines measures operational for mitigating climate change in the transport sector**. It sets out the guidelines and actions planned for 2030 and 2035, with the aim of meeting France's targets and commitments to combat global warming and control energy consumption.

The scope of geographical the document is that of the multi-annual energy programme: mainland France . However, many of the levers set out in the document can be taken up and if necessary, ,adapted to the specific territorial contexts of the French overseas departments and regions.

1. A structuring and strategic legislative context

The SDMP is provided for in article 40 of law no. 2015-992 of 17 August 2015 on the energy transition for green growth (LTECV) , see the article cited in the box below. The SDMP is appended to the multi-annual energy programme (PPE 3), a tool used to steer energy policy, in order to set out the details of the energy transition for transport.

SDMP 3, which is an update of SDMP 2 published in 2020, also falls within the framework of the Law of 24 December 2019 on the Orientation of Mobilities (LOM), in particular Article 73, which states: *"France sets itself the objective of achieving, by 2050, the complete decarbonisation of the land transport sector, understood in terms of the carbon cycle of the energy used*", as well as intermediate milestones to achieve this objective.

These guidelines are implemented through the various parts of the SDMP: the various decarbonisation levers mentioned in the article are set out in part IV and appendix I, and the assessment of the existing mobility offer and the development and energy consumption scenarios are set out in part II.

Lastly, the SDMP must be consistent with the national low-carbon strategy (SNBC), which sets strategic decarbonisation targets for each sector by 2050.

Article 40, Law 2015-992 of 17 August 2015 on the energy transition for green growth (LTECV)

"The State defines a strategy for the development of clean mobility. It concerns :

1. *The development of low-emission vehicles and the deployment of infrastructure to supply them with fuel. In particular, it determines the national framework for action to develop the market for alternative fuels and the deployment of the corresponding infrastructure;*
2. *Improving the energy efficiency of the vehicle fleet;*
3. *Modal shifts from private cars to public land transport, cycling and walking, and from road transport to rail and waterway transport;*
4. *The development of collaborative modes of transport, in particular car-sharing and car-pooling;*
5. *Increasing the load factor of goods vehicles.*

This strategy is set out in regulations.

It includes an assessment of the existing clean mobility offer, quantified and broken down by type of infrastructure, and sets targets for the development of vehicles and the deployment of the infrastructure mentioned in 1° of this article, as well as for intermodality and load factors for goods vehicles, for the timeframes of the multiannual energy planning mentioned in article L. 141-1 of the Energy Code in the version resulting from I of article 176 of this law, of which it forms an annex. It defines the priority territories and road networks for the development of clean mobility, particularly in terms of infrastructure, in line with a targeted strategy for the deployment of certain types of low-emission vehicles.

The government submits this strategy to the National Council for Ecological Transition for its opinion, and then forwards it to Parliament.

2. A comprehensive approach to mobility and transport

The greening of transport modes, demand management, modal shift of passengers and the excellence of sustainable logistics are the conditions for the success of ecological planning. This is why SDMP 3 is particularly important. Over and above the measures set out in the article of law, its aim is to be the reference document for the decarbonisation of transport. **The core of the document concerns land transport, as defined by the legal framework.** All modes of land transport are therefore taken into account, for both passenger and freight transport:

- Road (including urban public road transportand non-urban , shared mobility)
- Shod and guided
- River
- Ports
- Active mobility (cycling and walking) and micromobility

With regard to air and sea transport, each of these sectors has produced a decarbonisation roadmap as part of the provisions of Article 301 of the Climate and Resilience Act. They will

also be included in the scenarios and guidelines of the SNBC 3, which aims to decarbonise all of France's emissions.

3. Measures that are economically efficient and compatible with social justice and other environmental issues

The SDMP 3 also takes account of the issues social and economic linked to the mobility of people and goods, by proposing measures that are economically efficient and compatible with social justice:

- Social issues: transport helps to open up regions, thereby reducing the economic and social vulnerability of the people living . thereMobility is essential for work, training, healthcare, relaxation, etc. The "right to mobility" should enable people who do not have a driving licence, or cannot afford to buy or hire a car, to break out of their isolation. Difficulties in accessing mobility penalise particularlypeople looking for work or training, especially young people: a quarter of French people have already turned down a job for lack of transport. The transport budget has a substantial impact on households (14% of their budget in 2022[1]) and businesses.
- Economic issues :
    - Freight transport is essential to the daily lives of French people and to the national economy (the transport sector, both passenger and freight, will contribute 10.6%[Erreur ! Signet non défini.] to GDP in 2022).
    - Freight transport and logistics: more than 140,000 companies, 900,000 employees (excluding infrastructure operations), 600,000 HGVs, 6 million LCVs (including own account and private customers), €174 billion in value generated;
    - Passenger transport: 90,000 companies, 460,000 jobs (excluding infrastructure operation), 90,000 coaches and buses and almost €45 billion in value generated; 38.7 million cars on the road[1]

  Many of these jobs cannot be relocated.

Finally, although the SDMP is a climate change mitigation document, the measures that make it up must also be compatible with the other challenges of ecological planning, illustrated in a few key figures and elements below:

- Health and pollution issuesair : outdoor air pollution is generally considered to be the leading source of environmental mortality: 40,000 premature deaths a year in France are caused by PM2.5[2] and 7,000 by nitrogen oxides, according to Santé publique France[3] . Road traffic contributes to the emission of these atmospheric pollutants (exhaust, tyres, braking, etc.), particularly NOx from vehicles using fossil fuels, and PM2.5. Transport is also responsible for exposure to noise (road, air and trafficrail , etc.), the impact of which is estimated at 10,000 premature deaths a year in Europe[3] . What's

[1] *Bilan annuel des transports 2022, SDES: https:*
[2] *Fine particles (diameter less than 2.5 µm) and nitrogen oxides*
[3] *Impact of ambient air pollution on mortality in mainland France (2021): https://www.santepubliquefrance.fr/determinants-de-sante/pollution-et-sante/air/documents/enquetes-etudes/impact-de-pollution-de-l-air-ambiant-sur-la-mortalite-en-france-metropolitaine.-reduction-en-lien-avec-le-confinement-du-printemps-2020-et-nouvelle*

more, despite the progress made, road accidents still cause many deaths, not to mention injuries and disability. Finally, regular exercise is good for your health;

- Biodiversity issues arising from land artificialisation: although mobility infrastructures are not the main consumers of natural, areasagricultural and forest , they nevertheless have a impact significant on them. For example, major road links halve the average size of areas of ecological interest[4] . However, since the Grenelle Environment Forum in 2009, awareness of these impacts has grown. Road builders have taken on board the concept of ecological corridors, leading to a reduction in the impact on these areas of ecological interest. In 2020, road infrastructure (national and local) directly contributed to the consumption of around 5% of natural, agricultural and forestry areas. This rate of consumption has been halved since 2010. Similarly, rail links can also have an impact on the size of areas of ecological interest;
- Water-related issues: transport infrastructures can cause a deterioration in the quality of the water intercepted by them. They can also disrupt the flow of water, leading to overflows and even flooding in the immediate vicinity.
  To meet these challenges, project owners are incorporating works that meet these requirements into their projects (storage basins, water treatment basins, collection networks, water crossing structures, etc.).
  In order to correct any lack of equipment on older road networks, or equipment that does not meet current standards of treatment, the French government has launched a programme to modernise the national road network that is not under concession, including water-related issues.
- Resource : scarcitydemand for biofuels and biogas is strong in many sectors and applications, and is likely to exceed biomass resources as early as 2030available . In addition, the transport sector will be involved in the massive extraction of mining resources (lithium in particular) for the manufacture of batteries for electric vehicles;
- Issues of production capacity and sovereignty: the French and European automotive industry must continue its transition to electric mobility in order to meet demand in sufficient quantity and at a competitive price. French production capacity and European therefore needs to be assessed in the light of future fleet growth, against a backdrop of reindustrialisation. This applies particularly to batteries;
- Adapting to climate change: transport infrastructure and services are essential to the movement of people and the supply of goods, yet they can be particularly vulnerable certain climatic hazards such as flooding, extreme heat, marine submersion, the shrinking and swelling of clay, forest fires and falling rocks.
- Challenges in reshaping sectors and jobs: changes in mobility have an impact on sector dynamics, which can be positive or negative depending on the sector.

4. SDMP 3, at the crossroads of numerous public policies

The development of clean mobility lies at the crossroads of various policies, whether relating to transport, planning or taxation. therefore SDMP 3 calls for these policies to be coordinatedpublic .

[4] *IFEN 2006, figures taken over by SGPE*

i. Spatial planning policies

a) Links between regional planning and the development of clean mobility

The transport of people and goods is intrinsically linked to regional planning. It cannot be conceived without an overall vision, whether in urban, suburban or rural areas.

Regional planning plays a decisive role choice of modein people's : the proximity of the home to the workplace, services, health centres, schools or stations, for example, the range of mobility, logistics and telecommunications services on offer, and the availability of safe infrastructure for all modes of transport, are all factors in the choice of mode of travel. Urban planning also has an influence on goods transport (distances and modes), for example through the location of logistics zones.

In urban areas, where competition for land is fiercest, the development of public spaces must give priority to alternatives to the car, while integrating the other imperatives of the ecological transition: management of logistics flows, desoiling of soil, etc.

In peri-urban areas, the dynamics of urban sprawl are still prevalent. On the one hand, the concentration of services and jobs in the heart of the conurbation creates pressure on land, forcing the most vulnerable households to move away from town centres to take advantage of land that is less expensive but less well served by infrastructurepublic transport. In so doing, these low-income households are moving further away from available jobs, unless they increase their dependence on the car[5] . On the other hand, the increase in travel speeds means that households can choose to live further and further away from densely populated areas, while still maintaining an equivalent journey time between home and work[6] , also contributing to the phenomenon of "urban sprawl". Ultimately, however, the urban sprawl resulting leads to congestion on the main urban arteries, ultimately increasing journey times and pollutant emissions.

Urban sprawl the result of is also strategies to locate certain businesses on the edge of town, which increases the dependence of entire areas on the car for access to jobs and services

In order to limit the undeniable effects of urban sprawl on land and biodiversity, the government is now implementing policies to achieve the "zero net artificialisation" (ZAN) of land by 2050 that it set itself in 2021. The ZAN objective has been broken down into a progressive trajectory for reducing the consumption of natural, agricultural and forest areas, which must be incorporated into planning and urban development documentslocal . The planning of transport infrastructure development must therefore take these constraints into account. But conversely, the way in which the ZAN objective is implemented should take account of mobility issues: it should be less difficult to build near a station than in a arearural or sparsely populated , as this encourages people to take the low-polluting train. However, the difficulty of gaining acceptance for densification is a major obstacle: the urban forms that make this density, if not desirable, at least tolerable, have yet to be invented or developed. There are, however, factors that can make it more acceptable, such as access to services that are unavailable in rural or sparsely populated areas.

Another difficulty is the urban planning around stations, which must make room for infrastructure that encourages intermodality (e.g. bus stations). The functions of a *square*

[5] *cf. WENGLENSKI S., 2003, "Une mesure des disparités sociales d'accessibilité au marché de l'emploi en Ile-de-France".*
[6] *cf. MASSOT M. H., ROY E., 2004, Lieu de vie - Lieu de travail. 25 ans d'évolution de la distance au travail, Report, INRETS, Arcueil, 144 p.*

(urban character) and a *hub* (intermodality) cannot always be reconciled, and need to be decided on a case-by-case basis, but with overall consistency to ensure that both types of function are fulfilled. On a broader level, functional mix (which is also desirable to reduce travel, in relation to the functional zoning of land use plans) can pose problems of cohabitation between housing and activities, which need to be prevented.

On a more behavioural level, the moment of moving house (for a company as for a household) is crucial and deserves to be better supported so that transport is integrated in its rightful place within the criteriachoice , alongside other criteria (living environment, price of land, property opportunity, debt rate maximumfor a property project, etc.).

In rural areas, road transport is unavoidable for a large proportion of journeys, but there is always scope for action:

- Providing safe pedestrian and cycle routes to encourage the use of active modes of transport for local journeys and as a feeder to inter-city public transport (TER and coaches);
- By developing low-capacity public transport (transport on demand);
- By developing carpooling and carsharing;
- By concentrating urban development and services around market towns to give them a critical size that allows them to be served regularly by public transport.

Regional planning must also consider the availability of recharging infrastructure for transport fleets, at the depot, at the destination and when roaming, and coordinate this with the distribution capacity of the electricity network.

Finally, the location of industrial and logistics sites has an impact on demand for freight transport and the choice of mode. Priority should be given to locating sites close to rail or waterway infrastructure, particularly for reindustrialisation projects in France. Optimising the spatial location of sites logistics should therefore help to control demand for freight transport.

b) Local authority and mobility territorial planning documents

Local authorities have various planning documents (regional plan for development, sustainable development and territorial equality (SRADDET), territorial climate-air-energy plan (PCAET), regional development plan (SAR)) and urban planning documents (local urban plan (PLU)) to define their local development policy[7] . The rules they define are both a constraint to be taken into account by transport infrastructures, and an opportunity to make the most of them by organising urban development accordingly.

These documents should simultaneously enable the development of clean mobility solutions, and organise urban development that encourages the use of clean mobility. The aim is to promote :

[7] *Existing guides to these documents include :*

- *https://outil2amenagement.cerema.fr/ressources/guides-fiches/sraddet-et-mobilites*
- *https://www.cerema.fr/system/files/documents/2022/07/bao_urba-transports_plui.pdf*

- The city of short distances[8] , which favours active modes of transport for everyday journeys
- The densification of station areas[9] , which encourages people to use the train for longer journeys, particularly home-to-work journeys.

As town planning documents only govern construction and not the internal development of public spaces, the latter merits a specific strategy, which can typically be found in the mobility plan[10] (see next part c)).

In particular, the SRADDET, drawn up by the region, which is also responsible for organising the TER, provides a framework for encouraging the densification of station areas. On the other hand, planning the development of safe paths for pedestrians and cyclists is more a matter for the planning documents of municipalities and public inter-municipal cooperation bodies (EPCI).

c) Territorial mobility planning documents

Since the Loi d'Orientation des Mobilités (2019), the local organisation of mobility has been based on the region and the intermunicipality[11]

- The region, as the regional mobility organising authority (AOM), organises: rail transport, transport non-urban and school (the département remains competent only for special transport for disabled pupils), services relating to active, shared or solidarity mobility.
- Responsibility for local AOM is compulsory for agglomeration communities, urban communities, metropolises and the Lyon metropolis. On the territory of the communities of communes, since [1]July 2021, it is exercised either by the community of communes or, if the communities of communes have not wished to have this responsibility transferred, by the region. The local AOM organises public and school transport, as well as services relating to activemobility, shared or mutually supportive . It can also offer mobility advice for vulnerable people, people with reduced mobility, employers and major traffic generators. Lastly, it can organise or contribute to freight transport services where and urban logistics there is a lack of private provision; to date, this has hardly been implemented.

The powers of these two AOMs, regional and local, are interlinked: the region has sole responsibility for rail services and links between AOMs. The local AOM has sole responsibility for other public transport services wholly within its territorial jurisdiction. By way of exception, where a community of communes has taken on the role of AOM, the region continues to organise regular, school and on-demand transport services within the area covered by the

[8] This involves locating everyday amenities (bakery, school, gym, etc.) in residential areas so that residents are close to them, and developing the corresponding routes to encourage active modes of transport.
[9] More broadly, the aim is to increase both density and functional mix (also known as intensification) around stops that are well served by high-level rail, guided or road transport services. This approach has been theorised in North America under the name "transit oriented development" (TOD). It also includes the development of safe and attractive routes to encourage people to walk or cycle to the station.
[10] In accordance with article L1214-2-1 of the French Transport Code, the mobility plan includes a section on the continuity and safety of cycle and pedestrian routes.
[11] Articles L1231-1 et seq. of the French Transport Code

AOM, unless the community of communes expressly requests otherwise. The region and the local AOM are both responsible for organising active, shared or mutually supportive mobility services, contributing to the development of these forms of mobility, and paying individual aid for mobility.

In terms of planning, the local AOM draws up a mobility plan (PDM) . This is [12]compulsory for AOMs (other than communities of communes and regions) that overlap with a conurbation of more than 100,000 inhabitants. Other AOMs may draw up a mobility plan, or a simplified mobility plan (PDMS)[13] . At 1 January 2023, there were 131 mobility plans or similar documents (e.g. local town planning plans with a mobility plan status[14]), whether mandatory or voluntary, approved and in force, 19 simplified mobility plans approved and in force, and 68 PDMS in the process of being drawn up .[15]

The mobility plan is fully in line with the local version of the SDMP, as it "aims to contribute to reducing greenhouse gas emissions linked to the transport sector, in line with France's commitments to combat climate change, to combating air and noise pollution and to preserving biodiversity" .[16]

Since the Mobility Orientation Act, the regions have also been required to implement operational mobility contracts to coordinate the actions of the various AOMs and infrastructure managers in the mobility basins they define . [17]

d) The role of State-Region Planning Contracts (CPER) in regional transport infrastructure planning

The planning of major transport infrastructures involves the mobility component of the State-Region Plan Contracts (CPER). Signed between the State and the Regions, the CPERs allow for the convergence of funding for projects that are key to regional development, as well as ensuring the consistency of public policies in the service of a shared strategic vision at the level of each region. The operations that can be contracted involve partnerships between the State, the Regions and other local authorities; they concern rail, road, inland waterway, ports and cycling. However, the mobility strand of the CPERs is not the only source of funding for the State's operations and programmes, which are supported by other contractual arrangements (centralised programmes, direct funding from AFITF, calls for projects, etc.).

The projects included in the CPER are consistent across the board, in particular with national priorities for decarbonising the mobility of people and goods, taking account of different uses and the balance between freight and passengers, as well as with regional transport priorities (defined in the SRADDET). Particular attention is paid to mobility in rural areas.

---

[12] *Articles L1214-1 to L1214-38 of the Transport Code*
[13] *Articles L1214-36-1 to L1214-36-2 of the Transport Code*
[14] *Article L131-8 of the town planning code*
[15] *See https://www.francemobilites.fr/outils/observatoire-politiques-locales-mobilite/planification*
[16] *Article L1214-1 of the Transport Code. Article L1214-2 refers to the need to limit urban sprawl, which the plan mobility must take into account.*

The mobility section of the CPERs, in line with the 2019 Mobility Orientation Act, gives priority to rail transport and everyday transport, as well as to improving existing networks, thereby promoting low-carbon mobility and controlling the carbon footprint of transport infrastructures. Greater selectivity is sought in projects to extend the road network, taking into account the impact on the region. economic, social and ecological Finally, the mobility section of the CPER for the period 2023-2027 includes reciprocal commitments in favour of the transition in the organisation of mobility and the supply of services around infrastructure.

The Region, as leader of mobility[18] , must implement commitments throughout the territory non-binding in three areas:

- Strengthening the governance of mobility
- Developing sustainable mobility
- Developing sustainable freight transport

It should be noted that, at the level of river basins, inter-regional State-Region plan contracts (CPIER) are used to ensure consistency in the implementation of public policies across regional administrative boundaries, and to address issues specific to these territories

ii. Climate policiesand energy

a) Green planning

The General Secretariat for Ecological Planning (SGPE) coordinates ecological planning at national level and is responsible for ensuring the coherence and monitoring of ecological policies, initiating and framing the mobilisation of ministries and stakeholders, coordinating all negotiations and measuring the performance of actions taken. Its work is organised into workstreams, some of which relate to transport (land, air and sea). SDMP 3 will into In particular, feedthe ecological planning work, and conversely, the projects ecological planning already undertaken by the SGPE in the transport sector are taken into account in this document.

Together with the Directorate General for Energy and Climate (DGEC), the SGPE is also leading the French Strategy for Energy and Climate (SFEC), which forms the basis for this SDMP 3. The SFEC brings together 3 ecological planning documents, presented below: the multi-annual energy programme (PPE), the national low-carbon strategy (SNBC) and the national plan for adaptation to climate change (PNACC).

b) Climate change mitigation and energy planning policies

The SNBC **is the framework for action to mitigate climate change**: it sets **out greenhouse gas emission reduction targets** in terms of annual emission reduction trajectories by sector, and **describes precisely the assumptions used to achieve them and the associated measures**. It is a strategic document that defines **France's long-term roadmap (2050 and beyond) in the fight against climate change**. The EPP defines France's energy trajectory. It brings together the objectives for reducing energy consumption and developing the French energy mix.

[18] *Article L1215-1 of the Transport Code*

The SDMP, as an appendix to the EPP and part of the ESCO, must be consistent with the various documents that make up the ESCO. Its objective is to translate the energy and climate objectives of into operational termsthe SNBC and the PPE .

Since 2005, the European Union has had a carbon market in place (the Emissions Trading Scheme, or ETS) covering the power generation, heating, heavy industry, aviation and maritime sectors. In this carbon market, greenhouse gas emission allowances (CO2, N2O and PFCs[19]) are allocated to the companies concerned free of charge or by auction[20] . Revenues from these auctions are then redistributed to the Member States, and 50% of these revenues must be used to finance actions to protect the environment. As far as transport is concerned, aviation and, since 2024, maritime transport are concerned.

c) Climate change adaptation policies

Recent climatic events have shown the extent of the consequences of the disruption of transport routes in terms of disruption to traffic and the cost of reconstruction. Recent heat waves have also shown the importance of addressing the issue of summer comfort in transport, both for users and for transport company employees, especially as heat waves become more frequent and more intense. Droughts also have an impact on river transport, which is particularly important for certain supply chains. Adapting transport infrastructure and services to climate change is therefore essential to ensure that people and goods can continue to move.

The adaptation of transport infrastructures and services is addressed in the National Plan for Adaptation to Climate Change (PNACC), with the following main actions concerning transport: drawing up adaptation plans for transport infrastructures and services on the basis of vulnerability studies, adapting rolling stock to summer comfort and drawing up a timetable for updating technical guidelines for the design, operation and maintenance of transport infrastructures. On the economic front, the development of a strategy for the resilience of logistics chains to climate change is also addressed in the PNACC 3.

Adaptation to climate change does not fall within the scope of SDMP 3. However, the aim is to ensure that the SDMP 3 measures are compatible with adaptation to climate change, by favouring measures that will not contribute to increasing the vulnerability of transport and mobility to climate change, or that will even have co-benefits in terms of adaptation to climate change.

iii. Air quality policies

Air pollution, caused in particular by land transport, is a major problem with serious consequences for public health. Classified as a carcinogen by the World Health Organisation (WHO), it is the 2nd leading cause of death in France, after tobacco, accounting for more than 40,000 deaths a year (all air pollution combined, not just from the transport sector).

Air quality is therefore a crucial issue for health human and for living beings in general. It also has economic consequences. A comprehensive, coordinated policy is needed at all levels -

[19] *PFCs: Perfluorinated compounds*

[20] *Free quotas are allocated by the European Commission according to the sector and the level of activity of the industrial site concerned.*

international, national and local. It is up to all players - the State, local authorities, businesses, citizens and NGOs - to guarantee everyone the right to breathe healthy air:

- At European level, Directive 2008/50/EC requires France to monitor ambient air quality and comply with limit values for concentrations of pollutants, particularly nitrogen dioxide and PM10 fine particles. The aim of these regulations is to ensure clean air in Europe. The directive is currently being revised and should be published in the third quarter of ( ).2024 The standards set will be stricter and more closely aligned with WHO guidelines.
- At national level, the government is implementing policies aimed at reducing pollutant emissions in the long term and managing pollution episodes. The National Plan for Reducing Emissions of Atmospheric Pollutants (PREPA[21]) sets out the strategy for reducing emissions in all sectors.
- At local level, the plans for the protection of the atmosphere (PPA) set targets and measures to reduce concentrations of atmospheric pollutants in major conurbations and in areas where limit values regulatory are exceeded or are at risk of being exceeded .

The 2019 Mobility Orientation Act and the 2021 Climate and Resilience Act also require the introduction of low-emission (ZFE) zones in certain conurbations, specifically to combat pollution from road traffic (nitrogen oxides, fine particles). These measures contribute to cleaner, more mobility. environmentally-friendly Numerous accompanying measures (aid for greening vehicles, for sustainable logistics, for cycling and walking, Green Funds used by local authorities to improve transport, etc.) help users to adapt their mobility.

iv. Policies in favour of biodiversity

The National Biodiversity Strategy (SNB) 2030[22] sets out the objectives for the coming decade to reduce the pressures on biodiversity, protect and restore ecosystems and bring about far-reaching changes to reverse the decline in biodiversity. It is a response to collective the ecological emergency and to preserving biodiversity in France. It is made up of 40 specific measures focusing on 4 areas: reducing the pressures on biodiversity, restoring degraded biodiversity wherever possible, mobilising all stakeholders and guaranteeing the means to achieve these ambitions.

Actions to develop and decarbonise transport must be consistent with the preservation of biodiversity.

v. Resource conservation policies

Mining and metals

With regard to the increasing scarcity of metals, which are used in particular as raw materials for electric vehicle batteries, the State's action to secure supplies of metals is coordinated by the Interministerial Delegation for the Supply of Strategic Ores and Metals (DIAMMS), created on 10 December 2022 by Decree no. 2022-1550. The DIAMMS is headed by the Interministerial

[21] *https://www.ecologie.gouv.fr/sites/default/files/documents/23028_PREPA_BATweb.pdf*
[22] *https://www.ecologie.gouv.fr/sites/default/files/Doc-chapeau-SNB2030-HauteDef.pdf*

Delegate, who may call on the central administrations and inspectorates of the ministers responsible for raw materials and mining policy, industry, ecological transition and energy, and the central administrations of the Ministry of Foreign Affairs, as required.

vi. Sectoral mobility policies

The development of clean mobility is to be found in numerous sectoral strategies that exist for different sectors and/or modes of transport.

- Travellers :
  - The Loi d'orientation des mobilités[23] (LOM) of December 2019 had a simple objective: to make everyday transport simpler, cheaper and cleaner. This law provides the legal framework for the development of mobility clean for travellers, and in particular includes the goal of carbon neutrality for land transport by 2050.
- Goods :
  - The National Logistics Strategy[24] is an interministerial strategy monitored by the Interministerial Logistics Committee. It has an impact on logistics chains (planning, industrialisation, transport, competitiveness, environmental footprint). It concerns all modes of transport. It defines 8 objectives and 23 actions to make France a leader in sustainable logistics. It has been updated and clarified through a 2025 - 2026 roadmap published in November 2024.
- Rail freight :
  - The National Strategy for the Development of Rail Freight[25] (SNDFF) meets the objective of doubling the modal share of rail freight by 2030, as set out in the Climate Change Act, by defining an action plan. It comprises 72 measures concrete, structured, coherent and inseparable to develop rail freight transport and combined transport.
    - The 72 measures are designed to address four crucial issues:
      - Restoring the viability of services and the economic model of rail freight operators
      - Improving SNCF Réseau's quality of service
      - Investing in infrastructure to develop rail freight
      - Increasing coordination with port and inland waterway services
    - The SNDFF was approved by decree 2022-399 of 18 March 2022.
- River :
  - On 16 February 2024, the French Minister for Ecological Transition and Cohesion Territorial launched the National River Strategy. The this aim of is initiative to work with stakeholders in the sector to identify actions that will help to achieve the 2030 objective of increasing the modal share of the sector by 50%.
- Road mobility
  - Plan national covoiturage du quotidien, 2023-2027[26] . It includes in particular:

[23] https://www.legifrance.gouv.fr/loda/id/JORFTEXT000039666574
[24] https://www.ecologie.gouv.fr/sites/default/files/Strategie%20CILOG.pdf
[25] https://www.ecologie.gouv.fr/sites/default/files/210909_Strategie_developpement_fret_ferroviaire.pdf
[26] https://www.ecologie.gouv.fr/sites/default/files/DP%20plan%20covoiturage%20accessible.pdf

        - Financial incentives for carpoolers (the scheme will be evaluated in 2024);
        - Support for local authority projects via the Green Fund.
    - Cycling and walking plan[27] : launched in September 2022, this plan covers the period 2023-2027 and aims to continue developing active mobility in the daily lives of all French people. It follows on from the 2018 Cycling and Active Mobility Plan. The cycling and walking plan has three aims:
        - Make cycling accessible to everyone, from an early age and throughout life.
        - Make cycling and walking an attractive alternative to the car for local journeys and combine them with public transport for longer-distance journeys
        - Make cycling a lever for our economy by supporting French players in the sector
    - Schéma national des véloroutes et voies vertes: this is a document that defines the national cycle route network, including overseas territories. It sets out the conditions under which this national cycle route network is made continuous. It is based on regional cycle route plans.
    - Urban public transport: there is no national plan for the development of urban public transport, but the State has been since 2001, supporting its development in particular through calls for projects[28] . In line with the target set at the Grenelle Environment Forum, the government has earmarked €2.5 billion to support exclusive right-of-way public transport and multimodal interchange hubs. The 4) (thcall for projects supports projects where work is scheduled to start between now and the end of 2025
    - Roadmap for the decarbonisation of heavy goods vehicles (industry document): As part of the provisions of Article 301 of the Climate and Resilience Act, players in the heavy goods vehicle industry (hauliers, manufacturers and energy suppliers) have made a major contribution drawing up a roadmap identifying the obstacles and levers to achieving the objectives of the national low-carbon strategy for road transport.

      The roadmap drawn up by the heavy vehicle industry has identified the main levers for decarbonisation. The first of these is the greening of engines and energies. This lever needs to be complemented by actions to improve vehicle energy efficiency, eco-driving, optimised flows and modal shift. As the electrification of vehicles has been identified as the primary means of greening fleets, it will necessarily have to be accompanied by the deployment of charging points in depots and on the road.

      Following the submission of the roadmap to the ministers on 24 May 2023, it was decided by all the players in the industry to extend this work, in particular to build an economic and financial framework and define a public/private (shippers, banks, etc.) financing plan for the pathway to electrification of heavy goods vehicles. The aim of continuing this work is also to monitor the

[27] *https://www.ecologie.gouv.fr/sites/default/files/23100_DP-Plan-velo-2023.pdf#page=7*
[28] *https://www.ecologie.gouv.fr/transport-urbain-appels-projets-transports-collectifs-en-site-propre-tcsp*

deployment of electric charging points and refuelling stations, and to support the resulting change in terms of skills and changes in transport organisations.

- Deployment of electric vehicle charging infrastructure (IRVE) :
  - National plan for the development of high-powered vehicle chargers on the national road network (RRN) (SNDIRVE RRN): the this plan purpose of is to define, in 5-year increments, the need for high-powered vehicle chargers on the RRN (conceded and not conceded) to meet the roaming charging needs of light vehicles and heavy goods vehicles, depending on the proportion of electric vehicles in each of these categories. It will serve as a framework for NHS managers.
  - At local level, the LOM provides that local authorities and public bodies can draw up a master plan for the development of IRVE (SDIRVE). This is an optional scheme that gives the entity with IRVE powers the role of "orchestrator" for the development of recharging facilities in its area, with the aim of achieving a coordinated offering between public and private project owners, consistent with local mobility policies and tailored to needs. A guide to drawing up these SDIRVEs was published by the Ministry for Ecological Transition and Territorial Cohesion in 2021 .[29]

  The rollout of recharging infrastructure is essential for the deployment of heavy-duty mobility, in particular through the installation of charging points at road haulage depots.
- Metropolitan regional express services (SERM): the law of 27 December 2023 on metropolitan regional express services[30] sets out the framework for the development of within the next ten yearsa network metropolitan in ten major conurbations outside the Île-de-France region . The aim is both to open up certain areas and to decarbonise transport. These projects should receive regional express transport €2.7 billion, including €8,950 million from the State over the period 2023-2027, as part of the CPERs.
- Road express services (SER): a road express service is an express coach service, supplemented where necessary on the same route by a car-sharing service. The DGITM is looking into ways of promoting this type of service, particularly for suburban commuters, both as a fully-fledged component of SERM and where the potential does not justify a rail service.
- National strategy for the development of automated and connected road mobility: this strategy, which was launched in May 2018 and last updated in February 2023, aims to support stakeholders (local authorities, manufacturers and transport operators) in the development of automated and connected road mobility services, with a priority on public transport or shared mobility to complement mass transport, and the development of road information to reduce unsafety and the nuisance of congestion. This approach, added to the fact that industrial developments in automation are based on electric vehicles, can contribute to the objectives of developing clean mobility.

[29] https://www.ecologie.gouv.fr/sites/default/files/2021%20-%20Guide%20sch%C3%A9ma%20directeur%20IRVE.pdf
[30] https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000048678343

- Deployment of low-emission zones (LEZs): the Green Fund in 2023 and 2024, supported local authorities in the deployment or reinforcement of their LEZs, with a dedicated measure. In 2023, €127 million in subsidies were awarded for projects representing €461 million in investment, to facilitate the operational implementation and social acceptability of LEZs in the conurbations concerned and their mobility basins. This support will continue until 2025.

