Patto Europeo per il clima: focus sulla mobilità sostenibile

Ciclo "Lezioni d'Europa"
20 Aprile 2023

B. Ciuffo
Sustainable, Smart and Safe Mobility Unit

European Commission

The European Commission's political leadership

#Eustrivesformore #vdLcommission

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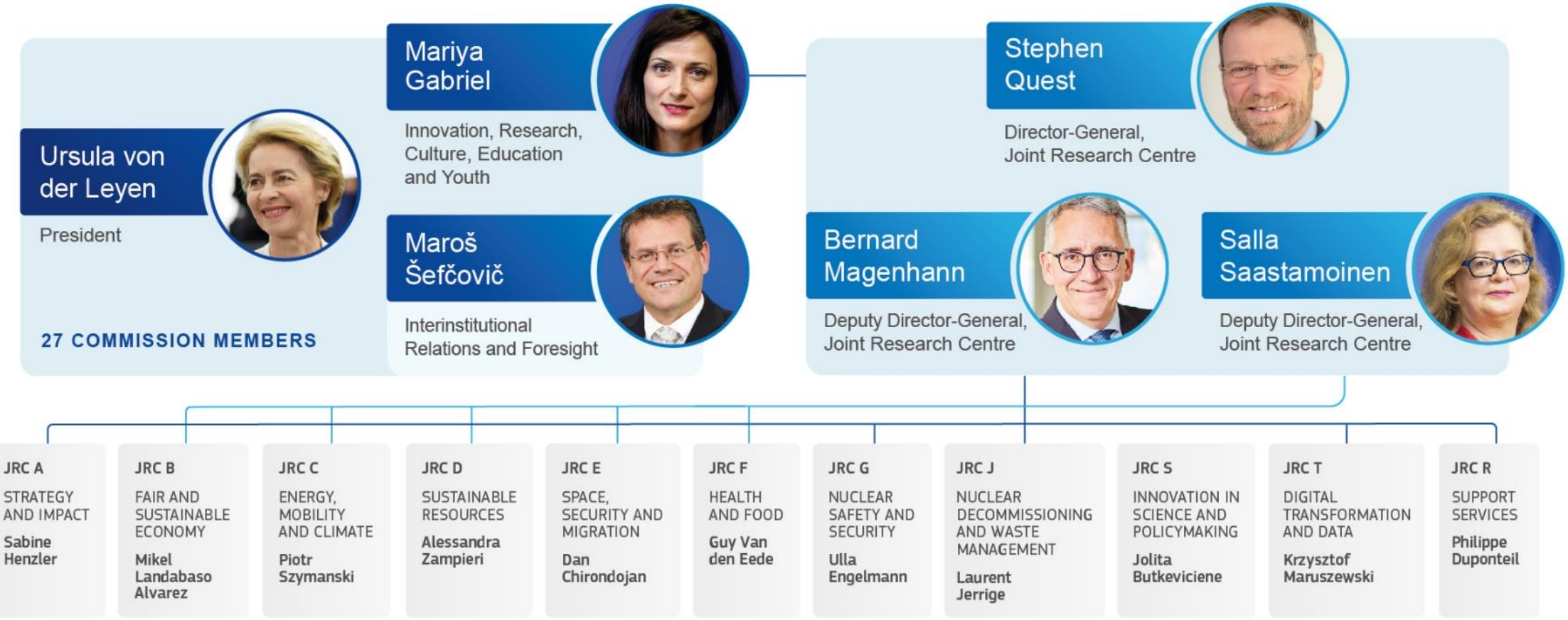
The Joint Research Centre within the Commission



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Science for policy

ANTICIPATE

INTEGRATE

IMPACT

Our purpose

The Joint Research Centre provides independent, evidence-based knowledge and science, supporting EU policies to positively impact society.

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Our role

Independent of private, commercial or national interests

Works for more than **40 European Commission's policy departments**

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JRC sites

Headquarters in **Brussels** and research facilities located in **5 Member States:**

Belgium (Geel)

Germany (Karlsruhe)

Italy (Ispra)

The Netherlands (Petten)

Spain (Seville)

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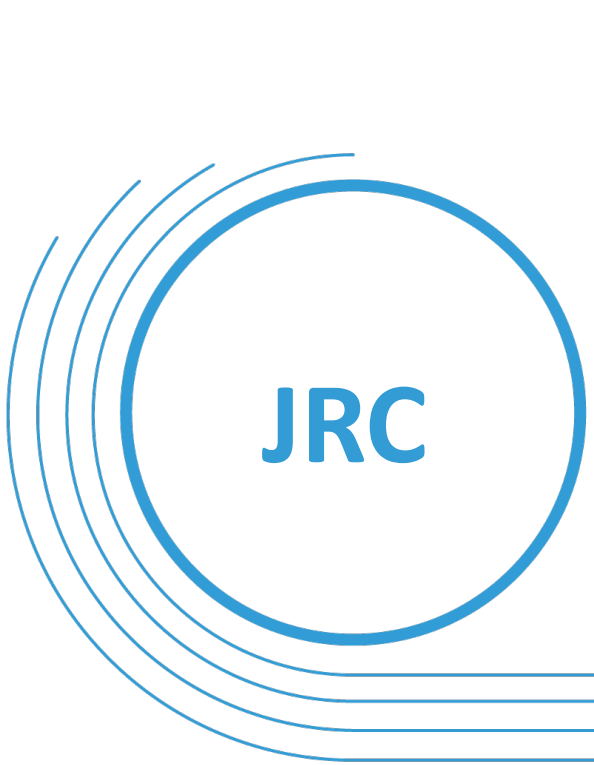
JRC – Facts and figures



About EUR 380 million annual budget plus about EUR 80 million earned

2.800 staff

> 50 large scale research facilities

110 on line databases
> 100 economic, bio-physical and nuclear models

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In 2019, in Europe (EU-27)

