PRESS RELEASE

Saint-Romain de Colbosc, July 3, 2025

FacteurDix unveils LINE,

High Energy Performance Automobile Project

- **FacteurDix, a Normandy start-up created in 2024, presents its vehicle LINE.**
- **FacteurDix's mission is to develop, produce and market the most energy-efficient vehicle.**
- **The objective: reduce the energy consumption related to the automobile by a factor of ten**
- **LINE (Light Is Not Enough) :**
  - **Electric vehicle with 3-wheel approval (L5e)**
  - **Two-seater side by side, 50 kW, 500 kg, 500 km range**
- **LINE is aiming for the world record for energy efficiency for an approved vehicle in 2027 with a target consumption of around 4 kWh/100km**

The world of mobility, at the convergence of lifestyles, technical developments, environmental issues and passions, is in full swing. Electrical solutions open up new perspectives for a wide range of applications. Among the most ambitious solutions is the **FacteurDix project**.

FacteurDix is a Normandy-based automotive start-up created in 2024 by two engineers, **Marc Guillemaud** and **Augustin Roulleaux Dugage**, who have set themselves the ambition of creating and marketing the most energy-efficient electric vehicle. This project aims to respond, through its performance and very low consumption, to the environmental issues that arise today, in particular in terms of energy consumption. To demonstrate the relevance of its project, FacteurDix intends to set a world record in terms of energy efficiency for an approved vehicle within 18 months by reducing the energy consumption related to the car by a factor of ten.

Why?

The car is the 1st item of greenhouse gas emissions and energy consumption

In France, car use accounts for nearly 30% of global energy consumption and emits an average of 2.2 tons of CO2 emissions per year and per person[1].

The environmental impact of a vehicle is mainly linked to its use

Use accounts for 80% of the environmental impact of a combustion engine car, compared to only 20% for its production and end of life. For electric vehicles, the data varies according to the country's energy mix, and use (including the battery) represents on average 60% of the environmental impact[2].

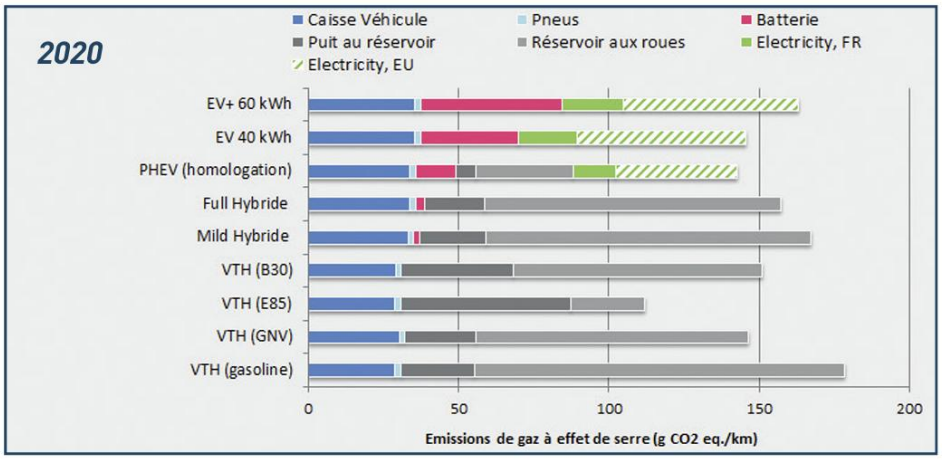


Figure 1 Life cycle analysis over 125,000 km, IFPEN 2025

120: Using your car means mobilizing the power of an average of 120 cyclists, i.e. the Tour de France peloton for each trip[3].

90% : the proportion of journeys outside built-up areas made by car[4].

1.4: this is the average number of passengers per car in France and this index has been declining over the last thirty years.[5]

Find other documented findings on mobility at the end of the dossier

To talk about climate change and the threats to the environment is to talk about energy and to realize that we need to reduce its consumption. By working on the first item of energy expenditure, FacteurDix is therefore positioning itself as a real **impact project**.