- Ports :
  - National port strategy[31] : this defines the guidelines for the entire French commercial port system, contributing to the robustness and exemplarity of national ports, which are at the service of decarbonisation and sovereignty. Designed to be operational and evolving, its changes are regularly shared with all the institutional and economic players in the port, maritime and logistics ecosystem. Some of the SNP's priority strategic objectives relate specifically to issues close to the SDMP:
    - develop modal shift for pre- and post-carriage ;
    - supporting the decarbonisation of maritime transport ;
    - welcoming reindustrialisation and new energies;
    - contribute to improving the performance and resilience of supply chains.
- Hydrogen :
  - National hydrogen strategy: since 2018, France has also been investing in the deployment of the first links in the hydrogen mobility chain, notably through the call for territorial ecosystem projects or the equipment factories needed to deploy solutions through the IPCEI (important projects.projects of common european interest) The role of hydrogen mobility is confirmed by the European AFIR regulation, which requires the deployment of hydrogen refuelling stations (HRS) close to urban hubs and at regular intervals on the main transport network. France will meet these obligations and will continue to take advantage of the European AFIF window to finance this infrastructure. In addition to the electrification of uses, these deployments will make it possible to support the use of hydrogen in the most relevant segments of the mobility sector, which may already have been supported by the State, by targeting sectors for which alternatives are limited, as well as uses that would only be supported by local authorities or private players.

vii. Tax policies

The development of clean mobility is linked to tax policy: through incentives for clean mobility (green taxation), through the revision of tax provisions that are unfavourable to clean mobility (brown taxation), but also through the predictability of the tax framework over a period of a few years, which allows players to make decisions in favour of more energy-efficient transport systems - and finally through the funding it provides for clean mobility: in particular the mobility payment, collected by the mobility organising authorities from public and private employers with 11 or more employees.

[31] *https://www.ecologie.gouv.fr/politiques-publiques/strategie-nationale-portuaire-snp*

viii. Demand policies for electric vehicles

Demand for electric vehicles is gradually evolving, given the still high prices of electric vehicles. In order to accelerate the adoption of electric vehicles, it is essential to maintain the support scheme for the purchase of electric vehicles (ecological bonus) before achieving general price parity between internal combustion and electric vehicles. The introduction of the environmental score has made it possible to encourage the purchase of the most environmentally-friendly electric vehicles in terms of production and transport, thanks to an analysis of the vehicle's life cycle.

In addition, a strengthening of the greening obligations for business fleets set out in the LOM law will, in addition to the ecological bonus, help to accelerate the adoption of electric vehicles, given that business vehicle fleets represent a strategic source of energy for decarbonising road transport.

The French automotive industry, including carmakers, parts manufacturers and subcontractors, and in particular battery cell producers, has invested heavily to shift production towards 100% electric vehicles. This transition is dictated by European targets for reducing CO2 emissions from new vehicles, including the end of sales of new light combustion vehicles from 2035. By 2030, some of the industry's leading groups are planning already to produce only 100% electric vehicles in France. This ambitious industrial objective will make it possible to respond to a rapid increase in demand for electric vehicles. However, if these ecological and industrial objectives are to be achieved, sales of electric vehicles will have to accelerate.

ix. Industrial policies for the vehicle industry

France has several assembly sites for zero-emission light and heavy vehicles. This industrial transition requires considerable investment from all players in the industry. An industrial policy focused on supply and innovation will encourage the industry to redirect its production towards electric vehicles and accelerate research and development activities.

Public support for the development of a French transport equipment offering is a lever for creating value and jobs, which can also encourage environmentally-friendly production, at a time when France's energy mix is very low-carbon.

In particular, encouraging the production of smaller electric passenger vehicles (segments A and B) could contribute to the development of a French range that is even more accessible to households, complementing the existing range. Similarly, the emergence of an intermediate vehicle sector could be encouraged.

In addition, policies to support the supply of heavy vehicles (trucks, buses and coaches) will actively contribute to the decarbonisation of the road haulage and transport sectors. The evolution of engines towards zero-emission technologies is one of the levers for decarbonisation and is also a necessity for these sectors, which are subject to European regulations on greenhouse gas emissions.

Industrial policies will also help to support changes in the automotive subcontracting industry. New activities linked to the development of zero-emission vehicles are set to grow rapidly and

can be supported to guarantee the means for their development. Conversely, it is also important to diversify the strategies of companies operating in sub-sectors that are set to shrink with the gradual disappearance of internal combustion vehicles.

Strong support for the French battery production industry has also led to the emergence of a dedicated industry that is creating jobs, which will need to be supported over the long term to ensure they remain competitive.

II. The current transport situation and future prospects

1. CO2e emissions balance

In 2022, emissions gross (greenhouse gas excluding LULUCF[32]) in France will amount to 396 Mt CO2e[33] (or 5.9 tCO2e/inhab), with transport accounting for 131 Mt CO2e (or 1.92 tCO2e/inhab), or 32%, slightly up on 2021 (127.6 Mt CO2e in 2021). This share is higher than in many other developed countries. This is due to the fact that 65% of France's electricity will come from nuclear power in 2023[34] (which will automatically increase the share relativeof sectors with low electrification levels). While national emissions greenhouse gas fell by 20% between 1990 and 2019, the transport sector is the only one whose greenhouse gas emissions increased over this period (by 9%)[35] . Taking into account the impact of 2020, which was a very special year for the transport sector due to the health crisis caused by COVID-19, between 1990 and 2022 emissions fell by 27% overall and by 6% for transport[36] . Considerable efforts are still required to decarbonise the transport sector

The 1st carbon budget 2015 - 2018. The SNBC 1 defined the 1st carbon budget for the period 2015-2018, with maximum emissions of 442Mt CO2 on average per year for all sectors combined. At the end of this period, the 1st carbon budget had been exceeded by a total of 61 Mt CO2. The transport sector exceeded its own budget by 40 Mt CO2 .[37]

The 2nd carbon budget for 2019-2023. The SNBC 2 defined the 2th carbon budget for the period 2019-2023, with maximum emissions of 420Mt CO2 on average per year for all sectors combined[38] . The year 2023 marks the end of this second carbon budget. The final balance of this carbon budget will be drawn up in 2025 on the basis of updated inventory data, but an initial provisional balance can be drawn up on the basis of 's pre-estimates for 2023Citepa.

---

[32] *Land use, land use change and forestry.*
[33] *Data 2022 - SECTEN (viewed 19/07/2024): https:*
[34] *RTE: https:*
[35] *SDES, Key transport figures for 2023: https:*
[36] *Secten 2024 report*
[37] *https://www.ecologie.gouv.fr/suivi-strategie-nationale-bas-carbone*
[38] *The French Environment Code (Article D. 222-1-B) requires a technical adjustment to be made to the carbon budgets for each period if changes in the methodology used to compile greenhouse gas emission inventories lead to changes of more than 1% in the values of the reference years used for the SNBC scenarios (1990, 2005 and 2015). The purpose of these "technical" adjustments is to maintain the consistency of the trajectory initially adopted, by maintaining the same reductions by sector and by gas in "relative value" compared with 2005. The Code provides for this technical adjustment to take place when the carbon budget is closed (the final balance sheet for the 2019-2023 carbon budget will be drawn up in 2025 on the basis of updated inventory data (Secten 2025)). However, in order to maintain annual consistency with the trajectory initially adopted in the SNBC, the carbon budgets may also be adjusted, on an indicative and provisional basis, over the course of a period, in the light of methodological developments in the national greenhouse gas emissions inventory.* ***The carbon budgets indicative annual for the second period have been adjusted in the light of 's 2024 national inventory of greenhouse gas emissions Citepa(Secten 2024).***

According to 's pre-estimates for 2023Citepa, this carbon budget should be a gross basis respected onat national level. **Gross emissions are estimated to fall by a cumulative eq over the period 2019-2023-100 Mt CO_2.** The transport sector should respect its carbon budget (-11 Mt CO_2eq accumulated over the period 2019-2023 according to Citepa's pre-estimates for 2023).

The 3rd carbon budget 2024-2028. The preliminary estimate of the 3rd carbon budget of the SNBC 3 (calculated as an indication on the basis of the trajectory resulting from the modelling exerciseprovisional) amounts to 335 Mt CO_2eq (excluding land use, land use change and forestry), in line with the new French objective of reducing gross emissions by -50% in 2030 compared with 1990.

For the transport sector, the preliminary estimate of the 3rd carbon budget of the SNBC 3 is 110 Mt CO_2eq. By 2030, the modelling exercise (currently underway) suggests that the transport sector could achieve 90 Mt CO2eq[39] (see specific decarbonisation targets in section 5 of this document).

Emissions from the transport sector, excluding international air and sea bunkers, will amount to 131.2 Mt CO2e in 2022[40] , including 124.8 MtCO2e from land transport, largely dominated by road transport (123.3 MtCO2e).

Mode	CO2e emissions in 2022 (Mt CO2e)
Road	123,3
Rail	0,4
River	0,12
Other sailing (pleasure)	1
TOTAL	**124,8**

Table 1: CO2e emissions from land transport in 2022 (MT CO2e) - source: SECTEN report, ed. 2024

Transport emissions in 2021 will still be by affectedthe impact of the Covid-19 pandemic, and the rebound will continue in 2022, albeit less intensely. They have remained relatively stable since 2008, with improvements in the environmental performance of vehicles offsetting barelythe increase in traffic.

Emissions from passenger transport amounted to 77 Mt CO2e in 2019[41] (73.7 MtCO2e in 2022). Emissions from freight transport amounted to in 2019 51.7 Mt CO2e (51.9 MtCO2e in 2022) .[42]

Road traffic emissions are , predominantwith passenger cars accounting for , heavy goods vehicles for 24%58%, light commercial vehicles for 16% and buses and coaches for 2% in 2019.

[39] *European Commission: https://commission.europa.eu/publications/france-final-updated-necp-2021-2030-submitted-2024_en*
[40] *SECTEN 2024 report: https://www.citepa.org/fr/secten/*
[41] *SGPE*
[42] *Emissions from LCVs are grouped here with those from HGVs.*

2. Current mobility practices

i. Passenger transport

a) Observed modal shares

By 2022, passenger transport will account for around 999.7 billion passenger-kilometres[43] :

- 82% of journeys are made by private car or motorised ;two-wheeler
- 17% by public transport, including 63% by train, metro or RER ;
- 1% by air (domestic transport only).

The number of kilometres travelled by passengers increased by 28% between 1990 and 2019, while the average annual distance travelled per person increased by 12% (including an 11% increase between 1990 and 2000, with mobility per inhabitant remaining fairly stable between 2000 and 2019[44]), all modes combined. The car is largely predominant, including for journeys of less than 5 km, which could be made bicycle or on foot provided the right conditions are in place (available infrastructure, capacity of physical people, etc.). In 2021, activity will bounce back after the Covid-19 pandemic, without however returning to its 2019 level.

The preferred mode of transport depends very much on the distance to be covered:

	Walk	Bike	TC	Car	2-wheel drive	Other	% distance per band	% of journeys by band
0 - 1 km	**77%**	3%	1%	19%	0,3%	0,1%	1%	18%
1 - 2 km	40%	5%	4%	**50%**	0,4%	0,2%	2%	13%
2-5 km	10%	4%	14%	**71%**	1,0%	0,1%	8%	24%
5-10 km	2%	2%	14%	**80%**	1,8%	0,7%	13%	17%
10-20 km	0%	1%	11%	**85%**	2,1%	0,6%	22%	14%
20-35 km	0%	0%	11%	**87%**	1,0%	0,9%	22%	8%
35-50 km	0%	0%	11%	**86%**	2,1%	0,6%	13%	3%
50-80 km	0%	0%	17%	**81%**	1,3%	1,3%	19%	2%
Breakdown by mode	3%	1%	12%	**82%**	1%	1%		

Table 2: Modal shares by distance band - source: SDES, French mobility survey 2019, weekday journeys less than 80km from home. The percentages are based on trip.km, with the most commonly used mode in bold.

For journeys long-distance (over 80 km), the private car predominatesstill , and air travel is still used most often for journeys of 900 km or more (79%), which are also the fastest growing .[45]

[43] *SDES, Key transport figures for 2023: https:*
[44] *Monitoring of SNBC indicators: passenger mobility level indicator: https://indicateurs-snbc.developpement-durable.gouv.fr/niveau-de-mobilite-des-voyageurs-a161.html*
[45] *https://www.statistiques.developpement-durable.gouv.fr/comment-les-francais-voyagent-ils-en-2019-resultats-de-lenquete-mobilite-des-personnes*

	Journeys of more than 80 km
Car	*72%*
Train	*14%*
Aircraft	*9%*
Coach	*3%*
Other modes	*2%*
Total	***100 %***

Table 3: Characteristics of long-distance journeys (in modal shares) - source: SDES, Enquête sur la mobilité des français 2019, trip characteristics, a trip is a journey whose destination is more than 80km from home, and may be made up of several journeys around the place of stay, if nights are spent away from home. Percentages are based on voy.km. The Mobility of Persons Survey was conducted face-to-face (by INSEE interviewers) between May 2018 and April 2019, in 6 waves of 2 months each, among 20,000 households in mainland France. These households belong to dwellings drawn from the annual census surveys.

b) Modal shift from the private car: a major challenge for decarbonisation policies

Today, the private car is still in the majority, and many journeys are made by carpooling. The clean mobility offer faces various challenges in order to meet the objectives of modal shift:

- Supply issues: in order to encourage a genuine modal shift by the French, they need to have alternatives for their to the private car daily journeys. We therefore need to ensure that there is a shock supply of mobility services other than the private car to meet the different needs of users, particularly in peri-urban areas. Urban areas account for 80% of greenhouse gas emissions, of which city centres account for only 2%. The rest of these emissions are distributed as follows:
    - 33% of emissions come from travel outside the metropolitan area;
    - 25% of emissions come from exchanges between the metropolis and the urban area;
    - 25% of emissions come from exchanges between the urban centre and the urban area or the rest of the metropolitan area;
    - Finally, 15% of emissions come from travel within the city (outside the urban centre).

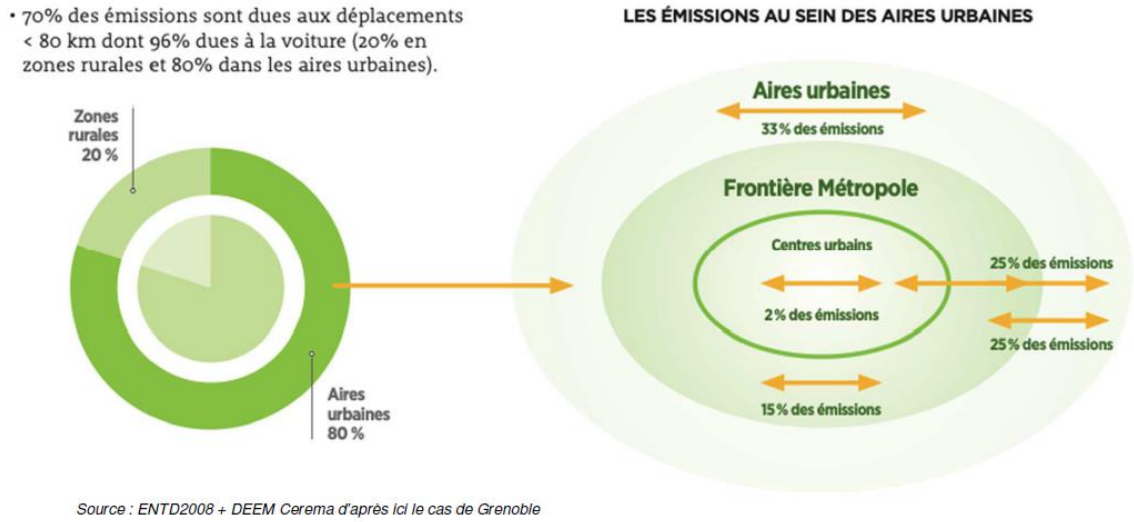


Figure1 : Breakdown of emissions within urban areas, Source: ENTD2008, DEEM Cerema

- Infrastructure issues: alternative forms of transport may require specific infrastructure, whether for rail, public transport or active forms of transport. Walking and cycling are highly dependent on the availability, quality and safety of infrastructure (roads and parking); the efficiency of public transport can be enhanced by reserved lanes, dedicated sites and feeder park-and-ride facilities; carpooling can be boosted by the presence of reserved lanes during congestion hours (VR2+, reserved for cars with two or more occupants, as well as public transport)[46] and carpooling areas.
- The deployment of alternatives must also be accompanied by a reduction in the use of private cars with disincentives, particularly for car-sharing. This can be done, for example, through parking policies, allocation road or even trip limitation (telecommuting, carpooling). To achieve this, it may be necessary to redeploy certain areas currently used by cars in order to develop new services: part of the public space used for parking and traffic can be reserved for alternative forms of transport.
- The availability and acquisition cost of electric buses and coaches are still obstacles to the decarbonisation of public transport lines.

c) Decarbonising the motorisation of private vehicles: the steps still to be taken

As for private cars, by 2024, 16.8% of new cars will be electric, and 8.4% will be rechargeable hybrids (however, the environmental benefits of rechargeable hybrids are not significant compared with those of 100% electric vehicles, if electric use is not favoured). The deployment of IRVEs will have to be consistent with this trend.

[46] *In Lyon, it was observed that banning access single-car to the M6 and M7 reserved lanes during traffic jams relieves congestion on the carpool lane, which can make it more attractive.*

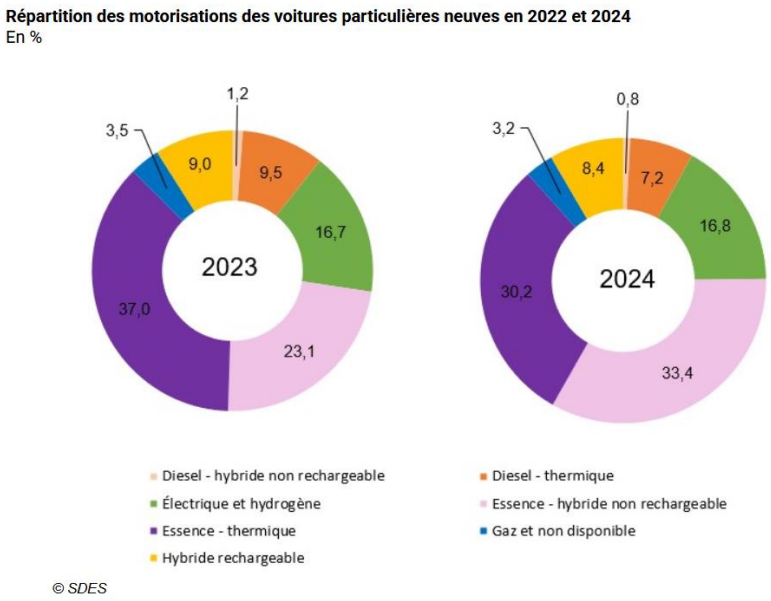


Figure 2: Breakdown of new passenger car engines (2022, 2024) - SDES

In 2024, 295,600 electric cars were registered, compared with 300,900 in 2023, a fall of 3%. Their market share stagnated (+0.1 points compared with 2023).

This trend is set to accelerate over the next few years, as a result of the phase out sales of European Union's decision to newin 2035 combustion-powered light vehicles , with a target of reducing emissions from new cars by 55% by 2030 compared with 2021.

In addition, the various players involved are currently drawing up plans for the roll-out of IRVEs, which will help to encourage the purchase of electric vehicles, the main concern being range and fast-charging capacity.

ii. Transport of goods

Domestic inland freight (excluding pipelines) represents 338.0 billion transport tonne-kilometres. It has risen by around 10% since 1990, with a fall since 2008, mainly due to changes in industrial production.

Road transport grew strongly during this period: +34% in tonne-kilometres under the French flag[47] , mainly carried by heavy goods vehicles (80% of tonne-kilometres transported, of which 57% under the French flag). This increase has mainly been to the benefit of international transport under foreign flag, which has multiplied by more than 3 since 1990

Most of the goods transported are destined for the food industry (in 2022, 39% of goods transported will be agricultural products or products from the agri-food industry**Erreur ! Signet non défini.**) and the construction industry (around 24% of goods transported**Erreur ! Signet non défini.**). Metals,

[47] *(viewed 07/03/2024)* *https://www.notre-environnement.gouv.fr/themes/climat/les-emissions-de-gaz-a-effet-de-serre-et-l-empreinte-carbone-ressources/article/les-emissions-de-gaz-a-effet-de-serre-du-secteur-des-transports*

parcels, fuels, chemicals, plastics and rubber, transport equipment, wood, paper and waste make up the rest of the loads carried by HGVs under the French flag.

In 2022, 88% of inland freight transport will be by road[35] . Rail accounts for freight 10.4% of domestic freight transport. Overall greenhouse gas emissions from rail remain very low compared with road transport[43 5] , as mentioned in section II.1.

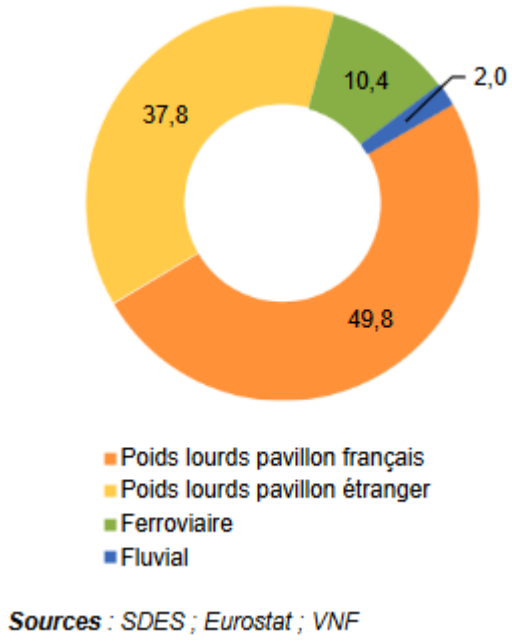


Figure3 : Modal share of inland freight transport in 2022, excluding pipelines (in % of tonne-kilometres) - Source: SDES

Rail freight and inland waterway is still marginal compared with road freight, and faces difficulties in increasing its modal share:

- River freight and rail are constrained by their geography, and in particular by the location of warehouses and logistics zones: if railways and rivers are not close to logistics zones, road use is necessary for the first/last few kilometres, and the load breaks entailed by multimodality are costly, so there is no incentive to use several modes for the same journey;
- Rail freight is more relevant for long-distance flows, and is constrained by its reliability and the quality of service provided by the infrastructure manager, which determine its competitiveness;
- Rail freight infrastructure requires extensive modernisation and regeneration if to it is be developed. The quality of some freight infrastructure has deteriorated significantly (capillary lines, service facilities and ITE), and new infrastructure is needed to develop new traffic (in particular combined transport terminals);
- Finally, rail freight competes with rail passenger transport for use of the national rail network.

In 2022, road freight transport in mainland France will remain stable, with 296.2 billion tonne-kilometres travelled by heavy goods vehicles. Most of this activity (over 95%) will be domestic, totalling 161.0 billion tonne-kilometres. Although national transport fell slightly by 0.2% compared with 2021, international transport (including transit) increased by 9.2% over the same period.

The electrification of fleets is the main vector for decarbonising road freight transport, as it offers significant gains in energy efficiency compared with equivalent combustion-powered vehicles. The incorporation of biofuels into road fuels, as currently practised, represents an additional lever for mitigating the sector's climate impact, particularly for the specific uses of certain economic sectors where it is not certain that a viable electric alternative will exist by the time the SDMP comes into effect (2030-2035). This decarbonisation of the heavy-duty vehicle range has been made compulsory for manufacturers by European legislation, which imposes a gradual reduction in greenhouse gas emissions from heavy-duty vehicles sold: it sets a target of -90% CO2 emissions for new heavy-duty vehicles by 2040 (compared with 2019). Planning for the energy transition of road freight transport must be structured around four axesinseparable : a range of heavy-duty vehicles with alternative engines that meet all uses, an fuelling networkappropriate , availability of and recharging logistics land and financial support. Depending on technological developments and the specific uses to which vehicles are put, electrification will be more or less rapid depending on the type of transport service.

3. Outlook to 2030

This section presents a scenario for the development of transport demand, as well as trajectories for the development of vehicle fleets and their energy performance, making it possible to achieve the objectives by 2030. The EPP and the SNBC are based on a common scenario, which is part of an objective to reduce gross greenhouse gas emissions by 50% between 1990 and 2030, and in the longer term to achieve carbon neutrality by 2050. The assumptions and trajectories presented in this document (part II.3) constitute the provisional scenario of the energy-climate strategy, published as part of France's integrated national energy-climate plan (PNIEC), submitted to the European Commission in July 2024. The figures available use 2019 as the reference year (from Secten 2023). The objectives and levers identified are explained below (part IV and appendix I).

The aim of this scenario, which is common to both the SNBC and the PPE, is to be in line with the general long-term orientations of the SNBC and to be as predictive as possible over the period of the PPE. The measures and guidelines of the SDMP are not modelled one by one, as their effects cannot always be quantified. That said, the scenario reflects the changes that should result from the implementation of the measures identified.

i. Energy consumption scenarios in the land transport sector

Energy consumption projections for the transport sector lead to a reduction in energy consumption from 501 TWh in 2019 to 396 TWh by 2030. In terms of greenhouse gases, emissions will fall from 134.1 MtCO2e in 2019 and 131.2 MtCO2e in 2022 to 90MtCO2 in 2030 (based on the Kyoto perimeter, including the French overseas departments and territories).

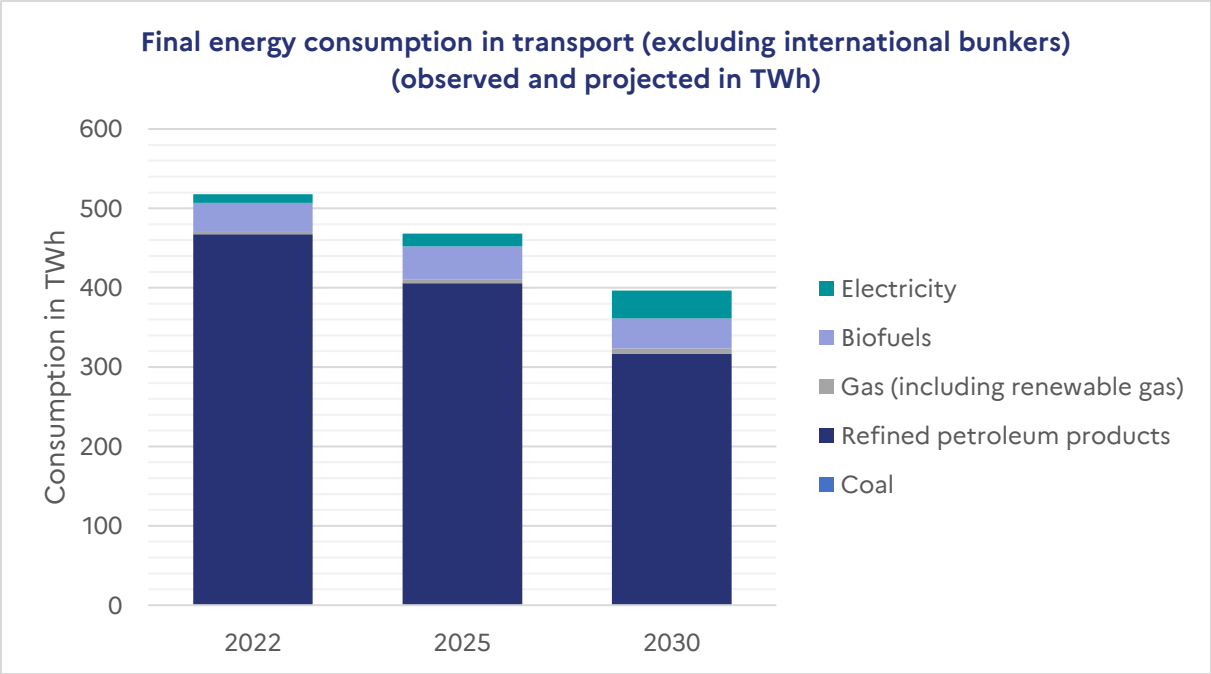


Figure4 : Final energy consumption of domestic transport (excluding international) (historical and projected) (source: Bilan énergétique de la France, SDES, 2022 edition; bunkersDGEC modelling; Kyoto scope (France and overseas territories))

Electrification is playing an increasingly important role the energy mix for transport, helping to decarbonise vehicles and reduce energy consumption, with electric vehicles three times more energy-efficient than internal combustion vehicles. Given the projected fall in total fuel consumption, the rate of incorporation of biofuels will increase, also contributing to decarbonisation, with priority given to modes and uses for which there is no credible operational alternative to the electric vector: river freight, non-electrified rail (freight and passengers) and certain heavy goods vehicles. These uses, which are difficult to electrify, could also turn to hydrogen if this energy carrier proves to be relevant both financially and in terms of life-cycle energy consumption.

Controlling transport demand, shifting the modal split to modes other than road, improving vehicle occupancy rates and the load factor of heavy goods vehicles are all part of the scenario and will help to reduce energy consumption and emissions.

The following graph shows the projected breakdown of the different types of fuel within the scope of the EPP (mainland France).

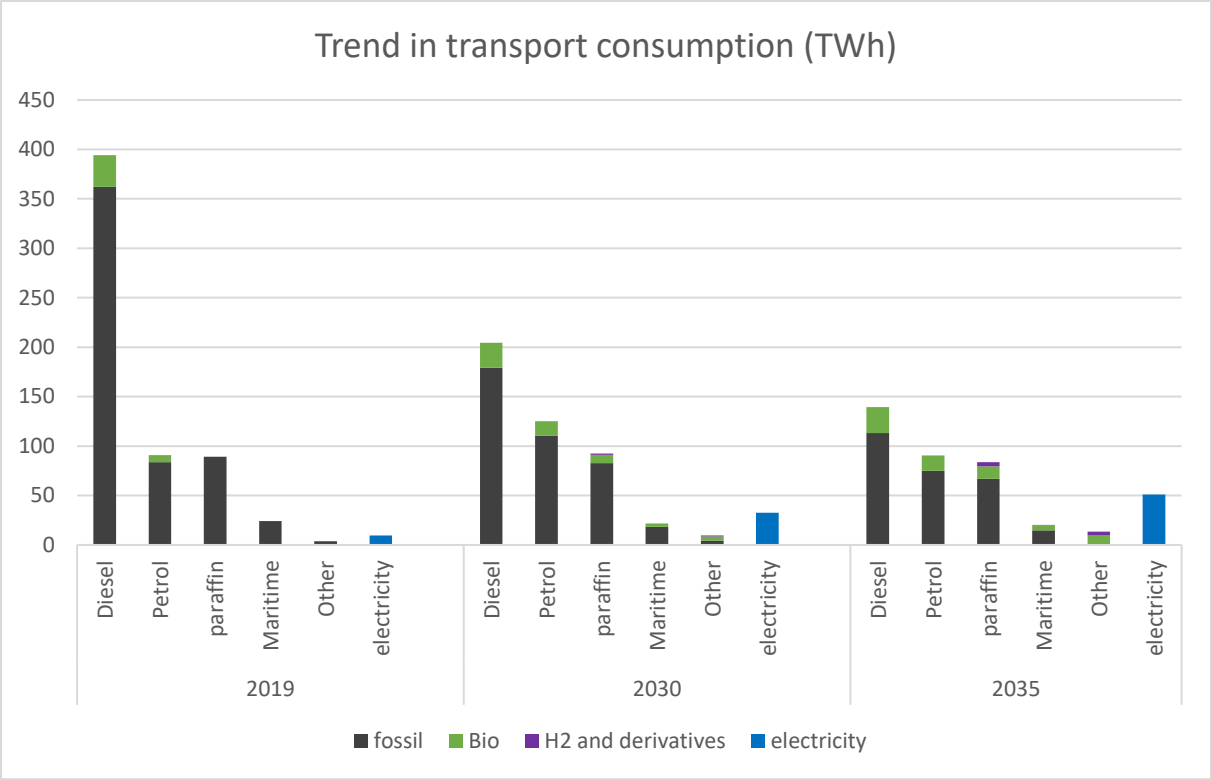


Figure5 : Trend in energy consumption in the transport sector (draft Multiannual Energy Programme; France metropolitan area; August 2024)

ii. Scenario for the development of low-emission and energy-efficient vehicles

The share of electric cars in vehicle sales new will increase rapidly, reaching 66% in 2030, bringing the share of electric cars in the fleet to 15%. The share of electric light commercial vehicles (LCVs) in new vehicle registrations will also rise rapidly, from 5% in 2022 to 51% in 2030. From 2035, in accordance with European legislation (Regulation (EU) 2023/851), the sale of light vehiclesnew combustion-powered , including plug-in hybridsand non-plug-in , will cease. In the SDMP, the share of electric heavy goods vehicles (HGVs) in registrations new increases rapidly to reach 50% in 2030, in line with the announcements made by the main manufacturers as part of the revision of the European regulation on CO2 emissions from new heavy goods vehicles (Regulation (EU) 2019/1242 revised in 2024). In the term, the use of NGVs/bioNGVs will remain short and medium limited to cases where electrification is difficult to achieve: for example, 4 TWh of NGVs will be consumed by heavy goods vehicles in 2030. The proportion of electric buses and coaches is increasing rapidly: 90% of new buses in 2030 will be electric and 30% of new coaches in 2030 will be electric. The development of intermediate electric vehicles is also a lever for decarbonising new segments.