6.038.000.000.000 pkm*

80% of which by the road

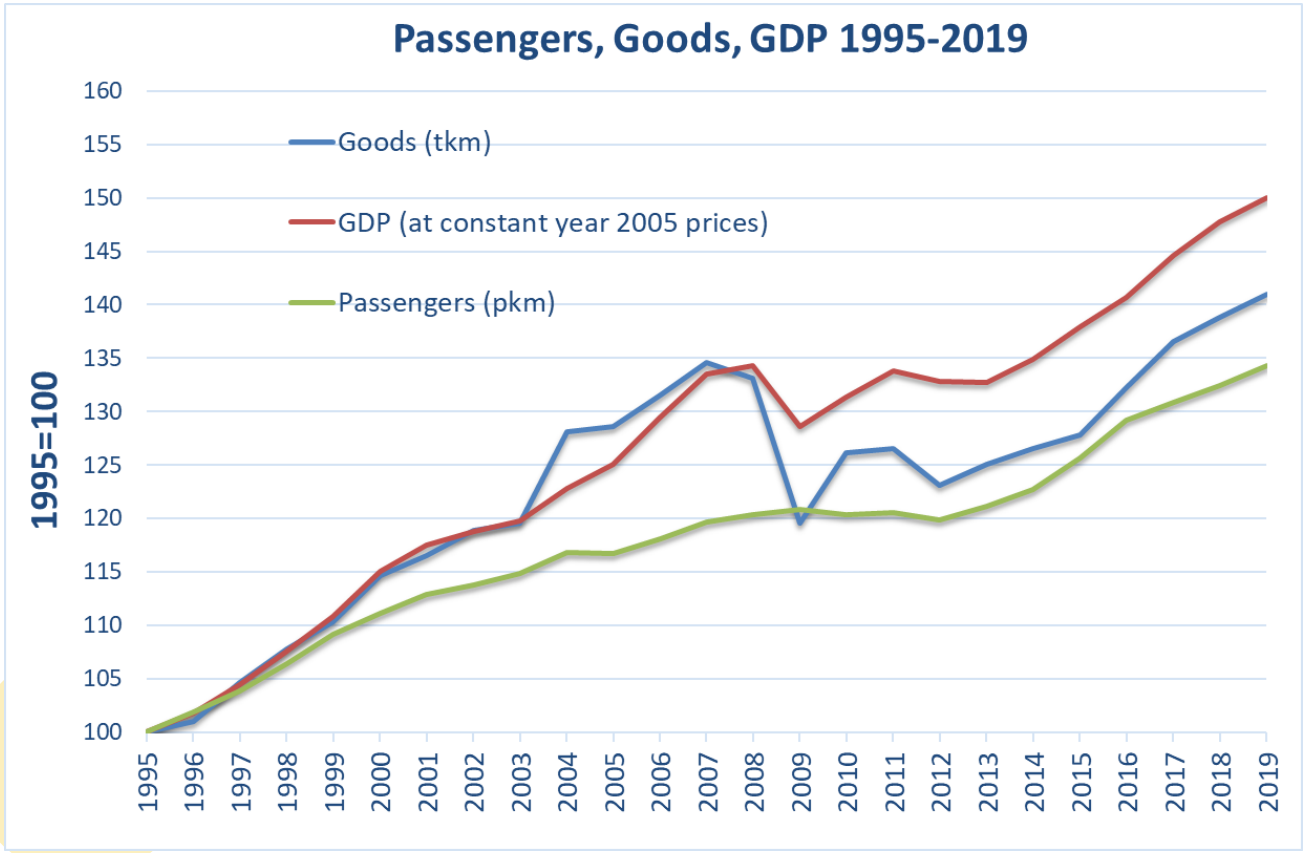
3.392.000.000.000 tkm*

52% of which by the road

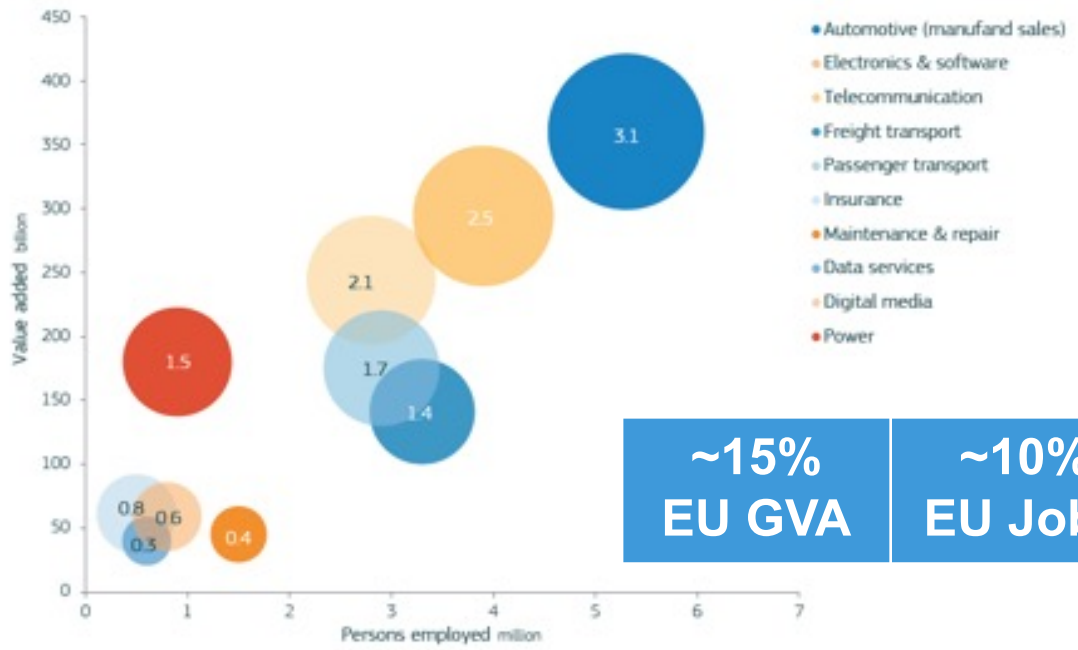
3.440 billion vehicle kilometers**

* European Commission. EU Transport in Figures – Statistical Pocketbook 2021.
** Indicative value based on own elaborations

