



The project is funded by the European Commission's  
Directorate-General Environment



# EU Transport GHG: Routes to 2050?

## Infrastructure and spatial planning

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Stakeholder Meeting 5  
September 24, Brussels (B)

Partners

[www.eutransportghg2050.eu](http://www.eutransportghg2050.eu)



# GHG emission reduction in urban planning and development

- Different policy-oriented options for GHG emission reduction in urban planning and development will be discussed:
- Urban planning
- Investments in public transport
- Investments in cycling and walking infrastructure
- Parking policy
- Policy for advanced distribution concepts

# Urban planning

- Concept of compact city: intensive use of available space in the urban area. Minimizing the distance between the functions in order to reduce the distance travelled.
- Reduction of GHG emission.
- Policies the minimize urban sprawl:
- Netherlands: ABC policy for companies and controlled housing building activities near and in cities.
- Long term measure. City of 2050 already exists.
- Largest effects in areas where strict planning regulations do not exist.
- Road and parking capacity is limited in compact cities. Possibilities for other modes (public transport, cycling, walking).

# Investments in public transport

- Public transport is more environmentally friendly than car transport
- In congested urban areas public transport can compete with the car when investments are made in dedicated infrastructure and an increased frequency.
- Measures need to be taken to reduce the attractiveness of the car.
- Solitary investments in infrastructure lead to an improvement of accessibility of a city but will not reduce GHG emissions.
- New car users will use the road space that has become available.
- Combination with compact city.



# Investments in cycling and walking infrastructure

- Supporting cycling and walking an good option for reducing GHG emissions. Modal shift from short car trips towards these modes.
- Prerequisites:
  - Good facilities
  - Small distances (compact city).
  - Flat terrain
- Cycling lanes and walking pavements instead of car lanes
- New development: Electric bicycles
- Co-benefits: liveabilty in the city, health benefits.



# Parking policy

- Travel costs and time are both influenced by parking policy
- High prices of parking facilities let people consider alternative modes of transport.
- Boundaries of areas with different parking tariffs should be carefully chosen (see paper 7).
- A reduction of the number of parking facilities can help to reduce traffic from visitors. A shortage of parking licenses for residents can reduce car ownership.
- Alternatives should be offered: park and ride facilities, public transport, cycling facilities.

# Policy for advanced distribution concepts

- Current freight transport in cities is not sustainable.
- Legislation for distribution of goods can lead to more GHG emissions.
- Advanced distribution concepts:
  - Use of clean vehicles (electric, CNG)
  - Urban consolidation centres, for example Binnenstadservice (NL). This can be combined with pricing of entering the city centre and introduction of physical barriers for large vehicles.



# Conclusions Urban Areas

- Discussed policy instruments can help reduce GHG emissions but these need to be combined with other measures like pricing policy.
- Otherwise effect is expected to be limited or even negative when complementary measures are not deployed because of second order effects due to latent traffic demand.
- As a result of these discussed policy instruments the liveability in the cities and the accessibility of the cities will improve.

## GHG emission reduction in spatial and infrastructure development outside urban areas

- Option for GHG emission reduction is to prevent trips or to shift towards 'greener' modes.
- Several investments in modes with lower GHG emissions to promote a modal shift will be discussed:
  - Short haul air towards rail
  - Road to waterways
  - Road to a combination of rail and waterways.
- Paper 5: potential of modal shift differs for passenger transport between 2-14%, for freight transport between 4-23% in combination with a strong modal shift policy.

# Investments in rail infrastructure

- Many high speed sections have been/are constructed across Europe.
- Less emissions than air transport, but more than conventional train transport.
- High speed lines can be a substitute for short haul air transport, for example Paris-Lyon.
- Risk is that people use high speed lines because they allow them to travel a larger distance in the same time period.
- Possible to have a complete European network before 2050.



# Investments in waterway infrastructure and in intermodal connections

- Waterway transport is mainly used for large volumes of freight transport over large distances.
- Current investments: section Antwerp-Paris.
- Intermodal connections can lower GHG emissions by using low emissions modes for part of the trip.
- Extra costs for transshipment (in money and time).



## Conclusions spatial and infrastructure development outside urban areas

- Investments in the greener modes can lead to better developed and more efficient transport networks.
- Provision of new transport possibilities and/or infrastructure cannot be expected to lead to GHG emission reductions.
- Therefore these investments should be part of a larger set of policy instruments like pricing policy, modal shift policy and legislation for vehicle emissions.