[1] MyCO2 by Carbone4, carbon footprint of a French person in 2019
[2] Energy, economic and environmental study of road transport by 2040 (E4T 2040), 2022, ADEME and IFPEN
[3] 16 kW for moving a car, 130 Watts for a cyclist
[5] Insee Première No 1835, 2021, The car remains the majority for home-work trips, even for short distances
[4] MINISTRY OF ECOLOGICAL TRANSITION AND TERRITORIAL COHESION, 2022, Getting around by car: alone, with others or by carpooling

FacteurDix's ambition: create a vehicle that consumes 10 times less energy

FacteurDix's ambition is to create and produce an **electric vehicle with 3-wheel homologation (L5e)** that **consumes ten times less energy** than a conventional combustion car: a lightweight car with high dynamic performance that does not compromise on safety, comfort and range; a format that reduces our footprint on the planet, creates a unique driving experience and offers another pleasure to travel.

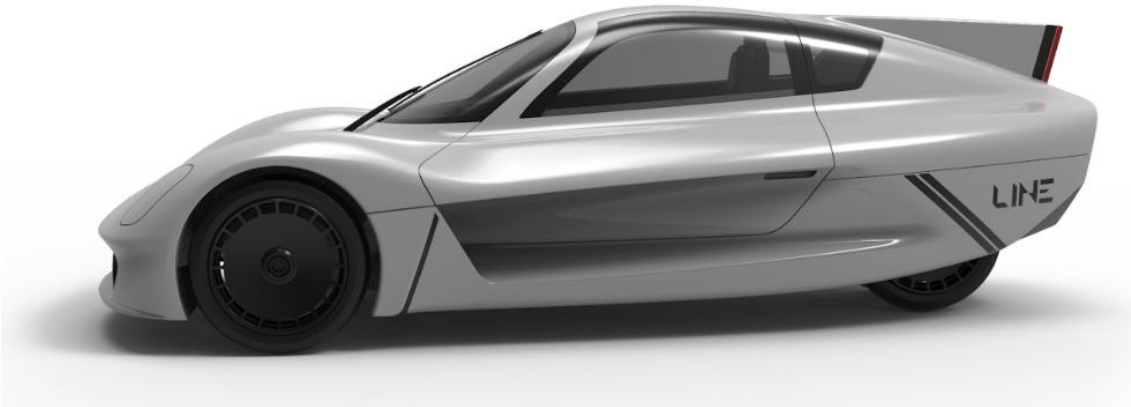
To achieve this promise, it was necessary to start from the basics of physics and optimize the 3 parameters that size consumption: **mass**, **aerodynamics** and frontal **area**:

- **Mass** : use of composite materials for the body and chassis, as in competitive boating or aviation. Target : less than 500kg.
- **Aerodynamics**: an airflow facilitated by the "teardrop" profile of the 3-wheel format and a deliberately radical design.
- The **frontal area:** reduced while preserving an airy cabin (with two slightly offset seats).

A change of scale therefore takes place with the 3-wheel format: this singular configuration serves energy efficiency and forms the basis of design and conception.

Fluid lines and a sporty DNA are the raison d'être of the project carried out by FacteurDix to enable this new vehicle to achieve unparalleled energy performance.

The fruit of this project has a name: **LINE (Light Is Not Enough).**



LINE: the vehicle designed to push the limits of energy performance

LINE
Light is not enough

A record-breaking vehicle

LINE aims to set **a record** in terms of fuel efficiency for an **approved** vehicle. FacteurDix targets a consumption of around **4 kWh/100km**.

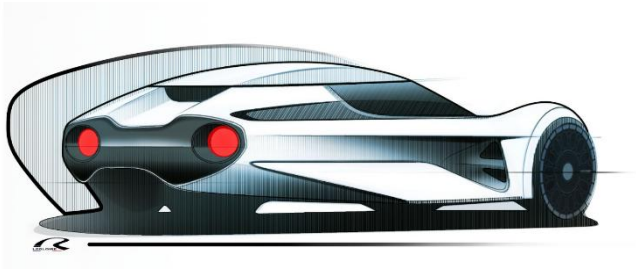
By way of comparison:

Vehicle Type	Energy consumption (on WLTP cycle)
Combustion sedan	~45 kWh/s 100km (eq. 5L/s) 100km)
Electric Sedan	~15 to 20 kWh / 100km
Scooter	7 kWh/s 100km
LINE	**4 kWh/s 100km**

Covering most automotive uses: LINE is also developed to cover more than 85% of uses, and in particular to allow use on motorways. Range, fast charging and the ability to make long motorway journeys therefore benefit from particular attention to remove the obstacles to the adoption of electric vehicles and preserve the object of freedom that is the car.

