SUSTAINABLE MOBILITY

TOWARDS THE FUTURE

THE PROBLEM(1)

congested and inefficient cities

In 2050, 80% of the European population will live in cities
85% of GDP is generated in cities
THE PROBLEM(2)
Emissions from the transport sector, air quality and climate change

Greenhouse gas emissions by IPCC source sector, EU-28, 2016

- Transport (including international aviation): 26.2%
- Fuel combustion: 16.3%
- Other: 21.3%
- Manufacturing industries and construction: 10.7%
- Energy industries: 26.5%
- Industrial processes and product use: 8.6%
- Agriculture: 5.7%
- Waste management: 0.9%

Source: EEA, republished by Eurostat (online data code: ene-co2-ggpc)

THE PROBLEM(3)
Emissions from the transport sector, air quality and climate change

Greenhouse gas emissions from transport by mode in 2014

- Road transport: 72.5%
- Railways: 11.1%
- Maritime: 9.8%
- Air transport: 5.5%
- Inland navigation: 1.1%

Share of transport energy demand by mode in 2014 (%)

Greenhouse gas emissions from transport by mode in 2014

- Road transport: 72.5%
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- Inland navigation: 1.1%
THE PROBLEM

The predictions of increase if nothing is done

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THE PROBLEM (6)

Things are changing and there are some opportunities even in bad times.

Lower air pollution during COVID-19 lockdown may improve crop production

An international team of researchers analysed the effects of lower emissions of air pollution during the COVID-19 lockdown on crop production.

The largest estimated increases in wheat yields were found in China and South Korea.

In Europe, these increases could be between 2-3 % in Northern EU countries and up to 7 % in Southern EU countries, mostly caused by changes in ozone in countries outside of Europe.

THE PROBLEM (7)

Portugal’s poor positioning in the EU context.
THE PROBLEM (8)
Portugal’s poor positioning in the EU context

EU citizens on the move
Top 3 countries
(\% of total inland transport in passenger-km)

Traveling by car
- Portugal 90\%
- Spain 89\%
- France 87\%

Traveling by train
- Portugal 12\%
- Spain 10\%
- France 11\%

Traveling by bus, coach or other bus
- Portugal 19\%
- Spain 22\%
- France 18\%

THE PROBLEM (9)
Portugal’s poor positioning in the EU context

Europe road deaths per million inhabitants, 2017
Road deaths per million population

- 0-30
- 31-40
- 41-60
- 61-80
- 81-99
- No data

Source: European Transport Safety Council
POLICY EU (1)


Five main challenges were defined:

- Free-flowing towns and cities
- Greener towns and cities
- Smarter urban transport
- Accessible urban transport
- Safe and secure urban transport

POLICY EU (2)

White Paper “Roadmap to a Single European Transport Area”, 2011

40 concrete initiatives for the next decade to build a competitive transport system that will increase mobility (...) by halving the use of conventional fuel cars in cities by 2030 and achieving essentially CO2-free logistics in major urban centers by 2030.
Urban Mobility Package 2013

Concept of Sustainable Urban Mobility Plans (SUMPs) focused on the following areas:

- City logistics,
- Access regulation,
- Urban ITS and
- Urban security.

At the Paris climate conference (COP21) in December 2015, 195 countries adopted the first universal and legally binding global climate agreement. The transport sector accounts for 25% of global greenhouse gas emissions, according to the Intergovernmental Panel on Climate Change (IPCC). This human activity produces 8 gigatonnes of substances per year that contribute to global warming. The figure is 70 times higher than 30 years ago.
POLICY EU – WORLD (5)

The Athens Resolution – 2016

- DECARBONIZATION AND TRANSPORT ELECTRIFICATION
- VEHICLES WITHOUT CONDUCTORS AND SCANNING
- CONNECTED TERRITORIES
- RECOVERY OF PUBLIC SPACE
- SHARING MOBILITY AS A SERVICE

POLICY EU – WORLD (6)

Maastricht Mobility Treaty – 2017

- DREAMING 'HIGH': HAPPY PEOPLE AND A SUSTAINABLE PLANET
- THINK BIG: BRING FOCUS, BUT DO NOT LOSE THE ‘ZOOM OUT’
- TEAM, ACT
THE NEED FOR A 'PARADIGM' CHANGE (1)

• The paradigm of our mobility, mostly based on the car even for short distances, is not efficient.

• It must change, in order to change the forecast of our future in terms of health, safety and savings, individual and collective.

• Efficiency is achieved by promoting sustainability:
  • Economy
  • Environmental
  • Social

THE NEED FOR A 'PARADIGM' CHANGE (2)

• The change from mobility centered on the car should proceed gradually, following the path of decarbonisation, and this must be done based on the criteria:

• Car mobility,
  • More electric
  • Most shared
  • More autonomous

• But still giving priority to public transport and active modes, especially for passenger transport.