Energy efficiency is a pillar of decarbonisation. The fuel consumption of new combustion-powered passenger cars will fall by 16% by 2030 compared with 2019, supported by a shift towards lighter, more fuel-efficient vehicles and by eco-driving, and will then remain stable until 2035. Consumption of new electric cars will fall by 12% by 2030 compared with 2019. New diesel LCVs will consume less 14% by 2030 than in 2019 , and new electric LCVs 20% less. The consumption of new diesel will fall by 15% by 2030 compared with 2019, and that of HGVs new electric HGVs by 10%.

The rate of incorporation of biofuels in road transport is increasing (on a constant volume basis for road transport), based primarily on the development of sustainable fuels, helping to decarbonise the sector in the transition phase. The use of biofuels could vary within transport, roadmoving towards heavy rather than light mobility. The obligations imposed on fuel distributors to incorporate alternative fuels and electricity in transport will be gradually strengthened. The target for reducing intensity greenhouse gas in the transport sector by 2030 is 14.5%, in line with the European objective. This target, for all forms of transport including air and sea transport, takes into account renewable electricity in transport, as well as biofuels, taking into account their decarbonising power.

iii. Transport demand projections

a) Passenger transport

The increase in the distance travelled by private car users between 2012 and 2019 is 5%, in line with the change in GDP. At the same time, public transport will grow by 7% over the same period. This is the result of an average increase of 8% in the distance travelled by public road and guided transport (including coaches, buses and trams), and a parallel increase of 6% in rail travel

To date, the PNIEC forecasts a 2.2% increase in total mobility at the same rate as population growth (from 985 billion passenger-kilometres in 2019 to 1007 billion passenger-kilometres in 2030), with mobility per person remaining stable across all modes. The densification of urban fabrics, the limitation of urban sprawl and telecommuting all contribute to this stability. The modal shift towards rail and public transport is increasing, with a 4-point rise in their modal share. Mobility by bicycle increased from 5.5 to 19 billion passenger-kilometres, thanks in particular to the development of safe, continuous cycle paths and lanes, with the aim of doubling the network of cycle infrastructure to 100,000 km by 2030. Road in terms of passenger-kilometres mobility is set to fall, from 780 billion passenger-kilometres in 2019 to 746 billion passenger-kilometres in 2030. Car-sharing is encouraged and, according to the PNIEC to date, the car occupancy rate will rise from 1.62 to 1.70 by 2030. Car traffic will fall by -9% compared with 2019 (-6% compared with 2022).

b) Transport of goods

Demand for freight transport is directly linked to changes in industrial production (demand study conducted by the DGITM in 2023). The projection medium- and long-term is determined by changes in the economy, and particular inreindustrialisation and decarbonisation , which will profoundly measuresalter many flows. On the basis of the production and consumption projections derived from the work of the SNBC, a projection of demand has been constructed by differentiating around thirty goods.

The number of kilometres travelled by road vehicles increased by 41% between 1990 and 2018[48] . Over the same period, the quantity of goods transported, expressed in tonne-kilometres, increased by 30%[40] . While road transport freight grew by 56%, rail freight transport fell by

[48] *(viewed 07/03/2024)* https://www.notre-environnement.gouv.fr/themes/climat/les-emissions-de-gaz-a-effet-de-serre-et-l-empreinte-carbone-ressources/article/les-emissions-de-gaz-a-effet-de-serre-du-secteur-des-transports

36%[40] . LCVs saw the biggest increase in their emissions greenhouse gas (+34%), in line with the increase in goods transported by this type of vehicle[48]

In the projection, the increase in total demand for freight transport is 4% compared with 2019, less than in the trend scenario (7.5%), thanks in particular to changes in industry (decline in fossil fuel industries, electric vehicle industry requiring fewer parts and therefore less freight than the internal combustion vehicle industry, recycling, reuse, etc.) and buildings (decline in new construction).

The modal share of rail freight will double between now and 2030 compared with 2019, reaching 18%, in line with the objective of the Climate Resilience Act and consistent with the national strategy for the development of rail freight. The modal share of river transport will increase by 50% to 3%. Road freight transport in tonne-km will fall by 2030, from 298 billion tonne-km (2019 traffic level) to 273 billion tonne-km .(-8%)

Optimising the loading rate of lorries will lead to an increase in the average load from 7.4 tonnes in 2019 to 7.8 tonnes by 2030. HGV traffic will therefore fall by 12% between 2019 and 2030.

Part IV. and Annex I of this document detail the policies and measures that support these different levers, both for vehicles and for demand for mobility.

iv. Emission reduction scenarios and targets

a) Reduction targets

According to the figures in the PNIEC, **the transport sector will have to target emissions of 90 Mt CO2e in 2030, i.e. a reduction in 31% emissions compared with 2022 (a reduction of 41 MtCO2e)**. These figures may change as a result of studies linked to the SFECsubsequent.

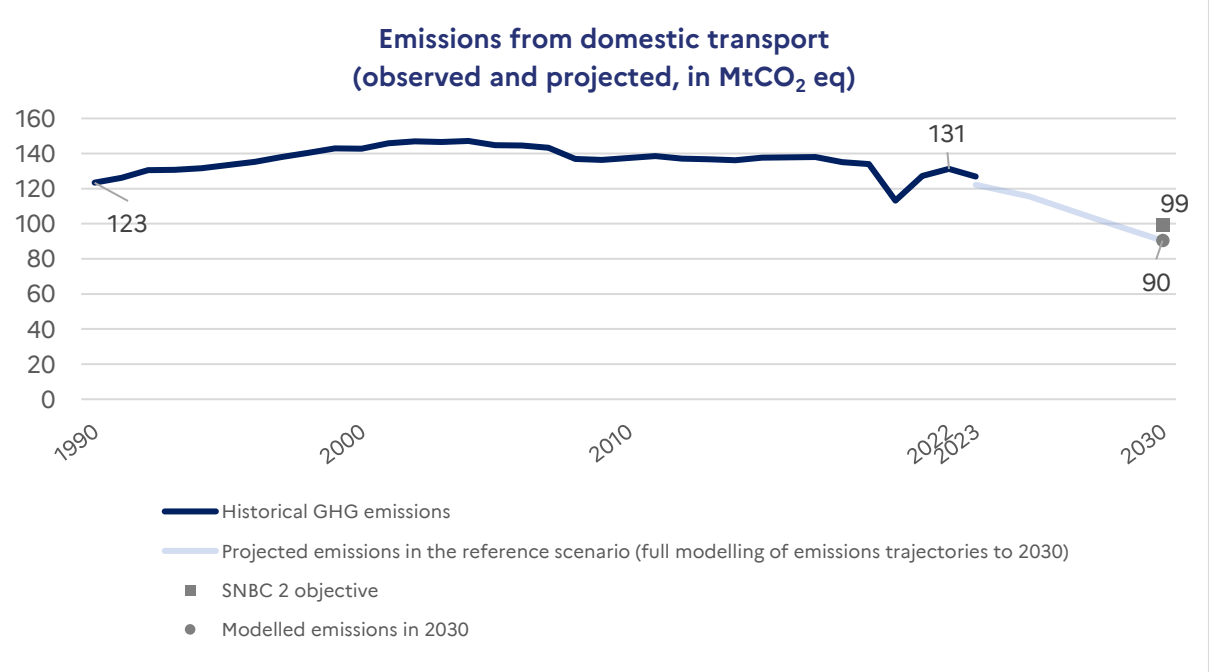


Figure6 : Emissions trends (historical and projected) in the domestic transport sector (excluding international) in MtCO2eq between 1990 and 2030 (source: National Inventory of Greenhouse Gas Emissions, CITEPA, bunkersSecten 2024, PNIEC; DGEC modelling).

b) Passenger transportand freight trajectory

To get a better idea of the scale of the ambitions for 2030, the graph below breaks down the emission reductions greenhouse gas achieved by lever for passenger and freight transport.

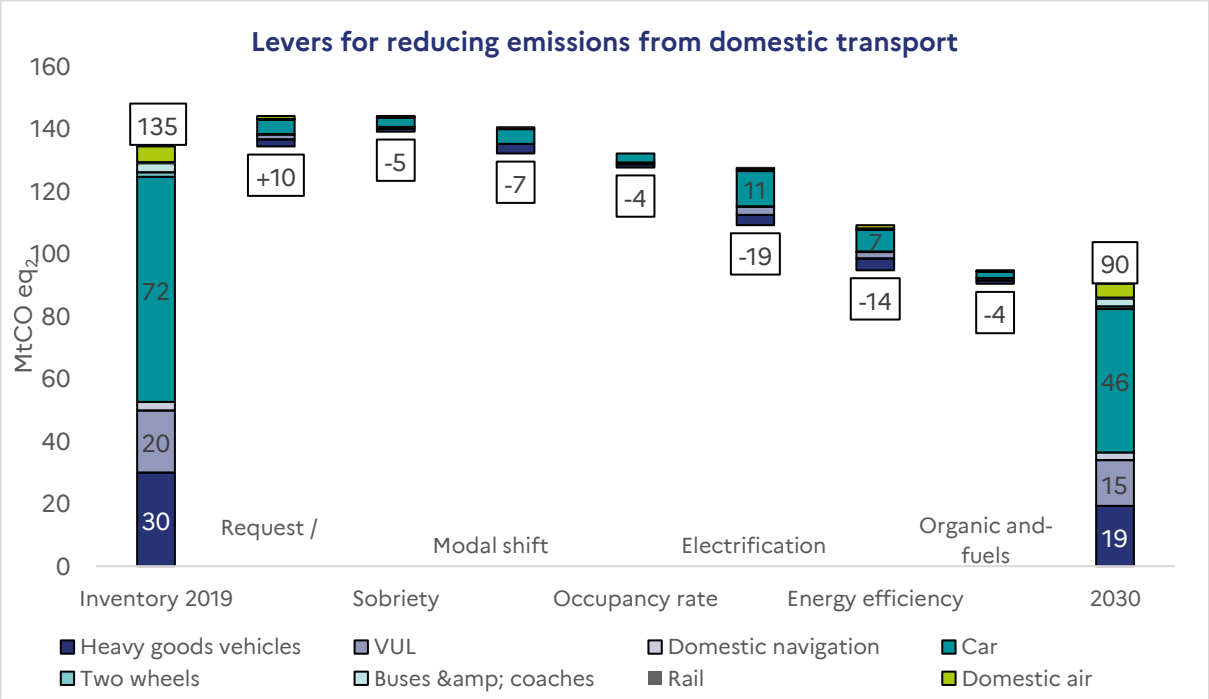


Figure 7: Indicative breakdown of the effects of the various levers based on modelling workMTECT

III. Method for assessing the various decarbonisation levers

Environmental assessment is a systematic and anticipatory process designed to identify, predict and evaluate the potential environmental impacts of the measures contained in the SDMP. An initial assessment of the strategy has therefore been carried out in the form of a multi-criteria analysis by sub-section, following the plan of the document.

This multi-criteria analysis covers the following areas: natural and technological risks, impact on use landand subsoil, impact on human health and nuisance, impact on biodiversity and natural habitats, potential for reducing greenhouse gas emissions, impact on landscapes and heritage, impact on water resources and aquatic environments, issues relating to exhaustible resources (excluding fossil fuels) and waste production, and other effects.climate and energy

Once the environmental assessment of the measure has been carried out, the evaluation must also include measures for measures generating negative environmental externalities .so-called "ERC" (Avoid - Reduce - Compensate)[49]

[49] *ERC ("Avoid - Reduce - Compensate") measures are a systematic approach to minimising the environmental impact of development projects. They consist of three stages: avoiding potential negative impacts, reducing those that cannot be avoided, and compensating for residual effects:*

The aim of these ERC measures is to integrate ecological considerations from the planning stage and throughout the life cycle of projects in order to achieve sustainable development objectives and comply with environmental regulations.

This initial assessment of the SDMP may give rise to further work, aimed in particular at estimating the emission reduction potential greenhouse gas of each action described in the document, as well as its carbon abatement cost.

- ***Avoid**: Identify and implement actions to avoid environmental impacts right from the design phase. Examples include choosing a project location outside environmentally sensitive areas or using clean technologies to eliminate potential sources of pollution.*
- ***Reduce**: Adopt measures to reduce impacts that cannot be avoided. For example, optimising the use of water and energy to reduce resource consumption. Reduction can also involve creating monitoring instruments to analyse pollutants and take the necessary measures.*
- ***Compensate**: Implement actions to offset residual impacts on the environment. Restoring degraded habitats to compensate for the destruction of natural areas or creating nature reserves to protect species threatened elsewhere.*

IV. Strategic areas and decarbonisation levers

With the aim of achieving the reductions in emissions and energy consumption set out in the PNIEC and PPE 3, various strategic decarbonisation axes can be defined on the basis of the Kaya equation applied to transport:

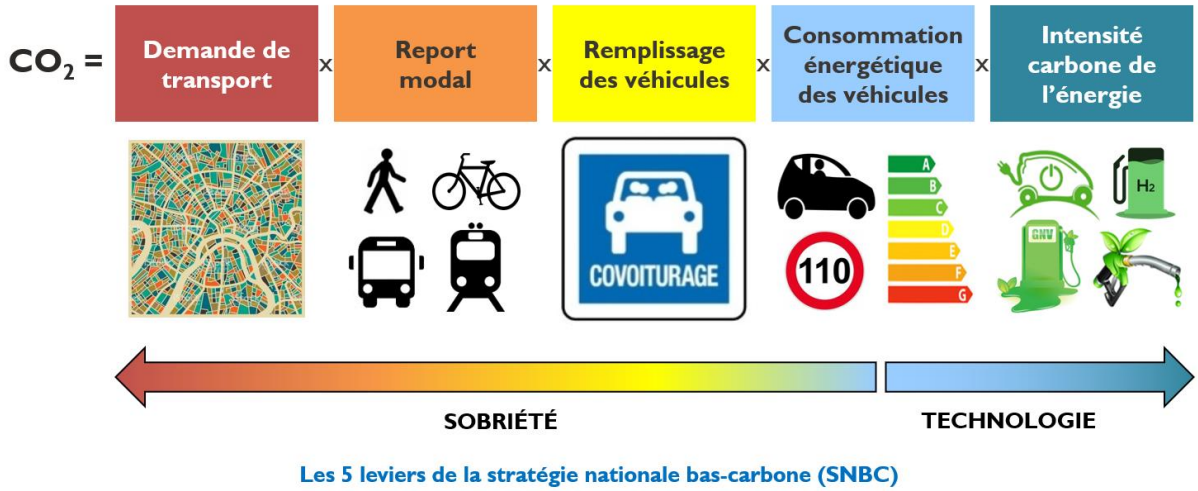


Figure8 : Kaya equation applied to transport (source: Aurélien Bigo, Les transports face au défi de la transition énergétique. Explorations entre passé et avenir, technologie et sobriété, accélération et ralentissement, 2020)

Promoting sober transport demand is the first strategic axis without which a transition could not be made at optimal social, economic and environmental cost. The demand for passenger or freight transport, i.e. the number of kilometres travelled multiplied by the number of passengers or by the tonnes of freight transported, expressed in passenger-kilometres or tonne-kilometres (pkm and tkm) has historically increased, except during major crises such as the Covid-19 pandemic in 2020, for example. This illustrates both the challenge and the vital importance of this strategic area. Controlling, or even reducing, this demand is therefore vital if we are to reduce emissions from the transport sector, and can also help to create new ways of thinking about travel.

The second strategic priority is This involves switching from one mode of transport to another, with a lower carbon content, for the same journey. Historically, this has made a significant contribution to the rise in emissions, and has most often been in the direction of more carbon-intensive modes of transport, in particular cars and heavy goods vehicles. It is important to implement the levers to achieve this shift in the opposite direction in order to decarbonise the sector.**to shift transport demand and supply towards low-carbon modes**, in other words, to make a **modal shift.**

The third strategic direction is to **increase the occupancy, loading and use of transport.** Vehicle occupancy is measured by the **occupancy rate** for passengers (i.e. the number of people per vehicle). For goods, it is more commonly referred to as the **load factor**, i.e. the quantity of goods transported in relation to the vehicle's capacity. The utilisation rate measures the amount of time a vehicle is used per unit of time. Increasing the occupancy, load or utilisation rate reduces unit greenhouse gas emissions: the same quantity of passengers or goods will require fewer journeys; the same vehicle will be used for more people or goods. Historically,

the vehicle occupancy rate has tended to fall for passenger transport, whereas it has tended to rise for freight transport, due to the economic advantage of optimising journeys by loading vehicles more efficiently. The utilisation rate has remained historically very low, remaining psychologically linked to the person or organisation that owns the vehicle.

Improving the energy efficiency of mobility, the fourth strategic area, brings together all the measures aimed at consuming more efficiently, in particular by optimising **energy consumption** or by using less energy-intensive solutions. It can be expressed using very different indicators, most often as energy consumption per mode or divided by total demand (in toe/voy.km in particular; with toe = tonne of oil equivalent), divided by vehicle traffic (toe/veh.km), or by GDP or freight company turnover (toe/€). Energy intensity helps to reduce emissions or energy consumption, sometimes making a major contribution.

The fifth strategic axis is the most technological and consists of **using technology to reduce carbon intensity.** This concept defines the quantity of emissions emitted per quantity of energy consumed. It brings together two dimensions that are sometimes separated: the switch from one form of energy to another for the same mode of transport (electric car instead of combustion engine car), and changes in the carbon intensity of each form of energy taken individually (changes in emissions for a single form of energy, e.g. electricity from renewable, fossil or nuclear sources). This second aspect has historically had little impact on transport, given that the energy consumed by transport has been dominated by oil for several decades, but could have a greater impact as the fleet moves towards electric vehicles.

Finally, the last strategic axis concerns the transversal conditions necessary for the success of the decarbonisation of the transport sector: putting **in place the transversal conditions for the success of the decarbonisation of the sector.transport**

STRATEGIC ORIENTATIONS	PASSENGER TRANSPORT		FREIGHT TRANSPORT	
	Objectives	***Examples of proposed actions***	**Objectives**	***Examples of proposed actions***
Encouraging sober transport demand	Controlling demand through spatial planning	*Strengthening assessments socio-economicof developments by taking climate effects into account* *Re-examine light of environmental issues new road and motorway infrastructure projects that have not yet begun in the*	Networking the region with logistics zones and optimising their use	*Develop land-use planning tools for logistics zones to improve the regional network of warehouses and logistics zones* *Setting up urban logistics hotels*
	Limiting the number of vehicles and journeys	*Study the possibility and quantify the benefits of opening up fleets of service vehicles to car-sharing: implement this opening up of fleets to car-sharing where appropriate.*	Optimising and reducing freight transport journeys	*Examination of possible avenues for reduction and optimisation by modifying the production process, in conjunction with the sectors concerned.* *Simplification and standardisation of traffic and parking regulations*
	Spreading transport demand over time	*Documenting the impact of work organisation in metropolitan areas* *Organisation of feedback on the time offices set up in certain cities*	Getting logistics players more involved in ecological planning	*A stronger presence for shippers and transport organising authorities*
	Creating new imaginary worlds	*Work with the industry to reduce the amount of airtime given to advertising that promotes products and services that are the most harmful to the environment.*	Making the challenges visibleof logistics flows	*Raising awareness of urban logistics issues among elected representatives and local authority technical departments* *Strengthening the role of logistics in urban and regional planning tools*
Shift transport demand and supply towards low-carbon modes	Decarbonising home-work journeys	*Consider tax reform for job mobility solutions offered by employers* *Making support for clean mobility more attractive* *Improving the implementation of employer mobility plans*	Developing multimodal freight transport	*Development of combined transport via intermodal rail-road and river-road freight sites* *Development of multimodality between bulk modes (rail-river)*
	Limiting the use of private cars	*Work on the distribution of roads and the place of intermediate vehicles in public spaces* *Supporting and facilitating action by local authorities to extend the conversion bonuses introduced by local authorities to multimodal credit.*		
	Developing public, rail and river transport	*Stepping up investment in regenerating and modernising the rail network* *Continuation of State-sponsored projects to modernise and develop the rail network*	Develop rail and river freight to increase their use	*Stepping up investment in regenerating and modernising the rail network* *Continuation of State-sponsored projects to modernise and develop the rail network*

		Improvements to existing night train services *Roll-out of metropolitan regional express services (SERM)* *Definition of local indicators of access to transport alternatives to the car (transportpublic , active modes) and setting related targets* *Simplification of ticketing (single ticket, interoperability of digital services)* *Study of the development potential of electric river mobility in cities crossed by an inland waterway*		*Ensuring that the needs of both freight and passenger trains are met, by mobilising service platforms and infrastructures Study of the potential for river or rail transport of goods and materials for construction projects and businesses close to rail infrastructures or along the waterways* *Development of pontoons and quays for boats* *Encouraging and incentivising shippers to develop bulk transport (river and rail)*
	Increasing the use of cycling and walking	*Development of cycling infrastructure* *Developing the possibilities for carrying bicycles on trains and coaches* *Development of intermediate vehicles*	Increasing the use of cyclo-logistics for last-mile journeys	*Development of cycle infrastructure in towns and logistics zones close to the heart of the conurbation to enable transhipment.*
	Developing multimodal interchanges and park-and-ride facilities and making them attractive, accessible and safe	*Tools for local authorities to develop and renovate multimodal interchanges and relay parking areas*	Digitising logistics to facilitate exchanges between players	*Setting up standards and norms to encourage interoperability and exchanges between players*
Increase occupancy, loading and transport use rates	Limiting the number of light vehicles by developing car-sharing	*Study the possibility and quantify the benefits of opening up fleets of service vehicles to car-sharing: implement this opening up of fleets to car-sharing where appropriate.*	Consolidating freight transport	*Supporting and equipping logistics companies to reduce delivery frequencies* *Promoting best practice among shippers who commit to bulk solutions* *Monitor the implementation of the tax mechanism for the use of the road network by heavy goods vehicles in Alsace and the rest of the Grand Est region, and provide feedback where appropriate.*
	Developing car-sharing	*Development and of implementationmaster plans for areas car sharing in the regions* *Evaluate and recalibrate driver incentive schemes* *Developing car-sharing routes*	Sharing freight transport between shippers to increase loading rates	*Finalisation of the current study and testing of the resulting solutions*
	Developing reserved lanes for public transport	*Assessment of trials of dedicated lanes for public transport and/or carpooling before extension*	Working on packaging to limit the volume transported	*Launch of a study by sector on the potential for using standardised containers for all modes, and implementation of the relevant recommendations arising from the study.*
Improving the energy efficiency of mobility	Reducing the weight of passenger cars	*Further increase in the weight penalty* *Revision of the mileage scale to give less of an advantage to the heaviest vehicles* *Development of intermediate electric vehicles*	Developing eco-driving	*Introduction of a voluntary commitment programme and a charter quantifying energy savings and disseminating best practice*

		Making aid to builders conditional on environmental criteria		
	Influencing recharging habits	*Encourage the development of time-differentiated services (peak/off-peak)* *Making it easier to schedule off-peak charging times*		
Using technology to reduce carbon intensity	Deploying sufficient charging infrastructure for electric vehicles (IRVE)	*Setting up the SDIRVE-RRN* *Establishing governance to ensure consistency between national and local networks*	Decarbonising road haulage fleets	*Introduction of a scheme to encourage shippers to contribute to the greening of HGV fleets* *Developing the range of zero-emission vehicles* *Motorway tolls vary according to engine type* *Reinforcing the environmental nature of the additional depreciation for heavy vehicles*
	Speeding up the deployment of electric vehicles for private customers	*Motorway tolls vary according to engine type* *Accelerate the adoption of electric vehicles by pursuing and maintaining the right level support for the purchase and long-term leasing of electric vehicles.* *Continuing to increase the CO2 penalty beyond 2027* *Developing the range of small, accessible electric vehicles*	Deploying IRVEs for electric heavy goods vehicles	*Setting up the SDIRVE-RRN* *Sustainability of a support scheme for the deployment of IRVEs in depots and at their destination*
	Decarbonising business fleets and public transport	*Increased taxation on company vehicles and greening quotas for large fleets* *Reinforcing the environmental nature of accounting depreciation* *Work on levers to give a multi-year vision to financial support for the acquisition of heavy and electric vehicles* *Developing the industrial supply of zero-emission buses and coaches produced in France*	Decarbonising rail and river transport	*Securing biofuel stocks* *Study the introduction of incentives for the deployment of electric or rechargeable hybrid boats*
Put in place the cross-cutting conditions for success in decarbonising the transport sector	Informing and supporting individuals and companies to change their transport habits	*Information campaigns on mobility and its impact* *Development of mobility advice*	Structuring a strategic dialogue with industries to involve them in decarbonising their logistics	*Structuring of the system based on the logistics working group of the National Industry Council and on bilateral exchanges with the industries with the greatest challenges.*

	Enhancing knowledge, skills and attractiveness	*Development of modelling and simulation tools to inform choices* *Simplification and streamlining of the administrative process for issuing D permits, including the creation of a provisional certificate*	Enhancing knowledge, skills and attractiveness	*Creation of a toolbox for reducing mobility-related emissions* *Providing the logistics sector with forward-looking management of jobs and skills*
	Taking account of social justice and dialogue	*Creation of an indicator of precarious mobility to make it easier to target aid at priority areas and households that have no alternative to the car or cannot afford to finance the transition to an electric alternative.*		

ANNEX I

This appendix details the strategy, levers and proposed actions presented in Part IV. The proposed actions have a guiding value and must contribute to achieving the sector's decarbonisation and energy consumption reduction objectives. implementation of these measures will contribute to the decarbonisation of mobility with a view to meeting the targets for reducing greenhouse gas emissions by 2030, set out in part II.3.

1. Passenger transport

i. Transport request

Demand for transport has continued to grow, both for passengers and for goods[50] . A few events reduced demand from time to time, such as the worldwide Covid-19 pandemic and the ensuing containment measures. However, demand rose again as soon as this crisis was over.

An increase in demand for carbon-based modes of transport automatically leads to an increase in greenhouse gas emissions, to duethe increase in distances travelled and the number of journeys. This is why controlling demand for transport is an essential factor in reducing emissions from the sector.

Demand for transport is conditioned by factors that affect many more sectors than mobility alone. For travellers :

- Regional planning: the length of daily journeys, and the choice of mode of transport, depend on the location of homes and jobs, shops, health centres, schools, etc. ;
- The development and organisation of activities over time (work, school, leisure, etc.)
- Teleworking, and more widely the practice of remote activities (medical teleconsultation, Mooc, e-commerce...)
- People's behaviour (mobility habits) and how they perceive their journeys (journey times considered acceptable, for example).
- An increase in the population, without any change in practices, leads to an increase in journeys
- The ageing of the population, etc.

Sobriety measures often have long-term effects, as they require structural changes in society'. The measures identified in this document, which looks ahead to 2030-2035, are therefore designed to initiate these changes s habitsand to put us firmly on the path to change. Reducing the need to travel aims to make our economy and ourorganisation more travel-efficient spatial , while satisfying people's need to travel for employment and housing.

As well as lowering emissions, there are many other benefits to be gained from adopting measuressober mobility . it For example, can improve the quality of life, particularly in urban areas, by making it calmer and more serene. People's health can be improved thanks to less air

[50] *The correlation between transport demand and national GDP is 0.7 on average (France Stratégie, 2014).*

and noise pollution, and the use of more frugal modes of transport can often be increased thanks to frugal measures (changes to the layout, changes in the way people think, etc.). Spaces left vacant can be reused to improve the quality of life, for example by planting vegetation. However, these measures are highly dependent on the local context, and the reduction in the use of private cars will remain limited in some areas.

The following levers can be used:

Some subjects are already in the pipeline:

- Energy efficiency plans for public authorities: their aim is to encourage staff to take an active role in energy efficiency through a number of initiatives, for example in the area of transport. These focus on staff mobility:
    - limiting the speed of company vehicles on business trips to 110 km/h on motorways;
    - installing secure parking for bicycles
    - by choosing the train rather than the plane for journeys of less than 4 hours;
    - by switching from car to public transport;
    - Encouraging carpooling;
    - etc.
- Encourage teleworking.

a. Controlling demand through spatial planning

In addition to reducing the number of journeys, action on transport demand should also reduce the distances travelled by vehicles emitting greenhouse gases for a given trip . Regional planning purposehas a major impact on the distances travelled by commuters, whether on a daily or occasional basis, through the availability and quality of transport infrastructure for the different modes of transport, the location of residential areas, employment areas, services, etc.

In addition, infrastructure development can lead to an increase in demand for transport, which may raise questions with regard to objectivesclimate change , the mitigation case of infrastructure intended for the most emitting modes of transport. In particular, the trajectory adopted following the report of the Conseil d'orientations des infrastructures (COI) in February 2023[51] reduces the programming of new road projects, by limiting them to projects to improve regional accessibility. These projects will make it possible to reduce journey times and thus limit the negative effects of road congestion and pollution at local level, but they will require concomitant control of urban development.

- **The assessments should take greater socio-economiccarried out upstream of projects transport infrastructure and development operations** (shopping centres, business parks, etc.) **account of the climatic effects of such developments**, particularly those linked to transport. This would enable be more selective development to projectsin terms of their impact on the environment. Town planning rules such as commercial development permits are among the levers that could be used.

[51] https://www.ecologie.gouv.fr/sites/default/files/documents/COI_2022_Programmation_Synthese%20-%20def_0.pdf

- **Re-examine environmental impact of new road and infrastructure motorway projects that have not yet begun,** and reduce as far as possible the environmental impact of those that are currently underway and those that will be maintained.
- Implementing **urban planning that encourages mobilitysustainable** : we need to act on the location of generators of flows of all kinds (housing, jobs, shops, facilities, etc.), particularly in towns around existing alternatives to the private car:
    - For day-to-day services, by locating them as close as possible to homes, so that residents can access them on foot, by bike (a **city of short distances**) or by public transport.
      For example, stations and interchanges themselves can host local services, turning waiting time into useful time (see also the measure on the development of multimodal interchanges, part 1.ii.g.).
    - For more specialised traffic generators (centres of employment, higher education, hospitals, etc.), by locating them close to public transport with a high level of service (train, express bus and, in towns, guided transport or even BRT), to encourage their visitors to use public transport to get there
    - Housing should also be grouped together, ideally near a station (**intensification of station districts**[52]), in order to encourage active modes of transport and public transport, which presupposes the design of urban forms capable of making density, if not desirable, at least acceptable. The issue of noise pollution must be carefully studied to ensure that this proximity is achieved under acceptable conditions.

b. Limiting the number of vehicles and journeys

In addition to distance, it is important to limit the number of journeys made by private car, especially car-sharing, as this is a particularly important factor in demand. To achieve this, measures can be put in place to demotorise households by offering them other alternatives.

Key measures

	Carrier
Quantify the benefits of opening up company and local authority service vehicle fleets to carsharing, and .implement this opening up of fleets to carsharing where appropriate	Status

- **Quantify the benefits of opening up company and local authority service vehicle fleets to carsharing and implement this opening up of fleets to carsharing where appropriate**: these fleets are not used for long periods (e.g. at weekends or when there are gaps in the day). To begin with, a trial could be envisaged on a government site. In particular, the "greening of the vehicle fleet" commitment of the Eco-responsible Public Services (SPE) scheme provides a favourable framework for this. This experiment would make it

[52] *Approach theorised in North America under the name "transit oriented development" (TOD)*

possible to assess the relevance of opening up corporate and administrative fleets to carsharing, and could be followed up by more in-depth assessments, with a view to generalisation. Feedback from private companies could also enrich the system. To make the approach more attractive, consideration could then be given to adding a car-sharing criterion to the greening of corporate and public sector fleets (which could be added to electrification). However, the practicalities of such a development would need to be examined.

