What works and what doesn't work for sustainable accessibility?

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President

TRANSPORT & ENVIRONMENT
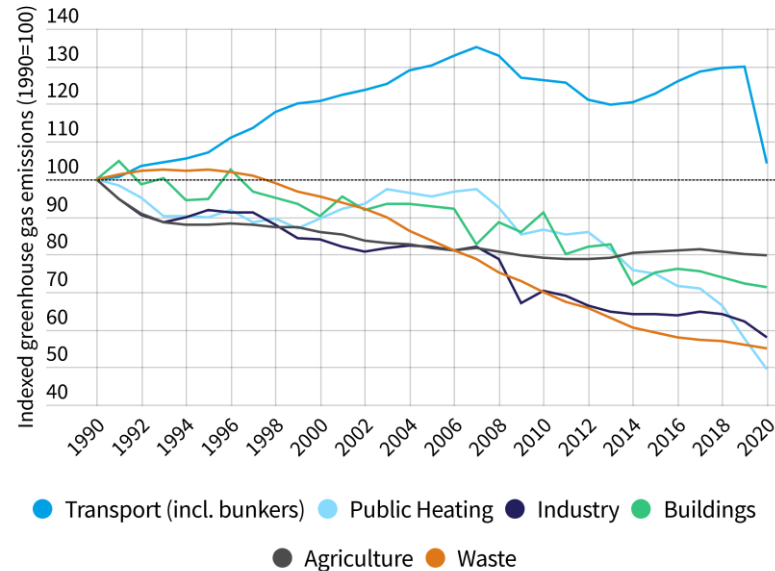
T&E

24 Countries

61 Members

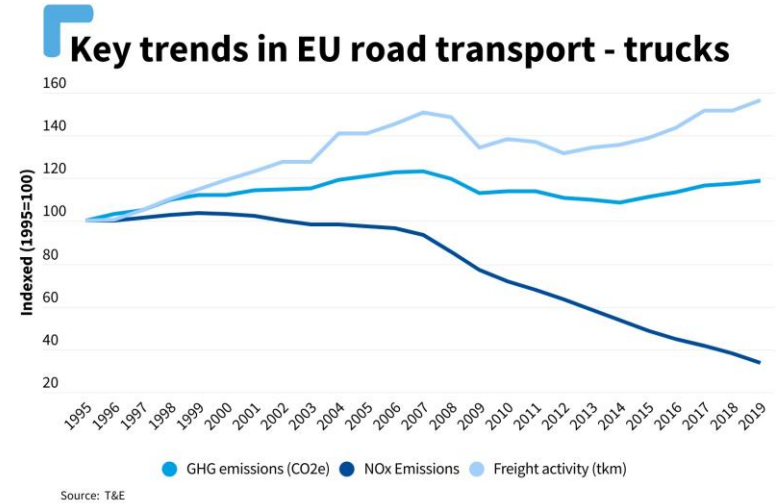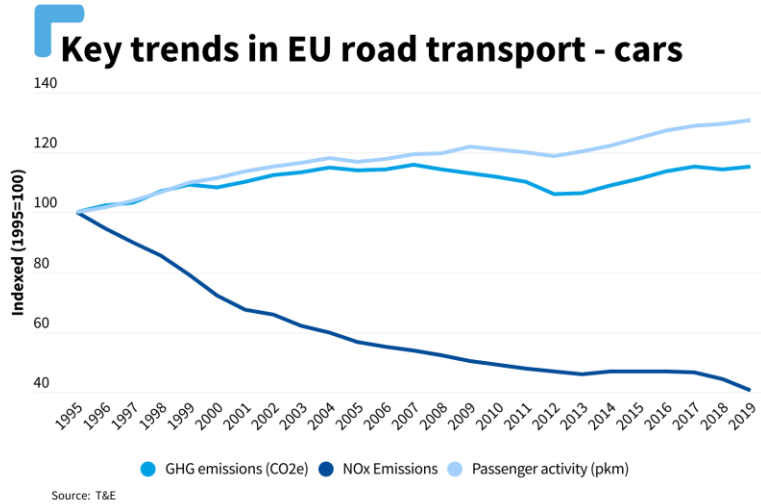**6** Country Offices