Design at the heart of the DNA

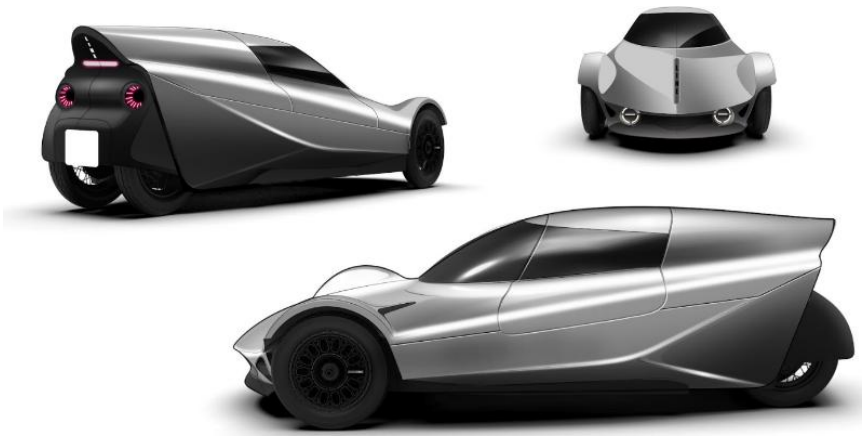
LINE adopts a design oriented towards aerodynamic performance developed based on three main ideas: narrowing the rear track, maximizing transparency and maintaining a compact format.

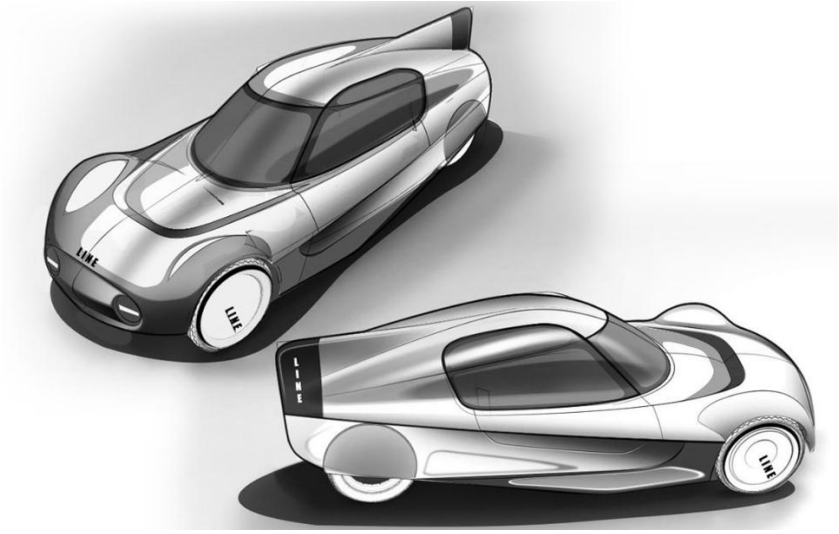


These ideas shape the volumes of the vehicle and draw fluid curves inspired by the world of aeronautics and motor racing.

The air tunnels and the interior design create the dynamism of the front end and side sections. The rear fin, a true aesthetic signature of LINE, clearly evokes performance.

These radical design choices are matched by a sleek style and understated stylistic details. This aesthetic line underlines the ecological intention of the project: to create a design that frees itself from the markers of its time to be able to last.