- **Launch of a national working group on carsharing** (bringing together DGITM, ADEME, CEREMA, economic players and associations, local authorities or their representatives) to discuss the objectives, strategy and roadmap for developing carsharing.
- **Make the most of the demotorisation potential offered by car-sharing:** according to ADEME[53] , subscribing to a car-sharing service reduces the ownership and use of private cars, with 1 car-sharing car replacing 5 to 8 private cars and freeing up 0.9 to 3 on-street parking spaces. **A revision of the CEE for car-sharing standardised operation sheet will also be studied**: this currently allows funding to be granted for a subscription of at least 12 months to a car-sharing service, in recognition of the fuel savings that car-sharing makes possible.
- With regard to business travel, **set a reduction in the transport item in the carbon footprint of certain companies**, compared with the 2018 level, for an equivalent number of employees (CO2e/employee on the business travel item): this measure should encourage companies to limit the number of business trips necessary for their activity, and for those trips that must be maintained, to opt for more energy-efficient modes.

c. Smoothing out peaks in demand

Smoothing out peaks in transport demand helps to reduce congestion, both on the roads and on public transportrail and guided . It also makes it possible to optimise public transport. This is because public transport is designed to cope with peak demand: smoothing out peak demand saves money, while filling up vehicles better at off-peak times. These peaks in demand are highly dependent on working and hoursstudy , and it is important to act on these hours to smooth out the peak.

- **Organise, via the committees of mobility partners, feedback on the "time offices" set up in certain towns and cities, and their impact on mobility:** these structures dealing with time policy local already in around ten towns and cities in Franceexist . The task of these offices is to adapt the timetables of public services and the organisation of local time (planning, travel, etc.), taking better account of users' expectations and quality of life. In Rennes (where first Time Office France's was set up in 2002), this is reflected in three objectives: 1) Acting for greater social equality; 2) Making the area more fluid; 3) Responding to the constraints of a world with finite resources.
  The time offices are grouped together within the Tempo Territorial association .[54]

[53] https://presse.ademe.fr/2022/09/enquete-nationale-autopartage-2022-impact-sur-les-pratiques-de-mobilite-des-francais.html#:~:text=L registration%20%C3%A0%20a%20service,spaces%20for%20parking%20in%20the%20roads.
[54] http://tempoterritorial.fr/

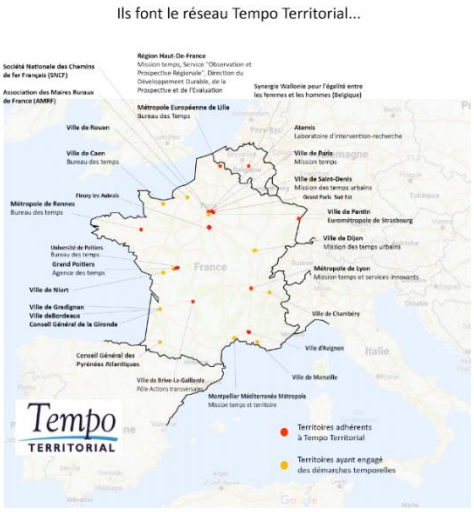


Figure9 : Network of organisations involved in managing time-related issues in the region

Capitalising on the work carried out by these structures would make it possible to assess the relevance of extending it more widely and thus identify concrete measures that could be generalised or copied in other areas.

- **Documenting the impact of work organisation in metropolitan areas more thoroughly**, in order to identify the most appropriate actions to be taken to smooth out peak times and days for public transport: few studies currently exist on the subject, so it would be useful to carry one out, taking a few case studies in metropolitan areas, in order to gain a better understanding of the subject.
- **Study the possibility of staggering school exitsentrances and , and experiment with such measures**: school timetables have an impact not only on pupils, but also on parents, who sometimes accompany them. Staggering the timetables of different schools in the same area by a quarter of an hour could help to reduce traffic congestion around schools. This could also have the secondary effect of optimising school transport, by grouping together school transport routes. This would reduce the number of vehicles and drivers, and therefore the cost of school transport. Drivers could also be offered more driving time (and therefore a more attractive contract), which is all the more valuable given that the school transport sector is facing a large number of retirements and is struggling to recruit. These time differences can only be studied at local level, through a collective effort involving school heads and the school transport organising authority, not forgetting the teaching teams, parents and education authorities.

As far as car traffic is concerned, one tool used in Milan and Tokyo to smooth out rush hours is positive congestion charging (or reverse congestion charging): this is a form of toll that encourages users to shift their timetables by rewarding them with some form of compensation in the form of a bonus or monetary reward (e.g. vouchers to be used in shops) in exchange for a change in behaviour aimed at avoiding rush hours. Conversely, if they decide to drive during peak full stops, they could be penalised financially if the scheme so provides. In France, the metropolis of Lille has decided to experiment with a positive congestion charge, the aim of increasing the occupancy rate of vehicles, shifting traffic times on the routes concerned and encouraging modal shift, with a contribution of €2 per journey avoided. However, the relevance of this scheme still needs to be studied, particularly in cases where other

mechanisms exist on the same perimeter but with different objectives (reduction of emissions, nuisances, atmospheric pollution, etc.), such as the EPZs. In addition, before any implementation is considered, this type of scheme must be carefully studied to define procedures that guarantee social justice, and it must be motivated at local level by situations of regular congestion.

In addition to peak hours, the Covid-19 health crisis and the development of teleworking have led to the emergence of peak days (Tuesdays and Thursdays) . [55]

d. Creating new imaginary worlds

The collective imagination has an impact on travellers' choices, with advertising and the image given of different modes of transport encouraging people to travel far and fast. Creating a vision different of mobility is necessary to change people's behaviour and turn them towards sobriety.

- **Work with industry and government to reduce the amount of airtime given to advertising that promotes products and services that are the most harmful to the environment**, such as "faster and further" or "heavy" cars (SUVs). The impact of advertising on the collective imagination is very strong (every day, French people see an average of 1,200 advertising messages that influence their consumer behaviour (billboards, television, networkssocial , magazines)[56]), and it can have a major influence on travellers' choices. It is therefore reduce the amount of airtime devoted to advertising that encourages behaviour that runs counter to the urgent need to tackle climate changevital to :
    - Advertisements encouraging people to travel "faster and further".
    - This could be done, for example, by making compulsory itfor manufacturers to provide amount airtime for SUVs.thesameoffor light cars as

  A tool has already been developed in the "Climate and Resilience Act of 22 August 2021 "(art. 7), which sets out an obligation for certain companies to make a declaration on a digital platform and to voluntarily sign up to " contracts". sectoral and cross-sectoral climateThe aim of these contracts is to significantly reduce commercial communications relating to goods and services that have a negative impact on the environment, particularly in terms of greenhouse gas emissions, damage to biodiversity and consumption of natural resources over their entire life cycle. In the transport sector, only the automotive sector is subject to the directive. Most of the companies concerned have submitted their declarations, but few have signed up to a climate contract (a third of all sectors combined, 20% for the automotive sector), and the rate of return of reports is very low.

  It should be noted, however, that the Platform French Automotive (PFA) has signed a sectoral climate contract containing a single commitment: to invest increasingly in promoting electric and hybrid vehicles (whether rechargeable or not) by devoting at least 60% of advertising spend to promoting these vehicles by 2022.

[55] https://www.institutparisregion.fr/nos-travaux/publications/le-mass-transit-a-lheure-du-teletravail-et-de-la-sobriete-energetique/

[56] https://www.ecologie.gouv.fr/role-publicite-dans-transition-ecologique

There is therefore room for improvement in the area of advertising in the transport sector. This is all the more interesting given that, in 2019, the automotive sector was the second largest advertiser in France .[57]

addition to advertising initiatives, creating a new way of thinking means making it desirable and accessible to travel by means other than the most carbon-intensive modes. For long-distance journeys, experiments are being conducted to encourage people to discover "slow tourism", which can also have an economic advantage. One solution deployed by some companies, which has an impact on both demand and modal shift, is to give employees who make responsible mobility choices for their holidays one or more extra days off, so that they can take the time to travel more slowly. This solution encourages employees to travel more responsibly, using slower modes of transport (which may mean travelling less distance, particularly compared with air travel) as the employee has to provide proof that the mode of transport chosen meets sober travel criteria.

ii. Modal shift

The modal shift must be in favour of alternatives to the private car, in order to make greater use of the least carbon-intensive modes. This means increasing the use of rail, river transport and for passengers and goodsactive mobility or collective .

To develop alternative modes of transport, a number of issues need to be addressed. For passengers, these include infrastructure, the availability and frequency of services, intermodality, coordination between services, ticketing and information on available modes of transport.

On the other hand, the development of alternative modes can lead to an increase in the number of journeys by adding to the number of journeys by road if incentives are not put in place at the to same time It is therefore essential to combine the development and facilitation of alternative modes with measures to act on road transport demand.reduce the use of private cars.

The following levers can be used:

a. Working with employers to decarbonise commuting to and from work

Home-to-work journeys account for the majority of passenger journeys (in terms of numbers): taking all modes of transport together, home-to-work journeys in mainland France alone account for 13% of emissions greenhouse gas from transport, and more than 25% of emissions from private cars[58] . These journeys also shape other journeys made throughout the day, as travellers combine their different needs. Enabling people to get to work by means other than car sharing is therefore particularly important for decarbonising transport emissions.

[57] *Report on the implementation of codes of conduct and their effectiveness in significantly reducing audiovisual commercial communications relating to goods and services that have a negative impact on the environment.*
[58] *Commuting to and from work: greenhouse gas emissions vary widely from one region to another - SDES: https://www.statistiques.developpement-durable.gouv.fr/media/6943/download?inline*

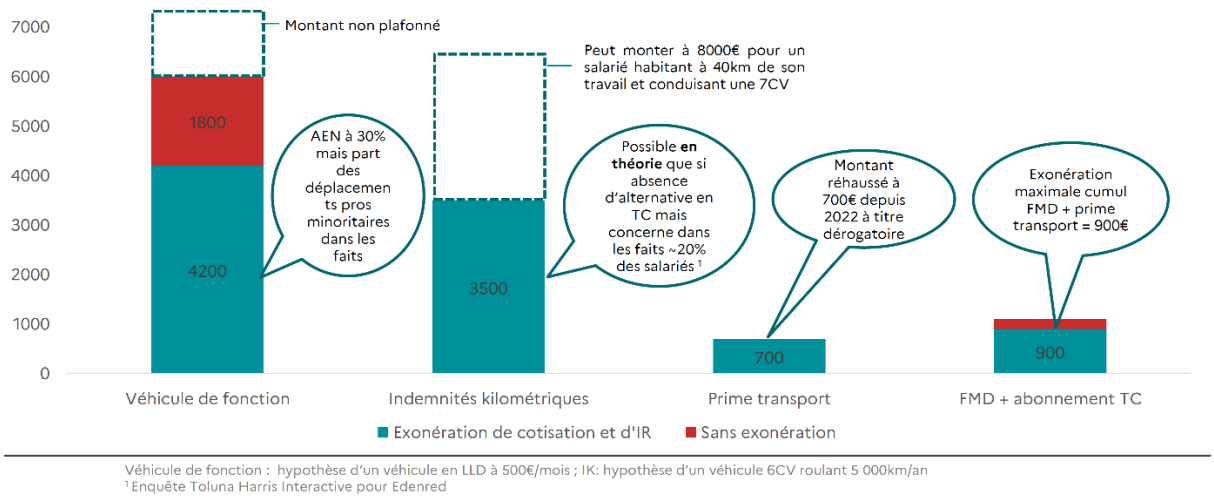


Figure10 : Source SGPE, April 2024

Key measures

	Carrier
Continue to reform the taxation of job mobility solutions offered by employers	Status

The current tax framework does not encourage clean mobility: in particular, the framework applicable to company cars on the one hand, and to home-work mileage allowances on the other, are de facto incentives to use the car for home-work journeys and even, in the case of the company car, for personal journeys, even though the employee could use another less polluting active or shared mode.

Consideration could therefore be given to **reforming the tax framework applicable to company cars**, which could involve some or all of the following measures:

- **Continue to reduce the tax and social security exemptions for company cars** other than those with very low emissions: an order dated 25 February 2025[59] modifies the rules for calculating the benefit in kind for vehicles made available from 1 February 2025, whether internal combustion or electric but not eco-rated, in order to bring the system closer to the reality of the shares of their professional and private use. Consideration could also be given to abolishing the flat-rate benefit in kind for fuel

[59] *https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000051254024*

- Examine the possibility of reserving this exemption for vehicles actually needed for the job.
- Enable the employer to pay, instead of the company car or in return for the choice of a smaller, more fuel-efficient company car, a "mobility" budget **clean** benefiting from the same tax advantage as the benefit in kind of the electric vehicle, i.e. a deduction of 50%. There are technical solutions to ensure that this budget only funds clean mobility expenditure .[60]
- Reduce the incentive to use one's car provided by employer-paid home-work mileage allowances:
    - Either by abolishing the corresponding exemption from social security contributions; in return, the "transport bonus" would be de-capped for low salaries
    - or, in :
        - Reducing the mileage scale bring it closer to the actual cost of using the vehicle (see below)
        - Reinforcing checks on conditions (scheduling difficulties or lack of public transport).

At the same time, **aid for clean mobility could be made more attractive**. There are currently three overlapping schemes providing financial support for sustainable mobility to and from work, making it difficult for employees to understand the benefits and complex for employers to manage:

- Reimbursement of season tickets for public transport or public bicycle hire services, which is compulsory but limited to half the cost of the season ticket;
- The sustainable mobility package (FMD) created by the LOM law is optional, and the amount is freely determined by the employer up to a ceiling set by law, as are the eligible practices, to be chosen from among: carpooling (as driver or passenger), cycling, electrically assisted cycling (VAE), motorised personal mobility device (EDPM), car-sharing with low-emission vehicles, public transport tickets;
- The "transport bonus", which enables the employer to cover the cost of recharging an electric or hybrid vehicle, is optional and the amount is freely determined by the employer, subject to a ceiling set by law.

The employer may allow two or all three of these schemes to be combined, with different exemption ceilings set by law.

In order to simplify these aids and make them more attractive, it could be proposed to merge them and reduce the number of coexisting schemes. There are two possible solutions:

A "Global Sustainable Mobility Package" (FMDG), combining the three schemes (FMD, transport allowance, reimbursement of season ticketspublic transport), with a minimum amount that could be set at €600[61] /year/employee, and with a social and tax exemption ceiling set at €900/year/employee. This FMDG would benefit all employees who use an alternative to car-sharing in a combustion-powered vehicle for their home-to-work journeys: public transport, a bicycle or a motorised personal

[60] *The mobility voucher: this is a bank card dedicated to the payment of such expenses. The payment terminal uses the transaction's NAF code to check that the expense is eligible, as with restaurant vouchers.*

transport vehicle owned or leased, car-sharing, or a personal electric, hybrid or hydrogen vehicle or car-sharing scheme. For employees who have a season ticket for public transport or a public bicycle hire service, it would replace the obligation to reimburse 50% of its amount, hence its minimum amount, which must be at least equal to what these employees currently receive .[62]

The simplest solution, and the one most favourable to clean mobility, would be to make this GDF compulsory. It would then replace the three existing subsidies; however, this solution would have a significant impact on labour costs. Another option is therefore to introduce the GDF, at least initially, as an optional solution, simplifying management for the most proactive employers.

- A "hydrocarbons" budget (transport bonus for combustion vehicles) and a "green mobility" budget (FMD and transport bonus for electric vehicles) for employers, grouping optional mechanisms by impact. The compulsory reimbursement of public transport season tickets would be retained so as not to mix compulsory and optional mechanisms. The share "hydrocarbons"would decrease until 2030. In the meantime, employers who choose to offer a "hydrocarbon budget" would be obliged to offer employees a "green mobility budget" as an alternative.

Other proposed measures:

- Provide business parks (article L. 318-8-1 of the town planning code) with a **joint employer mobility plan** drawn up in conjunction with the AOM.
- **Create a "pro sustainable mobility" label**, along the lines of the "employeur pro vélo" label introduced by the Fédération des usagers de la bicyclette to encourage employees to cycle. Employers who meet a certain number of criteria are awarded a label. A label pro-sustainable mobility could be developed on the basis of this example, with the aim of supporting employers in offering alternative solutions to their employees.

We also need to **step up the introduction of employer mobility plans**[63] , the first stage of which consists of a diagnosis of the mobility generated by the establishment, providing a better understanding of people's daily journeys. Since the LOM, all employers with more than 50 employees on the same site are 2019 required to include home-work mobility in the quality of life at work section of their compulsory annual negotiations (NAO). In the absence of an agreement, these companies must set up an employer mobility plan. However, this employer mobility is rarely referred to [64] . For more on employer mobility plans (content and implementation), see also the measure on this subject in section 1.v.a) c.

Finally, employers can also act upstream to influence demand for transport:

[62] *Excluding TGV season tickets*

[63] *Employer mobility plans are a tool for employers to organise mobility: https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000039785105 . This is an integrated approach to analysing and optimising the travel generated by the activity of a company or business park, an administration, a school or university, a cultural centre, according to the types of users (employees, customers, visitors, suppliers, etc.) and the reasons for travel (work, home-work, leisure, etc.).*

[64] *At the time of the LOM, ADEME noted that only 8% of the companies obliged to do so (under the LTECV law) had complied with their obligation.*

- By choosing to locate close to public transport with a high level of service. Urban planning rules could be considered, as has been done, for example, with the ABC policy implemented in the Netherlands and Switzerland .[65]
- By helping their employees to move closer to their place of work. For example, the start-up 1kmapied helps companies with several sites to relocate their employees to a site closer to home. According to its experience, the potential for relocation is far from negligible, particularly if the approach is organised at the level of a professional sector.

Aid for employees or civil servants wishing to move closer to home is also possible, but is very dynamic, as precedents show.

Finally, in addition to commuting to and from work, commuting to study can also be a key factor for younger people who are not yet in employment. Universities and places of study can also take advantage of mobility plansemployer by including all forms of mobility linked to their activity in [66]order to offer alternatives to both employees and students.

b. Limiting the role of the private car in transport

In order to ensure a modal shift, the place of the private car must be questioned at the same time as new services are proposed, with the aim of avoiding creating new journeys.

Key measures

	Carrier
Supporting and facilitating action by local authorities to extend the conversion bonuses introduced by local authorities to multimodal credit.	Local authorities and the State

Improving infrastructure, for example, can help to increase modal shift through the following levers:

- **Give more thought to the fair sharing of roads between different modes and types of vehicle** (pedestrians, bicycles, cargo bikes, vélomobiles[67] , electric carts, cars, public transport, etc.) with a view to redeveloping existing infrastructure for these modes where appropriate: roads must meet the challenges of accessibility, user safety, cohabitation, etc. Its use can also help to favour certain modes over others, depending on the area's uses and needs. Various tools for regulating traffic can be used also today to meet these challenges, such as the ZFEs (zones d'émission française), the reserved lanes that are being developed, paid parking, etc.

[65]

[66] *https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000039785105*

[67] *Bike with lightweight bodywork, faster than a bicycle or cargo bike (>25km/h), and much lighter than cars*

At this stage, intermediate vehicles are very marginal on the market and it would therefore be premature to give them a dedicated place on the road. Cargo bikes, on the other hand, are becoming increasingly widespread, but their width, length and weight can be problematic on cycle paths shared with motorised personal transport devices (MPTDs) and bicycles or electric bicycles.
Consideration therefore needs to be given to the sharing of roads and parking generally between the different modes of transport, and any decisions on redevelopment will have to be taken at levellocal. In particular, **a working group national will be set up to look at the role of intermediate vehicles in public spaces** (see part i below): *Developing new vehicles, intermediate in size between the bicycle and the car*).

- It would be appropriate to **improve planning for access by active mobility, carpooling or public transport to areas where essential services are located (particularly health services).** In particular:
    - **By studying the inclusion of a mobility component in plans departmental for access to public services:** essential services can be difficult to access by any means other than the private car in some areas (particularly rural areas), and this can lead to people becoming isolated. Developing alternative modes of transport decarbonise a number of journeys and encourage access for all.
    - In addition, tools exist for local players to improve this planning (mobility plans in particular). It would therefore be a good idea for these players to strengthen them in terms of access to essential services. Guides to implementing these tools and planning are already to availablethem. These could be expanded to cover the accessibility of essential services, in order to support local players in this task.

Modal shift can also be achieved by promoting car-free travel, in particular through measures to develop car-sharing (see section IV.1.i.b *Limiting the number of vehicles and the number of journeys*). In addition, downsizing can be made more desirable by measures such as :

- **Extend the local conversion bonuses introduced by local authorities to include multimodal credit:** in addition to local bonusesconversion , which encourage people to make theirgreener vehicles but not to give them up, authorities local could encourage people to take their cars out of use by offering them multimodal credit enabling them to use any kind of sustainable transport instead (public transport, car-sharing, car-sharing or clean vehicle hire, etc.). The Grenoble conurbation is currently experimenting with this, with the creation of a "ZFE ", and passthe concept could be extended to other cities to accompany the . ZFEsFeedback from this initial experiment will enable the relevance of such a scheme to be assessed. In particular, it could be interesting to evaluate any windfall effects and the means, if any, of avoiding them. Work could then with local authorities be carried out to extend the scheme to relevant areas.

Finally, other levers exist to promote modal shift:

- **Training local authority departments in low-carbon transport issues, accompanied by study trips for elected representatives or technical departments:** the aim would be to strengthen existing training courses to raise awareness among elected representatives and technical departments of the challenges of mobility, for passengers and goods, and

to inform them of the options available to them to take action on decarbonising mobility.

c. Developing rail transport to increase its use

Trains are one of the least carbon-intensive modes of transport and represent a highly relevant alternative to car and air travel for long-distance journeys, so increasing their use is particularly important for achieving the sector's decarbonisation targets.

Key measures

	Carrier
Stepping up investment in network regeneration and modernisation	Status

- **Increase investment in network regeneration and modernisation to improve performance and make rail more attractive:**
  - Modernisation: the deployment of the centralised network control system (CCR) will bring together the control of the 1,500 signal boxes and the regulation of traffic in around twenty centres in the long term, and will in particular enable the automation of traffic management, better passenger information and improved management of disrupted situations. The deployment of the European Rail Traffic Management System, known as ERTMS, aims to harmonise rail signalling in Europe to make it even easier for trains to interoperate between rail networks and to develop traffic flows.
  - Regeneration: track, catenaries, switches, engineering structures and track...

  Funding is needed to set up these systems. Prime Minister In February 2023, announced Elisabeth Borne a plan for the future of transport, providing for additional investment of €1 billion/year in regenerating the rail network and €500 million/year in modernising it between now and the end of the five-year period. An amendment to SNCF 's performance contract is Réseaucurrently being prepared to formalise these additional investments.
- **Promoting and improving existing national night trains to compete with the air and the car:** the opening of the lines Paris-Nice) night (2021), Paris-Tarbes-Lourdes (2021) and Paris-Aurillac (2023has enabled the development of night trainsTET Train d'Équilibre du Territoire) (. The crucial issue now is **the renewal of the rolling stock**. The rolling stock currently in use is over old, 45 years and no longer meets passenger expectations in terms of service, comfort and accessibility. The State has therefore initiated the renewal of this night train rolling stock. The renewal of rolling stock will primarily concern existing night routes. The development of international lines should also be encouraged.

- **In conjunction with the AOMs and Regional AOs, improve visibility on long-term rolling stock orders**, to facilitate the matching of industrial supply and reduce the risk of delivery delays.
- **Continue and accelerate trials of light shuttlesrail :** these solutions enable supply and demand to be matched as closely as possible on certain routes, by improving services at lower cost, and their development can therefore be useful in offering alternatives to the private car. Today, the French government is supporting these solutions through calls for projects (in particular the "calls for expressions of interestdigitalisation and decarbonisation of rail transport" and Corifer). The regulatory framework for their deployment is also under construction.
  Some investment in infrastructure is likely to be required for these solutions, which is currently fairly low for the demonstrators but could become more significant as the system is scaled up. These investments mainly concern modifications to some non-electrified segments if the shuttles are electric, and the deployment of recharging infrastructures in stations could also be necessary.

Furthermore, the availability of rolling stock is an important factor in the development of rail passenger transport and its ability to absorb the modal shift from the private car. Unlike the rail freight sector and other European countries, there is currently no developed rolling stock leasing market for passenger rail transport in France. Each operator of commercial transport services (known as "SLOs", for "freely organised services") and each organising authority for public transport services under contract that wishes to develop its offer must therefore order new rolling stock. As a result, the limited number of manufacturers coupled with the time required to build new trains is a factor limiting the development of the transport offer. The industry contract, currently under review, will have to address this issue of matching demand with the industry's capacity to meet it.

For SLO operators, the acquisition of new or second-hand rolling stock is a major aspect of their development, and may even be a difficulty in setting up their service offerings. Although this may delay the entry of new players into the rail market, which is now open to competition, their arrival leads to a significant increase in rail services, as demonstrated by the experience in Spain, where competition has been effective since 2019[68] , and more recently in France .[69]

As far as contracted public services are concerned, fleet renewal is a priority for the Regions, the organising authorities for TER trains, and Ile-de-France Mobilité for Ile-de-France trains, but the delivery deadlines for their orders spread are necessarily over several years. When rail services are opened up to competition, it will no longer be possible to use SNCF Voyageurs framework contracts. Alternatives exist: use of a leasing company; provision of equipment by the operator; invitation to tender conducted by the AO. Several regional AOs have set up local public companies (SPL) to acquire and manage railway equipment.

With regard to regional balance trains (known as "TETs" and currently operated under the "Intercités" brand by SNCF Voyageurs), the State, as the organising authority, is committed to a policy of renewing and modernising obsolete equipment. Substantial investment is underway

[68] *In Spain, rail services on competitive corridors have increased by almost 55% compared with 2019. Source: Autorité de régulation des transports - "Marché français du transport ferroviaire - Premiers chiffres 2023".*
[69] *In France, competition in SLOs, with the arrival of Trenitalia at the end of 2021 and Renfe in the second half of 2023, has led to increases in capacity of more than 10% on the Paris-Lyon route and on France-Spain routes. Source: Transport Regulation Authority*

on day and night Intercités lines[70] . Discussions are underway to define the future rolling stock for the night TET lines, and in 2025 the State will launch a call for tenders with a view to recruiting a rail equipment leasing company to provide the rolling stock for the duration of the contract.

Finally, the opening up of high-speed lines to competition, marked by the arrival on the French domestic market of Trenitalia France and Renfe, should lead to a reduction in ticket prices on competitive lines, where each operator is free to set its own prices. This reduction in fares has been observed in Spain and Italy on high-speed lines (from 10 to 20% on average, depending on the study). In France, the Autorité de Régulation des Transports has noted a reduction of around 10% between 2022 and 2023 in Paris-Lyon ticket prices following the arrival of Trenitalia on this line .[71]

Furthermore, on TER and Intercités services, it is the organising authorities, the Regions and the State respectively, that set the fares. Thanks to the subsidies granted, users pay only a small proportion of the real cost of transport. TER fares are increasingly encouraging users to take out a season ticket, which encourages frequent use of the train. The result is a steady increase in TER ridership.

Finally, the State finances national social fares, which allow certain categories of the population to benefit from reduced fares, such as large families, people accompanying disabled people or students. The government is also considering the development of new fare initiatives, such as the Rail tested in summer 2024 in collaboration with the Regions and SNCF. This Pass pass gave young people aged 16 to 27 unlimited travel on TER and Intercités trains for one month for €49.

With regard to feeder services to the rail network, feeder solutions must be put in place at stations. The aim is to develop intermodality with cycling and other active modes of transport, as well as with public transport, car-sharing and car-pooling (see part 1.ii.g on multimodal interchange hubs and part 1.ii.d on public transport services). Operational mobility contracts can be tools that can be fully mobilised to achieve fluid and fully efficient intermodality.

d. Increasing the availability and use of public transport

[70] Since 2013, this represents a total commitment of €3.5 billion, financed entirely by the State via AFIT France. In addition to supporting the renewal of the fleet of TET lines taken over by the regions, the State has renewed the equipment on the Nantes-Bordeaux and Nantes-Lyon lines (15 new trainsets in 2017), and on the Toulouse-Hendaye line (9 new trainsets in 2019). Following a specific call for tenders, the manufacturer CAF has been chosen to renew the fleet on the Paris-Limoges-Toulouse and Paris-Clermont-Ferrand lines (28 trainsets), with the new trainsets enter service scheduled to in 2027. As far as night trains are concerned, in 2018 the French government undertook to ensure the long-term future of the two existing lines (Paris-Briançon and Paris-Rodez/Latour-de-Carol/Cerbère). Since then, three new night routes have been opened: Paris-Nice (May 2021), Paris-Tarbes (December 2021) and Paris-Aurillac (December 2023). For all these lines, €107m has been earmarked in 2021-2023 for the renovation of 129 carriages, including €77m as part of the recovery plan, which has also invested €23m in service facilities (stations and maintenance).
[71] Source: French Transport Regulatory Authority

Public transport offers alternatives, particularly for everyday journeys, but also for long-distance journeys by coach. Numerous projects are underway to develop the offer, such as the regional metropolitan express services (SERM), and many actions need to be put in place.

Key measures

	Carrier
targets for local transport alternatives to the private car (transportpublic , active modes), by defining . access indicators	Local authorities and the State

Monitor and plan the **development of public transport**:

- **Local authorities should set targets for provision as local transport an alternative to the private car (transport public and active modes), by defining national indicators for access** and making it possible to assess provision at every point in the region. In particular, a multimodal approach makes it possible to identify the complementarities between the different modes of transport, according to the different types of area.
  Draw up, at levelregional and AOM , objectives for the development of road transport alternatives to the car (express coach networks, car-sharing and transport on demand). A study is being carried out by the French government to estimate the in metropolitan France (excluding the Ile-de-France region)potential for mass transport using express coach networksand car-sharing , and to encourage regional AOMs and AOs to develop these networks.
- **Alongside the development of public transport services, integrate infrastructure and user services** (car parking, particularly via park-and-ride facilities, bicycle parking, repair services, security, hubslogistics) through initiatives joint between the various players in the transport ecosystem (route contracts, performance contracts, etc.).
- **Continue to plan public transport as soon as the are developed feeder solutions servicesin the operational mobility contracts: in** the same way as for SERM (see below), feeder solutions for public transport services ensure that the whole journey is decarbonised and that the new service is used. If the new transport line is only accessible by car, people will often prefer to use the car for the whole journey. So, when developing a public transport project, studying feeder solutions from the outset of the project means that multimodality can be considered from the outset. This action could be included in the review of the content of operational mobility contracts as mentioned later in this document (part 1.ii.d.). Planning documents such as territorial coherence schemes (SCoT) and mobility plans could also be used for this purpose, depending on the area.

Deploying SERMs :

- SERM has three main objectives:
  - ecological, insofar as the aim is to encourage a modal shift towards low-carbon collective and active mobility, by reducing dependence on the car. This modal

shift reduces greenhouse gas emissions, limits congestion on the main roads and improves the quality of life in urban areas;
    - social justice and purchasing power, while 15 million of our fellow countrymen and women are living in precarious transport conditions[72] , dependent on their car or under house arrest;
    - regional equality, with balanced development between central areas, suburban communities and medium-sized towns

The framework for the deployment of SERMs is provided by law no. 2023-1269 of 27 December 2023. This provides for projects to be led by regional and local AOMs. It provides for SERM status to be granted by ministerial decree, prior to the mobilisation of financial and organisational tools capable of accelerating their implementation. It sets the target of deploying at least 10 SERMs within 10 years of the law's promulgation.

- As these projects have medium- to long-term ambitions, the law also the possibility for local authorities that set up SERMs opens up to work towards establishing long-term financing over several years through borrowing backed by a basket of dedicated tax revenues, on the model of the financing of the Grand Paris Express. The Société des grands projets (SGP, formerly the Société du grand Paris) could then be mandated to take out the loan(s). Local authorities are thus free to take advantage of this major tool to accelerate their projects and ensure the success of their ambitions.
- The law also provides for the fight against urban sprawl and the promotion of modal shift: "the communes or the competent public establishments for inter-communal cooperation shall promote urban renewal, the optimisation of the use of space and the urban quality of projects in the vicinity of the stations of the metropolitan regional express service, in particular by providing for a minimum density of buildings and for feeder services to these stations".[73] . It therefore seems essential that all of the levers available to local authorities can be mobilised, in order to propose, for example, regulations to guide the urban development generated by these projects around stations and mobility hubs. Finally, the initiative ZAN will also help to limit urban sprawl in less densely populated areas.
- **Reduction for the first 5 and last 5 kilometres:** the law[73] encourages intermodality. As such, SERMs must ensure a high level of interconnection between mass transport modes (trains, express coaches) and feeder modes (public transport, carpooling, cycle paths, walking). In order to obtain SERM status, project developers will have to work with each local AOM to ensure that the MEPs in their area are properly accessible. In particular, the aim is to develop intermodality with cycling and other active modes, as well as with urban public transport and car-sharing. Operational mobility contracts, which are to be signed between the regions and local AOMs at the level of mobility basins, will be tools to be used to the full in this quest for fluid and fully effective intermodality. The law also stipulates that this contract, if not signed at the time SERM status is granted, must be signed within 6 months in the mobility areas included within the SERM perimeter.

