



Transport indicators and related data

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With the collaboration of Enerdata

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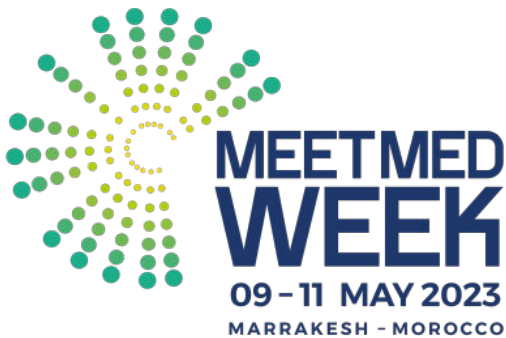
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Morocco, Marrakesch



Contents

1. Energy in the transport sector
2. Overall indicators
3. Detailed indicators
4. The necessary data



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Energy use in transport

- Energy is used for **passenger** and **freight transport**.
- Energy is both a final consumer good and a factor of production
- **Infrastructure** :
 - road, rail, water, air
 - they determine the energy used; large differences in specific consumption;
- **Types of vehicles**: great diversity of road vehicles

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Basic transport sector indicators

Indicators	Comments
Transport energy consumption per capita	Highly aggregated; includes variation in equipment rates
Energy consumption per unit of GDP: energy intensity of transport	Highly aggregated; measures the relative change between consumption and GDP
Road transport energy consumption per vehicle	Includes variation in the composition of the vehicle fleet
Transport fuel consumption per petrol vehicle	Includes variation in the composition of the vehicle fleet
Transport diesel consumption per diesel vehicle	Includes variation in the composition of the vehicle fleet
Energy consumption of road transport per car equivalent	Indicator cleaned of variations in the composition of the ODYSSEE fleet

Unit consumption per car equivalent

- Relates total road transport consumption to a notional vehicle fleet, measured in **car equivalents**.
- Conversion of the actual fleet into **car equivalents** based on coefficients reflecting the ratio between the annual consumption of each type of vehicle and the car:
 - Two wheels: 0.2 toe/year
 - Auto: 1 toe/year
 - Truck: 5 toe/year

1 two-wheel = 0.2 auto equiv.
1 truck = 5 auto equiv
- Indicates overall efficiency trends after removing the impact of the change in fleet composition.

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Specific consumption indicators by mode

Indicators	Type
Energy consumption of air or rail transport per unit of traffic (passenger-km or tonne-km)	CS
Litres/100 km for road vehicles	CS
Litres/100 km for new road vehicles	CS
Share of efficient vehicles in new vehicles	Broadcasting
Energy consumption for passenger transport per traffic unit (cars, buses, rail)	CS
Energy consumption per road vehicle (toe/car, toe/truck, toe/van, toe/bus)	CS
Energy consumption of road freight transport per tonne-km	CS
Share of public transport for passengers Share of rail & waterways for goods	Broadcasting