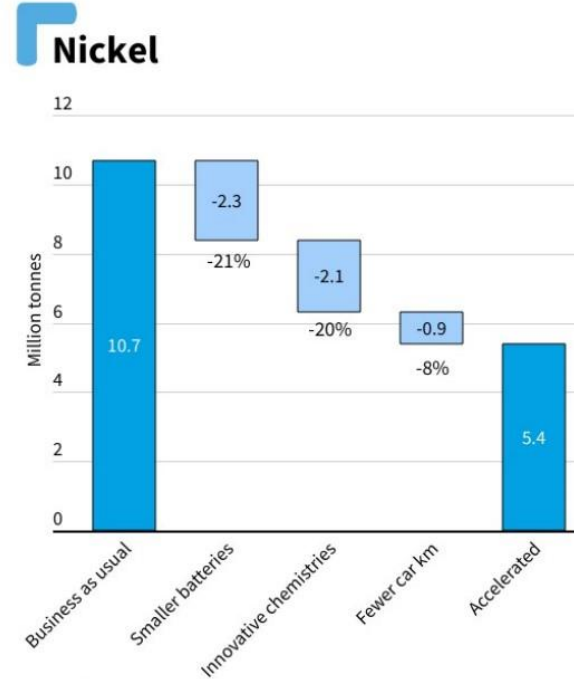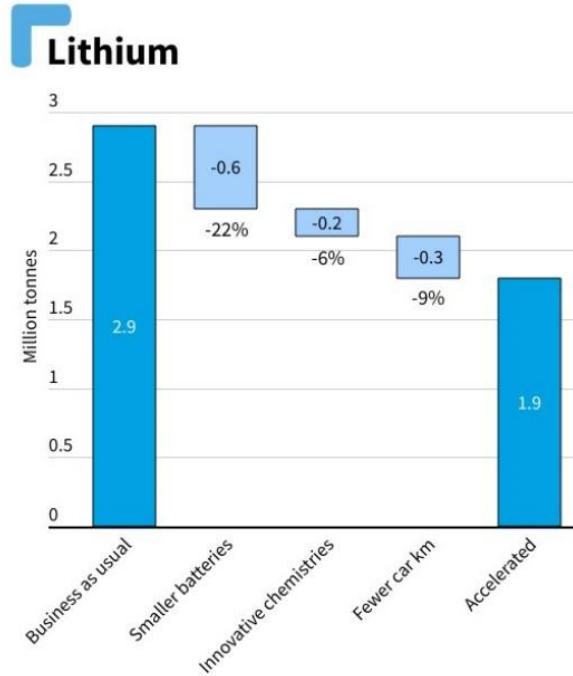**100+** Staff

Greenhouse gasses: transport is lagging behind

EU indexed emissions by sector

Transport (incl. bunkers) · Public Heating · Industry · Buildings · Agriculture · Waste

Source: Member State reporting to UNFCCC
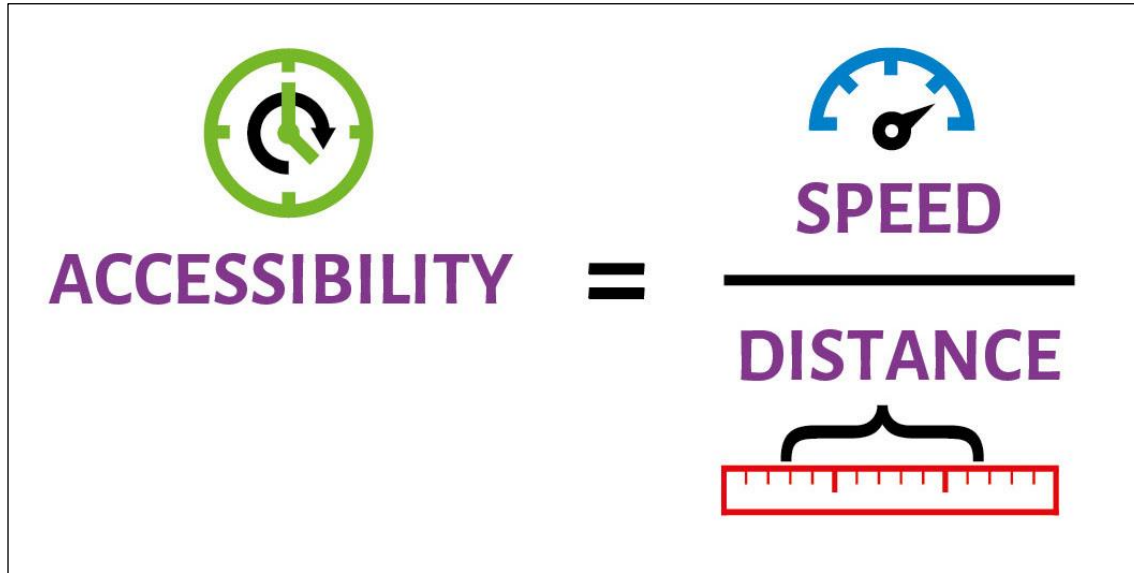
Emission standards are effective, but not sufficient