Contribution of transport to EU economy



Sectors linked to **road transport** and their size (GVA, jobs)**



~15% EU GVA

~10% EU Jobs

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Road transport challenges

Transport is the only sector with increasing GHG emissions

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Economy

Employment

Life style

Trades

Congestion

Land-use consumption

Pollution and energy consumption

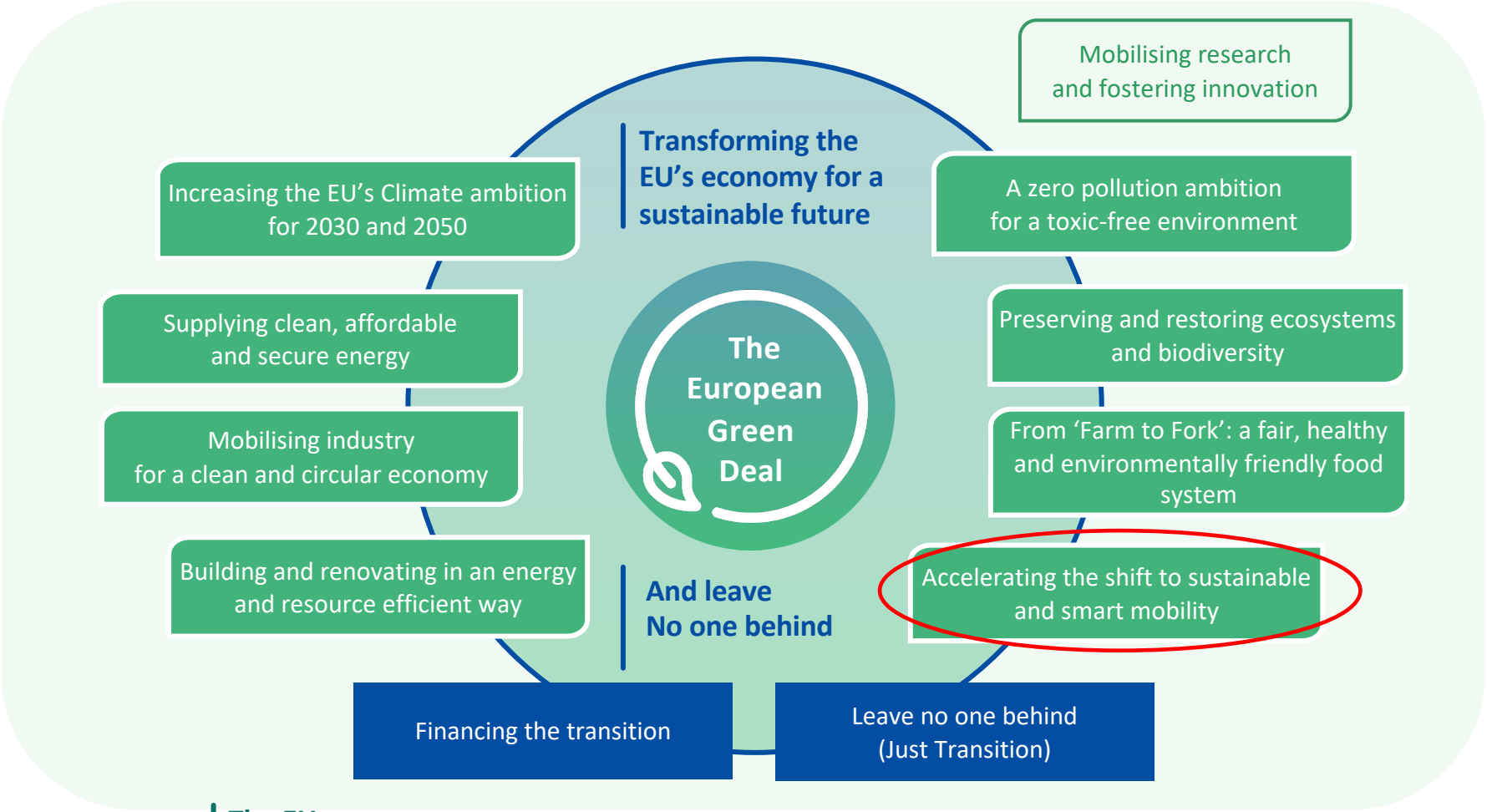
Accidents

Addressing the challenges

Addressing road transport challenges to achieve sustainable development goals

New technologies to make road transport more efficient, safer, cleaner and more sustainable

The European Green Deal (2019)



The European Green Deal and transport

- **Objective**: transform the EU into a modern, resource-efficient and competitive economy, no net emissions of greenhouse gases by 2050

90%
reduction
greenhouse gas emissions in transport by 2050

Reduce pollution

The Green Deal will address emissions, urban congestion, and improve public transport.

- **2030 Climate Target Plan**
  - At least 55% reduction of GHG emissions
  - Share of renewable energy sources in transport needs to increase from 6% to around 24%

The Sustainable and Smart Mobility Strategy (2020)

THE TRANSPORT AND MOBILITY SECTOR

is the **second-largest area** of expenditure for European households

contributes 5% to European GDP

employs directly around **10 million** workers

OBJECTIVES

1 Sustainable Mobility

2 Smart Mobility

3 Resilient Mobility

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The European Climate Law

- The European Climate Law Regulation of 30 June 2021

  Union-wide climate-neutrality objective 2050

  New **2030** target of at **least 55% net** greenhouse gas emissions reduction

  Recognition of the need to enhance the EU's **carbon sink**

‘Fit for 55’ package

TAXATION & TRADE

Funds:
Social Climate
Modernisation
Innovation

Revision of the EU Emissions Trading System (EU ETS)

Revision of the Energy Taxation Directive

NEW Carbon Border Adjustment Mechanism

Revision of the Regulation on Land use, Land use change and Forestry (LULUCF)

Revision of the Effort Sharing Regulation

Revision of the EU ETS in alignment with the CORSIA system for reducing international aviation emissions

Revision of the Alternative Fuels Infrastructure Directive

Revision of CO_2 emissions standards for cars and vans

NEW ReFuelEU Aviation Initiative

NEW FuelEU Maritime Initiative

Revision of the Renewable Energy Directive

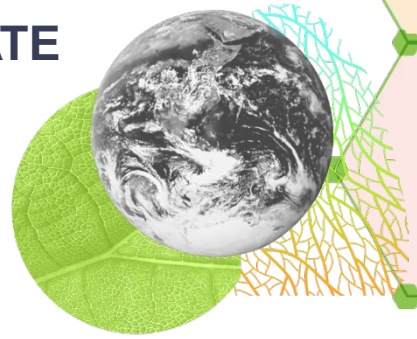
Revision of the Energy Efficiency Directive