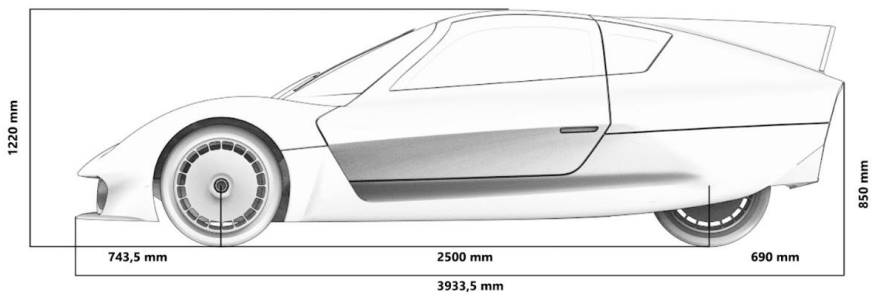


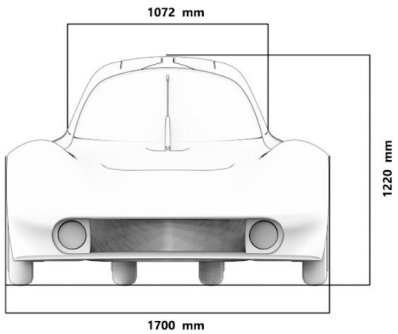


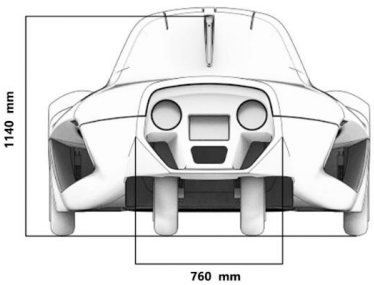
Key Technical Specifications*

Length	3.93 m
Width	1.70 m (front) / 0.76 m (rear)
Height	1.22 m
Wheelbase	2.50 m
SCx	0,28
Curb weight	<500kg
Trunk	90L (2 carry-on suitcases)
Configuration	2 seats side by side in offset
Certification	L5e (3-wheeler)
Engine	High-voltage electric: ~50 kW (under study)
Transmission	Traction, motors, wheels
Running gear	2 front wheels, 2 rear twin wheels
Max speed	~165 km/h
Autonomy	500 km on WLTP cycle (~400 km on motorway)
Recharge	About 10 min from 20 to 80%
Consumption	4 kWh / 100km (cycle WLTP)

* Pending approval

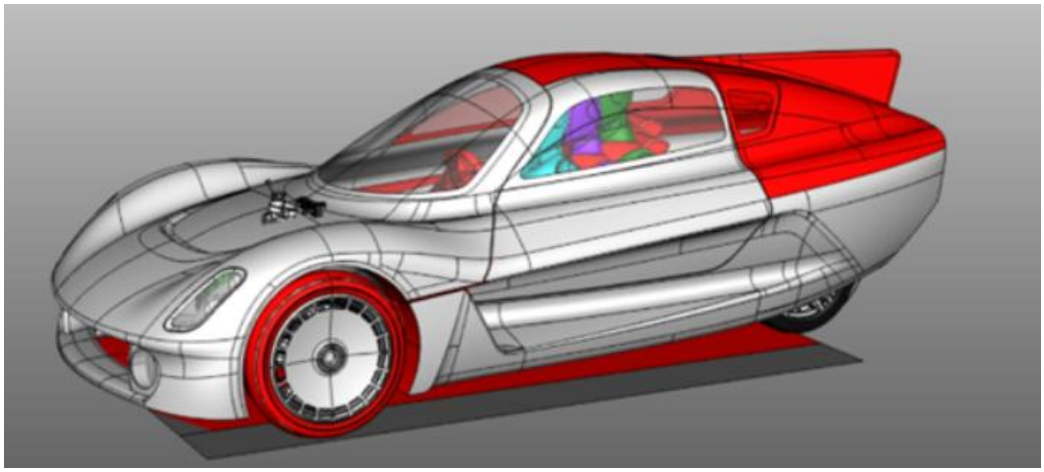






Chassis and body made of composite materials

LINE uses composite materials – particularly CFRP carbon fiber – for its chassis and bodywork. This sports car-specific solution reduces the weight of the airframe while ensuring the levels of rigidity and safety needed for high-speed use. This choice is also relevant on an industrial scale in the automotive industry because it allows vehicles to be mass-produced while avoiding heavy metal forming investments.



Safety and comfort

FacteurDix intends to guarantee **LINE** a level of safety certified by the rigorous homologation processes in force in France and Europe. The vehicle integrates front airbags, ABS/ESP systems and passive driving assistance systems (crash box, side crumple zones) so that ecological intent is not a pretext for sacrificing safety.

In terms of comfort, the heating, air conditioning, audio and multimedia systems are discreetly integrated to create a refined world free of superfluous features that are not directly related to driving.

High-speed stability and ergonomics

The design of a light and aerodynamic vehicle involves many technical challenges, so FacteurDix has joined forces with the Faster design office **to** meet them. In working on the interior and exterior architecture of the vehicle, Faster has integrated the constraints of ergonomics, access to the vehicle, and stability. The choice of **two twin wheels on the rear axle** and traction via **wheel motors**, concentrating the weight on the front axle, testifies to this work.