Key trends in EU road transport - cars

● GHG emissions (CO2e) ● NOx Emissions ● Passenger activity (pkm)

Source: T&E

Key trends in EU road transport - trucks

● GHG emissions (CO2e) ● NOx Emissions ● Freight activity (tkm)

Source: T&E

Reduce materials use for batteries

Accessibility, proximity and mobility

Source: Bleijenberg 2017

Accessibility and urbanisation

Workplace accessibility

Workplace proximity

Travel speed

Source: PBL
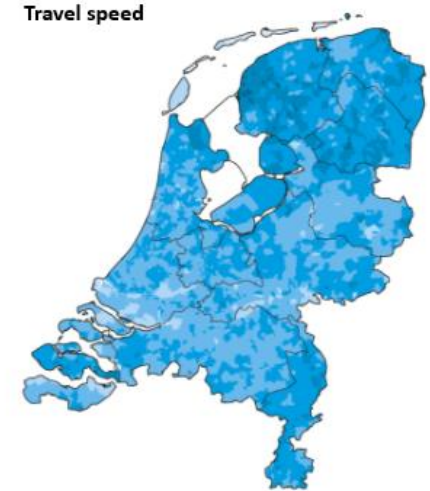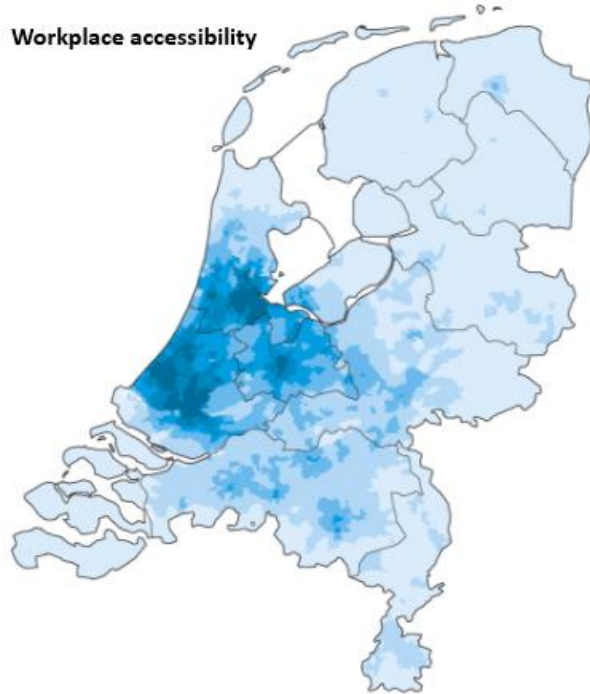
Constant travel time! Ergo: speed ➡ distance