Fit for 55

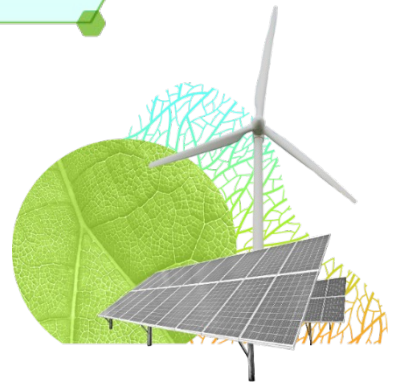
Work in progress: Revision of CO_2 standards for heavy duty vehicles

TRANSPORT

CLIMATE



ENERGY



Pricing

Rules

Targets

Support

1 Sustainable Mobility

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Main elements of the CO2 standards proposal

1 Sustainable Mobility

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Alternative Fuels Infrastructure within Fit for 55

- Proposal for a Regulation that covers Alternative Fuels Infrastructure in the EU repealing existing directive
- Sets out mandatory national targets for the deployment of sufficient alternative fuels infrastructure in the Union, for **road vehicles**, **vessels** and **aircraft**
- Road vehicles:
  - Targets for charging infrastructure linked to ZEV sales
  - LDVs: 1kW per EV, 0.66kW per PHEV through public infrastructure, min. one station every 60km; capacity provisions for HDVs
  - H_2 refuelling, one station every 150 km along the TEN-T core network and in every urban node serving both LDVs and HDVs.

Smart mobility

Unleash full potential of **data**.

By 2030, integrated electronic ticketing facilitates seamless multimodal passenger transport.
Freight transport will be paperless.

By 2030, automated mobility will be deployed on large scale.

PAVING THE WAY TO DRIVING AUTOMATION IN EU

AUTOMATED VEHICLES

KEY CHARACTERISTICS:

- Driver present
- Automated driving mode limited to motorways up to 60 km/h, up to 130km/h from January 2023
- No limitation to size of vehicle series
- Cybersecurity measures

FULLY DRIVERLESS VEHICLES

KEY CHARACTERISTICS:

- No driver present
- Automated driving permitted in defined areas
- Limit on size of vehicle series to max.1500 vehicles per model per year Review of limit by July 2024
- Allowed from September 2022

The new EU ADS Regulation (2022)

Commission Implementing Regulation laying down rules for the application of Regulation (EU) 2019/2144 of the European Parliament and of the Council as regards uniform procedures and technical specifications for the type-approval of motor vehicles with regard to their automated driving system (ADS)

ANNEXES to the Commission Implementing Regulation

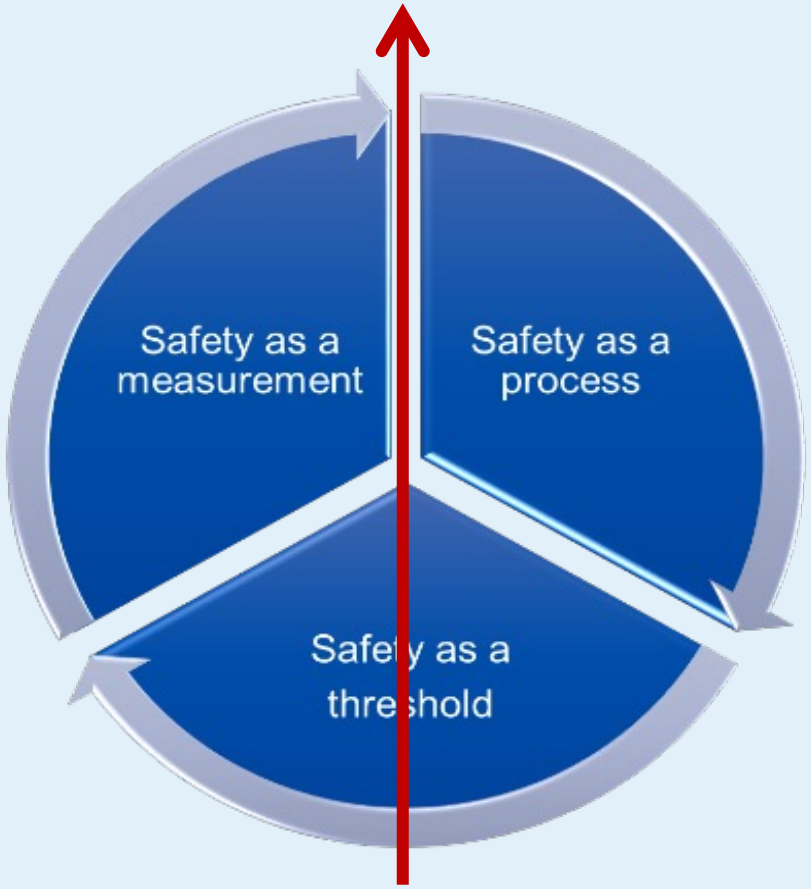
1) Information Document
2) Performance Requirements
3) Compliance Assessment

   PART 1 Traffic Scenarios
   PART 2 Audit of SMS and safety assessment
   PART 3 Tests
   PART 4 Guidelines for the credibility assessment
   PART 5 In-service reporting
4) EU Type approval certificate