[72] *Barometer of everyday mobility, Wimoov - September 2024*
[73] *LAW no. 2023-1269 of 27 December 2023 on metropolitan regional express services: https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000048678343*

- The approach is designed above all to be gradual, to produce the first tangible results in the short term: SERM project sponsors must therefore define a phased increase in the number of services, to enable the first service enhancements to be made quickly, with virtually constant infrastructure, before considering the adaptation or creation of new infrastructure. In this way, the deployment of express road services (SER) - including express coach services - is strongly encouraged&. Rail projects take come to a long time to . As a general rule, fruition**opportunity studies** will be carried out to identify the most efficient mode in terms of expected demand on each route, so that the service developed (rail, express coach, carpooling line) matches demand as closely as possible. In any case, Road Express Services based on express coach or carpooling lines are a fully-fledged component of SERM. Mobility organising authorities can already develop RES on ad hoc road sections, even before considering the creation of reserved lanes (VRTC or VR2+) at the entrance to built-up areas. Depending on the configuration of the area, they may choose to supplement the RES with a a later daterail , or to component at reinforce the onlyroad service .
- The modal shift towards public transport enabled by SERMs will be all the more effective if measures to reduce the use of private cars are put in place at the same time . Article 1 of the law stipulates that: *"Metropolitan regional express service projects shall include, on each of the roads concerned, a possible road traffic reduction trajectory consistent with decarbonisation objectives. (....) When a section of motorway or expressway is affected by a metropolitan regional express service project and comprises at least three lanes, the feasibility and advisability of converting one lane into a lane reserved for carpooling and public transport shall be examined in the light of the road traffic established".forecast*

Coordinate the various players to :

- **Specify the content of the operational mobility contracts provided for by the LOM:** the operational mobility contract is the operational translation of the various actions of the Region in its capacity as lead partner for mobility, at the level of a mobility basin. It may cover some or all of the points in the Region's role, depending on local needs. It brings together the AOMs, the mixed syndicates (SRU), the départements and the managers of passenger stations or multimodal interchange hubs. In particular, provide continuity of public transport services between neighbouring local authorities, which is necessary to ensure ease of use for users. they To date, the Regions have made little use of this tool .[74]
- **Continue the communication initiatives already underway on the culture of data sharing and the digital commons**: awareness-raising initiatives of this type are currently being organised with the Mobility Factory. Within the framework of the SDMP, these actions will be continued to encourage stakeholders to share more of the data needed to enable users to enjoy easy intermodality thanks to a coherent multimodal offer in compliance with data-related regulations (RGPD, Data Act, etc.).
- **Promoting plans school and capitalising travel on feedback from the CEE MOBY programme[75] : the** aim of to facilitate access to alternative and active modes of travel to school, with support for the various stages of the project (this programme, which

[74] *See the observatory of local mobility policies*
[75] *https://www.moby-ecomobilite.fr/programme/*

ended in December 2023, was consultation, diagnosis, action plan, awareness-raising, tools, etc.). All types of journeys were observed: journeys made by pupils, their parents, teachers and school staff, occasional journeys made by pupils during school time and deliveries, so as to include all those involved around the school. The analysis was particularly useful for assessing the potential for modal shift by pupils and their parents towards the school, and the need to implement various actions, whether around school transport or cycling.

Facilitating the use of public transport:

- Local authorities are recommended to **ensure that long-distance coaches benefit from the same traffic management measures as public transport on the main roads of the conurbation**, in order to guarantee their access to bus stations located in centres urban (in particular their access to reserved lanes in certain conurbations). As set out in the should guide, reserved to all public transport vehicles lanes open be (including express and long-distance coaches, company shuttles, etc.), whether or not they operate a regular service. In particular, this will make more long-distance coaches with private cars.competitive
- It is recommended that AOMs and local authorities in charge of traffic lights **allow express coaches to benefit from any traffic light priorities** available to urban buses - the equipment of coaches remaining the responsibility of the express coach organising authority.

Financing the "supply shock" for public transport:

- In accordance with Act no. 2023-1269 of 27 December 2023 on SERMs, a conference on the financing of AOMs will be held to examine the economic model of AOMs, and thus their ability to roll out transport networks, taking into account the other investments they have to make, in particular to meet their obligations to green their bus fleets.

e. Simplifying ticketing to increase the use of public transport

Ticketing is an essential of access to public transport for users, and simplifying it element will make it easier to use and more multimodal.

- **Propose standard contracts to players in the transport ecosystem for the implementation of article 28 of the LOM (multimodal digital services)**[76] : the DGITM has organised consultation work in 2023 on the challenges of a single ticket, and the opportunity to use standard contracts for "multimodal digital services" has been identified.
- **Continuing work on the single transport pass, with trials in 2025 in the first territories**: the single pass solution identified during the work begun in 2023 is being developed for trials in certain territories: tests in the first pilot territories will begin in the summer of 2025. These areas will participate in the development of the various components of the project, as well as in the testing of the mobile application, to ensure that they meet

[76] https://www.legifrance.gouv.fr/jorf/article_jo/JORFARTI000039666770

specific local needs and user requirements, while taking account of regional issues. To achieve this ambition, from 2025 the project will take the form of a trial based on three solutions:

- a dedicated application for acquiring shares ;
- a national interoperability platform to connect ticketing systems and redistribute revenue;
- a post-payment system, whereby users pay only according to their actual usage, without having to wait at ticket offices or kiosks.

Depending on the results, thiscouldbe extended to other areas.

The European Commission has been working since 2021 on an initiative called "MDMS - Multimodal digital mobility services", which aims to develop for a ticket distribution system journeys combining different modes of transport that guarantees fair and equitable conditions of competition between players. With regard to opening up the multimodal and rail ticketing market at European level, in 2025 the European Commission will propose a new legislative package that could contain three proposals:

(i) The 1st would require "essential platforms" for ticket sales to sell the services of a larger number of carriers, treating them in a non-discriminatory manner;

(ii) The 2nd would require the major railway undertakings to open up ticket sales to a greater number of intermediaries and could regulate their relations with these intermediaries.

(iii) The 3rd would aim to improve rail passenger rights to guarantee onward travel in the context of multi-carrier rail journeys.

f. Increasing the use of cycling and walking

As well as being the least carbon-intensive modes of transport, active modes of transport also have health benefits, as they contribute to daily physical activity. They are also accessible in terms of cost, or even free for walking, and can therefore meet the needs of journeys of less than 10 km for cycling and 1 to 2 km for walking. To achieve this, the necessary infrastructure needs to be in place:

Key measures

	Carrier
Pursue the national active mobility strategy and develop cycling infrastructure	State and local authorities

- The succession of plans promote active mobility since 2014 has made it possible to display a national ambition and set targets for the development of cycling, with an interministerial dimension (transport, ecology, health, sport, economy, etc.). These plans have borne fruit, with 60% growth in cycle traffic and km of cycle facilities

between 2017 and 2024. The SDMP is designed to maintain this momentum by **continuing this national strategy over the long termfor cycling and walking** .

- **Developing cycling infrastructure:** a large amount of infrastructure needs to be put in place to enable cycling to develop, particularly cycling-specific infrastructure (cycle paths). The Cycling and Walking Plan sets out the strategy for developing this infrastructure up to 2027. This strategy must be pursued beyond that date to maintain the development momentum and achieve the desired objectives. The targets for the number of kilometres of cycle paths for thehorizons SDMP are as follows: 100,000 km in 2030 (target of the cycling plan), and 150,000 km in 2035.

  A number of measures now in areplace:

  - On user safety and making cycling and walking attractive: the regulations, and in particular the Highway Code, have changed following the Interministerial Committee on Road Safety (CISR) and the plan national to better regulate electric scooters[77] , to improve the safety of cyclists and drivers of motorised personal mobility devices (MPMDs), to step up the fight against theft, to develop the cycle network and to support local authorities.
  - Help for local authorities: guides have local authorities can refer to at been produced thatevery stage in the development of infrastructure for pedestrians and cyclists (planning, design, construction and maintenance).
  - Intermodality: the law (LOM) sets a number of secure parking spaces for bicycles, to be provided at 1,100 stations; these are currently being rolled out.

  Three areas need to be further developed or consolidated:

  - **Develop master plans for cycle facilities (SDAC) so that départements and inter-municipalities have them: this** is a tool that enables local authorities to plan the roll-out of a continuous, safe cycle network. It must meet five major objectives:
    - Safe travel, if possible by separating cyclists from motorised users in heavy traffic.
    - Continuity of the network, even during roadworks, and a network of routes to optimise journeys.
    - Comfort, for example by limiting stops, allowing cyclists to overtake each other, thinking about signposting...
    - Adapting to new uses and flows ;
    - Access to the main destinations (essential public services, intermodal hubs, schools, etc.)

    A guide produced by the CEREMA explains the construction approach to be adopted when setting up a SDAC in a given area[78] . SDACs should be set up more systematically in order to reinforce the territorial nature of national targets for the creation of lanescycle. This measure could be integrated more generally into the deployment of simplified mobility plans (PDMS).
  - **All local authorities should develop planning for accessibility by bike and on foot to educational establishments** (schools, collèges, lycées and higher education establishments) and provide the appropriate infrastructure (cycle facilities, cycle parking). The local authorities responsible for the schools could

[77] https://www.info.gouv.fr/actualite/plan-national-pour-mieux-reguler-les-trottinettes-electriques
[78] https://www.cerema.fr/fr/actualites/editions-schema-directeur-amenagements-cyclables-planifier

take the lead in this planning, in conjunction with the road managers. It is important for young people to become a priority in the development of active mobility, both to anticipate the behaviour of future adults and to reduce the practices of accompanying them by car and combat illnesses linked to a sedentary lifestyle. This measure could be integrated more generally into the deployment of simplified mobility plans.

- **Continue and/or increase financial support** for the installation of cycle infrastructure, cycle parking, planning and awareness-raising initiatives. The Bicycle Plan& Walking , which was renewed in 2023 and is scheduled to run until 2027, sets targets for the number of linear cycle routes in order to achieve the more general objectives of modal shift and decarbonisation
- **Strengthen the technical and methodological support provided to local authorities** in their task of developing cycling facilities, particularly in terms of planning: a well-conducted local approach should make it possible to identify the most effective levers for modal shift, such as serving schools, stations, public services or areasshopping. The aim is to help them build the infrastructure in compliance with design rules, and to ensure that it is properly maintained so that it remains safe and attractive. This assistance could take the following forms:
  - Complete and regularly update documentation relating to cycling infrastructure (a rapidly evolving field), in particular through publicationsCerema ;
  - Deploying training and disseminating knowledge about planning methods to local authorities (for example, through communication about the programmeCEE AVelo), to give them access to engineering skills

- **Developing the use of bicycles on trains and coaches:** in order to ensure multimodality, particularly for leisure and tourist trips, it is essential to This will enable passengers to make journeys of more than 10 km without using a car. Bicycles are an ideal way of getting to and from the train, develop the use of bicycles on trains (TER, regional balance trains and high-speed trains) and coaches (racks at the back of coaches).so it must be to take them on boardmade easier , in addition to secure parking solutions at stations and the development of bicycle hire services. The LOM has defined requirements for new and renovated trains to carry bicycles. This momentum must be maintained. Improvements to passenger information and accessibility for cyclists at stations must be widely pursued.
- **Developing pedestrian access to stations and public transport stops.** In order to improve the attractiveness and safety of access to stops and stations and make public transport more attractive for both departures and arrivals.

g. <u>Develop multimodal interchanges into functional, attractive and safe spaces</u>

Multimodal transport hubs (PEMs) are a multimodal tool that can be used to facilitate the experience of users of different modes of transport. For this to be possible, these hubs need to be attractive, practical and safe, which requires cooperation between the various players involved.

Key measures

	Carrier
To help local authorities draw up and implement plans for the development and renovation of multimodal interchanges, in order to make them attractive, practical and safe.	Local authorities and the State

- **To help local authorities draw up and implement plans for the development and renovation of multimodal interchanges, in order to make them attractive, practical, safe and accessible.** An assessment of measures relating to MCTs that have already been put in place could be carried out to gain a better understanding of their effects, particularly with a view to avoiding negative environmental impacts (including soil artificialisation) if the need is not assured. A working group bringing together the main players involved in these hubs at national level could be set up by the government to begin the process. It would focus on the following subjects:
    - Mapping the development and renovation needs of MEPs ;
    - Attractiveness: by renovating these areas and guaranteeing a level of service adapted to passenger numbers (waiting areas, passenger information, local services);
    - Convenience: by facilitating connections between different modes of transport;
    - Safety: to guarantee passengers a trouble-free journey;
    - Accessibility: thanks to the different modes of transport available at these centres.
- **Clarify the responsibilities of each player at intermodal hubs in management agreements or operating contracts.** These contracts should include details of :
    - The precise responsibilities of each player involved in the cluster
    - Spatial coordination between managers of single hubs such as intermodal hubs and associated and surrounding areas;
    - The methods of cooperation between the various operators at the hub (ticketing, redirecting passengers to other routes in the event of traffic disruption or a crisis, etc.).

  These coordination tools also benefit the various players involved: a simplified and enhanced user experience means increased visitor numbers for all.

h. Developing park-and-ride facilities

Park-and-ride facilities allow people to park in the vicinity immediate of major public transport , enabling them to get to quicklystopstown centres . They encourage motorists to leave their cars on the outskirts of town, thereby limiting road congestion, the occupation of town centres by cars, and urban pollution

Key measures

	Carrier
Support local authorities in developing park-and-ride facilities to enable motorists to use the main public transport lines, and study the most appropriate pricing system.	Local authorities and the State

- **To help local authorities develop park-and-ridefacilities to enable motorists to use the main public transport lines, and to study the most appropriate pricing.** These P+Rs can also support the deployment of car sharing. An assessment of the measures relating to P+R car parks that have already been put in place could be carried out to gain a better understanding of their effects, particularly with a view to avoiding negative environmental impacts (including land artificialisation) if the need is not met. The government could initiate the organisation of a working group to national establish guidelines for the development of park-and-ride facilities, in particular with the parking group of the Association des Ingénieurs Territoriaux de France (AITF), which brings together local authorities and the Fédération Nationale des Métiers du Parking (FNMS). In particular, the this aim of could be to working group draw up guidelines for the organisation of park-and-ride facilities that can accommodate different modes of transport in complete safety and attract car-poolers in particular. It is envisaged that this working group will deal with the following points:
    - Creation of a special tariff for park-and-ride facilities. Pricing could be based on proximity to the city centre: the closer they are to the city centre, the higher the rate. Another type of fare that could be considered is one that reduces with the local public transport season ticket. The important thing is that the parking charge added to the public transport fare remains attractive compared with parking in the city centre. As a reminder, the definition of fares is ultimately the responsibility of the organising authority;
    - Conditions of access to park-and-ride facilities ;
    - Location of park-and-ride facilities: they should be located on main roads upstream of congestion at the entrance to the conurbation.

  The development of these car parks P+R will have to be implemented with the territories, in conjunction with the MEPs (see previous section), and in compliance with the ZAN.

i. Develop new vehicles, intermediate in size between the bicycle and the car

Intermediate vehicles encompass a very wide range of vehicles between the bicycle and the car: speed-pedelecs, cargo bikes, small carts, etc. They could therefore be used in everyday situations where the distances to be covered exceed those covered by the bicycle, making it possible to compete with the car for these everyday journeys. They providealso a less resource-intensive response to both personal and logistical mobility needs.

To this end, a national working group on intermediate vehicles will be set up to assess the current obstacles to the use of intermediate vehicles and define the levers that will enable their use to be developed (including economic and regulatory levers), while preserving road safety. This working group will be led by ADEME, which is already offering support for projects as part of the Extrême Défi programme to help manufacturers develop these solutions. Over a 3-year programme, players will be helped to move from concepts to prototypes and then to the scaling-up of intermediate mobility solutions, particularly for everyday journeys in rural and peri-urban areas.

The working group could also address the issue of the place of the intermediate vehicle on the road (see part b above: *Limiting the role of the private car in mobility*).

Other calls for projects in addition to the Extrême Défi, the funding arrangements for which have yet to be programmed, could also be set up to contribute to the emergence of intermediate vehicles.

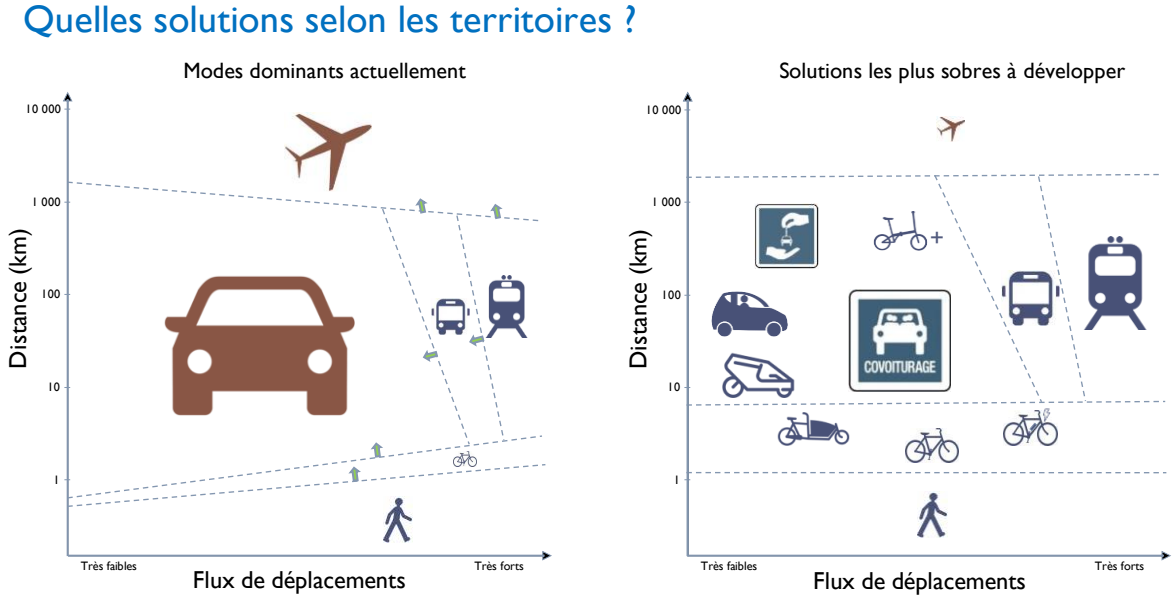


Figure11 : solutions Passenger mobility by distance and flow - Source: Aurélien Bigo, Les pratiques de mobilité des Français. Graphs based on an analysis with SDES using data from the 2019 personal mobility survey (EMP) [79]

j. <u>Informing and supporting individuals and companies to change their transport habits</u>

Mobility options need to be known by individuals and businesses in order to be used, and mobility advice is provided for by law and falls within the remit of the AOMs[80] . At present, this advice is mainly aimed at employers or vulnerable groups, but an AOM could take advantage of this opportunity to develop broader advice. Many groups could be given more support in their choice of mobility. Households that are moving house are a particularly interesting target

[79] *https://chair-energy-prosperity.org/wp-content/uploads/2020/12/Les-pratiques-de-mobilite-des-Francais-Aurelien-Bigo.pptx*

[80] *https://www.ecologie.gouv.fr/lorganisation-mobilite-en-france*

group, both because the choice of their future residence should take full account of access to clean mobility, and because this is a good time to re-examine one's practices.

Furthermore, advertising and information campaigns contribute to the collective imagination and can be powerful means of getting people used to new mobility practices.

Key measures

	Carrier
Carrying out information campaigns on mobility and its impact	ADEME

- **Develop mobility advice, mainly for companies, but also for individuals at certain stages of their lives:**
  - **Strengthen mobility advice for companies within the AOMs** to support them in their transport practices, and in particular to help them draw up employer mobility plans.
  - Involve and train **tourism operators** (tourist offices, hotels, gîtes, etc.) to inform holidaymakers about active and collective mobility offers. Tourism operators are effective relays for guiding and advising holidaymakers and business travellers. Training these players and informing them of the offers available to their customers enables them to use alternative facilities. In particular, tourists arriving by train, coach, plane or boat are good candidates for clean mobility because they don't have a car at the start: the challenge is to give them easy access to clean mobility and to let them know about it, before they have hired a car.
  - **Communicating about mobility options in the new place of residence following a move:** to encourage households to adopt new habits. When people move house, new practices become established. In cases where a service is available, publicising it to people who have just moved in can help them to adopt good mobility practices straight away.
- Working with young people :
  - **Promote a "cycling certificate" to continue education on learning to cycle after what has been done with the "programme Savoir rouler à vélo" at primary school:** the "Savoir rouler à vélo" programme is progressing and could be made compulsory. It is estimated that 67% of secondary school pupils and 80% of secondary school students live less than 20 minutes away from their school by bike. [81]This reinforces the need for further training in cycling for schoolchildren, even after primary school
- Taking action on advertising :
  - **Carrying out information campaigns on mobility**, providing information on the impact of car sharing (environmental impact, total cost, use of resources, etc.) and on possible alternatives, highlighting good mobility practices: the

[81] *According to the BL evolution study*

imagination created around mobility solutions is very important in users. It is therefore necessary to create a new imaginary world in which sustainable modes of transport have a stronger place. ' modal choicesSee the measure on advertising in the transport demand section, 1.i.d.

In addition to these measures, the so-called "" regulationsInfoGES, introduced in 2011 by Order no. 2011-204 of 24 February 2011 on the Transport Code, are designed to raise awareness and make hauliers' customers more responsible for controlling their emissions. It is also intended to harmonise information practices between hauliers and shippers at European level, making the fight against global warming a key factor in the competitiveness of businesses.

Essentially, the law stipulates that transport service providers, whether for passengers, goods or removals, must inform each beneficiary of the quantity of greenhouse gases emitted during the transport service requested. It applies to all carriers, whether French or foreign, operating in France.

The information provided under these regulations can be used to justify the decarbonisation of the transport service in question to the customer.

k. Develop river passenger transport where appropriate

River transport is overwhelmingly used for goods transport, although in large towns with a river running through them, river shuttles or ferries could be appropriate for certain segments. This mode of transport could be considered on a case-by-case basis depending on its relevance, in the same way as other modes of urban transport.

- Take into account the modal shift to river transport in passenger transport in major cities, with electric boats: on given routes or for river crossings (ferries), .an electric river shuttle could be set up

Given the cost of these services, a specific pricing system should be studied, to capture greater revenue from tourists in particular. Feedback should be capitalised on to maximise the chances of success of the new services

iii. rateOccupancy

The rate is occupancy an indicator that represents the number of seats occupied in relation to the total number offered by the means of transport. Increasing the occupancy rate makes it possible to reduce the number of vehicles used for the same journey, by optimising their use. However, a rebound effect is possible because the economic viability of transport is increased by optimising its use. So, for example, lowering the cost of transport road by increasing the rate occupancycould potentially lead to an increase in the number of journeys, which would increase emissions.

In other contexts, such as urban public transport, the revenue/expenditure ratio has deteriorated sharply in recent decades, so the economic impact of their development would be beneficial.

In the transport sectorpassenger, the rate occupancy has been falling steadily since the 1990s, mainly due to the democratisation of private individual means of transport such as the car. To increase the occupancy rate of private cars, carpooling can be facilitated by incentives (financial in particular) and by giving carpoolers more space on the road.

The following levers can be used:

a. Developing car-sharing

Shared mobility reduces the number of vehicles needed for a given number of journeys: car sharing increases the number of people transported.

Key measures

	Carrier
Develop master plans for car-sharing areas in the regions and ensure their implementation	Local authorities

In addition to the measures set out in the carpooling plan currently in place and scheduled to run until 2027, the following levers can be activated to increase carpooling:

- **Develop master plans for carpooling areas in local areas: a methodological guide is being prepared to provide local areas with the tools they need.** The carpooling plan already supports the creation of carpooling routes and carpooling areas, so drawing up master plans would enable the development of carpooling areas to be stepped up, and the territorial target for the number of areas that exists today implemented in a more operational way. A census of carpool stops and areas has been carried out to be at , making it possible to monitor their development. In particular, the master plan for car-sharing areas must include the issue of [82]accessibility to areas by a mode other than the private car (e.g. providing secure cycle parking, or guaranteeing pedestrian access).
  These plans could include a review of the links between car-sharing areas and multimodal interchangesmaster .
- With the aim of improving the quality of life and reducing the environmental impact of everyday journeys, **car-sharing should be encouraged**, with local authorities setting up infrastructure to make it easier to use (rest areas, routes, reserved lanes), as well as initiatives to promote car-sharing and provide financial incentives. In particular, the aim should be to :
  - National coverage by departmental carpooling schemes, increasing the number of carpooling areas (+ 10 to 15 areas per department);
  - The development of car-pooling lines (at least one main line per department), in particular as part of projectsregional express servicemetropolitan ;
  - Supporting and speeding up experiments with dedicated lanes (particularly those planned as part of the Climate and Resilience Act), see next section;
  - Setting up and reinforcing promotional and financial incentive campaigns

[82] https://transport.data.gouv.fr/datasets/base-nationale-des-lieux-de-covoiturage/

Since 2023, been supported these actions have by the Green Fund.

- **Encourage employers to introduce an internal mobility charter combined with an employers' car-sharing charter** (78 signatory companies for 1,210,000 employees concerned as of 25/02/2024[83]).
- **Encourage the development of short-distance car-sharing practices, by evaluating and recalibrating the Certificates (EEC) scheme Energy Saving** and analysing how it complements local car-sharing support campaigns run by local authorities**.**

b. Introduce reserved lanes to facilitate collective mobility

The introduction of dedicated lanes for collective transport (including carpooling) involves dedicating access to certain existing traffic lanes solely to these forms of transport, thus excluding all others.

These dedicated lanes meet a number of objectives: they make public transport and car sharing more competitive by offering them dedicated space that is less subject to congestion, which can increase their use, and they can also reduce the space allocated to car sharing depending on the layout chosen (removal of a lane, for example). These two aspects therefore encourage modal shift.

There are many possible layouts (substitution of an existing lane, use of the hard shoulder, creation of a new lane) as well as numerous variants: lanes reserved for public transport (VRTC), for vehicles carrying at least 2 occupants (VR2+), dynamic or static, etc. A national review of reserved lanes currently underway should provide feedback on thereserved lanes, targeting the types of lanes to be introduced on the relevant sections of the road. projects already in place and provide a better understanding of their effectiveness, their impact on traffic, their cost, etc. This review could then be used to draw up a strategy for developing This assessment could then be used to draw up a strategy for the development of dedicated lanes, targeting the types of lanes to be introduced on the relevant parts of the road network. It should lead to proposals in a report to Parliament in the summer of 2025.

Reserved lanes must be monitored. The government has decided to support local authorities wishing to introduce enforcement, by means of a pilot scheme in which the government provides the technical solution and the police authorities carry out the recording of offences. The regulatory framework (processing of personal data) is in place (decree of 19 April 2024). Extending this pilot scheme beyond 2025 will depend on the results of the national review of dedicated lanes mentioned above.

iv. Energy efficiency

Energy efficiency in transport means using as little energy as possible for a given service (moving a person or a tonne of goods between two points, for example).

Historically, energy efficiency has been achieved by improving vehicle aerodynamics and engine through exogenous (eco-calculators) and endogenous (intrinsic efficiency) technological meansefficiency . A change of powertrain, such as the transition from internal

[83] *https://employeursprocovoiturage.ademe.fr/*

combustion to electric, can also lead to substantial gains in energy efficiency. This is because the energy efficiency of the electric powertrain is better than that of the internal combustion version. Finally, influencing the occupancy rate also reduce the energy used by the people making the journey. Measures to influence the occupancy rate are mentioned in the previous section (section 1.iii.).

However, "rebound effects" can reduce or even cancel out energy efficiency gains. For example, in the case of the car industry, energy efficiency gains have been partly offset by the increased weight of cars, and have therefore not fully reduced energy consumption. Energy efficiency measures must be accompanied by measures sobriety reduce the associated rebound effect as .much as possible

The following levers can be used:

a) Road

a. Reducing the weight of passenger cars

It is particularly effective to reduce the average weight of the road fleet in order to significantly reduce emissions and, more generally, the vehicle's carbon footprint. What's more, reducing the size of vehicles makes it possible to allocate urban space more efficiently to parking.

Key measures

	Carrier
Continue to increase the weight penalty, starting at 1.6t in 2024, and including all OHVs from 2025 (with a 200kg allowance for those with a range > 50km), and electric vehicles from 1July 2026, with a 600kg allowance and an exemption for eco-certified electric vehicles, by defining a multi-year trajectory for change.	Status
Finalise the review of the mileage scale to give less preference to large vehicles	Status
Make aid to manufacturers conditional on environmental criteria such as the carbon footprint .vehicle's or the quantity of raw materials/critics used	Status

- **Continue to increase the weight penalty, starting at 1.6t, according to a multi-year trajectory** in order to give visibility to the players (while taking into account families or certain professional uses). In addition, 100% electric vehicles will be included from 1 July 2026, with an allowance of 600 kg and an exemption for those achieving the minimum environmental score, in order to encourage the lightest vehicles, including among these engines.
- **Finalise the review of the mileage scale to bring it closer to actual usage:** employees and sole traders subject to income tax in the non-commercial profits (BNC) category can assess their expenses during business travel (including home-work travel) and ask the tax authorities to deduct their actual expenses when calculating income tax. The

calculation is based on the number of vehicles and distances travelled. At present, the scale is overestimated in relation to the actual cost of using the vehicle. A review of this scale per kilometre would bring it closer to users' actual costs. It is also possible to remove the higher brackets (in particular the 7 HP bracket and above). These two measures would give less of an advantage to the heaviest vehicles.

Puissance administrative (en CV)	Distance (d) jusqu'à 5 000 km	Distance (d) de 5 001 km à 20 000 km	Distance (d) au-delà de 20 000 km
3 CV et moins	d x 0,529	(d x 0,316) + 1 065	d x 0,370
4 CV	d x 0,606	(d x 0,340) + 1 330	d x 0,407
5 CV	d x 0,636	(d x 0,357) + 1 395	d x 0,427
6 CV	d x 0,665	(d x 0,374) + 1 457	d x 0,447
7 CV et plus	d x 0,697	(d x 0,394) + 1 515	d x 0,470

Figure12 : Kilometric scale applicable to cars for expenses incurred in 2022, published on 7 April 2023 (in €)

It should be noted that the initial finance law for 2024 - article 213[84] stipulates that: "*Before 1 September 2024 [deadline subsequently amended: 1 March 2025], the Government shall submit to Parliament a report on the appropriateness of revising the scale of mileage allowances to take account of the vehicle's greenhouse gas emissions instead of the vehicle's administrative power*".

- **Make aid conditional direct to manufacturers (France 2030, AAP invest, etc.) on environmental criteria such as the carbon footprint vehicle's or the quantity of raw/critical materials used**, in order to encourage a reduction in vehicle weight in line with our international commitments. However, safety must not be compromised by making vehicles lighter. Consideration could be given, to for example, a gradual increase in aid in relation to this criterion.
- **Provide feedback on measures to limit parking spaces for the heaviest private vehicles (SUVs) in urban areas (Paris, Lyon),** in order to assess their relevance for other conurbations. Where appropriate, the government could provide support and tools to local authorities wishing to introduce such measures.
- **Work on advertising that encourages the purchase of heavy cars** (see measure on advertising in section 1.i.d.).
- **Development of intermediate electric vehicles** (see Intermediate vehicles section in 1.ii. Modal shift)

b. Influencing recharging habits

In the interests of efficient use of the electricity network and smoothing demand, users of electric vehicles should be encouraged to recharge their vehicles during off-peak hours.

[84] https://www.legifrance.gouv.fr/loda/article_lc/LEGIARTI000048769351/2024-01-19

- Encourage the development of time-differentiated offers (e.g. tariffs**peak/off-peak**) to develop demand flexibility
- Make it easier to **schedule** off-peak charging
- In addition, the creation of an **educational communication campaign** on charging off-peak using several media channels, such as television and social networks, would be a good way of encouraging discussion on the subject.

b) Rail

See the section on Energy efficiency for freight (2. iv.), as the energy efficiency issues are the same for all trains.

v. Carbon intensity of transport

Carbon intensity is a value defined by the quantity of CO2 emitted per unit of energy consumed. It is used to assess the appropriateness of using an energy source in terms of the associated environmental impact, as well as the transport technologies used. The measures aimed at reducing carbon intensity include, for example, changing traction energy to use less carbon-intensive alternative energies.