Mobility English population, 1972-2019

Source: DfT
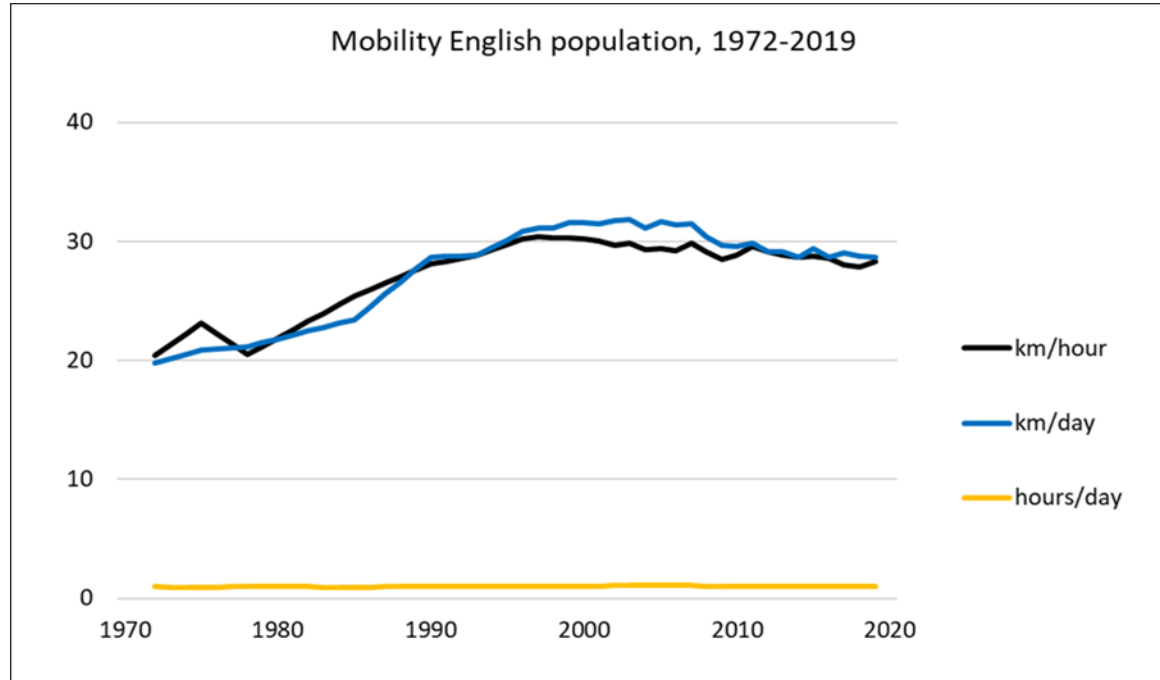
Seventy years of mobility growth

Mobility Dutch population, 1950-2019

Sources: PBL, KiM
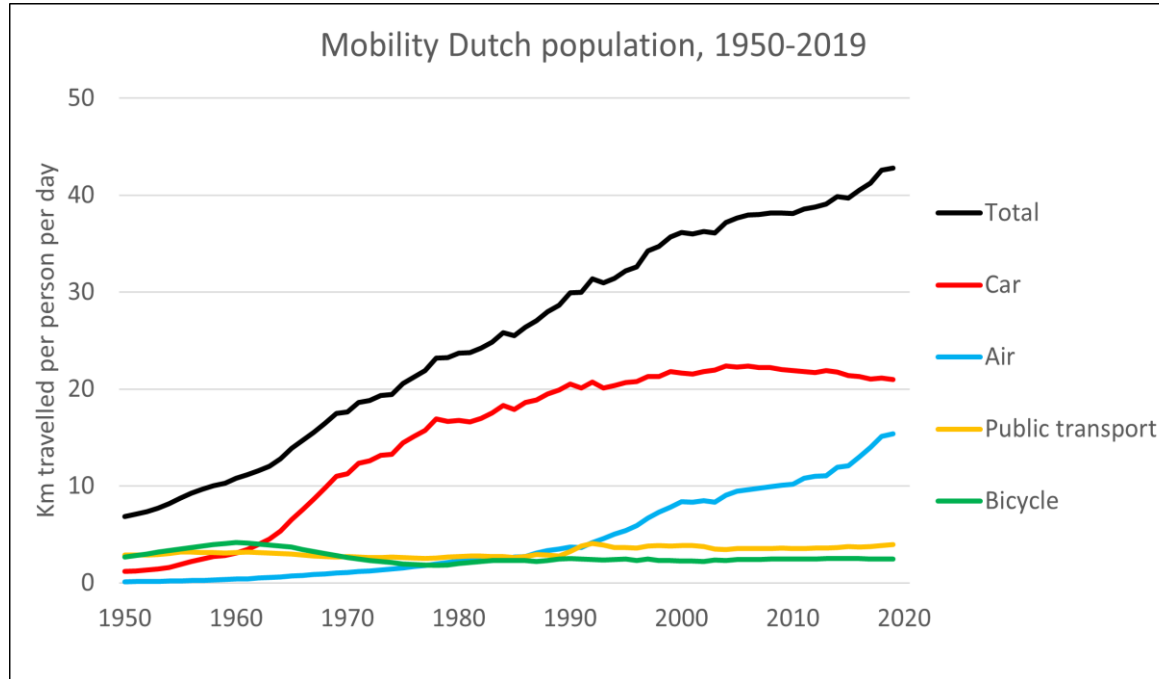
Urbanization determines mobility behavior