Creating the high-energy vehicle segment

FacteurDix is aimed at people who are educated about climate issues and are looking for a driving experience in line with their ecological convictions.

From 2027**, LINE will market** a very small, customizable all-carbon series with a price positioning accordingly.

Then, **LINE** will move to an industrial scale to gradually reach market prices for this type of vehicle (around €30,000).

A French industrial project

By proposing **LINE**, FacteurDix aims to be an impact project aiming at large-scale marketing in the long term.

To achieve this, the company has defined a coherent industrialization strategy on the French territory:

- Very small series production of record vehicles, made by the Faster Design office.
- Transition to industrial scale with **in-house production facilities** and the support of subcontracting partners.

CSR approach: towards the company with a mission[6]

The environmental ambition and the positive impact on the territory of FacteurDix's activity must be integrated, from the company's first developments, in a structured and controllable approach.

And since the speeches can sometimes be misleading, FacteurDix has set itself the goal of being a **Mission-Driven Company by 2026.**

This quality will ensure that growth contributes **positively** to society as a whole and to the environment, including:

- By reducing the environmental footprint of the first GHG (Greenhouse Gas) emission item for a French person,
- By integrating a clear strategy of repairability, durability and recyclability,
- By helping to create qualified jobs in the region.

LINE: the project schedule

2025 Realization of a rolling demonstrator in partnership with the design office **Faster**. Dimensioning of the powertrain (motor and battery) with Technomap. Presentation of the demonstrator (July)

2026 Start of the concept development phase (18 months) to carry out the proof of concept.

2027 Development, homologation and validation of the record for energy performance on the WLTP cycle.

2028 Production and sale of the first copies (very small series)

From 2029 Industrialization and ramp-up

[6] Service-Public.fr, "Quality of company with a mission"

About FacteurDix and its partners

FacteurDix

SAS with a share capital of €47500 / RCS Le Havre

Registered office: Saint Romain de Colbosc (76)

Capital 100% owned by the two partners

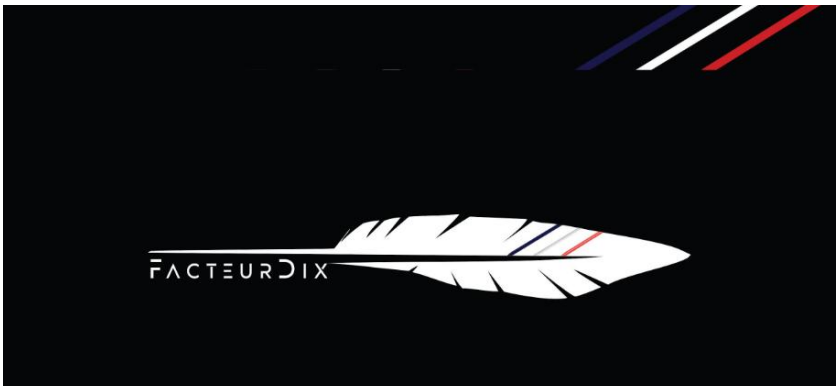
Creation date: January 2024

The partners of FacteurDix

Marc Guillemaud (35 years old) – CentraleSupelec Engineer, IFP School – 12 years of experience in the petrochemical industry – A few years of cycling counting Watts and kilograms

Augustin Roulleaux Dugage (36 years old) – Engineer from the Mines de Nancy, IFP School – 11 years of experience in the petrochemical industry, 1 year of start-up and operation of a hydrogen production site – Number 2 at the heart of the fray

Augustin Roulleaux Dugage explains*: "Throughout the years of cycling for Marc Guillemaud, through our studies and then our periods spent in a factory at ExxonMobil, energy has been at the heart of our activities. This early awareness has shaped our view of the current climate crisis. After a career in the industry with, as a highlight for each of them, an experience as head of unit where we were responsible for the operations of Seveso-classified production units, we considered different projects to create or take over a business. We had in mind to engage in useful projects and not to contribute to the increase in the entropy of our societies. The FacteurDix project was an obvious choice after reflections on our modes of transport. We thought about it, matured and confronted it many times before finally deciding to devote all our energy to it. »*