From car to user centred
SUSTAINABLE MOBILITY GOALS(1)

- Reduce impact on the environment and public welfare / minimize emissions;
- Maintain human health and safety;
- Meet the travel needs of the population;
- Support the economy;
- Minimize transport costs / time for access and mobility of people and goods;

SUSTAINABLE MOBILITY GOALS(2)

- Minimize infrastructure costs;
- Make the best use of resources, including energy sources;
- Ensure the long-term viability of transport systems;
- Safeguarding implications for the quality of public space globally.
SUSTAINABLE MOBILITY ACTIONS (1) - EU

- Adopt and promote new technologies and traffic management;
- Promote active modes;
- Implement support and planning infrastructures;
- Promote shared and collective transport;
- Promote lighter and more specialized road vehicles (electric mobility);
- Promote smart modes of transport and optimized business models;
- Promote transportation as a service (MaaS);
- Ensure intermodal mobility;
- Develop demand studies and data collection.

SUSTAINABLE MOBILITY ACTIONS (2) – EU-THE RIGHT MIX

For each city, the right combination depends on:
- City structure, zoning and infrastructure;
- Personal characteristics of the user and levels of demand (existing or to be promoted);
- Transport systems available.

Sustainable mobility is a fundamental paradigm for a sustainable future:
Mobility needs to be as efficient as possible from an economic, social and environmental point of view;
It is necessary to meet the needs of movement, access, communication and business, without sacrificing other essential human and ecological values today or in the future.
SUSTAINABLE MOBILITY ACTIONS (4) – TDM

‘Traffic Demand Management’ or ‘Demand Control’ measures

Information, incentives, resources and support for people who want to make the best use of available transportation options. These alternatives include public transport, vehicle sharing, pedestrian and cycle transport. Some models also include telecommuting.

All TDM measures aim to reduce the number of trips of the type:

A motor vehicle with one occupant.
NEW MOBILITY PARADIGMS(1)

Electric, shared, autonomous and ‘smart’
Associated with major technological and business developments in the fields of motor vehicles and information systems.

NEW MOBILITY PARADIGMS(2)

Intermodal and multimodal:
Ensure opportunities and alternatives to the use of the car by combining sustainable modes.
NEW MOBILITY PARADIGMS(3)

Connect spatial planning (regional and urban scales) with transport network planning.

NEW MOBILITY PARADIGMS(4)

Promote TOD – Transit Oriented Development
NEW MOBILITY PARADIGMS(5)

Subsidize public transport, for workers and residents in certain areas of the cities.

NEW MOBILITY PARADIGMS(6)

Improve quality and comfort, as well as the frequency and reliability of public transport.
NEW MOBILITY PARADIGMS(7)

Improve the quality and comfort of stations, stops and modal interfaces.

NEW MOBILITY PARADIGMS(8)

Think of the network, at all transport scales: transport networks in urban and regional terms, linked internally and externally - responding to 'origin-destination' mobility logics, linked to needs.
NEW MOBILITY PARADIGMS (9)

Coordinate urban development and rehabilitation or ‘urban design’, with urban mobility management:
'Mixed' zones (activities)

NEW MOBILITY PARADIGMS (10)

Coordinate urban development and rehabilitation or ‘urban design’, with urban mobility management:
Road hierarchization
NEW MOBILITY PARADIGMS(11)

Coordinate urban development and rehabilitation or ‘urban design’, with urban mobility management:
Reallocate street space to sustainable modes, namely by reducing the number of parking spaces.

NEW MOBILITY PARADIGMS(12)

Coordinate urban development and rehabilitation or ‘urban design’, with urban mobility management:
Implement the ‘complete streets’ concept.
NEW MOBILITY PARADIGMS (13)

Coordinate urban development and rehabilitation or ‘urban design’, with urban mobility management:
Use Traffic Calm measures.

NEW MOBILITY PARADIGMS (14)

Coordinate urban development and rehabilitation or ‘urban design’, with urban mobility management:
Include or improve pedestrian-oriented street design elements, including special pavement, walkways, signage and afforestation.
NEW MOBILITY PARADIGMS(15)

Guarantee all types of infrastructures for active modes of transport, including routes, lanes and cycling areas, according to the road hierarchy (type of street).

NEW MOBILITY PARADIGMS(16)

Ensure bicycle-friendly equipment and environments, including secure parking, storage and showers.
NEW MOBILITY PARADIGMS(17)

Taxation of circulation or 'pricing';
High prices for congestion during ‘rush hour’;
Rationing space on the road or travel on alternate days, restricting travel based on the license plate number, at certain times and locations;
Time, distance and location (TDP) rates, where users are charged based on when, where and how much they drive.