The following levers can be used:

a) Road

a. Deploying sufficient recharging infrastructure for electric vehicles

The national rollout of charging infrastructure for electric vehicles (IRVE) is a fundamental building block for the expansion of electric mobility, whether in urban, suburban or rural areas. To support the transition spurred on by the European CAFE regulation[85] , the government has launched a national scheme for the roll-out of IRVEs for both light and heavy vehicles on a national scale. At local level, local authorities are drawing up master plans for the deployment of IRVEs, with a greater emphasis on deployment on public roads.
In addition to the master plan for the deployment of roaming IRVEs, the following measures could be considered:

Key measures

	Carrier
Implement the master plan for the deployment of IRVEs along the national road network	Status
Deploying roaming IRVEs	State / Road managers

[85] *The CAFE (standard, Corporate Average Fuel Economy) which refers to the European regulation on CO2 emissions from new light vehicles, aims to accelerate the transition to clean vehicles by requiring that the average CO2 emissions of fleets be equal to or less than 95 g/km from January 2021, on pain of financial penalties (European Commission, 2021).*

- **Maintain existing incentives for private individuals and condominiums**, and **step up efforts with landlords social and business property owners** to get them more involved in financing pre-equipment for IRVEs.
- **Integrate the specific needs of professionals (taxis, VTCs, road hauliers, etc.), such as the need for rapid recharging during regulatory breaks. If necessary, support could be provided to increase the number of fast-charging stations by targeting usage more effectively.** When installing charging points, the choice of charging power must be adapted to the intended use of the site and the target audience**.**
- **Improve the clarity of tariffs** for terminal operators and mobility operators: tariff structuring and price display are provided for in European AFIR regulations.
- **Define the governance of the IRVE network and the interaction between local and national deployment.**

b. Speeding up the deployment of electric vehicles for private customers

Most of the emissions from the transport sector come from the road vehicle fleet, with 52% of total domestic emissions from private cars[86] in 2022. To support the necessary transition of the fleet to electric vehicles, the social and environmental targeting of support for the greening of vehicles has been strengthened in recent years.

Key measures

	Carrier
Systematise the inclusion in motorway tolls of all new concession contracts of a modulation of tariffs according to engine type for all vehicles.	Status
Accelerate the adoption of electric vehicles by continuing and maintaining the right level of support for the purchase or long-term leasing of an electric vehicle, particularly for low-income households.	Status
Continue to increase the CO2 penalty beyond 2027	Status

- **Systematise the inclusion, in motorway tolls for all new concession contracts, of a modulation of tariffs according to engine type (electric vs thermal) for all vehicles** (this would therefore also apply to freight transport) and study the possibility of extending it to existing contracts.
  As a result of the revision of the Directive Eurovignette in 2022, all concession contracts for which the award procedure has been initiated after 24 March 2022 will have to provide for modulation of the HGV toll according to CO2 emissions. As far as light vehicles are concerned, recent concession contracts already provide for modulation according to engine type (tariffs are lower for electric vehicles). The application of these modulations to existing contracts will require negotiations with the concessionaires.

[86] *Key transport figures - 2024 edition (SDES, 2024)*

- **Accelerate the adoption of electric vehicles by continuing and maintaining the right level of support for the purchase or long-term leasing of an electric vehicle, making electric mobility more accessible, particularly for the most modest households, by supporting vehicles with the best environmental performance, with a multi-year perspective:** this aid can be supplemented by local authorities as part of measures to promote low-carbon mobility, in particular by additional support targeted at households affected by the introduction of ZFE-m (low-emission mobility zones) and by aid for professionals and local authorities. Social leasing, for example, has met with considerable success in its initial deployment phase, thanks in particular to attractive leasing offers for electric vehicles produced in the most environmentally-friendly conditions. Measures will also be put in place to provide greater incentives for companies and transport operators to replace their fleets with zero-emission vehicles
- **Continue to increase the CO2 penalty beyond 2027**: the aim CO2 penalty is to encourage of increasing the consumers to choose vehicles that emit less greenhouse gas per km[87] . In particular, encourage consumers to choose vehicles that emit less CO2 during manufacture and use.the combination of the CO2 penalty and the weight penalty will
- **Supporting the ramp-up of electric vehicle supply:** to meet the growing demand for electric vehicles, it is important to support the development of supply at the same time, by supporting the relocation of assembly lines dedicated to these vehicles. Calls for projects dedicated to research and development (R&D) and productive investment can help meet these challenges. In particular, it is important to develop the supply of small, accessible electric vehicles.
- **Consolidating the battery cell production industry**: France is aiming to consolidate the battery cell production industry with a target output of 100 to 120 GWh/year of battery cells by 2030, enough to equip the equivalent of all the electric and hybrid vehicles produced in France. The National Battery Strategy has supported around forty innovative projects as part of the France 2030 programmes and the Strategic Project Guarantee (GPS), generating €8.2 billion in investment. France is also supporting the ramp-up of the battery industry through the PIIEC, whose French member projects will generate a total of more than €3.5 billion in investment.

c. Decarbonising business fleets

Commercial fleets account for a significant proportion of the French road vehicle fleet. Furthermore, the main purchasers of new vehicles are companies, and they buy proportionally fewer electric vehicles than households. So, in order to decarbonise the second-hand market, decarbonising fleets is the key lever.

Key measures

Carrier

[87] *The CO2 malus is an additional tax that must be paid when first registered a passenger car is in France, based on its CO2 emissions per km. The CO2 penalty threshold has been reduced by 5g/km per year in recent years (WLTP method since 2020), and will be triggered when WLTP emissions exceed 118g/km for 2024. (Légifrance, 2024)*

Reinforcing the environmental nature of accounting depreciation	Status

- **Reinforce the environmental nature of accounting depreciation**. This measure represents a major source of financing and decarbonisation.
- **Increase taxation on company cars and greening quotas for large fleets**: the annual tax on COemissions $_2$ from vehicles used for business purposes is a lever used to encourage companies to opt for cars with lower emissions. a increase in The initial Finance Act for 2024 .provides for gradual this tax over several years
  In , as part of the Finance Act for 2025,addition an annual incentive tax on the acquisition of low-emission light vehicles has been introduced to improve compliance with the greening quotas, provided for since the Mobility Orientation Act (2019), for large public and private fleets when renewing their vehicles annually . Consideration could be given to tightening this legislation, in particular by completely excluding plug-in hybrid vehicles from fleet renewal (non-plug-in vehicles are already excluded), in order to refocus quotas solely on 100% electric vehicles, which have a better environmental record. Finally, the quota trajectory could be raised and extended beyond 2030.
- **Support the acquisition of electric LDVs legal entities (for example, through CEE)**. From 1 January 2025, the purchase of electric LDVs will benefit from an energy saving package increased by a factor of 4 (see standardised operation sheet TRA-EQ-114 "Purchase or lease of a new light vehicle or light commercial vehicle or electric retrofit of a light vehicle or light commercial vehicle, by a local authority or other legal entity").
- **Strengthen employer mobility plans** (see part 1.ii.a.). As well as enabling action to be taken on employees' home-work journeys, they can be a tool for action on professional fleets, in particular to make trade unions more aware of employer mobility plans in order to ensure that they are put in place.
- **Include electric buses in ADEME's calls for projectssmart-charging and vehicle-to-grid** : this will facilitate electromobility, even where there is a long layover time.

Include BioNGV in the mechanism that will replace the incentive tax on the use of renewable energy in transport (TIRUERT): the development of the mechanism from 2026 could enable unsubsidised BioNGV to contribute to achieving an overall GHG reduction target

d. Decarbonising transportpublic

Decarbonising public transport has become a very important priority at local level in order to combat air pollution in urban areas, as well as reducing greenhouse gas emissions.

Supporting demand for electric heavy-duty vehicles:

- **Examine ways of giving a multi-year vision to the envelope financial support for the acquisition of heavy electric vehicles (buses and coaches, under certain conditions).**

Develop the industrial supply of zero-emission buses and coaches produced in France:

This leverage is necessary both to respond to an increase in demand and to manufacturers' obligations under European legislation. Regulation 2024/160 sets a target of 100% urban buses new zero-emission by 2035. To achieve this, calls for projects can be used to support research

and development projects or productive investment projects. Particular attention could be paid to interurban passenger road transport, where decarbonisation is still in its infancy compared with urban passenger road transport.

- **Supporting the adaptation of assembly sites for zero-emission passenger transport vehicles**: France is already home to several assembly sites for heavy internal combustion vehicles**.** The assembly lines at these sites could be converted to accommodate the production of zero-emission vehicles.
- **Supporting the growth of zero-emission heavy-vehicle production sites**: several heavy-vehicle assembly sites are already producing zero-emission vehicles. Expanding these sites could help keep pace with rising demand.
- **Supporting the establishment of new industrial sites dedicated to the production of heavy-duty zero-emission** vehicles: France will also be able to support new manufacturers wishing to set up there to produce zero-emission heavy-duty vehicles.

b) Rail

See Carbon intensity for freight (2. v.), as the issues carbon intensity are the same for all trains.

2. Logistics and freight transport

The broad guidelines for freight transport are set out in the National Logistics Strategy published on 22 December 2022, which builds on the various modal strategies produced in recent years (national rail freight development strategy, national ports strategy, national river strategy currently being drawn up, roadmap for decarbonising freight transport).

To ensure that the various documents are easy to read overall, the main measures in the modal strategies will be recalled and put into perspective, focusing on those directly linked to decarbonisation, and the emphasis will be on cross-cutting measures consistent with the national logistics strategy.

A number of major studies are currently underway (study AUTF-UTPon short- and medium-term modal shift by rail, further study of demand for freight transport piloted by the DGITM), the results of which are expected this summer. This document will be updated in the summer to take them into account.

i. Transport request

As with passengers, greenhouse gas emissions are linked to transport demand (number of journeys and distances covered). demand for transport is a key factor in reducing emissions from this sector.

For freight transport, demand is intrinsically linked industrial production and consumption as ,well as to changes in the economy. In particular, the reindustrialisation and decarbonisation of industry will profoundly change a number of flows, which will have a major impact on freight transport.

Reducing demand for freight transport means acting on two main :levers

- Organisation of industrial production (reducing the number of intermediate movements - for example, live animals are moved an average of 6 times), which is the responsibility of the manufacturers.
- Optimising the location of economic activities and logistics warehouses (which are faced with land issues and the objective of zero net artificialisation), which is the responsibility of manufacturers and planning authorities. The location of these logistics zones has a major impact on travel, modal choice, distances travelled, etc.

Some sobriety measures relating to the organisation of production can be implemented relatively quickly, provided that the model is economic sustainable. However, most of these measures require time to be deployed or to have an impact. The measures identified in this document, which has a time horizon of 2030-2035, are therefore intended to initiate these changes.

The following levers can be used:

a. Networking the region with appropriate logistics zones and optimising their use

Logistics zones are a key element in the organisation of freight transport, because of their place in the logistics chain. There is a lack of data on the number of logistics zones in the country and their impact on flows, and yet they have an impact on both the demand for goods transport (through their impact on distances travelled) and modal shift (through the accessibility of different modes of transport to these zones). An initial improvement in the inventory was made with the publication of the atlas of warehouses over 10,000 m^2 in November 2024[88] . The following measures could be taken to influence the location of logistics zones:

Key measures

	Carrier
Develop land-use planning tools for logistics zones, to improve the territorial network of warehouses and logistics zones	Status

- **Develop land planning tools for logistics zones, to improve the territorial network of warehouses and logistics zones:** to remedy the lack of information on the subject, an update of the atlas of warehouses was carried out with the SDES and the AFILOG and published in November 2024, with the aim of updating it annually (see measure on regional logistics observatories in part 3.i.). An initial inventory of land requirements was carried out in 2023 for the reindustrialisation of[89] and made it possible to cover the logistics requirements for industry. In addition, a master plan was launched in 2023 for the axis Mediterranean-Rhône-Saône logistics to identify the needs related to industry,

[88] *https://www.statistiques.developpement-durable.gouv.fr/les-entrepots-et-plateformes-logistiques-de-10-000-m2-ou-plus-89-millions-de-m2-de-surface-de*
[89] *Mouchel-Blaisot report*

energy and logistics and the associated land requirements. As an extension of these initiatives, a is to be drawn up logistics real estate and land coherence plan, with three main aims: (i) to strengthen the state of the art, (ii) to intensify the use of existing facilities and (iii) to accelerate the development of new practices.

- **Setting up urban logistics halls (UHLs):** the issue of networking UHLs for urban logistics is primarily a matter for local authorities. ULAs enable different logistics players to share a single site, thereby pooling the flow of goods entering the conurbation and optimising their distribution within the city (using less polluting modes of transport). The LUD+ programme (EEC programme on sustainable urban logistics) provides support to help locate and finalise the opportunity study (economic feasibility study to ensure the viability of an investment or project). A methodological framework could be developed in conjunction with these two programmes, in particular to explore the subject of functions in greater depthrail-road and/or river-road , and to ensure that all are involved in stakeholders the design of a HLU.

b. Optimising and reducing freight transport journeys

Sectors can work to optimise the routes required for their logistics. Several actions can be implemented to this end:

- **Controlling the risk that aggregate extraction and processing sites will move further away from each other, thereby increasing average transport distances:** urban pressure is likely to lead to a relocation of building materials processing sites, given that recycling is set to grow significantly in the coming years. Logistics therefore need to be taken into account in regional quarry plans. To this end, it is planned to introduce measures to keep sites close to areas of consumption and limit the average distances of flows, and failing that, to create the conditions for directing flows onto bulk modes.
  An initial analysis has been undertaken with the DREALs to assess the feasibility of such a measure and to calibrate its potential impact on demand (overall reduction target of 16 bn t.km by 2050).
- **Examine possible ways of reducing the number of goods movements by modifying production processes**: an initial exploratory approach is envisaged with the meat industry (live animals are moved an average of 6 times in their lives, often over great distances), and with the automotive industry to characterise the impact of developing the production of electric vehicles.

In addition, hauliers generally optimise the journeys they make as much as possible, as they see this as economic optimisation (the more a journey is optimised, the less energy is consumed and the less journey time is spent by the driver). However, in certain segments, optimisation could be stepped up.

- **Drawing up a guide to best practice to make short distribution channels ecologically and economically relevant** (action provided for in the national food strategy - by the Ministry of Agriculture and Food Sovereignty).
- **Simplify and standardise regulations (traffic and parking) to optimise freight transport routes, where relevant:** work is underway as part of the work of the state start-up

DIALOG[90] , following successful experimentation during the Olympic Games 2024 and as part of the CEE LUD+ programme. In particular, work is underway on an extension to delivery areas and to all traffic regulations, both temporary and permanent. Other work is also underway with the GART to study changes to the regulations governing delivery areas.

- **Experiment with new logistics models:** in order to bring about lasting changes in logistics and reduce greenhouse gas emissions, new models need to be created. To begin with, this will necessarily involve experimentation (e.g. limited delivery times), the feedback from which will then need to be studied in order to assess the suitability of these new models for widespread use.

In the same way as for passengers, the so-called "" regulationInfoGES, introduced in 2011 by Order no. 2011-204 of 24 February 2011 on the Transport Code, aims to raise awareness and make hauliers' customers more responsible for controlling their emissions. It is also intended to harmonise information practices between hauliers and shippers at European level, making the fight against global warming a key factor in the competitiveness of businesses.

Essentially, the law stipulates that transport service providers, whether for passengers, goods or removals, must inform each beneficiary of the quantity of greenhouse gases emitted during the transport service requested. It applies to all carriers, whether French or foreign, operating in France.

The information provided under these regulations can be used to justify the decarbonisation of the transport service in question to the customer.

c. Getting stakeholders more involved in ecological planning

In addition to the involvement of transport operators in the issues and decision-making related to ecological planning, it is important to involve the other players to a greater extent. **Increasing the presence of shippers and local authorities in public decision-making on ecological planning logistics** would strengthen their involvement and participation in decarbonising transport. In particular, the role of the AOMs as orchestrators of logistics within a region deserves to be explored in greater depth.

d. Make the challenges and benefits of logistics flows visible

Logistics flows are often invisible to the general public and to local elected representatives. Yet they have a particularly important role to play in the organisation of logistics. They need to be informed about the challenges of logistics and the benefits it can bring a region.

- **Raising awareness among elected representatives and local authority technical departments of the benefits of urban logistics zones:** this is one of the aims of the LUD+ programme main (an EEC programme designed to support public and private players in the move towards sustainable urban logistics, by initiating and speeding up the practical implementation of operational actions arising from the LUD charter, by

[90] *DIALOG is a database-type tool designed to identify and integrate local traffic and parking regulations, with a view to optimising route planning.*

training and raising awareness, by supporting experiments, etc.), which is also designed to raise awareness among local authorities of the impacts and challenges of urban logistics. Visual educational tools are being also developed to help people understand how the system works and the impact of decisions taken. One of the challenges is to make flows and their impact visible, in order to facilitate the acceptance of logistics zones in conurbations and to enlighten consumers' choices by putting the transport required for any purchase back into their imaginations.

- **Strengthen the place of logistics in local and regional urban planning tools** : the Mobility Organising Authorities (AOM) responsible for drawing up Mobility Plans (PDM) are generally less equipped to deal with freight transport than with the "passenger" dimension. Similarly, Local Urban Plans (PLU), which must be compatible with Urban Mobility Plans (PDU) and PDMs, are often neglected when it comes to planning the logistics organisation of conurbations. Urban travel plans and local development plans can be used to study multimodal transport possibilities, complementarity with passenger transport, and the integration of logistics into the urban fabric. This would also make it possible to anticipate land, property and transport requirements ahead of urban development.
  In this context, work could be undertaken to develop modelling and/or simulation tools to help elected representatives understand the potential impact of their choices on logistics issues (see part 3.i.).

ii. Modal shift

The aim is to increase the use of bulk modes such as rail and river transport, as well as particularly energy-efficient modes such as cyclo-logistics. The issues of access to infrastructure, multimodal links, cost and coordination between players need to be addressed to ensure a modal shift.

There is a risk of increasing the number of journeys by adding to the number of journeys made by road if incentives to move away from road use are not put in place at the same time. Therefore, for logistics and freight transport, it is also essential to combine the development and facilitation of alternative modes with measures to act on the demand for road transport (see part 2. i.).

A study by the Association professionnelle des chargeurs (AUTF) in partnership with the Union des Transports Publics (UTP) was carried out in 2024 to assess the need for rail transport in the industrial and agricultural sectors . [91]

[91] *Action 5 of the National Strategy for the Development of Rail Freight (SNDFF)*

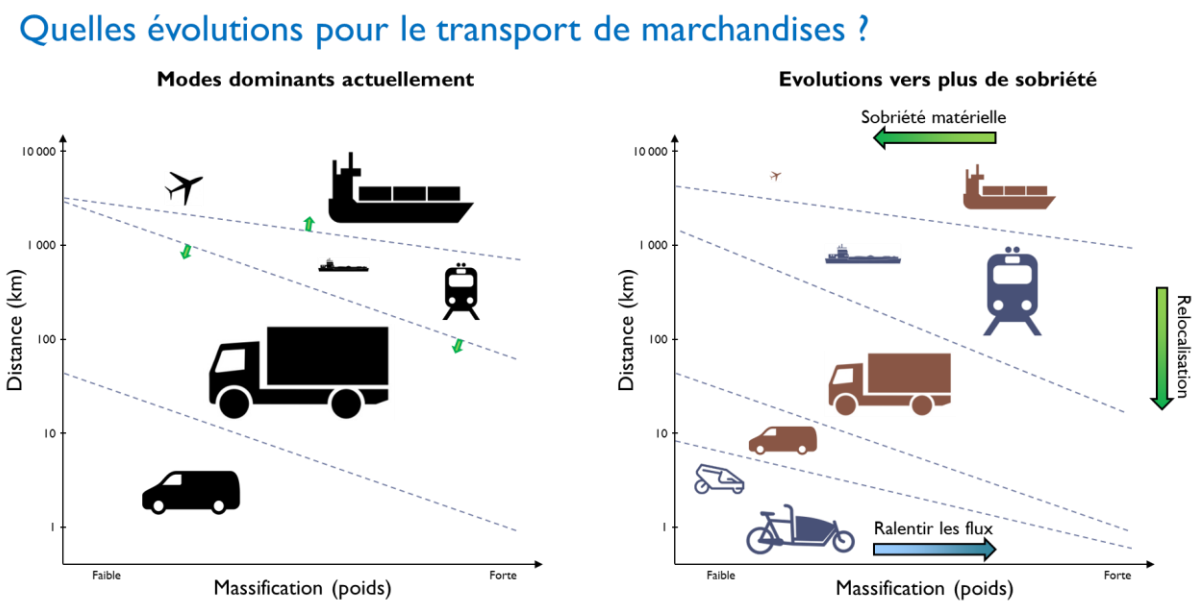


Figure13 : Freight transport solutions by distance and weight - Source: Aurélien Bigo, Les pratiques de mobilité des Français. Graphs based on an analysis with SDES using data from the 2019 personal mobility survey (EMP).[92]

The following levers can be used:

a. Developing multimodal freight transport

Combining several modes of transport makes it possible to decarbonise freight transport over long distances, while retaining the flexibility of road transport for the last few kilometres. However, it does entail a higher cost, particularly because of breaks in loads and transhipments between the different modes. That's why effective coordination between freight operators is vital to boost multimodality

For example, can be combined as followsthe different modes of transport :

- Maritime transport allows us to reach the borders of France,
- The river, which can be combined with sea, rail or road transport, allowing access to the heart of major cities,
- Rail, with its high mass and low GHG emissions, can be used for long-distance journeys in particular, and can be combined with seatransport,, river and road
- Roads provide the flexibility needed to transport goods to places that other modes of transport cannot reach,
- The cycle is ideal for short journeys in the city centre, particularly for the last few kilometres of deliveries.

A number of practical measures are planned to develop multimodality:

- **Develop combined transport, in particular via intermodal sitesrail-road and river-road freight .** Combined transport is a transport system that combines road transport with other modes such as inland waterway, rail or short sea shipping. Published on 24

[92] *http://www.chair-energy-prosperity.org/publications/travail-de-these-decarboner-transports-dici-2050/*

October 2024, the combined transport master plan[93] was planned as part of the National Strategy for the Development of Rail Freight (SNDFF, measure 46), which set a target of tripling rail-road combined transport through the stated objective of doubling rail freight[94] . Within this framework, the areas where it would be appropriate to develop and/or build intermodal sites have been identified. The action includes national projections, as well as regional studies, particularly in the Ile de France, PACA and Hauts de France regions.

- **Developing intermodality between bulk modes.** At present, there is very little transhipment of bulk to transport another type of bulk transport (rail-river) due to the lack of economic competitiveness of these solutions. multimodalityMost intermodality is between a massified mode and the road. However, rail and river are both relevant solutions for decarbonising freight and provide access to different locations, develop solutions that combine themso it is necessary to , for example:
    - Develop intermodal sites rail-river to facilitate transhipment between bulk modes and reduce stops due to load breaks.
    - Put in place integrated and complementary offers between mass modes: in addition to intermodal sites, offers including this must intermodality be proposed to shippers.
- Also, **encourage ports to establish strategies for developing mass transport** (river and rail) in their hinterland.
- **Carry out a full assessment of public support for freight** (road, river, rail)**:** freight transport companies already receive a number of operating subsidies from the State to support their business model. An in-depth study of all freight subsidies (all modes) would enable a full assessment of the various schemes and, if necessary, their recalibration with a view to encouraging a modal shift towards rail and inland waterway transport.

b. Developing rail freight to increase its use

As with passenger transport, rail freightis one of the lowest emitting greenhouse gas modes of transport. It also has the advantage of being highly concentrated, which makes it all the more attractive. The National Strategy for the Development of Rail Freight, which constitutes the reference framework for action on these issues, includes 72 concrete, structured, coherent and inseparable measures. are particularly noteworthy in this contextThe following measures

Key measures

	Carrier
Stepping up investment in the regeneration and modernisation of the national rail network	Status

[93] https://www.ecologie.gouv.fr/sites/default/files/documents/241024_Schema_directeur_TC_H32_vpublie.pdf
[94] https://www.ecologie.gouv.fr/sites/default/files/210909_Strategie_developpement_fret_ferroviaire.pdf

- **Increase investment in network regeneration and modernisation (catenaries, switches, engineering structures and track, deployment of centralised network control (CCR) and the European Rail Traffic Management System (ERTMS))** (SNDFF measures 65 and 67**):**
    - Modernisation: the deployment of centralised control of the network (CCR) will bring together the control of the 1,500 signal boxes and the regulation of traffic in around twenty centres in the long term, and will in particular enable the automation of traffic management and better management of disrupted situations. The deployment of the European Rail Traffic Management System, known as ERTMS, aims to harmonise rail signalling in Europe to make it even easier for trains to interoperate between rail networks and to develop traffic flows.
    - Regeneration: track, catenaries, switches, engineering structures and track...

  Funding is needed to set up these systems: an amendment to SNCF 's performance contractRéseau, currently being negotiated, should provide for investment additional of €500 million per year for modernisation and €1 billion per year for regeneration, with a trajectory of gradually increasing investment to achieve this ambition by 2028.
- **Ensure that the traffic needs of both freight and passenger trains are met, by mobilising the services and infrastructure platforms** (SNDFF measures 9, 10 and 58)**:** study the levers for improving the quality of rail freight service, particularly those in the hands of the infrastructure manager. The digitisation of processes and the simplification of path reservation procedures, which are sometimes incompatible with the periods dedicated to work on the network, could be improved. The rules for prioritising freight train paths in relation to passenger train paths could also be studied (implementation of the new provisions TEN-Tin this respect). The "services and infrastructure" platforms (PSI) contribute to this objective. The national territory has been divided into eight working areas, based on axes, in order to gather the needs of railway undertakings and works in each area and produce quality freight and passenger path schedules for the next service timetables. SNCF Réseau In this context, is working to improve coordination of capacity requirements for the various uses of the network, in close collaboration with the steering committee for the national rail freight development strategy (SNDFF), whose objective, as set out in law, is to double the modal share of rail freight by 2030. Several measures in the SNDFF contribute to achieving this objective (measures 9, 10 and 58).

In particular, as part of this system, a National Freight Platform (PNF) was set up in September 2023 under the guidance of the DGITM, as provided for in the s letter Minister'to SNCF Réseau dated 23 August 2023. In particular, it is intended to deal with regular long-distance freight flows that go beyond the scope of the various territorial platforms. The PNF study framework and the methods of interaction with the regional service and infrastructure platforms have been defined and validated. This work is being coordinated with the master plan exercises (combined transport and rail motorways) currently being carried out on the State side under the SNDFF. The aim is to structure long-haul demand and coordinate the best way for the ISPs to take it into account in terms of reserving capacity and the necessary capacity investments to be defined at regional level. All of this coordination and optimisation work should also make it possible to identify the investments needed to increase the capacity offered at the most relevant locations

In order to guarantee traffic needs, it is also important to **study the potential impact of improving the performance of freight wagons, particularly in terms of braking.** This could bring their performance closer to that of passenger trains, making it easier to fit them into passenger trains.

- **Investigate the potential of local rail freight services by setting up a working group to identify pilot projects** (SNDFF measure 35)**:** this type of service already exists in certain markets, such as waste, and the subject is addressed in the strategynational rail freight development . Measure 35 of the SNDFF provides for the identification of projects pilot for local rail services to conurbations. A market study needs to be carried out to for each sector determine the potential, which is to remain likely low, and the conditions for success.
- **Identify projectsinnovation** (measure 30 of the SNDFF), for example new wagons likely to access new markets and broaden the scope of rail transport.
- **Encourage and incentivise shippers to develop bulk transport (river and rail), as** shippers are often the ones who set the conditions for transport. In particular, study how to increase support combined transport under the Energy Saving Certificates scheme.

c. Developing river to increase its usefreight

In the same way as the railways, inland waterways are a mass transport mode, which helps to limit emissions greenhouse gas per tonne of goods transported.

A number of measures have already been taken to develop river transport:

- The opening of the Seine-Nord Europe canal will reinforce this by linking Compiègne, in the Oise department, to Aubencheul-au-Bac, in the Nord department, by 2030. It will thus connect the Seine basin to the 20,000 km of European waterways .wide-gauge [95]
- In addition, the Contract of Objectives and Performance (COP) 2023-2032 signed in December 2023 between the French government and Voies navigables de France (VNF) includes a number of measures designed to develop river transport, in particular an

[95] *An update of the socio-economic studies in 2021 indicates a forecast capacity of 19 Mt on the CSNE in 2035 and 38 Mt in 2070.*

objective to guarantee quality of service on inter-basin freight (small-gauge network): this measure should help to develop the roaming of these small-gauge fleets.

- The resources allocated by the State to VNF for the regeneration and modernisation of the network, in order to make more reliablethe operation of inland waterways , have been significantly .increased as part of the COP 2023-2032
- The subject of urban river logistics is examined in the National River Strategy, but at this stage from the point of view of innovation, as the issues and capacities need to be examined in greater depth.

A number of other measures will be put in place inland waterway to continue the development of freight transport:

- **Strengthen coordination between ports and VNF or other river infrastructure managers to improve river services,** for example through progress contracts:
    - On 13 December 2023, the Grand Port Maritime de Dunkerque and VNF signed a "2023-2026 progress contract" for the development of waterway transport from Dunkerque.
    - For the other two major seaports linked to activitiesriver, other forms of cooperation exist today: the major seaport Marseille-Fos (GPM) and VNF have launched a study to optimise container barges in the GPM's western basins and are coordinating their work through the inter-port and logistics coordination council for the Mediterranean Rhône Saône corridor, in particular through the corridor's master plan. Finally, in November 2021, VNF and HAROPA signed a partnership agreement to promote innovation and the development of river transport on the Seine. This cooperation between the two institutions includes, for example, the setting up of a system of interactive terminals for the supply of water and electricity to river freight carriers. These electricity terminals mean that boats docked at the quayside do not need to use their generator to run on-board equipment.

  Developing other progress such as the one that currently exists with the Port of Dunkirk would enable us to think more deeply about the dynamics of the river.contracts
- **Carry out a study of the potential for river transport of goods and materials for construction projects and companies along the waterway, in relevant cases:** VNF is already implementing the Plan d'aide au report modal (PARM) 2023-2027[96] , which provides support for companies wishing to integrate waterway transport into their logistics chains. The first stage consists of a study into the use of river transport. A study of this type could be carried out in all companies with significant activities located alongside waterways, in conjunction with river or port infrastructure managers. This study should be an extension of the AUTF-UTP study mentioned above on railways, in particular by capitalising on the basic foundation and the list of players to be involved within the sectors, in order to guarantee the consistency of the two approaches and facilitate the involvement of the sectors.
- **Develop the creation of floating pontoons and quays for boats, and guarantee good accessibility for freight or passengers:** there are sites, particularly on the Seine in the Ile-de-France region and in Paris, where the public river domain is saturated. It is

[96] https://www.vnf.fr/vnf/accueil/logistique-fluviale/adopter-le-transport-fluvial/aides-et-financements-adopter/aide-parm/

therefore necessary to create and insert quays and pontoons, but the question of conflicts of use must be studied carefully, particularly with regard to recreational uses. As river freight transport has the advantage of benefiting from infrastructure in the heart of the city, it must be able to continue to operate. Another element that encourages the development of traffic is berths waiting at locks for boats, which are needed mainly on the Rhine and the Seine. This measure appears in the national river strategy and in several State-Region planning contracts (CPER).

- **Evaluate the potential benefits of autonomous (driverless) navigation solutions electric and then deploy them in relevant cases:** These solutions make it possible to optimise the trajectories taken by the boats, which brings gains in terms of traffic management, and to increase the load carried by the barges, as the equipment used to carry people can be removed. However, these solutions are still in their infancy and require more research and studies in order to estimate the potential impact they could have, in terms of resources and increased patronage (rebound effect of this type of solution) in particular.

d. Increasing the use of cyclo-logistics for last-mile journeys

Urban logistics is predominantly road-based, but for the last few kilometres and for certain types of goods, cyclo-logistics is entirely appropriate. So there's a case for strengthening it.

- **Develop cycle infrastructure in towns and logistics zones near the heart of conurbations to enable transhipment:** for logistics zones, the subject is addressed in the transport demand section (cf. measure on the territorial network of warehouses and logistics zones, part 2.i.a.); for cycle infrastructure, it is identical to passenger infrastructure (cf. measure on cycle infrastructure, part 1.ii.f.).
- **Limit the routes of HGVs and light commercial vehicles (LCVs) in towns and cities to certain routes (to massify traffic) or certain times of day, and use cyclo-logistics for the last few kilometres where appropriate, in metropolitan areas**, after an impact study to assess the relevance of such routes for the different flows and vehicle engines: this measure could apply only to flows for which it seems appropriate.

iii. Loading rate

The load factor is also used in the logistics sector, to indicate the percentage or tonnage used out of the total useful capacity of the vehicle, also known as the load rate in this case. Increasing the load factor makes it possible to reduce the number of vehicles on the road for the same journey, by optimising their use

Within the freight transport sector, should a distinction be made between two types of transport which do not entail the same constraints and therefore have different load factors:

- Transport for hire or reward: the vehicle used to transport the goods does not belong to the issuing company.

- Own-account transport[97] : any other type of transport not included in the definition of transport for hire or reward.

The load factor for hire or reward is higher than that for own account, because the search for load optimisation is an economic priority for the haulier. Many factors influence the load factor for goods transport: the nature of the goods transported, the organisation of services (rounds vs. direct service), orders from principals, delivery times, route organisation, etc.