CS: Specific energy consumption

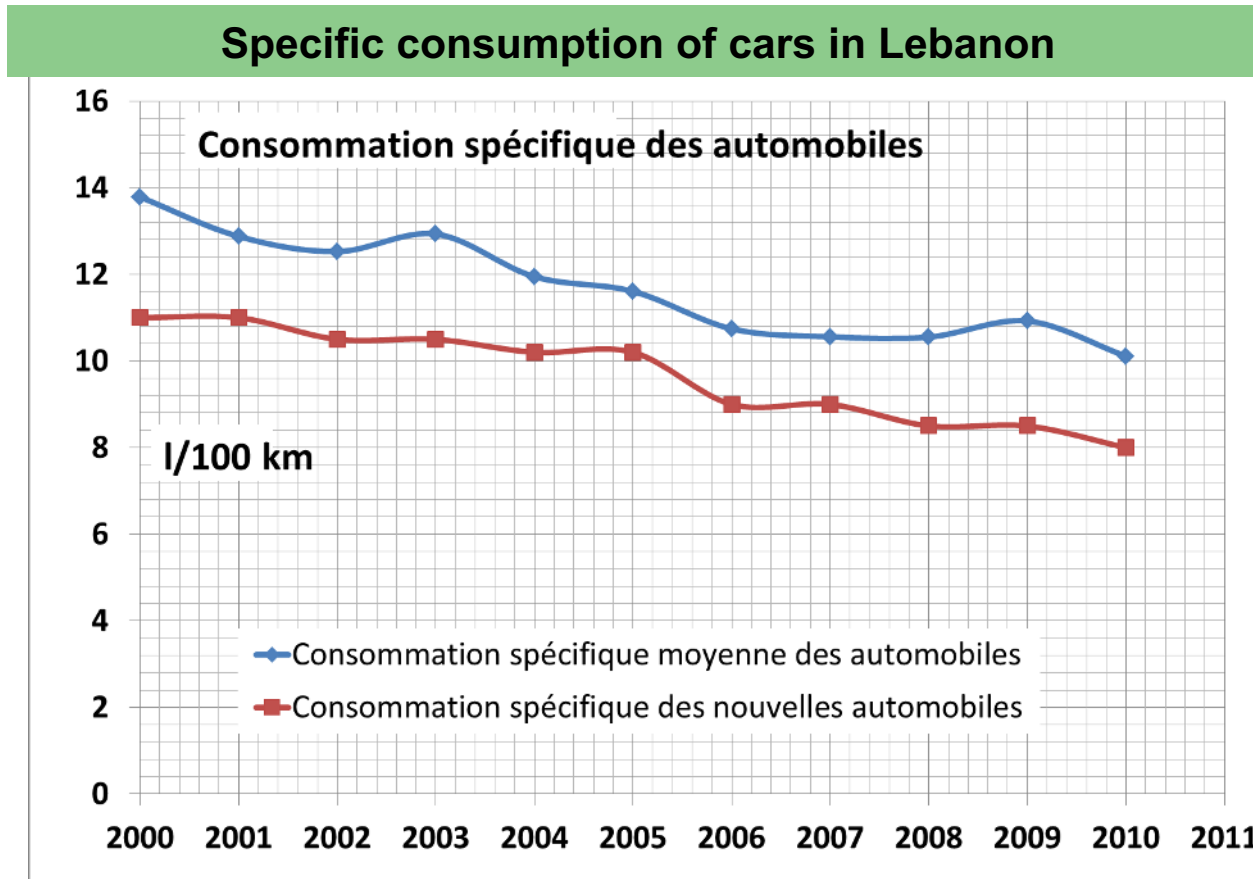
Detailed indicators: Example of cars

- Specific energy consumption (l/100km) of new cars
- Specific energy consumption (l/100km) of the car fleet
- Energy consumption per vehicle
- Energy consumption per traffic unit
- Specific CO₂ emissions (gCO₂/km) of new cars

Detailed indicators: Example of cars

	l/100km	toe/car	toe/km
Assets	<ul style="list-style-type: none"> • Provides the best measure of technical efficiency of cars • Also reflects the impact of behaviour (ecodriving, speed limits) and the shift to smaller cars 	<ul style="list-style-type: none"> • Provides information on the efficiency of car use (technical efficiency, annual mileage) • Combined with the l/100km indicator, the toe/car indicator allows technical and behavioural savings to be separated 	<ul style="list-style-type: none"> • Provides information on the efficiency of car mobility • Reflects the increase in car pooling
Boundaries	<ul style="list-style-type: none"> • Excludes some behavioural savings (reduced car use, increased use of public transport) 	<ul style="list-style-type: none"> • Don't separate technical and behavioural savings 	<ul style="list-style-type: none"> • Traffic data (passenger-km) sometimes uncertain

