“The Contribution of Transport in De-Carbonation and Climate Change aspects”

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If you imagine your city in 2020 years, what would you like it to look like? A place where children can play safely? Where the air is clean? Where you can walk to do your shopping? With lots of parks and green space? Where businesses can prosper?

“Planning for a better quality of life”
Transport is responsible for about 23% of the EU's greenhouse gas emissions. Since 1990 transport has not achieved its decarburizing targets. If this trend continues:

- Transport is expected to contribute 50% of all CO2 Emissions in the EU by 2050
- CO2 emissions from transport are expected to increase by +120% on 2000 levels by 2050.

The objective:
..to achieve a 60% reduction in CO2 emissions within the EU by 2050..

How do figures for transport develop?

Challenge global climate protection

‘If you don’t tackle the transport you can’t tackle climate change’  
(ITF, Leipzig, May 2013)
GHG emissions in the EU27 by transport mode

Overall emissions generated by:

- Road transport 71.3%
- Inland navigation 1.8%
- Maritime transport 13.5%
- Aviation 2.8%
- Rail 0.7%

Transport activities contribution to:

- Climate change,
- Local air pollution,
- Noise levels,
- Biodiversity loss,
- Natural resources depletion.

Emissions of greenhouse gases are a main cause of global warming. Emissions of compounds from transport activities make the ozone layer thinner, causing damaging infiltration of ultraviolet radiance.
Today there are estimated one billion vehicles Worldwide.
The number of motorized vehicles in developing countries is expected to increase manifold between now and 2050. Cars – 72% of all passenger kilometers – consume four times more energy per pass/km than public transport – responsible for 3.5 times more GHG emissions than public transport.

Today circulate about 500,000 private cars, in the future: to increase by 10,000 cars each year.

121 vehicles for 1,000 inhabitants

13.2% of every household's budget is spent on average on transport goods and services.
Demand for passenger and freight transport is constantly increasing in cities and towns, contributing to congestion, pollution, and traffic accidents.

Total CO2 emissions from freight and passenger transport combined, world-wide, would grow to 1.5 to 2.4 times 2010 levels by 2050.

How to reduce emissions in passenger transport?

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\text{total emissions} = \text{transport demand} \times \text{energy intensity} \times \text{CO}_2-\text{intensity}
\]

**Approaches**

- Avoid traffic: e.g., reduce needs for mobility and distances by means of integrated planning
- Shift traffic and push efficiency: e.g., reduce fuel consumption of vehicles and shift traffic towards more efficient modes
- Switch fuel: e.g., use low carbon fuels such as sustainable biofuels or renewable electricity
Transport in Cities; anything strange going on here? And in 2012 TIRANA City traffic looks like this:

POLLUTION

CONGESTION

CONGESTION
The number of fatalities is still high

Road Fatalities in urban areas in the EU 20 000 pedestrian fatalities occur annually in OECD member countries, where pedestrian deaths range from 8 to 37% of all road fatalities. Worldwide, the number of pedestrians killed every year on the road exceeds 400 000.

Albania: on 2012 about 1994 traffic accidents

Studies have also shown that co-benefits of policies aiming at mitigating climate change can reduce substantially the number of premature deaths from air Pollution.
20% reduction in greenhouse gas emissions on 1990 levels and 30% reduction if other developed countries make comparable reduction commitments.

20% increase in renewable energy – wind, solar and biomass of total energy production (currently 8.5%)

20% reduction in energy consumption of projected 2020 levels by improving energy efficiency.

A specific focus is on greening of urban transport because most people in the EU live in urban areas. In light of this, integrating public transport into the urban fabric can help make urban life healthier, safer and more enjoyable, due to greatly improved air quality and reductions in CO2 levels.
"Adapting to climate change in Europe – options for EU action" on response to climate change says, For transport: "Adapting existing transport infrastructure to changing climate conditions, while ensuring its continued and safe functioning, will require substantial additional investments. New transport infrastructure and related transport means should be made climate proof from the early design...."
The solutions are there:

By 2050, key goals will include:

- No more conventionally-fuelled cars in cities.
- 40% use of sustainable low carbon fuels in aviation; at least 40% cut in shipping emissions.
- A 50% shift of medium distance intercity passenger and freight journeys from road to rail and waterborne transport.
- All of which will contribute to a 60% cut in transport emissions by the middle of the century.
**Combined mobility**

Public authorities can decide on an adequate policy framework and together build up a mobility policy aiming to offer citizens the possibility to live in their city without owning a car. On the other hand, public transport can develop partnerships with combined mobility providers and overcome some of its shortcomings in order to meet the mobility requirements of modern citizens. Car-sharing, taxis and shared taxis, bicycle and bike-sharing, car-pooling, demand-responsive transport, car-rental, etc., are services that can complement the classic fixed line- and timetable-bound public transport services and, together with walking, they form a complete and coherent mobility solution.

**Developing master plans**

Sustainable and holistic master plans that better balance the space allocation between cars and public transport, walking and cycling, produce a wise development of land use and transport networks.

Charging for car use and parking: has two advantages: it encourages the use of more sustainable modes of transport and it also constitutes a source of funding for public transport.
The future we want: Urban redevelopment

“Transport and Mobility are central to sustainable development. Sustainable transportation can enhance economic growth and improve accessibility”
(Rio +20, June 2012)
Type of variant of the city form and mode of transportation

What current relationships is:
- between land use and transportation?
- land use and vehicle?
- land use and public transport?

Concentrated Development
- Manhattan Scenario

Distributed Development
- Los Angeles Scenario

Polycentric Development
- Amsterdam Scenario
The higher the density, and the higher the proportion of journeys made by walking, cycling and public transport, the more economical the transport system will be.

Currently, some 74% of Europe’s population lives and works in cities and towns, and by 2050 some 82% of the continent’s population will be concentrated in urban areas. Urban expansion and high dependence on the car and truck have led to congestion in cities and towns across Europe.
One bus could carry the same number of people as 30 cars, while only occupying the road space of three cars.
Land use influences the choice mode of travel and vice versa

Transport planners used their land use transport planning models and overtly objective forecasting techniques to show an inevitable trend of accelerating motorization and how to cope with it.
The Milan tower apart is that it will be the world’s first vertical forest, with each apartment having a balcony planted with trees. In summer, oaks and amelanchiers will shade the windows and filter the city’s dust; in winter, sunlight will shine through the bare branches.
Thank you!

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