NEW MOBILITY PARADIGMS(18)

High occupancy vehicle (HOV) lanes can further encourage vehicle sharing, avoiding congestion or tolls.
NEW MOBILITY PARADIGMS (19)

Vehicle sharing, or ‘carpooling’, in private or corporate solutions.

NEW MOBILITY PARADIGMS (20)

The use of Carsharing or Bikesharing systems.
NEW MOBILITY PARADIGMS(21)

Parking management
(differentiated taxation depending on the city area and penalizing parking in the centers)

NEW MOBILITY PARADIGMS(22)

Mobility accessible to all
NEW MOBILITY PARADIGMS (23)

Provide traveller information tools, including smart improvements to the transportation system, mobile and social apps, guidance tools and other methods to promote alternatives to single-occupancy vehicle (SOV) modes.

NEW MOBILITY PARADIGMS (24)

Different and flexible working hours
NEW MOBILITY PARADIGMS

Encourage teleworking at home or in a nearby location, outside the workplace, to reduce the number or distance of commuting.

NEW MOBILITY PARADIGMS

Mobility plans for companies
NEW MOBILITY PARADIGMS (27)

Education

RESOURCES - EU - POLICY (1)

(policies related to urban mobility)

Energy
Climate change
Transport - multimodality and energy efficient urban transport
Air Quality
Economy
Social equity and accessibility
People with a disability
Passenger rights
SUMP’s
Innovation, IT deployment and Smart Cities http://eu-smartcities.eu
RESOURCES - EU - POLICY /PROGRAMS (2)

(Transport - multimodality and energy efficient urban transport):

- Mobility management
  CIVITAS, ELTIS, EPOMM
- Sustainable Urban Transport Planning (SUMPS)
- Collective passenger transport (CIVITAS e ELTIS)
- Cycling
- Walking
- Transport for people with reduced mobility
- Clean and energy-efficient vehicles
  - Inter-modality
  - Traffic management
- Urban freight/city logistics

SUSTAINABLE MOBILITY SUPPORT PROGRAMS / PROJECTS - UE(1)

The project works in 10 thematic areas, related to sustainable transport mobility, covering:

- Independent lifestyles of automobiles;
- Clean fuels and vehicles;
- Public passenger transport;
- Demand management strategies;
- Integrated planning;
- Mobility management;
- Public participation;
- Security and protection;
- Telematics for transport and urban transport logistics.

Platform that facilitates the exchange of information, knowledge and experiences in the field of sustainable urban mobility in Europe.
To make mobility environmentally friendly, socially just and economically healthy;

Promote and further develop Mobility Management in Europe;

Support the exchange and learning of Mobility Management between European countries;

Become the main partner of European institutions and national governments when seeking advice on Mobility Management.
In 2011 the Portuguese government approved the Strategic Transport Plan (PET), which established the reform for 2011-2015.

The Strategic Transport and Infrastructure Plan 2014-2020 - PETI3 +, provides for a set of structural infrastructure reforms to be undertaken, promoting the shift from individual transport to public transport by the end of this decade. It promotes social and territorial cohesion and environmental sustainability, guaranteeing the mobility and accessibility of people and goods throughout the country.
SUSTAINABLE MOBILITY SUPPORT PROGRAMS / PROJECTS - EU(6) PORTUGAL

- Electric buses
- Expansion of metro networks
- U-bike project
- Project MOBI.E
- Incentives for ZEV / LEV
- Incentives for public transport

SUSTAINABLE MOBILITY SUPPORT PROGRAMS / PROJECTS - EU (7) PORTUGAL

National strategy for active cycling mobility 2019
TECHNICAL INSTRUMENTS (PORTUGAL)

INFOGRAPHICS FOR THE FUTURE
INFOGRAPHICS FOR THE FUTURE
INFOGRAPHICS FOR THE FUTURE

INFOGRAPHICS FOR THE FUTURE

WHAT IS A COMPLETE STREET?

- Active Sidewalks: Sidewalks should be smooth, wide, well-lit, and free of obstacles, making it easy to walk or run.
- Dedicated Bike Lanes: Bike lanes should be separated from car traffic to ensure safety.
- Active Roadway: One lane of car traffic going in each direction with a cycle lane in the middle, reducing the amount of road space needed for traffic.
- Safer Crosswalks: Clearly marked crosswalks allow pedestrians and wheelchair users to cross streets safely.
- Planting Street: Trees and landscaping improve the aesthetics of the roadway, provide shade, and create a buffer between cars and pedestrians, making the environment more pleasant.
- Green Spaces: Parks and public spaces increase community interaction and provide a sense of place.

Urban Street Design Guide
National Association of City Transportation Officials
OBRIGADA!

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