Detailed indicators: Example of cars



Source: ALMEE

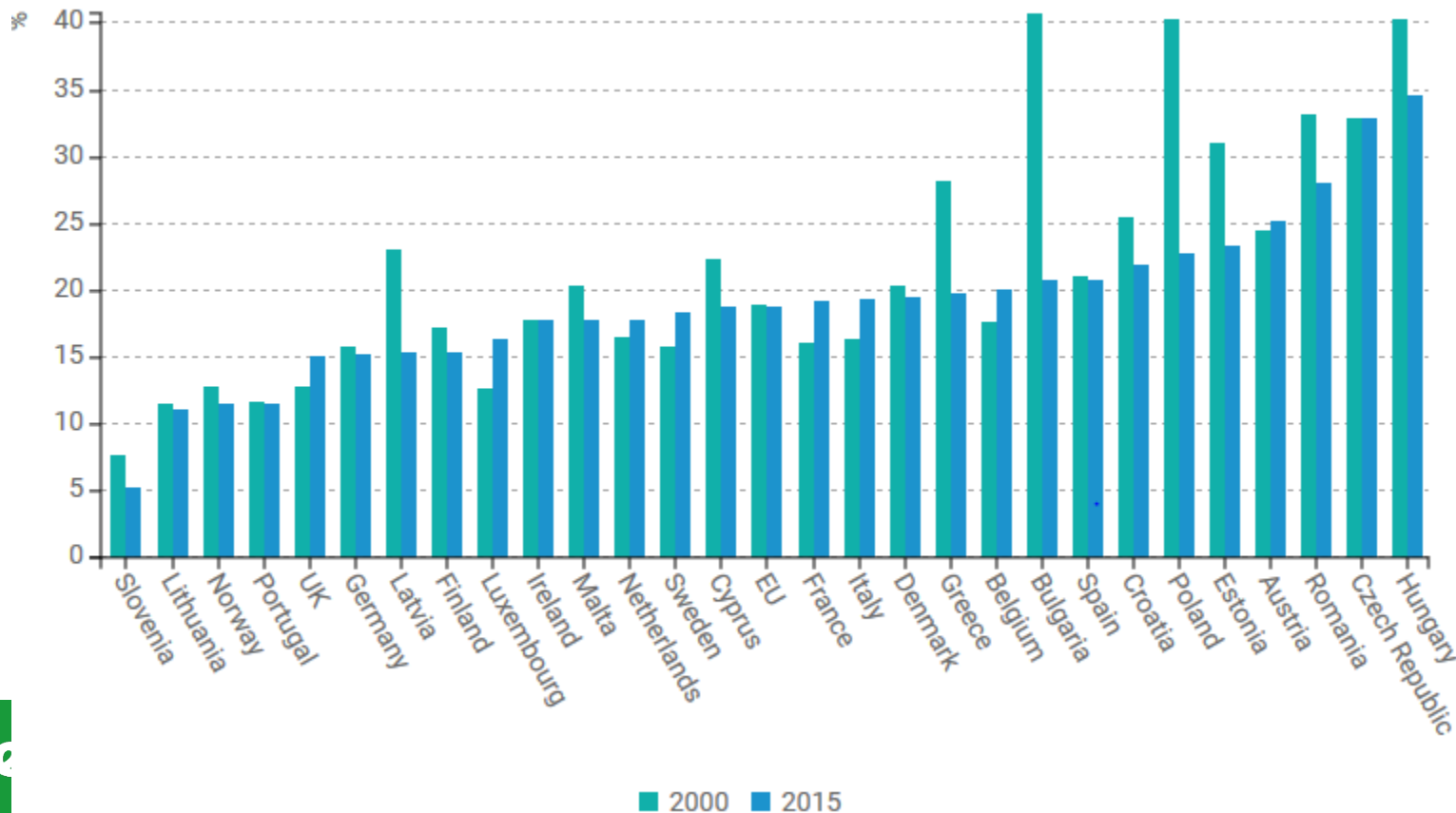
Indicators for alternative modes of transport

- **Share of public transport in passenger traffic (rail, bus) for passenger transport** shows the impact of policies to promote public transport (mainly support for infrastructure development) and to tax car use (congestion charging).
- **The share of rail and waterways in freight transport** shows the impact of policies to promote non-road transport (mainly support for infrastructure development) and to increase the cost of road transport (tolls, taxes).

Share of public transport in passenger traffic

- The share of public transport decreased in 60% of the countries, but remained stable at the EU level (18%).
- Strongest increases in Italy (+4 points), Belgium (+6 points), France, UK and Luxembourg.
- The share of public transport has decreased rapidly in Central and Eastern European countries, where public transport was dominant.