The following levers can be used:

a. Consolidating freight transport

Massification means filling up the vehicles used for transport. This applies mainly to road transport, as rail and river transport are already used for massified flows (for logistical and economic reasons).

The filling of vehicles is already relatively optimised, for economic reasons, within the limits of the conditions imposed on hauliers by shippers or principals. However, this optimisation can still be developed in certain sectors, and the constraints imposed by principals could in some cases be relaxed to allow vehicles to be filled more fully.

In order to achieve greater massification, it is possible to act through incentives or technical developments:

- **Supporting and equipping industries to reduce the frequency of delivery that they require from logistics companies:** the main leverage lies in easing flows and reducing delivery frequencies. An exploratory study is currently underway into flows between the agri-food industry and supermarkets, highlighting contrasting practices. The study of demand, which is also in progress, should also help to identify potential gains that vary from one sector to another, to take account of the constraints specific to each sector. For the time being, two the initial results identify scenarios for each category of goods: a "scenario proactive" corresponding to the objective of decarbonisation by 2050, and a scenario "business-as-usual" corresponding to a continuation of current trends, which will provide each sector with benchmarks.
- **Promoting best practice among shippers who use bulk solutions:** as shippers are the ones who set the conditions for transport, it is important to work with them to ease these conditions and enable vehicles to be filled more fully. Communication campaigns as part of the Fret 21 initiative could be deployed to this end.
  The work on the roadmap decarbonisation of heavy vehicles (art. 301 of the Climate and Resilience Act) has identified several measures to optimise vehicle loading:
  - The adaptation by shippers of their stock management methods to facilitate the optimisation of loads by hauliers. In particular, this involves reducing "just-in-time" logistics, which means that hauliers have to bear the burden of stock management;
  - Pooling transport between several principals;
  - Acceptance of counter-flows by principals, which would reduce the rate of empty returns;
  - The use of software to improve the load factor to reduce fuel consumption.

[97] *The rate of own-account loading is difficult to assess because the variety of uses makes it difficult to calculate.*

- **Monitor the implementation of the tax mechanism for the use of the road network by heavy goods vehicles in Alsace or the rest of the Grand Est region**[98] **and provide feedback where appropriate:** some local authorities already have the option of introducing under certain conditions this type of mechanism (see the Climate and Resilience Act). The aim of these measures is to limit traffic, thereby encouraging vehicles to be filled to maximum capacity. In Alsace, the primary objective is to prevent the transfer of lorries from Germany to Alsace.

b. Pooling freight transport between companies to increase load factors

Pooling between shippers enables the same vehicles to be used on similar routes, filling them with goods from two or more principals. It is therefore necessary to rely on knowledge of demand to identify compatible needs between players and develop the interoperability of tools. A study of demand for freight transport currently underway at the DGITM will help to identify concrete measures to be implemented in this area.

c. Work on packaging to limit the volume to be transported

Packaging plays a major role in the volumes transported, so the challenges of transport and logistics need to be considered upstream of transport, right from the design stage:

- **Link eco-design and packaging to transport, to limit the volume to be transported**, by :
  - Training product and packaging design teams to minimise packaging;
  - By training and supporting companies' logistics and circular economy teams to work on increasing the compactness per vehicle.
- **Launch a study by sector on the potential use of standardised containers, for all modes, in order to assess the benefits of such objects**, as well as the cost and advisability of introducing them. It to would be particularly useful and identify the sectors with the greatest potential then work with them on the study.

iv. Energy efficiency

For freight transport, the energy efficiency challenges are the same as for passenger transport, being linked to the vehicles rather than to what is transported.

The following levers can be used:

a) Road

Some of the measures applied to travellers will also apply, such as the environmental conditions applied to subsidies for manufacturers, and raising awareness of recharging times.

a. Developing eco-driving

Eco-driving is responsible, economical motoring that aims to reduce fuel consumption and pollutant emissions. It is characterised by flexible, anticipatory driving and moderate speed. It

[98] https://www.alsace.eu/actualites/une-taxe-poids-lourds-a-l-horizon-2025/

is already well developed in the road haulage industry, given the high cost of fuel. It is a concern for employers and is included in training content.

In order to generalise this behaviour, it is possible to use a number of levers such as :

- A **voluntary charter for road companies**haulage: the Voluntary Commitments for the Environment - Transport & Logistics (EVE) programme has helped all companies to reduce the energy and environmental impact of their transport activities, in particular by introducing an eco-driving programme.
- **Communication campaigns** on co-benefits.

b) Rail

There are a number of levers that can be used to increase energy efficiency in trains:

- Characterise **the potential impact of optimal speed practices** on the energy consumption of freight trains: these techniques, which can already be used in theory ("green speed" concept), are not widely used today.
- **The provision of information by the network operator on the optimum speed of traffic by means of a specific application** (measures 15 & 17 of the SNDFF) would make it possible to improve traffic flow by avoiding stops by freight trains, which are highly detrimental in terms of capacity and energy.

c) Port

A wide range of energy efficiency measures can be taken to optimise energy consumption in ports of call (optimising navigation phases, etc.), service vessels (engine , etc.) and efficiencyterminals (handling equipment, etc.). A study of the contribution of ports to the decarbonisation of the national economy, currently underway at the DGITM, will identify the concrete measures to be implemented in this area, and assess the associated emissions gains.

v. Carbon intensity of transport

For freight transport, the carbon intensity issues are the same as for passengers, being linked to the vehicles rather than to what is transported.

The following levers can be used:

a) Road

a. Decarbonising road haulage vehicles

Emissions associated with road freight represent 25%[99] of the total emitted by the transport sector, making it a major source of decarbonisation. Various decarbonisation levers exist to cover the different casesuse : electrification will be the main lever to deploy, biofuels and bioNGV, limited by resources, could be used in a complementary way, for uses that are still difficult to electrify today, and finally hydrogen will only play a possible role in the longer term, for very specific uses that cannot be electrified.

[99] *Key transport figures (SDES, 2024)*

Some of the measures mentioned for passengers would also have an impact on transportfreight: the inclusion of bio-NGV in the TIRUERT, and aid for businesses affected by the EPZs. Additional measures specific to freight transport need to be put in place:

Key measures

	Carrier
Set up a scheme to encourage principals to contribute to the greening of HGV fleets	Status
Analyse the levers that can be used to give a multi-year vision to the financial support envelope for the acquisition of heavy electric vehicles.	Status

- **Systematise the inclusion, in motorway tolls for all new concession contracts, of a modulation of tariffs according to engine type (electric vs thermal) for all vehicles** (see passenger transport section 1.v.) and study the possibility of extending this to existing contracts.
- **Put in place a system to enable customers to contribute to the greening of HGV fleets**: the decarbonisation of road freight transport must involve all the players in the market, both customers and hauliers. The involvement of principals, who are responsible for choosing the partner haulier and the mode of transport, has been identified as one of the key levers to be activated. is underway Work to identify ways in which shippers can contribute to the greening of fleetshauliers'.
- **Giving a multi-year vision to the financial support package for the acquisition of electric heavy goods vehicles**: an order dated 1st January 2025 opens up the benefit of energy saving lump sums for the acquisition or retrofit of electric heavy goods vehicles via an improved standardised operation sheet. The introduction of a specific support scheme for the electrification of the fleets of road transport is to be micro-businesses studied and is currently the subject of work.
- **Support the development of an industrial offering of HGVs zero-emission produced in France**: several assembly sites for internal combustion and electric trucks exist in France. It seems essential to support the conversion of combustion engine assembly lines to electric engines, and to encourage an increase in the production capacity of sites that already assemble electric vehicles. Finally, it may also be appropriate to attract new manufacturers and new industrial sites.
- **Reinforcing the environmental nature of the allowance depreciationfor heavy vehicles**: the framework for the depreciation allowance was first reformed in the Finance Act for 2025 to make it easier to use for zero-emission engines. Now, for these engineszero-emission, aid under this scheme is governed by the framework State aid of the General Block Exemption Regulation and is no longer subject to the de minimis aid ceiling. These provisions could again be revised to reinforce the comparative advantage of zero-emission engines.

- **Support electric retrofitting, particularly for heavy goods vehicles**: although retrofitting electric remains limited at this stage, its environmental relevance has been provenfor heavy vehicles , and it is all the more attractive in economic terms when the engine represents a smaller fraction of the vehicle's value / when it is used on equipment with a long service life (> 20 years).
- **Establish private/public partnerships to finance access to electromobility for logistics companies**: discussions should be initiated with banks and shippers to assess what role they could play in the electrification of fleets, particularly for small companies. In particular, the role of shippers as contract needs to be explored in greater depth, for example in obtaining loans adapted to usage, they can facilitators secure contracts with hauliers with whom they work on a regular basis.
- **Continue experiments on dynamic charging for heavy goods vehicles (DRVs) to establish feedback and assess the viability of such systems (operation, maintenance, etc.)**: there are several major advantages to be gained from this technology, which could complement the deployment of IRVEs on the national road network when the time comes:
    - Limiting the carbon footprint of each vehicle on the network (but increasing that of the infrastructure)
    - Increase the overall energy efficiency of the system
    - Reducing our dependence on imported batteries and therefore our consumption of critical materials.
    - Elimination of recharge times.
- In the same way as for light vehicles, **consolidate the industrial production of battery cells** (see part 1.v.b).

b. Deploying sufficient recharging infrastructure for heavy electric vehicles

The development of heavy-duty electric vehicles is currently conditional on the parallel deployment of charging infrastructure (IRVE) at depots, destinations and roaming sites. In the case of roaming, work on interoperability and theterritorial coverage of IRVEs must include HGV charging points. The national IRVE development plan (see section 1.v.1) on the deployment of passenger charging stations) will also cover heavy goods vehicles. The physical and financial feasibility of deploying charging points at depots is an essential prerequisite for the acquisition of electric heavy goods vehicles. In autumn 2023, a dedicated working group will be set up with the stakeholders to deal with the technical and financial aspects of this issue. From a technical point of view, the work will be based on a dedicated model currently being developed by ENEDIS to assess and identify network reinforcement needs on a regional basis and to help with the programming of the corresponding reinforcement work. present ENEDIS plans to the results of this study to the stakeholders during 2025.

Specifically for freight transport:

Key measures

Carrier

Ensuring the sustainability of a support scheme for the deployment of IRVEs at depots, destinations and roaming sites	State and electricity distribution network operators

- **Implement the master plan for the deployment of IRVEs along the national road network**: in the same way as for private vehicles, electric heavy goods vehicles require roaming charging points.
- **Ensuring the continuity of a support scheme for the deployment of IRVEs in depots for as long as it proves necessary**: this is a condition currently necessary for the deployment of IRVEs on the network, in particular to reassure the road haulage industry about the possibility of roaming charging and thus initiate the transition of their fleets.
- **Introduce a public contribution to the CAPEX of energy transmission**.

Additional work could be carried out to encourage the deployment of IRVEs for and facilitate heavy goods vehicles, for example by changing the framework applicable to the deployment of IRVEs near ICPE warehouses, or by identifying land reserves dedicated to IRVEs.

b) Rail

a. Decarbonising rail transport

The rail set to sector is grow as modal share of theboth passenger and freight transport increases. Decarbonising rail transport is therefore a major challenge if the associated emissions are not to increase structurally. In addition to the guidelines and measures included in the Stratégie Nationale de Développement du Fret Ferroviaire (SNDFF), the SDMP proposes a number of measures for decarbonising the sector as a whole. Current solutions for decarbonising rolling stock are based mainly on the electrification of lines and the use of biofuels, and in the longer term on innovative solutions such as batteries that can be recharged via catenaries or the use of hydrogen fuel cells.

- **Securing biofuel stocks** is a major short-term challenge if we are to reduce emissions from the sector easily and at little extra cost:
    - In order to guarantee the use of biofuels, it is essential to promote logistical and practical access for trains to biofuels, in the event that part of this is reserved for rail, to ensure a smooth transition for the fleet, which is still diesel-powered. In particular:
        - access to biofuels, in a context of limited availability and organised allocation to certain uses rather than others;
        - organise distribution logistics in line with the rules laid down by the tax authorities (limited miscibility of fuels depending on their degree of renewable energy).
- **Provide for a complete decarbonisation plan for the rail mode** (infrastructure, rolling stock, operating methods, organisation, etc.) for each use: this is already planned for

rail freight in the SNDFF. On the sidepassenger , the Fédération des industries ferroviaires and SNCF have published a white paper on decarbonising the rail sector in France. These decarbonisation actions must be carried out without hindering the achievement of the objectives of modal shift towards rail, a lever identified by the SNBC in order to meet the national objectives of decarbonisation of the transport sector. In particular, these decarbonisation plans should be carried out using an overall carbon footprint approach, and in particular seeking to reduce the carbon footprint of the construction phases, in order to ensure that rail projects make their full contribution to the objectives of the PNIEC and the PPE 3.
To achieve this decarbonisation, innovation in the various technologies envisaged will need to be pursued, both in terms of motorisation and infrastructure, and these innovations could be exploited in the refitting of equipment.

c) River

a. Decarbonising river transport

The French river network, the most extensive and complete in Europe, is an under-exploited asset. It represents one of the keys to achieving the objectives of reducing greenhouse gas emissions and increasing the resilience of water uses. In fact, river transport emits four times less greenhouse gas than road transport per tonne transported, and consumes three times less energy per tonne transported. This ecological competitiveness therefore offers a solution relevant for decarbonising logistics flows. It also offers a long-term solution for reducing energy consumption in logistics, including with green fleets across all modes.

What's more, the sector's commitment to a process of greening its fleets, accelerated in the context of the Paris 2024 Games, demonstrates its determination to maintain these ecological advantages over the long term.

Inland waterways are an infrastructure guaranteeing low-carbon freight transport, but they are also a historic tool for industrialisation. Investment in developing the network must guarantee growth in flows and the modal share of inland waterways, and contribute to regional development, particularly in terms of reindustrialisation in conjunction with the major seaports.

Lastly, the navigable river network is a vector for human, economic and tourist development of the regions, as shown by the demands for citizens to reappropriate their environment and waterways.

River transport is therefore at the heart of the national strategy to shift freight from road to bulk modes. The total decarbonisation of the inland waterway fleet represents little investment given the number of dedicated barges in circulation. It is therefore necessary for shipowners, shipbuilders and river barge architects work together , in particular, toon exploration methods to enable fleets to make the transition to low-carbon energy. The question of uses seems essential in order to prioritise possible energies. While electrification seems to be the best way of decarbonising short-distance transport, it is still essential to think about interoperability between European countries for transnational freight transport.

Discussions with other European countries must therefore continue in order to reach agreement on the preferred energy source for decarbonisation.

Electricity is already widely used in boat equipment, and developments are continuing. A CEE scheme exists currently for inland waterway transport, which complements the aid scheme PAMI managed by VNF and funded by a number of contributors, including the French government.

Key measures

	Carrier
Study the introductionincentives for the deployment of electric or rechargeable hybrid boats and the necessary recharging infrastructure	Status

- **Ensure that the inland waterway sector benefits from a biofuel incorporation ratesustainable** [100] , in order to decarbonise residual thermal uses, by reserving capacity for this mode
- **Studying thepossible inclusion of river RNG in the TIRUERT mechanism** for incentivised fuels could be one of the energy vectors contributing to achieving the European RED III objectives, transposed to the French level. This subject is the subject of a study.
- **Study the introduction of incentives for the deployment of electric or hybrid rechargeable boats** and the necessary recharging infrastructure: there is an aid mechanism (PAMI programme) managed by VNF, the budget for which is replenished by a number of contributors, including the French government. ADEME also contributes to the fund. These aid mechanisms are all the more important for developing new propulsion systems in a sector that does not yet benefit from a highly structured industrial sector.

d) Port

Numerous measures to reduce carbon intensity make it possible to reduce the emissions associated with port transit, both for service ships and ships calling at port (change of energy source for engines, electrification at quayside, etc.) and for the terminal (electrification of handling, etc.).

In addition, industrial port areas account for a large proportion of alternative fuel production and refuelling projects. As a result, they are helping to reduce the carbon intensity of the various modes of transport (road, river, air, sea) that can be supplied there.

A study of the contribution of ports to the decarbonisation of the national economy, currently underway at the DGITM, will identify the concrete measures to be put in place in this area.

[100] *Subject to changes in ministerial discussions subsequent to this document.*

3. Other cross-functional levers

Finally, certain levers are cross-cutting and do not act on a single factor in the Kaya equation. This is the case, for example, with measures to strengthen knowledge (studies, development of models, training, etc.), the development of data sharing between players, the connectivity ecosystem, digital technology, or measures linked to social justice and social dialogue bodies.

These measures do not always have a direct impact on reducing emissions, but they are nevertheless necessary to transform the transport system in depth and bring it closer to achieving the decarbonisation objectives that France has set itself.

i. Enhancing knowledge and skills to make greater use of the levers identified

Knowing the potential of each possible decarbonisation lever at local level is a key challenge if we are to efficiently target the fastest and most economical decarbonisation.

- **Strengthen engineering facilities for small local authorities** to enable them to benefit from significant expertise in relation to their own specific issues.
- **Create a "toolbox" for reducing mobility-related emissions for individuals:** ADEME could carry out this mission, to help individuals identify the actions they can implement at their own level. Tools such as la Fresque des mobilités already exist and could be deployed more widely. Differentiation by type of area and by target audience would seem to be a good approach for correctly qualifying emissions.
- **Maintain a high level of research and development in all areas of decarbonisation** (economy of combustion engines, optimisation of batteries, hydrogen efficiency, intermediate vehicles, weight and size of vehicles, etc.) as well as **research in the social sciences** on the levers of sobriety (in particular sociology, economics, geography and urban planning, etc.).
- **Knowledge of logistics :**
    - **Generalising regional logistics observatories**: knowledge of the regional logistics system is an essential foundation for building a decarbonisation strategy and being able to measure its regional impact. The national observatory provides a framework that facilitates access to data. It has been extended with the creation in November 2024 of an Open Data portal, logistics.data.gouv, financed by the Digital Investment Fund and data for ecological planning. Finally, the regional observatories were networked in September 2024.
    - **Exploring new sources of digital data to improve knowledge of flows**: for example, exploiting IoT data (Orange project or digital projects such as eFTI to feed public statistics).
    - **Develop modelling and simulation tools to inform choices:** as mentioned in the measure on the place of logistics in local and regional urban planning tools (part 2.i.g.).
        - Use the PEPR MOBIDEC to develop modelling and simulation tools in the field of logistics. In particular:

- To organise the pooling of flows (project led by the chairENPC's of the future)supply chain
- To simplify studies urban and make them more accessible to local authorities goods

- Characterise the link between warehouse location and flows to identify levers for optimising flows through optimal warehouse location.

ii. Structuring a strategic dialogue with industries by involving them in decarbonising their logistics

The organisation of logistics depends very much on economic sectors, so their involvement in the organisation and decarbonisation of their logistics is vital.

- **Rolling out the forward-looking work of the SGPE within the Sectors' Strategic Committees:** this makes it possible to identify priorities and draw up an action plan, based on voluntary action or more generally through regional measures.
- **Produce a vision of the decarbonisation trajectory by major sector of activity based on the results of the demand study**: this should enable sectors to visualise all their emissions (cf. Scope 3 approach on a more global scale of the sector or sector of activity) and thus make it easier to prioritise between decarbonisation of production and logistics when the impacts are contradictory (forexample recycling, which may generate more flows but a clearly positive balance from the point of view of production).
- **Structuring a dialogue mechanism, based on the National Industry Council's logistics working group and bilateral exchanges with the sectors with the greatest challenges:** an initial analysis of the progress made by the sectors in decarbonising their logistics is scheduled for September and will be shared within the framework of this working group. It will also look at the associated economic challenges. It will serve as the basis for a collective action plan to identify good practice, but also the bottlenecks and the levers for dealing with them, as well as the collective monitoring system.

iii. Build an economic environment that allows ecological guidelines to be implemented in practice (viability of players' business models, etc.).

The effective implementation of the measures envisaged depends on the existence of economic models that are viable for the players involved and sustainable over the long term. To achieve this, it is necessary to build an economic environment that is consistent with this perspective. This means understanding the trends and the long-term effects of the measures taken on the competitiveness of the various players and adjusting the aid measures in kind and in volume accordingly.

In particular, the cost of transport, which is often invisible to the consumer, , is not always given its rightful place in the criteriachoice . This leads to an imbalance and creates very tense transport flows (very tight delivery times, which do not allow for flexibility in the flow of goods). A rebalancing is needed to ease these flows, which will leave more room for decarbonising freight transport (sobriety and electrification in particular).

One lever could be to encourage consumers to adopt a virtuous consumption pattern, for example by modulating delivery charges according to the speed of delivery chosen, or the number of deliveries: in this case, a preliminary study should be carried out to establish the issues on which it is relevant and possible to take action.

iv. Digitalising logistics to facilitate exchanges between players (measures contributing to both modal shift and the consolidation and pooling of flows)

Logistics players are highly diversified, and their digital maturity varies widely. Against this backdrop, digitalization is a major lever for facilitating and streamlining exchanges, and thus facilitating modal transfer, massification and the pooling of flows. The ability to work in real time thanks to APIs[101] (the sector mainly uses electronic data interchange (EDI) today) is a prerequisite for improving service quality and therefore offering a more relevant alternative to road transport.

However, this requires the use of a common language and standardised, secure exchange protocols. It is also a prerequisite for offering simple solutions that are accessible to the smallest hauliers, whose support in practice is a prerequisite for the widespread introduction of digitisation throughout the sector.

To this end, it is necessary to develop a universal logistics language, building on the project initiated in 2024 thanks to FINDPE, and to form a collective to take it to national and then European level and make it a standard.recognised[102]

This framework should also serve as a basis for building interoperability of exchanges in the context of "data spaces" and facilitating exchanges with industrial and agricultural players (e.g. the COESIO project developed by the sector Intercéréales to pool flows between different producers).

It is also necessary to organise collective work in order to scale up. The project led by ADEME on digital commonalities in projects funded under the Logistics 4.0 programme should help to identify commonalities on which all players can draw (for example, digital identity with the MESH project Transport and Logistics developed by In Group).

Digitalisation must also benefit public players and facilitate exchanges between public and private players (e.g. the DIALOG project to digitise delivery areas, projectsPort Community System , connection with Customs, etc.).

v. Taking account of social justice and dialogue

Social justice represents a major challenge that will be key to sharing efforts fairly among citizens. In order to reach a global agreement, social dialogue is a lever to be used throughout the arbitration of future measures.

- **Create an indicator of precarious mobility to make it easier to target aid at households that have no alternative to the car, or cannot afford to finance their transition to low-**

[101] *Application Programming Interface*
[102] *Work initiated by a few players, but it needs to be expanded in order to have a significant impact.*

carbon mobility. This concept, introduced by the European Commission as part of the creation of the Social Fund for Climate Change[103] , needs to be adapted by the Member States according to their national context, and work led by the Ministry of Transport is currently underway to define this concept precisely.

- **Strengthen the implementation of Mobilités Solidaires action plans and the inclusion of people in precarious mobility situations in the "solidarity mobility" section of mobility plansAOM** .

vi. Enhancing the attractiveness of the transport professions and planning for the changes needed to cope with decarbonisation

The attractiveness of the transport sector is key to its decarbonisation: anticipating needs based on job vacancies and regional disparities is a major challenge. A shortage of drivers, for example, would be a blocking factor in strengthening or developing a new public transport offering.

Existing professions and training courses must also evolve to take better account of the challenges and impacts of climate change. Providing training for all those working in the transport and logistics sector will help to strengthen and accelerate the transition.

- **Streamline the administrative processes for issuing a D licence and create a provisional certificate before issuing a D licence:** this would help to reduce the shortage of drivers. Many drivers have to wait too long between taking the test and actually obtaining their D licence. This encourages them to go and work in another sector, as they have to wait until they have the licence before they can start work as a driver. A provisional certificate would speed up the process and boost the number of drivers.
  Work is currently underway and should lead to changes in the regulations governing professional training for hauliers and the introduction of measures to reduce the time taken to obtain permits. IT measures will also be put in place, such as developments to improve turnaround times (sharing of information between different IT systems).

- **Adapting training for transport and logistics professions to the new challenges of logistics, climate and energy:** in July 2024,published the Secrétariat Général à la Planification Ecologique (SGPE) a "Jobs and skills strategy for ecological planning"[104] .
  The aim of this approach is to assess and anticipate the impact of the ecological transition on jobs, the workforce (jobs destroyed/jobs created) and the need for workers to adapt their skills (necessary responses in terms of initial and continuing training), and then to draw up a national strategy determining the challenges of this transition in terms of jobs and skills.
  This strategy includes action plans on employment and skills in the transport sector, which identify a number of levers to support the players in the sector, in particular :
  - Communicating the business lines to key audiences (young people, retraining, women) and promoting the sector to employment and training players

[103] https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/social-climate-fund_en
[104] https://www.info.gouv.fr/upload/media/content/0001/10/df0f4182ce4d0e71f75a915e68ed32f233c82b35.pdf

- Supporting partnerships between businesses and schools, universities and employment and training providers
- Structuring induction, apprenticeship and initial and ongoing training courses to make the sector attractive and build loyalty and career prospects
- Integrating the employment and skills challenges of the ecological transition into companies' CSR approaches
- Promote bridges between professions, professional retraining and secure career paths to encourage intermodality and support transitions towards skills and key jobs for the ecological transition.
- Updating training reference frameworks, revising professional qualifications and diplomas to cover new key skills requirements
- Create a low-carbon driving school and support the creation of training courses to complement the approved courses
- Strengthening and supporting the OPCOs on the ecological transition aspect

In addition, it is important to strengthen vocational guidance in the transport and logistics sector, by including forecasts of changes in occupations and skills in order to remain adapted to needs during the transition period. To this end, launching a diagnosis of the needs and expected developments in the various transport and logistics professions could provide a clearer picture of the gaps and actions to be taken.

- **Develop forward-looking management of jobs and skills (GPEC) for the entire logistics sector:** the various transformations linked to ecological and digital transitions will have a profound impact on human resources and skills requirements over the long term[105] . Some sectors, such as inland waterway transport, are facing the prospect of very large numbers of people retiring, combined with delays in training.increasing A global vision of the evolution of human resources in terms of volume and skills is needed to ensure that the projected trajectory is compatible with that required to achieve the decarbonisation ambitions, and if not, to be able to take measures to remedy the situation sufficiently in advance.
  Initially, the plan is to take stock of the data and studies available from the main players and to draw up a list of critical resources on which to focus further research.

[105] *The Shift Project study predicts a drop of 100.,000 lorry drivers and an increase of 100,000 jobs in cyclo-logistics by 2050*

ANNEX II

Review of the SDMP 2019 - 2023 and outlook for the SDMP 2024 - 2028

The 2nd carbon budget 2019 - 2023

	Historical emissions (in Mt CO2eq) - reference years			Average annual emissions for the period described (in MtCO2eq)	
Year	**1995**	**2005**	**2015**	**2nd carbon budget (2019 - 2023) adjusted**	**3rd carbon budget (2024 - 2028) adjusted**
Transport (SNBC 2)	124	145	138	129	113

Table4 : Carbon budget 2019 - 2023, SNBC 2

Annual emissions (in $MtCO_2$ eq)	Carbon budget 2 (2019-2023) (technically adjusted in 202 4)[106] Deviation from indicative annual carbon budget in Mt CO_2eq (calculated on the basis of Secten 2024)					
	2019	**2020**	**2021**	**2022**	**2023**	**2019-2023**
Transport	**+ 1**	**-19**	**-2**	**5**	**4**	**-11**

France's transport sector should stay within its carbon budget (-11 MtCO2eq cumulative over the period 2019-2023, according to 's relative pre-estimatesCitepa).

[106] *In accordance with the French Environment Code (Article D. 222-1-B), a provisional technical adjustment of the carbon budgets has been made in the light of inventory, Citepa's 2024 Secten taking into account changes in greenhouse gas emissions accounting for the inventories.*

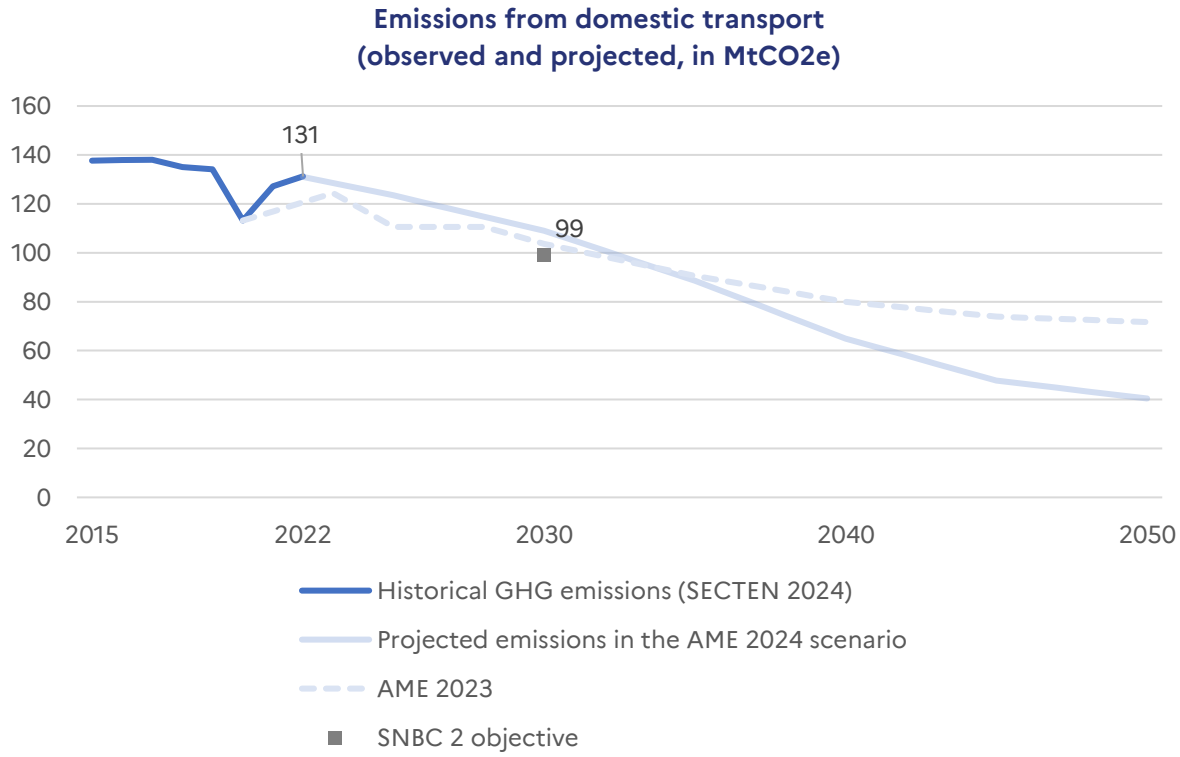


Figure14 : Domestic emissions trajectory under assumptions reference scenario (AME 2024, DGEC modelling)

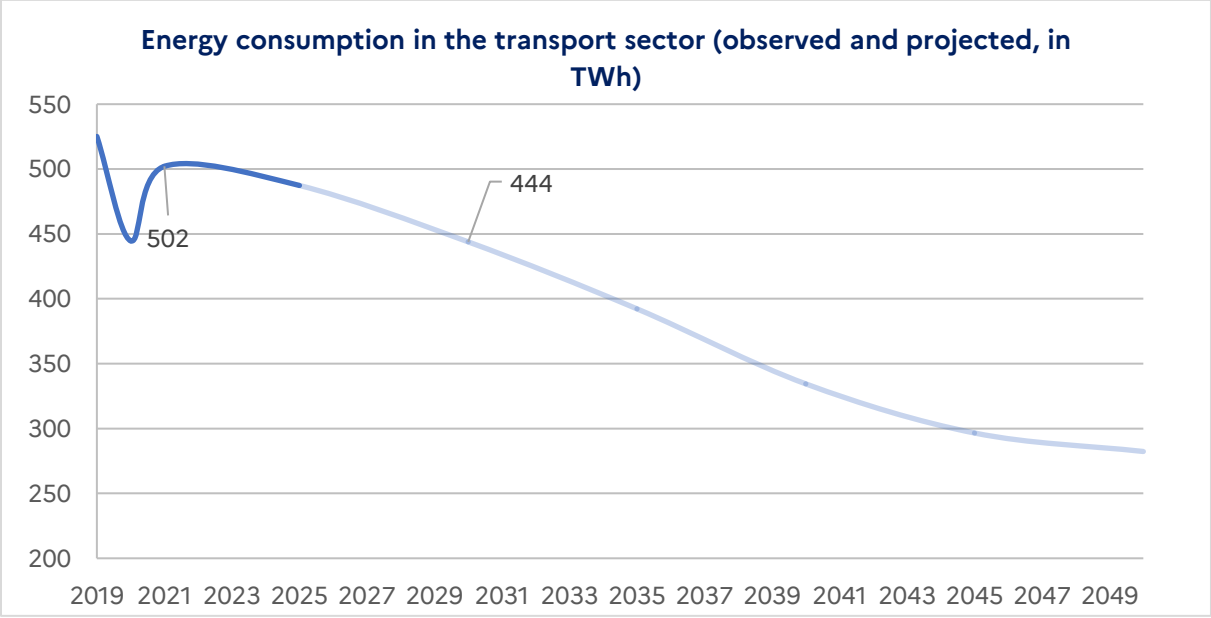


Figure15 : Energy consumption trajectory under reference scenario assumptions (AME 2024, DGEC modelling)

Achieving the 2023 objectives of the SDMP 2 :

The electrification targets set out in the SNBC 2 have been achieved in 2023 (17% of electric cars sold, compared with a target of 7%, 9% of rechargeable hybrid cars sold, compared with a target of 7%). Emissions from internal combustion vehicles, as measured by WLTP emissions, are falling. However, it will take time for low-carbon vehicles to make their way onto the road, especially as registrations are falling. The modal shift towards more sustainable modes of transport, such as rail or cycling, has not been as marked as expected. Despite efforts to promote environmentally-friendly alternatives, the use of public transport and active modes remains below target, particularly in suburban and rural areas. In addition, car-sharing, although on the increase, remains marginal compared with the dominant use of the private car, especially for short-distance journeys such as home-to-work.