	METROPOLIS	MAJOR CITY	RURAL AREAS	COUNTRY AVERAGE
Trip distance	5 km	10 km	15 km	10 km
Commuting distance	10 km	15 km	20 km	15 km
Speed	15 km/h	25 km/h	35 km/h	30 km/h
Car speed	20 km/h	35 km/h	50 km/h	45 km/h
Trip share of car	15%	50%	70%	60%
Car-kilometres	10 km/day	25 km/day	35 km/day	25 km/day

Source: Bleijenberg 2017

ITF work on Shared Mobility

International Transport Forum

**Five cities
Results Lyon**

- 88% Fleet
- 54% Vehicle km
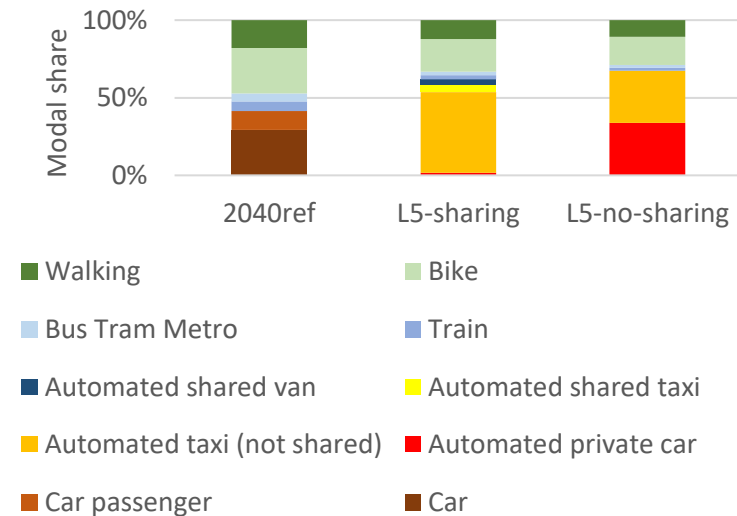- 51% CO_2
- 48% Congestion

Mobility will change due to automated vehicles (L5)

Simulating life with an AV

43 households Sarcramento region
one week

+ 60% Vehicle km
of which half no passenger

+ 81% Long trips (>80 km)

- 71% Trips public transport

- 58% Ride hailing trips

- 37% Bike trips

- 13% Trips walking

Modelling life with and AV

Legend:
- Walking
- Bike
- Bus Tram Metro
- Train
- Automated shared van
- Automated shared taxi
- Automated taxi (not shared)
- Automated private car
- Car passenger
- Car

Sources: Harb et al 2022; Snelder et al 2019

Conclusions

1. **Accessibility** creates economic and social value

2. Two different approaches to accessibility: **proximity** and mobility

3. Urban density and **spatial concentration** are the cheapest and most sustainable ways to improve accessibility

4. MaaS, car sharing, ride sharing, biking and public transport are essential for the **accessibility of urban regions**

5. **Emission standards** for vehicles and fuels are the main lever for sustainable mobility

6. Automated vehicles (level 5) must be **regulated** to avoid urban gridlock