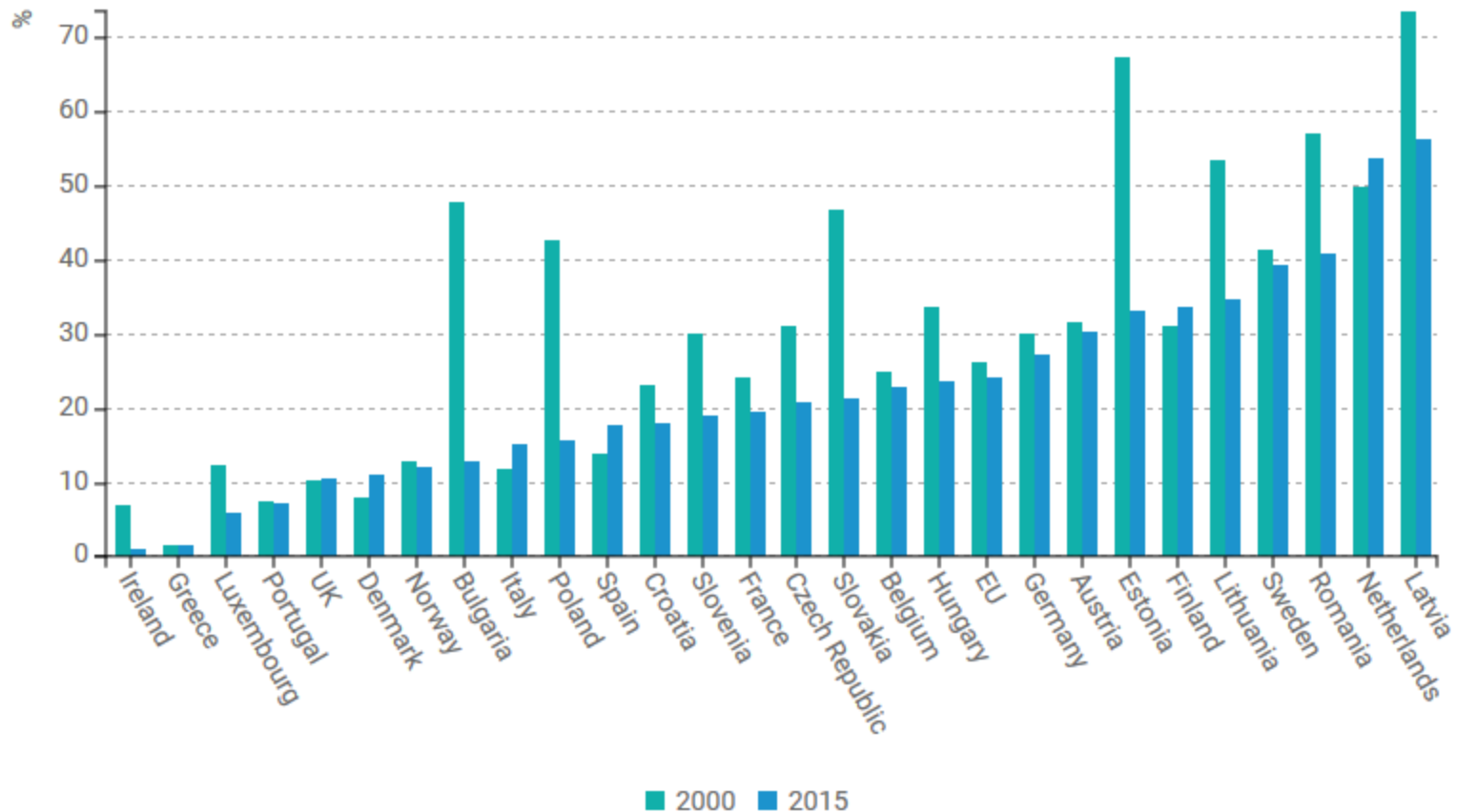
Share of public transport in passenger traffic in the EU



Share of rail & waterways in freight traffic

- The share of rail and waterways in freight traffic is decreasing for 2/3 of the countries, despite the policies implemented to promote these modes of transport.

Share of rail & waterway in EU freight traffic



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Transport sector data

- Activity data :
 - Road vehicle fleet: total and by fuel type / vehicle type
 - Annual sales of road vehicles: total and by fuel type / vehicle type
 - Passenger traffic by mode (in passenger-km)
 - Collective passenger traffic by mode (in passengers)
 - Annual car mileage
 - Freight traffic by mode (in tonne-km)
- Energy consumption :
 - By mode of transport (road, rail, air and water)
 - Road transport consumption by vehicle type :
 - Trucks
 - Light commercial vehicles
 - Automobiles
 - Two wheels
 - Coaches and buses

Data on vehicle characteristics

- Specific consumption (litres/100 km) by vehicle type
- Specific consumption (litres/100 km) of new cars

Data used both for the production of indicators and for consumption estimates by vehicle type

3. Presentation of the sectoral tabs: Transport

Transport

- Vehicle stocks and sales by type
- Average annual distance travelled by vehicle type
- Passenger and freight traffic (in pass., pass.km, t and t.km)
- Consumption by mode and vehicle type
- Specific consumption

Data

Indicators

- Energy intensity by mode
- Unit consumption
- Share of public, rail and waterway transport