Commission Implementing Regulation (EU) 2022/1426 of 5 August 2022

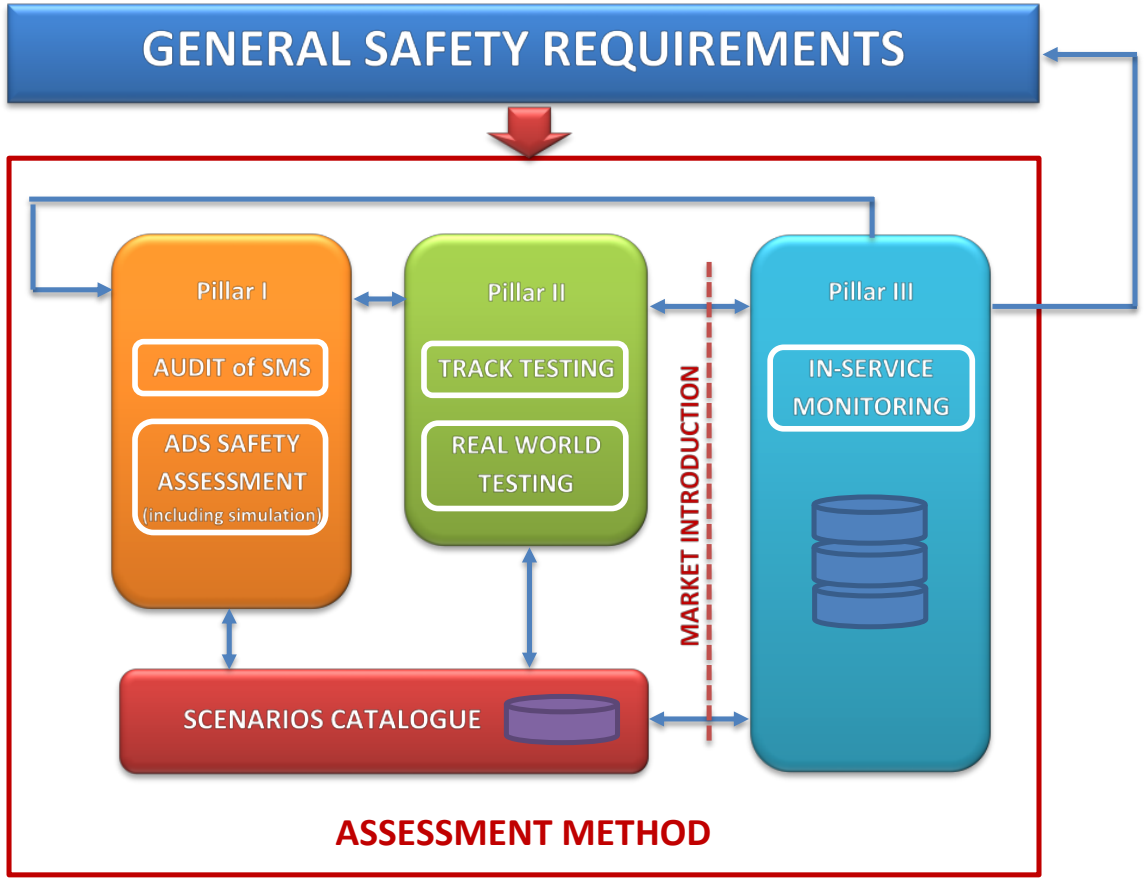
Safety Requirements

VISION ZERO



based on SoA performance

New Assessment Method



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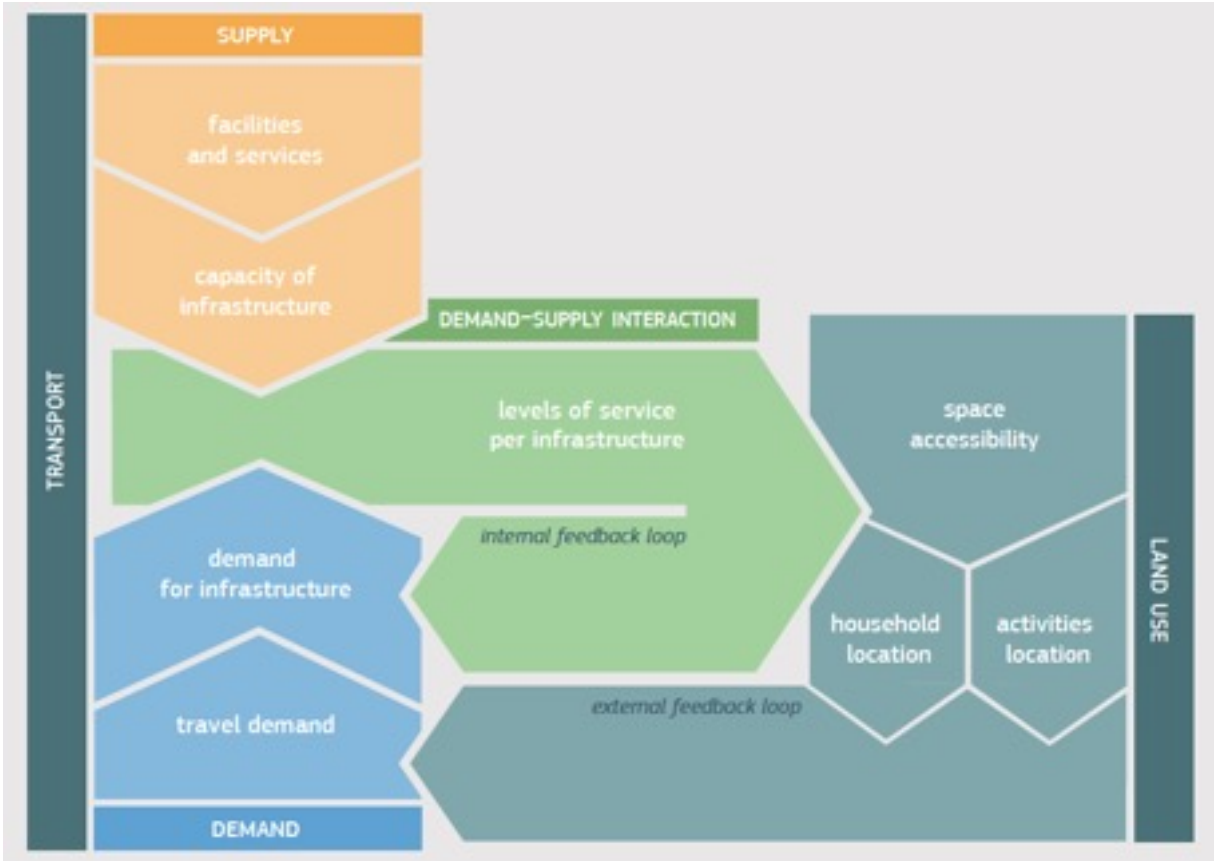
Transport complexity

Transport systems are «**internally complex systems**, made up of many elements influencing each other both directly and indirectly, often nonlinearly, and with many **feedback cycles**»*.

