Assessing sustainable urban transport policies with the URM2030 web-based tool

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European cities challenges
URM2030 on-line policy support tool

- High level assessment tool
- To allow cities to explore different transport policy scenarios up to 2030
- Adaptable to different city circumstances (focus on smaller / medium sized cities in Europe, up to 1 million inhabitants)
- All urban transport modes covered
- The ease of use and visual attractiveness
- Limited data requirements and no modelling experience required
- Guidance provided
- Available in 10 European languages
URM2030 as part of the Sustainable Urban Mobility Plans process

Facilitates assessment and discussion of current issues

Quantification supports development of priorities and targets

Allows scoping and development of policy packages

Key action supported by the URM2030 web-tool tool
Calculation framework

- City type choice
  - Country
  - City type
  - Population size and distribution
  - City economy

- City Customisation
  - Public transport use
  - Bicycle use
  - Motorcycle use
  - Tram/metro network
  - Level of congestion
  - Incoming trips

- Transport demand estimation
- Emissions estimation

- Transport parameters
  - Car ownership
  - Mode split
  - PT mode split
  - Freight traffic
  - Transport regulation

- Exogenous conditions
  - Energy prices
  - Energy taxation
  - Fleet technology trend

- Population and vehicle fleet
  - Population trend
  - Sprawling trend
  - Average income
  - Car fleet composition
  - Bus fleet composition

- Transport output
  - Car ownership trend
  - Mode split
  - Travelled distance
  - Average speed
  - Share of freight traffic
  - Penetration of alternative fuel vehicles

- Environment and Safety output
  - CO2 yearly emissions
  - Polluting yearly emissions (PM, NOx, VOC, CO)
  - Fuel consumption by fuel and mode
  - Road fatalities
  - Road injuries

- Economy output
  - Individual transport expend.
  - Transport expend. of public administration
  - Transport social monetary cost
  - Value of travelled time
  - Net financial result for public administration

Policy N

Parameter 1
Parameter 2
Parameter 3
...
City type selection

City Wizard

Country

Country

City type

Large city monocentric
Small city (100 000 inh.)
Small city with large historical core
Medium city (100 000 - 500 000 inh.)
Large city monocentric
Large city polycentric

Population size

75000

Advanced Settings

Sociodemographic:
Traffic
Parking
Public transport and bicycle
Vehicle fleets
Exogenous conditions

Population trend
Stagnation: growth rate of 0% per year

Sprawling trend
No sprawl

Average income level
Medium average income per capita

City Wizard

1. City type

Public transport use
Public transport is extensively used
Public transport is used
Public transport is rarely used

Bicycle use
Bicycles are used
Bicycles are extensively used
Bicycles are rarely used

Motorbike use
Motorbikes are used
Motorbikes are extensively used
Motorbikes are rarely used

City Wizard

1. City type

Sprawling trend
No sprawl
Limited move from centre
Some sprawl
Significant sprawl

Average income level
Medium average income per capita
High average income per capita
Low average income per capita

City Wizard

1. City type

Population trend
Stagnation: growth rate of 0% per year
Limited decline: growth rate of -0.5% per year
Significant decline: growth rate of -1% per year
Limited growth: growth rate of 0.5% per year
Significant growth: growth rate of 1% per year
City type customization

Advanced Settings

Mode split trend
Car share growth

Share of freight vehicles with respect to cars
8 %

Share of freight vehicles trend
0.1 %

Electric refuelling stations at the base year
Electric fueling stations do not exist or are negligible

Fuel cell refuelling stations at the base year
Hydrogen fueling stations do not exist or are negligible

Car sharing type
Round system (car must be returned to specific stations)
One-way system (car can be collected and returned to any points in the city)
Round system (car must be returned to specific stations)

Car sharing subscribers at the base year (number of subscribers)
0

Car sharing fixed cost at the base year (€/year)
€ 80

Average car sharing cost at the base year (€/hour)
€ 15

Average time to pick up a vehicle of car sharing service at the base year (minutes)
10
Policy selection

- Demand Management
  - Land use planning
  - Sustainable travel information
  - Bike sharing
  - Car sharing
  - Delivery and servicing plans
- Green Fleets
  - Green energy refuelling
  - Green public fleets
- Infrastructure Investment
  - Bus/tram network
  - Walking/cycling network
  - Park & Ride
  - Metro network
  - City logistic facilities
- Pricing and Financial Incentives
  - Congestion pollution charging
  - Parking regulation/pricing
  - Public Transport tariff/integrated ticketing
- Traffic management and control
  - Urban freight regulations
  - Prioritising public transport
  - Access regulations
  - Traffic calming measures

Policy Sets
- GHG Emissions/Air Quality
- Congestion
- Accessibility/Social Inclusion
- Safety
- Public Transport
- Walk/Cycle
- Freight
- Car

CLEAR ALL POLICIES
Policy customization

**BIKE SHARING**

**PRIMARY SETTINGS**
- Initial year of the measure: 2016

**ADVANCED SETTINGS**
- Bike share annual cost
  - Value: €2800
- Bike share implementation cost: €0
- Bike share coverage: 0.3

**BUS/TRAM NETWORK**

**PRIMARY SETTINGS**
- Initial year of the measure: 2015

**ADVANCED SETTINGS**
- Input variables affecting the PT mode share
  - AffMode: 1
  - Share Bus Network Frequency: 2000
  - Bus Network Extension: 6
- Modes affected by mode shift on PT: 1
- Bus/Tram implementation cost
  - Cost: €2000
  - Tram: €5800000
  - Frequency: €270000

**SECONDARY SETTINGS**
- Elasticities of impact on PT mode share
  - Bus Frequency: 1
  - Bus Network Extension: 1

**CAR SHARING**

**PRIMARY SETTINGS**
- Initial year of measure: 2018
- Car sharing fixed tariff (euro/year): €20
- Car sharing variable tariff (euro/hour): €15
- Average time to pick up a vehicle of car sharing service (minutes): 5
- Car sharing type: Round system (car must be returned)

**SECONDARY SETTINGS**
- Car sharing operating cost (euro/car): €1000
Transport policies impacts are segmented into three domains:

✓ **Transport impacts**: e.g. mode share, average trip distances and traffic levels, car ownership and penetration of alternative fuel vehicles.

✓ **Environment outputs**: e.g. CO\textsubscript{2}, CO, PM, NOx and VOC emissions, fuel consumption and accidents.

✓ **Economic outputs**: e.g. transport expenditures for individuals and administration, revenues and net financial cost of administration.
Roadmap concept

- Demand management
- Green Fleets
- Pricing and financial incentives
- Infrastructure investments
- Traffic management and control

Where are we now?  How to get there?  Where do we want to go?
Thanks for your attention

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http://urban-transport-roadmaps.eu/