Data source for the transport sector

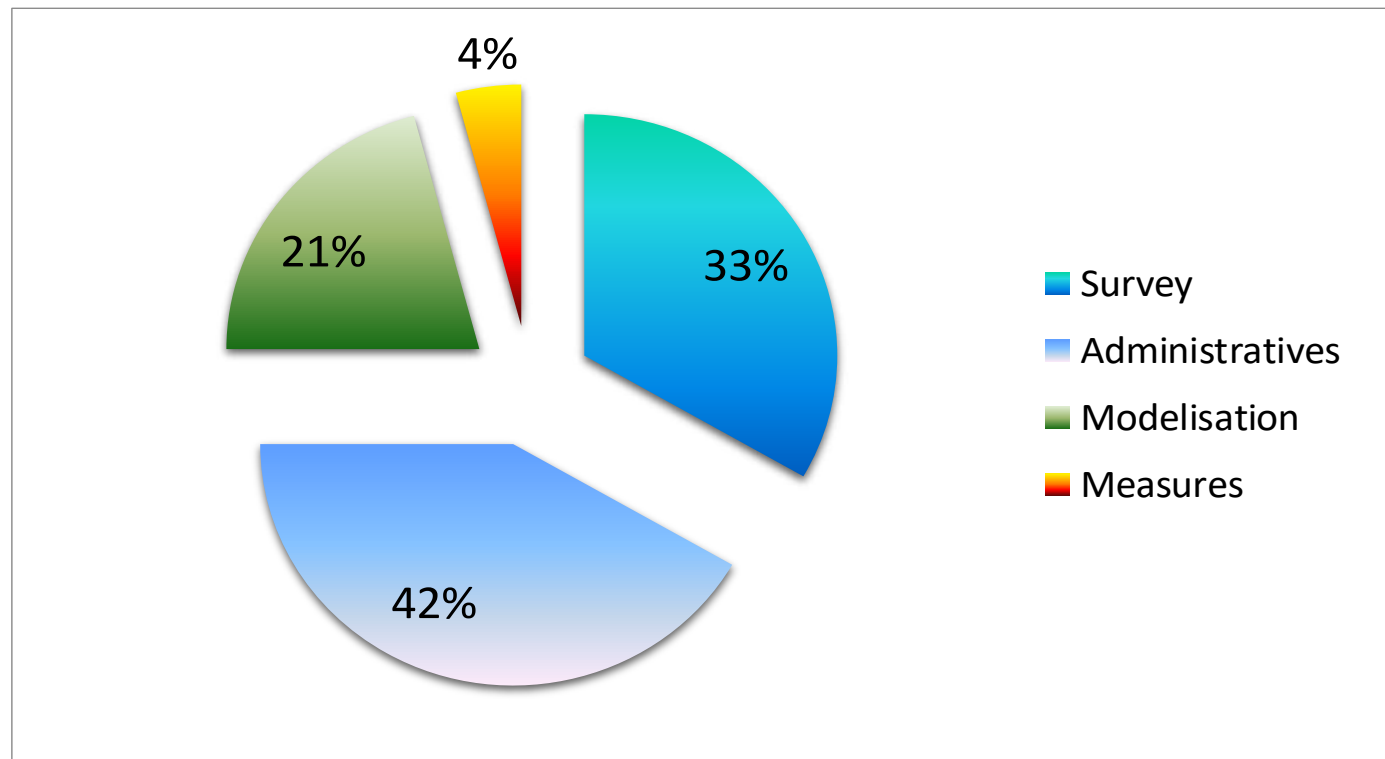
- Surveys: traffic, fleets, mileage
- Modelling: road consumption (total and by vehicle type), specific consumption
- Measurements: specific consumption, mileage
- Administrative sources: vehicle fleets and sales by fuel type, mileage (roadworthiness tests), specific consumption of new vehicles

Data source for the transport sector

- Energy consumption data by type of road vehicle (e.g. cars, trucks, light vehicles, buses, motorbikes) are not available in the energy balances.
- They are estimated by modelling using specific data combining official statistics on fuel sales (petrol, diesel), vehicle stocks and survey results on vehicle use in km per year or traffic in vehicle-km, as well as on specific fuel consumption (litres/100 km).

Source of final consumption data by mode and type of road vehicles

Relative weight of the methods used



Source: IEA 2011 survey (March 2012), based on 24 data sources