Transport policies have **implications** for the **economy**, **land use**, **environment**, **quality of life**, and **social cohesion**. In this respect, they have a «*bearing on many, often conflicting, interests*»*



* Cascetta, 2009

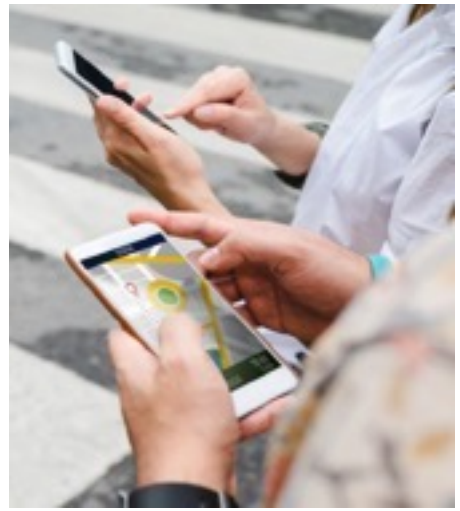
Implications of transport complexity – Cheaper on-demand mobility

Ride-hailing and car-sharing services are **increasing vehicles' use and congestion**

~50% of trips "would not have been made at all, or made by walking, biking, or transit"*

AVs may generate **new demand of mobility** from currently underserved population

AVs will make **travel experience** more comfortable and cheaper



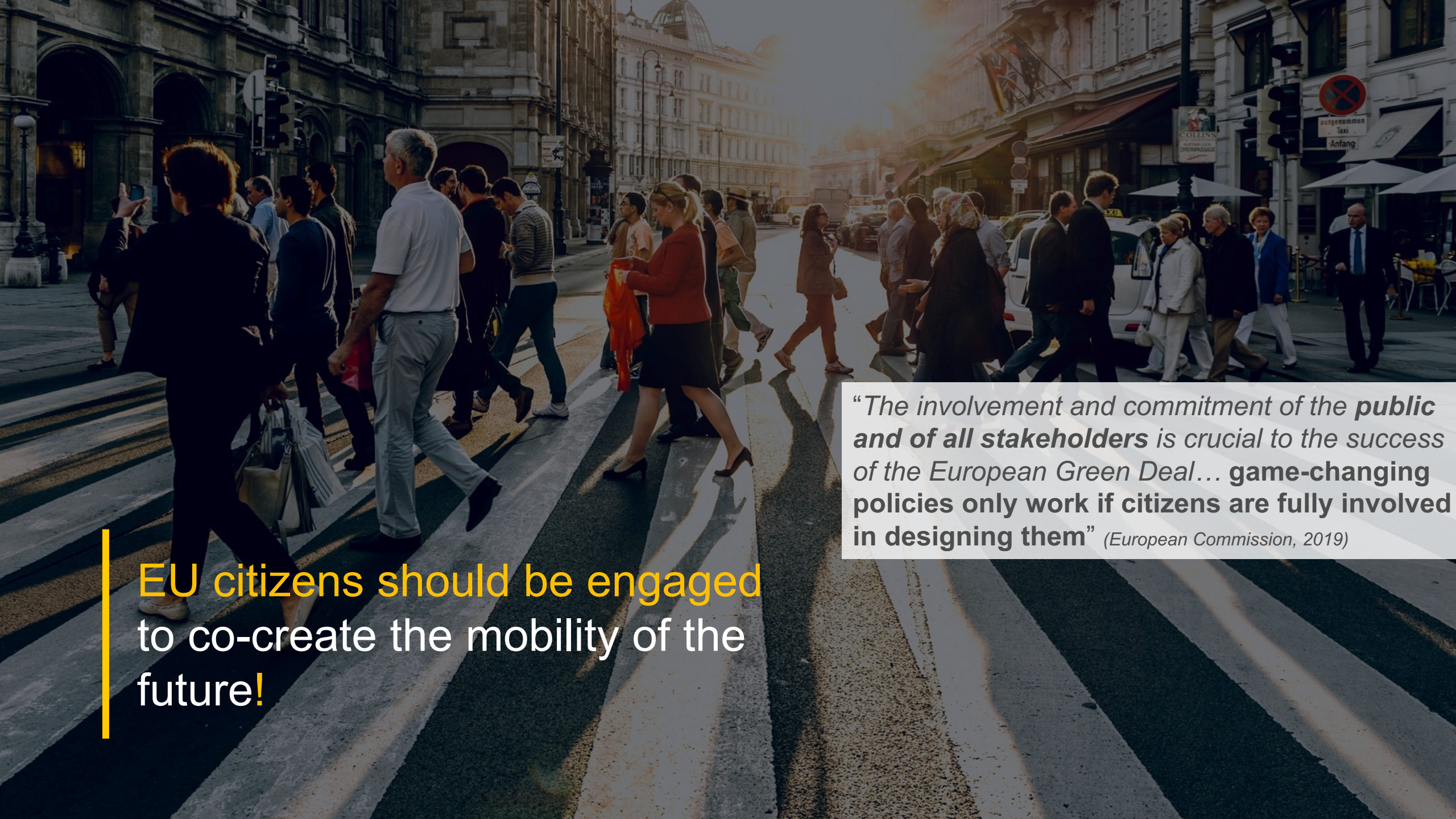
Considerable risks that **road traffic will eventually increase**

* Clewlow and Mishra, 2017

Road transport in the future of mobility

A cheaper, more comfortable, more efficient, more accessible, more secure, safer (also in relation to the long-lasting effects of Covid pandemics) and more flexible **road transport will remain the dominant mode in the decades to come.**

Is this the future of road transport we have in front of us?



"*The involvement and commitment of the **public and of all stakeholders** is crucial to the success of the European Green Deal…* **game-changing policies only work if citizens are fully involved in designing them**" *(European Commission, 2019)*

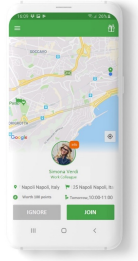
EU citizens should be engaged to co-create the mobility of the future!