Development partners

Companies		Description	Site
FASTER	**Faster** (Pleasure, 78)	Automotive design office involved in motorsport and prototype design for OEMs.	https://www.faster-racing.fr/
MONTREDON LEGLOIRE CREATIONS	**Montredon Legloire** (Barcelona)	Independent design studio with two branches: automotive design and fashion design.	https://www.legloire.com/
TECHNOMAP	**TechnoMAP** (Dieppe, 76)	Design office specialising in the electrification of mobility solutions	https://www.technomap.fr/

Institutions

Prototyping partners

Companies		Description	Site
	Koller (Montigny le Bretonneux, 78)	Company specialized in milling complex shapes.	https://koller.fr/
	Renault Labeda (Canteleu, 78)	Surface preparation and painting.	https://www.renault-labeda.fr/
TWIN	**Twin** (Bois d'Arcy, 78)	Design office, expert in digital design and in the enhancement of products and concepts.	https://www.twin.fr/

Dossier: Mobility findings

For the leaders of the FacteurDix project, several essential, subjective but documented observations on mobility have fueled their reflections.

The Automotive Queen:

With 82% of passenger kilometers[7] travelled, the car has established itself as the majority mode of transport with the exception of urban centers. In France, around 1.7 million passenger cars are sold per year (2024) and 38.9 million cars are on the road, travelling an average of 12,000 km per year[8].

Electric

With the exception of the roar, the electric motor outperforms the combustion engine at all performance levels: its specific torque, power density and reliability are better for a smaller footprint and lower cost. While batteries are still the Achilles' heel of electric vehicles - they are heavy, require large quantities of precious metals, are difficult to recycle and are limiting for range - the improvements of the last ten years are nevertheless impressive in terms of cooling, compactness, speed of charging and lifespan.

Electrification = decarbonation ?

In France, the carbon intensity of electricity production is the lowest in the world, while in Europe, the share of renewables is increasing. On the other hand, marginal electricity production is carbon-based, even in Europe: adding electricity consumption is equivalent to increasing the use of a fossil fuel-powered production site. Worldwide, electricity production remains mainly carbon-based (60%).[9] Electrifying means shifting the problem: it does not change the amount of energy needed to move the vehicle and requires electricity producers to produce more carbon-free products.

Hydrogen

Long range, combustion engine or fuel cell: hydrogen is the stuff of dreams. The discoveries of native hydrogen in eastern France offer hope for a carbon-free energy source. But the energy efficiency from production to use remains very low to date (~25%).[10] The complexity of the technologies tends to restrict their use to heavy vehicles and the properties of the molecule pose safety and logistical challenges that far exceed those of LPG.

Overweight and consumer society

[7] MINISTRY OF ECOLOGICAL TRANSITION AND TERRITORIAL COHESION, 2024, Key figures for transport

[8] Ministry of Spatial Planning and Ecological Transition, 2024, Data on the French car fleet as of 1 January 2024

[9] https://ourworldindata.org/electricity-mix

[10] JM Jancovici, What can we expect from fuel cells and hydrogen?

The weight of our cars has increased by almost 20% in the last 10 years[11] ! This extra weight increases energy consumption and electrification adds to this trend. This observation can also be generalized to the world of mobility: pedestrians are adopting electric scooters, bicycles are turning into e-bikes, 14–18-year-olds are having access to golf carts instead of two-wheelers and the sedan is giving way to SUVs.

In 2020 and 2021, 1.4 million electrically assisted bicycles were sold in France without reducing the mileage travelled by car[12].

Energy consumption, the Arlésienne

The oil shocks, the yellow vest crisis and now the autonomy of electric vehicles: energy consumption periodically comes up as an issue. While technological progress has significantly improved the embodied energy consumption of vehicles, the increase in weight, size and power has erased most of this progress. It is a sensitive subject that reveals the contradictions of the driver.

Car-sharing, buses, trains, and public transportation

The energy efficiency of public transport is excellent (~5 kWh per passenger per 100 km for the train), at the cost of high infrastructure investments that limit its development. The challenge of public transport, like that of car-sharing, is that of the psychological cost. Time constraints, transportation changes, trust in others are all challenges to be met for an even greater attractiveness.

[11] Auto-journal, 2024, New vehicles are getting fatter: about 400 kilos on average over the last seven years!
[12] MINISTRY OF ECOLOGICAL TRANSITION AND TERRITORIAL COHESION, 2024, Key figures for transport*