At the same time, the increase in freight traffic, partly linked to the post-COVID economic recovery, has helped to maintain a high level of emissions. Stagnating investment in rail and inland waterway freight infrastructure, as well as the challenges associated with the electrification of heavy goods vehicles, have made it more difficult to reduce emissions in this sector. These dynamics have made it possible to respect the carbon budget, but only precariously. We therefore need to step up the momentum already generated by the previous SDMP, such as modal shift, electrification of the fleet and sobriety, which are key to reducing CO2 emissions.

Achieving the objectives of the SDMP by 2030

The AME24 scenario is not a forecasting exercise, but rather an evaluation that enables us to estimate the extent to which future targets will be met, taking into account the measures adopted to date. GHG emissions will fall by 24% in 2030 compared with 2022, mainly as a result of the electrification of the vehicle fleet, the increased incorporation of biofuels and lower energy consumption. By 2030, emissions will be 9 MtCO2e above the SNBC target 2 (109 MtCO2e instead of 99 MtCO2e). They are higher than the SDMP target of 90 MtCO2e3 . Beyond 2030, GHG emissions will continue to fall as a result of the time required to renew the vehicle fleet and European regulations that set long-term targets for reducing emissions from new vehicles, phasing out internal combustion vehicles and increasing the incorporation of sustainable fuels into aviation, with the aim of reaching 40 MtCO2e by 2050.

1. Detailed report by major action

This section examines the actions carried out by the SDMP 2019-2023 (hereinafter referred to as "SDMP 2") and takes stock of the actions undertaken following its adoption. It will follow the structure of the latter.

i. Enabling all regions to benefit from alternative mobility services to individual use

SDMP 2 objective

The main objective was to provide all local authorities with a range of services that would enable residents to get around without the constraints of individual mobility. It was essential for each French local authority to set up or be included in a mobility planning body, in order to ensure coherent management adapted to local conditions, as well as providing transport services adapted to frequency and traffic, such as autonomous mobility.shared

SDMP 2 proposals

SDMP 2 proposed the creation of a mobility organisation body in each territory, namely the AOMs, and the extension of its scope of action to include active and shared mobility and services mobilityof a social nature. The objective set for the period 2019-2023 was to achieve total coverage of the territory by these bodies, thereby guaranteeing better coordination of travel at national level. This complete coverage was intended to meet challenges such as reducing territorial inequalities in terms of access to transport, and improving citizens' quality of life through more sustainable, inclusive and efficient mobility. Securing funding for the AOMs through the mobility payment and raising awareness of public the use of mobility from an early age were also important proposals.

The SDMP 2 also recommended facilitating the testing and deployment of new autonomous mobility solutions in sparsely populated areas.

Policies implemented and results

The Mobility Orientation Act (LOM) of 24 December 2019 contains all the recommendations of SDMP 2 listed above, such as extending the scope of action of the AOMs to include shared and active mobility and mobility services of a social nature. In particular, details the new areas and procedures for action by the AOMit [107] , described in 5 AOM support sheets provided by the Ministry of Transport. The AOM is now responsible for developing and supporting active mobility (cycling, walking), shared mobility (carpooling, carsharing) and social mobility (mobility platforms, social garages). Support for these AOMs will take the form of a series of 5 fact sheets detailing these new areas.

Autonomous mobility has also continued to be exported in a number of forms: the regulatory framework for automated road passenger transport (Order no. 2021-443 and Decree no. 2021-873) came into force on 1st September 2022. It is backed by an innovation support programme encouraging the transition to the deployment of pilot services beyond the experimental phase. Thirty projects are contributing to the creation of a "common good", in particular the sizing of the technological building blocks of the service in response to local needs and people's mobility. The government's role in coordinating the industrial and technical ecosystem is to

[107] *France Mobilité, 2019. https://www.francemobilites.fr/loi-mobilites/faq/gouvernance.*

guarantee a range of resources[108] , made available to local authorities and players, and to support them in the process of networking their territory.

SDMP 3 proposals

SDMP 3 proposes to step up the development of alternatives to individual mobility in all regions. To achieve this, the SDMP 3 proposes that be drawn up objectives for the development of alternative road transport (express coach networks, car-sharing and transport on demand) at AOM level.

SDMP 3 also proposes specifying the content of the operational contracts (these contracts are the operational translation of the s various actions at region'the level of a mobility basin). These contracts make it possible, in particular, to ensure continuity of the public transport offer between neighbouring local authorities, which is necessary to ensure ease of use for users. Clarifying and reviewing its content, working with local authorities, could enhance its usefulness.

Finally, a conference on the financing of the AOMs will be held to examine their economic model and their ability to roll out new services, taking into account the investments they are already required to make (greening of bus fleets, etc.).

ii. Controlling demand for mobility

SDMP 2 objective

Together with the decarbonisation of vehicles, their energy efficiency, modal shift and car sharing, demand management is one of the levers for controlling greenhouse gases.

It can be noted that, generally speaking, overall demand is increasing, but that modal structures are being transformed in favour of low-carbon, mass-market modes.

SDMP 2 proposals

In order to control the rise in demand for transport, the SDMP proposed 3 economic and financial work streams, such as the use of price signals in favour of low-carbon mobility, the inclusion of environmental and climate externalities in costs, and the harmonisation of fuel taxes at European level.

At the same time, SDMP 2 proposed to optimise travel by transforming Plans Urban (PDU) into Plans Travel Mobility (PDM), then strengthening them by applying measures to limit urban sprawl and coordinate school travel. Promoting teleworking was also one of the avenues explored.

On the other hand, the transition towards virtuous behaviour, such as taking transport into account in consumption choices, is very important. In order to promote these possible transitions, the gradual deployment of Low Emission Zones (ZFE), but also the facilitation of

[108] *https://www.ecologie.gouv.fr/politiques-publiques/transport-routier-automatise-connecte-ressources-territoires*

free-flow tolls on the motorway network and dedicated lanes for clean vehicles. Increasing the pressure on road infrastructure could therefore indirectly bring about changes in behaviour.

Policies implemented and results

A number of tax niches unfavourable to fossil fuels have been reduced. The tax on diesel for road haulage has been raised by €2c/L in 2020 to €45.19c/L. The solidarity tax on airline tickets has been increased. The ETS2 project, which is due to be implemented in 2028 (introduction of a carbon market for the transport and construction sectors adjacent to the current carbon market), aims to better internalise carbon costs and encourage the switch to low-carbon energies.

In accordance with the 2019 Mobility Orientation Act, low-emission zones have been deployed in conurbations where regulatory air quality thresholds are regularly exceeded. 12 low-emission zones are currently in place.

The 2021 Climate and Resilience Act strengthened the framework of the scheme by providing for the introduction of low-emission zones by 1 January 2025 in all conurbations with more than 150,000 inhabitants where the air quality values recommended by the Organisation World Health (WHO) are exceeded, and by setting a minimum perimeter to be covered. As a result, 28 new low-emission zones must be created by 1 January 2025 (unless derogations are agreed between now and then, in accordance with procedures defined by decree), and five existing low-emission zones must be extended.

In accordance with the French Climate and Resilience Act, conurbations that still regularly exceed regulatory thresholds must comply with a schedule of restrictions that will lead to a ban on cars on Crit'air 3 1 January 2025: because of the improvement in air quality, only Paris and Lyon are now affected.

The government is supporting local and regional authorities to facilitate the operational implementation and social acceptability of low-emission zones via a dedicated measure under the Green Fund. In 2023, €127m was allocated to projects representing €421m of investment. A new wave will be launched in 2024.

In terms of optimising travel, the Mobility Plans (PDM) provided for in the LOM law are taking over from the Urban Mobility Plans (PDU), now integrating work and personal mobility, in particular through measures such as teleworking, which has become widespread with the pandemic.

As far as motorways are concerned, the deployment of free-flow tolls makes it possible to reduce the amount of land required by eliminating toll booths and to reduce congestion. Two motorways, the A14 and the A79, have significantly improved their environmental impact thanks to this system. In addition, dedicated lanes for clean vehicles and car-poolers encourage more environmentally-friendly behaviour and make these practices more competitive.

SDMP 3 proposals

SDMP 3 continues and reinforces the actions of SDMP 2, in particular by proposing continuity in the progression of demand-smoothing policies, and by working on energy efficiency plans for public authorities.

SDMP 3 also proposes a review of new road and motorway infrastructure projects that have not yet begun, as well as a strengthening of the socio-economic assessments carried out upstream, while reducing as far as possible the environmental impact of those currently underway or those that will be maintained. This review could make it possible to control the demand generated by these new works and thus reduce the growth in kilometres travelled.

Limiting the number of journeys and the number of vehicles in the fleet is also one of the new sobriety challenges of SDMP 3, which was still poorly identified in the previous document. To this end, quantifying the benefits of opening up business fleets to car-sharing could encourage the pooling of vehicles and thus increase the overall efficiency of the fleet.

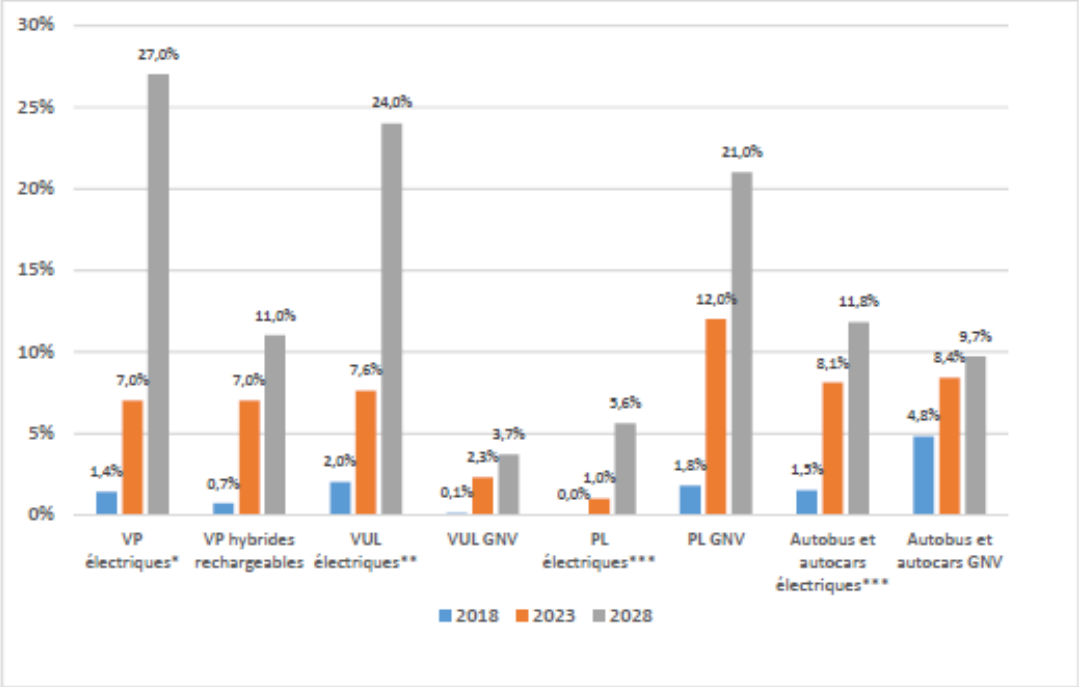
Finally, SDMP 3 suggests, in collaboration with the industry, the possibility of reducing airtime for advertising that promotes products and services that are the most harmful to the environment. This could be a very important tool in transforming the collective imagination, thereby acting as a catalyst for social change.

The revised ambient air, currently in the process of being adopted, provides for a significant reduction in limit values for nitrogen dioxide and fine particles by 2030 (thresholds halved). A significant proportion of the metropolitan area currently exceeds these future thresholdsEuropean qualitydirective on . If these new limit values are to be met by 2030, action to improve air quality will need to be stepped up, particularly in low-emission zones, over the next few years. Each area likely to exceed the limit values concerned will have to draw up a local action plan before 2030 to ensure that the new limit values are met by 2030 at the latest. To meet the deadlines, these action plans will have to be launched very quickly.

iii. Developing low-emission vehicles and improving the energy efficiency of the vehicle fleet by leveraging the alternative fuels market

SDMP 2 objective

The SDMP 2 set the following targets for sales of low-emission and fuel-efficient vehicles.



VP 100 % électriques.
***VUL 100 % électriques, hybrides rechargeables ou à hydrogène.*
**** PL et autobus/autocars électriques ou à hydrogène.*

Figure 1 : Évolution des parts de marché au sein des immatriculations (véhicules neufs) suivant la trajectoire PPE (avec mesures supplémentaires).

Figure16 : Sales targets for low-emission vehicles under SDMP 2

SDMP 2 proposals

To decarbonise vehicles, SDMP 2 proposed the introduction of a number of measures to encourage the transition to more environmentally-friendly modes of transport. The reinforcement of tax or aid schemes, such as the CO2 emissions surcharge, the ecological bonus and the conversion premium, will encourage the purchase of low-pollution, low-consumption vehicles.

Quotas were also proposed to ensure that public and private fleets included a minimum proportion of clean vehicles, in line with European directives. At the same time, the deployment of electric recharging infrastructure and gas and hydrogen stations should be encouraged to support this transition.

It also underlined the State's commitment to supporting ambitious European standards for reducing CO2 emissions from heavy goods vehicles.

With regard to alternative fuel distribution infrastructures, SDMP 2 provided for a network structure adapted to each fuel. For recharging infrastructure, the aim was to separate private recharging from public recharging.

Policies implemented and results

In order to maintain the incentive effect of the malus, which is designed to penalise the purchase of vehicles that emit the most CO2, the scale has been tightened each year (lower trigger threshold, higher ceiling). In 2020, the threshold has been lowered by 7 gCO2/km and the ceiling raised to €20,000 (compared with €10,500 in 2019).

In response to the recommendations of the Citizens' Climate Convention, the Finance Act for 2021 tightened the scheme for the years 2021, 2022 and 2023. The trigger threshold has been lowered to 133 gCO2/km in 2021 (compared with 138 g/km in 2020), 128 gCO2/km in 2022 and has reached 123 gCO2/km in 2023. The upper limit was raised to €30,000 in 2021 (from €20,000 in 2020), €40,000 in 2022 and €50,000 in 2023. As part of the 2024 Finance Bill (PLF), the trigger threshold has been lowered again by 5 gCO2/km, to 118 gCO2/km, and the maximum amount of the malus has been increased by €10,000 in 2024, to €60,000 from 193 gCO2/km (compared with €50,000 from 225 gCO2/km in 2023).

Since 1 January 2022, a penalty on the kerb weight of passenger cars has been in place to combat the increase in the average weight of vehicles. The threshold has been set at 1,800 kg for internal combustion vehicles, with a unit charge of €10 per kilogram above that. In 2024, the threshold was lowered by 200 kg for internal combustion vehicles, to 1,600 kg, in addition to an increase in the unit amount of the tax above 1,800 kg.

The tax deduction scheme has been extended to include electric and hydrogen vehicles, and has been .extended until 2030

Support schemes for the purchase of low-polluting vehicles have also been made permanent, and their environmental ambition and social targeting have been strengthened. The maximum ecological bonus for a new passenger car, at €7,000, is the same today as it will be in 2020 for low-income households. For other households, it has been gradually lowered to take account of market trends, while remaining at €4,000 (since 14 February 2024).

As for the million vehicles replaced thanks to the conversion bonus, this was reached in 2023. Measures to support the electrification of heavy vehicles have also been introduced from 2021 (ecological bonus and/or calls for projects).

The French authorities have supported the strengthening of the two regulations setting CO2 emission performance standards for new light vehicles (passenger cars and light commercial vehicles) and new heavy commercial vehicles (trucks, buses and coaches), with a view to achieving greater environmental ambition. The texts relating to these two regulations were revised in 2023 and 2024 respectively, as part of the "Adjustment to Objective 55" package.

In particular, these revisions have led to :

- For light vehicles, to increase the 2030 target to -55% for cars and -50% for vans (compared with -37.5% and -31% before the review) compared with the 2021 target, and to set a target for the end of sales of light vehicles new internal combustion in 2035;

- For heavy-duty vehicles, to strengthen the 2030 target to -45% (vs. -30% before the review) compared with 2019-2020 and to add two new reduction targets of -65% in 2035 and -90% in 2040, with a specific target for new urban buses of 90% zero-emission vehicles in 2030 and 100% in 2035.

The French law on mobility and the order transposing the European "clean vehicles" directive have introduced greening obligations for certain public and private vehicle fleets. Legal entities with large fleets must comply with a minimum percentage of low-emission vehicles to be incorporated when renewing their vehicle fleets.

As far as the State is concerned, by 2024, fleets of more than 20 private cars or light commercial vehicles must incorporate at least 50% low-emission vehicles (emitting less than 50 gCO2/km). In 2030, this rate will rise to 70% and 45% for very low-emission vehicles alone. Obligations have also been defined for heavy goods vehicles and buses, as well as for local authorities.

For private companies, fleets of more than 100 passenger cars and light commercial vehicles must incorporate at least 20% low-emission vehicles by 2024 and 70% by 2030. Other obligations apply to two- and three-wheel motor vehicles, or are worded differently to take account of specific situations (delivery platforms, taxi booking centres).

The rollout of electric vehicle charging points has accelerated considerably since 2021, rising from 33,000 points open to the public to almost 144,000 by 1 September 2024. To date, France is estimated to have around 2 million private charging points (in homes and offices), compared with just 500,000 at the start of 2021. Finally, all the service areas on the motorway network under concession are equipped with almost 3,000 fast charging points accessible to the public today.

The pace of deployment is accelerating every year, and this momentum must continue if we are to achieve the national target of 7 million public and private charging points by 2030, including 400,000 points open to the public and almost 50,000 fast-charging points accessible to the public.

These results have been achieved through a number of different initiatives. A number of subsidies have been introduced to support different types of recharging infrastructure projects (e.g. fast chargers, chargers in collective housing, chargers for heavy vehicles), via the Advenir energy savings certificate programme. At the end of 2023, the programme was extended until the end of 2027, with a new budget of €200 million to top up the previous budget (€320 million), in order to finance the installation of more than 72,000 new charging points for electric vehicles, including charging points open to all on the public domain or as part of a local public parking service, private charging points in collective housing and charging points at depots dedicated to heavy vehicles.

The regulatory framework has also been strengthened by adding new installation requirements for charging infrastructure on motorways and non-residential car parks, triggering major private investment. A national IRVE master plan for the national road network is also being drawn up, to anticipate the changing needs of users and the electricity network.

Most of the electrification targets set out in the SNBC 2 will have been achieved by 2023:

- With regard to passenger cars: the share of 100% electric engines in new car registrations has reached 17% by 2023 (compared with a target of 7%) and 9% for plug-in hybrid engines (compared with a target of 7%). Emissions from internal combustion vehicles, assessed using the WLTP cycle, are falling. However, it will take time for low-carbon vehicles to make their way onto the road, especially as new vehicle registrations are declining;

- In the case of light commercial vehicles, the share of 100% electric, plug-in hybrid and hydrogen engines in new registrations reached 7.2% in 2023, against a target of 16.7% in 2025. For engines, NGVthe market share reached of sales less than 0.1% (against a target of 0.3% in 2025), in line with a change of strategy aimed at 100% of new electric vans by 2035;

- For heavy goods vehicles (categories N2 and N3): the share of 100% electric and hydrogen engines in new registrations reached around 1.3% in 2023 (compared with a target of 14% in 2025). LNG-fuelled engines accounted for of the market 2.3% (compared with a target of 5% in 2025), reflecting a change in strategy aimed at achieving a much higher level of electrification of new HGVs and a corresponding decline in the share of gas;

- For buses and coaches: the share of 100% electric and hydrogen engines in new registrations reached around 10% in 2023 (compared with a target of 38% in 2025). engines NGV-poweredwill account for of sales 15%(compared with a target of 7% in 2025).

SDMP 3 proposals

In order to ensure the continuation of the sustained trend towards electrification and the transition to low-carbon technologies, SDMP 3 proposes, with a view to reducing emissions more quickly, to redirect the energy mix of heavy goods vehicles as a priority towards electrification, with marginal use of alternative fuels (in particular biofuels) for uses that cannot be electrified.

SDMP 3 also proposes to study a range of tax measures to further accelerate the transition of the fleet, such as strengthening the CO2 penalty 2027 or the environmental nature of accounting depreciation, a measure that represents, in addition to additional revenue, an opportunity to reduce the acquisition of combustion-powered cars, particularly by legal entities.

An is also plannedanalysis of the levers that could be used to give a multi-year vision to the financial support envelope for the acquisition of heavy electric vehicles, such as HGVs or buses and coaches, . To accelerate the electrification of the HGV fleet, acquisition aid could be coupled with the introduction of a scheme enabling principals to contribute to the greening of their fleets.

SDMP 3 proposes to continue strengthening the objectives for greening fleets set out in the LOM law, which have already been initiated by the Finance Law for 2025, for example by increasing the quota trajectory or by excluding plug-in hybrid vehicles, which do not offer the same environmental benefits as 100% electric vehicles.

In addition, one of the fundamental building blocks of electrification is the deployment of the necessary recharging infrastructure. To this end, SDMP 3 proposes, for example, the continuation of a support scheme for the deployment of IRVEs at depots and destinations for heavy goods vehicles, as well as the regional implementation of the national IRVE master plan on the national road network, which will make it possible to ensure electric fuelling at every point in the country.

Finally, with regard to the energy efficiency of light vehicles, SDMP 3 proposes, among other things, to act on their weight, thereby reducing their energy consumption. This can be achieved by making aid to car manufacturers conditional on environmental criteria, particularly in terms of resource consumption.

iv. Encouraging modal shift for passenger transport

SDMP 2 objective

Over the period 2019-2028, the SDMP 2 scenario forecast a decline in the modal share of cars in favour of transport public (rail and urban) by 2028: a 5-point shift in modal share from cars to active modes and public transport; a 3-point increase in modal share between 2015 and 2028 for public transport; and a 3-fold increase in the modal share of bicycles.

SDMP 2 proposals

The document suggested several measures to improve the multimodal mobility offer. It proposed speeding up the opening up of data to enable players to create journey planning and payment services integrating different modes of transport within a single journey.

The government has therefore proposed the pooling of all ticketing services in favour of a single ticket, which is currently being tested and is provided for in SDMP 3.

There were also plans to increase the use of active modes, such as cycling, by implementing the cycling and active mobility plan. This included the creation of an active mobility fund with a budget of €350 million over 7 years, measures to make cycling safer (such as secure parking, anti-theft markings on bicycles and cycle lanes at traffic lights) and incentives to encourage its use, such as the sustainable mobility pass or the "knowing how to cycle" initiative to make cycling more accessible. The acceleration of the cycling plan is a consequence of these guidelines.

The development of public, shared and collaborative transport was also among the proposals, with investment in rail and public transport infrastructure, as well as the promotion of clean mobility through calls for projects. The sustainable mobility package and the deployment of reserved lanes were also envisaged to encourage the use of shared modes of transport.

Policies implemented and results

In addition to the measures taken into account in the reference scenario available in the section**Modal shift** , the economic incentives provided for in the LOM law, such as the sustainable mobility package (FMD), the reimbursement of public transport season tickets and the transport bonus[109] , have been able to accelerate behavioural changes among individuals. The financial support for infrastructure development provided by the Agence de Financement des infrastructures de transport en France (French transport infrastructure funding agency) is also helping to maintain a high level of supply development, in order to ensure that the new

[109] The transport allowance enables the employer to cover the cost of recharging an electric or hybrid vehicle. The amount is freely determined by the employer, subject to a ceiling set by law.

demand for shared mobility can be absorbed. In addition, the car-sharing plan has been put in place.

The modal share of the car has remained stable between 2019 and 2022. On the one hand, the COVID period significantly reduced public transport traffic, with a slow recovery thereafter. On the other hand, the car often remains the most competitive mode (journey time, ease of use, flexibility, etc.), which may explain the slower-than-estimated changes in behaviour.

SDMP 3 proposals

SDMP 3 proposes a more ambitious approach to modal shift policies for travellers, in particular limiting the use of private cars. It therefore proposes a series of fiscal measures, such as the possibility of reforming the taxation of company mobility solutions offered by employers, in order to encourage a shift towards public transport or shared mobility.

In addition to reducing the use of cars, SDMP 3 also seeks to facilitate the use of alternative, more energy-efficient modes of transport. An overhaul of the three financial support schemes for clean mobility currently in place (FMD, TC reimbursement, transport bonus) is also envisaged in order to reduce the number of coexisting schemes and facilitate their implementation. With the same objective in mind, it is proposed to launch a debate on the equitable sharing of roads between the different modes and to support local authorities in extending the conversion bonuses introduced by local authorities to a multimodal credit, in order to question the place of the private car at the same time as access to new transport services.

Finally, SDMP 3 proposes to continue developing services and infrastructure for public transport, cycling, rail and waterways. Investment in the regeneration and modernisation of the national rail network and the deployment of cycling infrastructure will be continued. The roll-out of metropolitan regional express services (SERM) and the territorialisation of the development of public transport through the definition of local indicators of access to transport alternatives to the car and the definition, with the territories, of related objectives, will also make it possible to strengthen the offer available to passengers.

v. Promoting efficient freight transport and modal shift from rail and inland waterways

SDMP 2 objective

The objective proposed by the SNBC 2 and the PPE 2 was to stabilise the modal share of rail and river freight, following a period of decline in the modal share of rail. The Climate Resilience Act has set a target of doubling the modal share of rail by 2030 (to 18%) in order to achieve a 25% modal share by 2050.

SDMP 2 proposals

SDMP 2 proposed to make urban logistics more fluid by incorporating it into planning documents and regulating the activities of digital platforms. The aim was to improve the organisation of urban flows and provide a framework for those involved in urban logistics.

Policies implemented and results

With regard to urban logistics, the government has entrusted Anne-Marie Idrac, Anne-Marie Jean and Jean-Jacques Bolzan with a mission[110] . This has led the government to implement 5 actions:

- commissioning the Groupement des Autorités Responsables de Transport (GART) to organise discussions and actions on sustainable urban logistics at local level
- work on extending the decriminalisation of parking to delivery areas in order to improve management and allow experimentation with new services;
- initiate actions to develop training and information on urban logistics in order to make all players more aware of their responsibilities. CEREMA was to be involved in the production of methodological guides, in particular to integrate urban logistics as effectively as possible into the introduction of Low Emission Zones (ZFE);
- launch two initiatives, one legislative and the other technical, aimed at exploiting the full potential of urban logistics data:
    - a working group on legislative changes aimed, for example, at strengthening the role of logistics in Mobility Plans and systematically digitising traffic orders and transmitting static data on delivery areas;
    - a national observatory for urban logistics, organised around existing structures - particularly public ones
- strengthening the sharing of knowledge with local authorities by drawing on the work of the task force on the energy transition of road freight transport, focusing in particular on the transition of vehicles used to supply towns and cities.

All the actions are underway and have been completed by decisions taken by CILOG

- instruct the President of the French Wholesalers' Confederation to set up a technical liaison committee for urban logistics, bringing together the professional federations that consume and produce logistics, to act as a point of contact for the State and the technical committee led by the GART[111] ;
- Incorporate into the national logistics strategythree urban logistics objectives : develop [112]cyclologistics, support the growing maturity of public and private players with the CEE scheme, and roll out the digitisation of traffic orders and delivery areas.

In order to significantly increase the modal share of rail freight and reinforce the objectives of SDMP 2, the government has drawn up a National Strategy for the Development of Rail Freight (SNDFF) , with the ambition of doubling the modal share over the decade from 9% to 18% between 2019 and 2030, i.e. around 65 billion t.km. [113]The document highlights a number of key directions for developing rail freight in France, with one central objective: to reinforce the objectives of the LOM law on freight, such as making the sector more competitive, while encouraging a modal shift towards more sustainable modes of transport. Improving infrastructure plays a fundamental role in this. This includes modernising the rail network, increasing capacity for long and heavy trains, and renovating capillary lines and service tracks.

---

[110] Press release on the measures adopted by the Government with link to the report https://www.ecologie.gouv.fr/sites/default/files/documents/CP%20rapport_logistique_urbaine.docx.pdf
[111] CILOG 2023 press kit https://www.ecologie.gouv.fr/sites/default/files/documents/DP%20CILOG%20accessible.pdf
[112] National Logistics Strategy https://www.ecologie.gouv.fr/sites/default/files/documents/Strategie%20CILOG.pdf

[113]National Strategy for the Development of Rail Freight:
https://www.ecologie.gouv.fr/sites/default/files/documents/210909_Strategie_developpement_fret_ferroviaire.pdf

In 2022, several of these projects are already underway, with budget envelopes fully committed, reflecting concrete progress towards a better structured national rail network. At the same time, digitisation and data management also feature prominently in the strategy. The introduction of tools for real-time management of transport capacity and train geolocation are priorities, as is the interoperability of information systems between the various players in the freight sector. By 2022, the specifications for these tools have largely been defined, and several are already in the deployment phase, notably to improve the management of train paths and coordination between infrastructure managers.

Finally, the document stresses the importance of partnerships and innovation in boosting the sector. Collaborations between logistics players have been established to propose integrated solutions, while incubators have been set up to identify short-term innovations. These initiatives are well advanced, with demonstrators already in place to test new technologies such as automated terminals and automatic couplings. As part of this strategy, the government has made a commitment, following on from the aid measures introduced in the summer of 2020 and then in the 2021 Finance Act, to maintain an additional annual envelope of €170m until 2024 to support the operation of rail freight and combined transport services. A total of more than €300m per year will therefore be allocated by the State over the period 2021-2024 to this operational support .[114]

Despite the implementation of this strategy, the time required for such a structural transformation of the sector does not allow for very short-term results (the SNDFF was launched in 2022). The difficulties of making the railways more reliable and the sector's difficulty in finding a sustainable profitability model mean that action will have to be taken over a long period.

SDMP 3 proposals

The initiatives undertaken during the SDMP 2 period in the area of urban logistics were unanimously welcomed during the Paris Olympic and Paralympic Games in 2024. SDMP 3 will be an opportunity to continue the work of co-construction with federations of local authorities and professional federations to make urban logistics more fluid. The SDMP also proposes new multimodal initiatives, such as encouraging shippers to develop bulk transport. Cyclo-logistics is also highlighted for flows that enable its use through the development or redevelopment cycle infrastructure and zones.of the necessary logistics

SDMP 3 therefore proposes to maintain and strengthen the objectives and actions of the SNDFF in order to accelerate the transformation of the sector. Similarly, a river strategy under ministerial leadership was launched in 2024. 7 priority areas have already been identified, such as increasing modal shift, remobilising river freight to complement the wide-gauge network, boosting the dynamism of inland ports, capturing new markets, modernising the image of river freight and, lastly, energy issues.

SDMP 3 therefore proposes to support this new river strategy by studying the potential of river transport for construction projects and businesses along the waterway. The new Plan d'Aide au Report Modal (PARM), covering the period 2023-2027, will provide support for companies

[114] *Source: French Ministry of Ecology*

wishing to shift part of their logistics to the waterways[115] . It is also proposed to support the decarbonisation of the sector by securing biofuels, as well as by assisting the electrification of the river sector with the installation of quayside recharging infrastructure. For river and sea transport, the objective of carbon neutrality was to be supported by ports equipped for low-carbon fuels and conversion to alternative technologies. SDMP 3 maintains these objectives and proposes to step up investment in river transport in order to maximise a low-carbon modal shift.

[115] *PARM: https://www.vnf.fr/vnf/accueil/logistique-fluviale/adopter-le-transport-fluvial/aides-et-financements-adopter/aide-parm/*