The JRC Mobility Living Lab

- The largest site of the JRC: **167 ha** in total, **213 000 m²** of managed space
- Hosting a community of around **2500* people,** including JRC permanent and temporary staff, intramuros experts and non-JRC services on-site
- **More than 80 buildings** heated/staffed
- **36 km of roads**
- **Fully fenced** site; **Italian law** applied under JRC responsibility







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To unveil the effect of new technologies on road transport,

one living lab is not enough

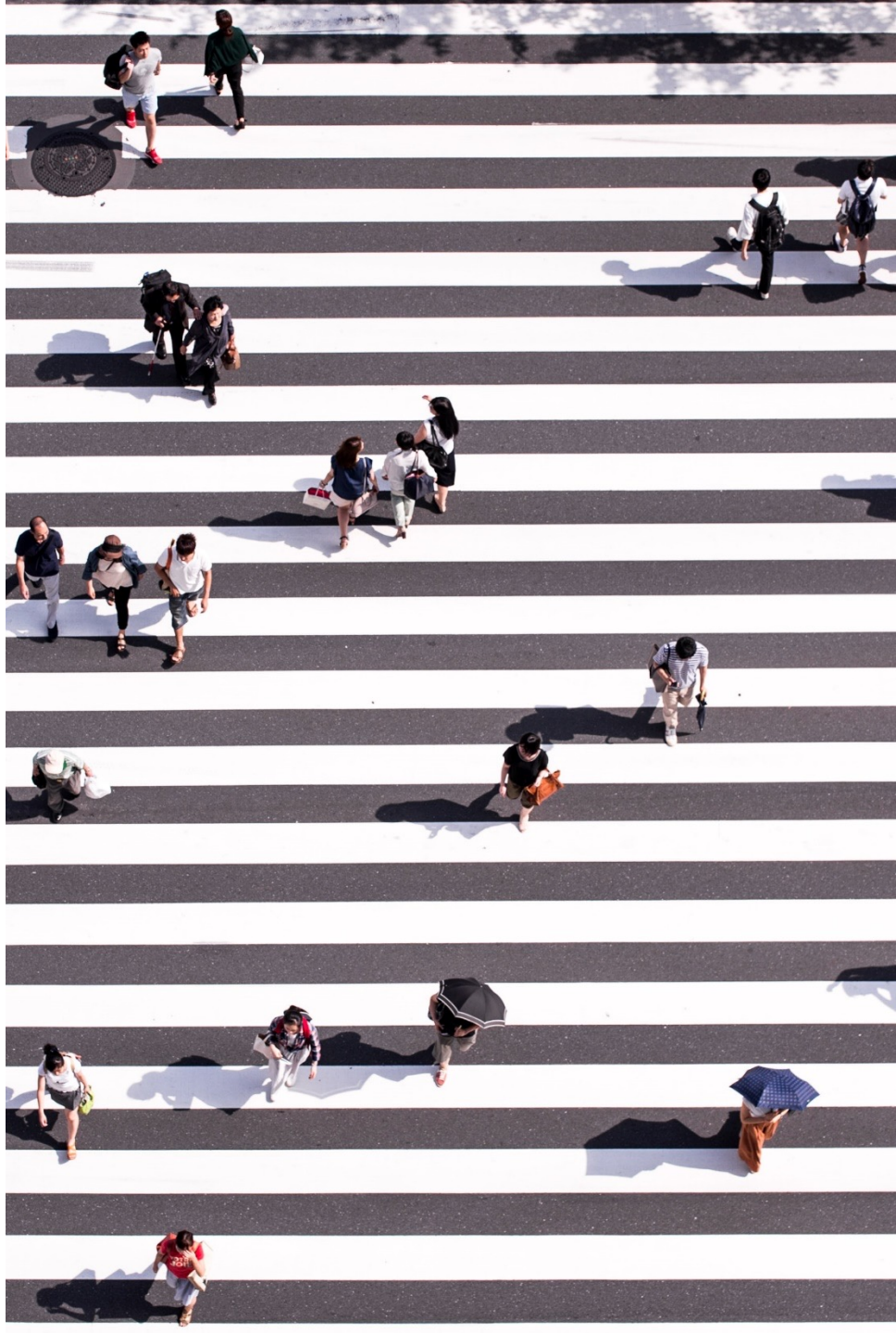
European Network of Living Labs

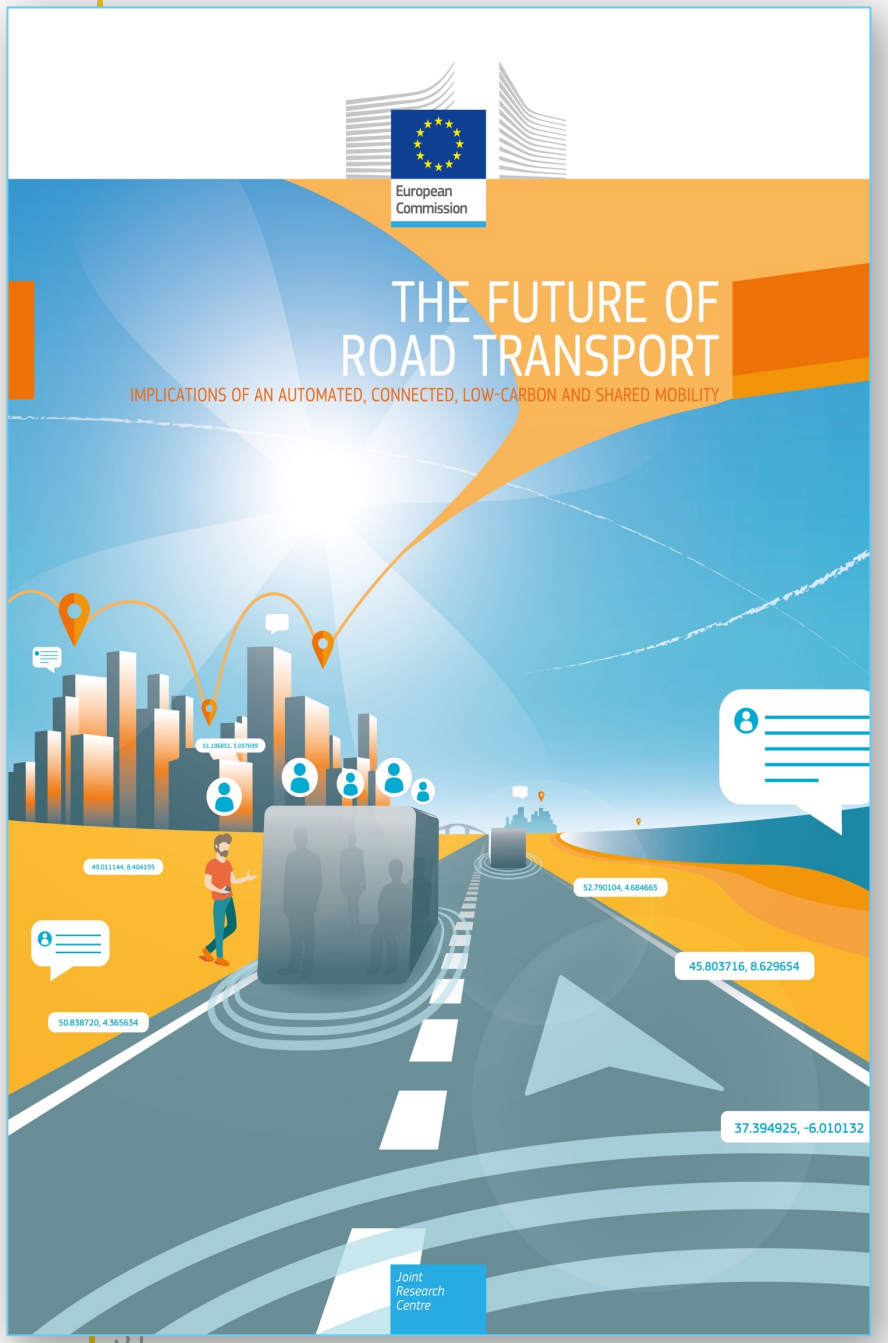
ENoLL Working Group on mobility

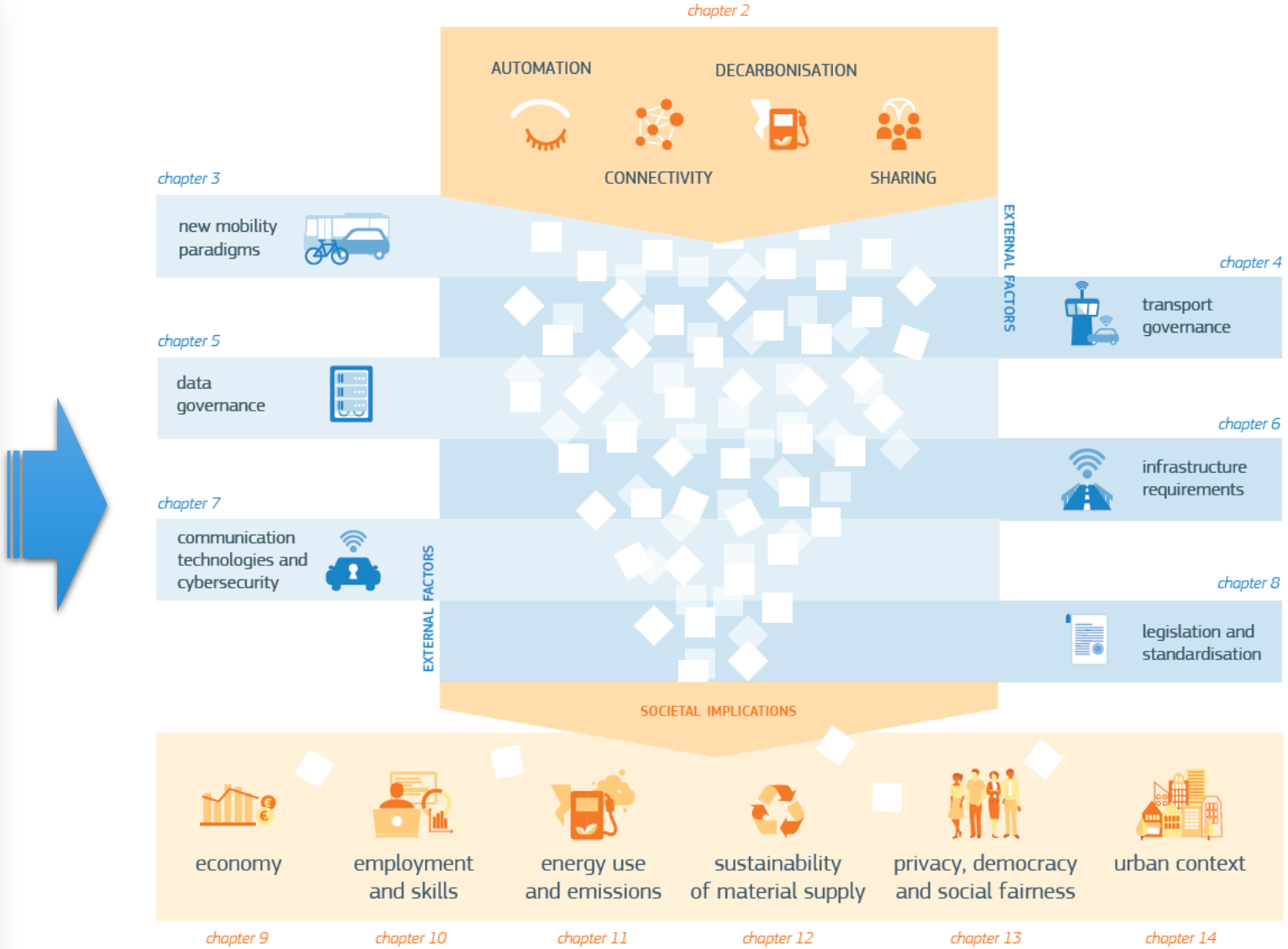
eit Urban Mobility

A network of living labs is needed

to address transport complexity







Available at:
https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/future-road-transport

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Conclusions

- The transport sector is one of the pillars of our modern society
- It also poses challenges that are difficult to address
- New technologies are usually requested to address the challenges while preserving the possibility to satisfy the mobility needs of people
- If not properly governed, the introduction of new technologies may lead to unwanted consequences
- Engaging citizens in the transformation of the transport sector allows to better anticipate possible future challenges

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Thank you

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