Greener Mobility is more than just changing the car-engine or switching fuels

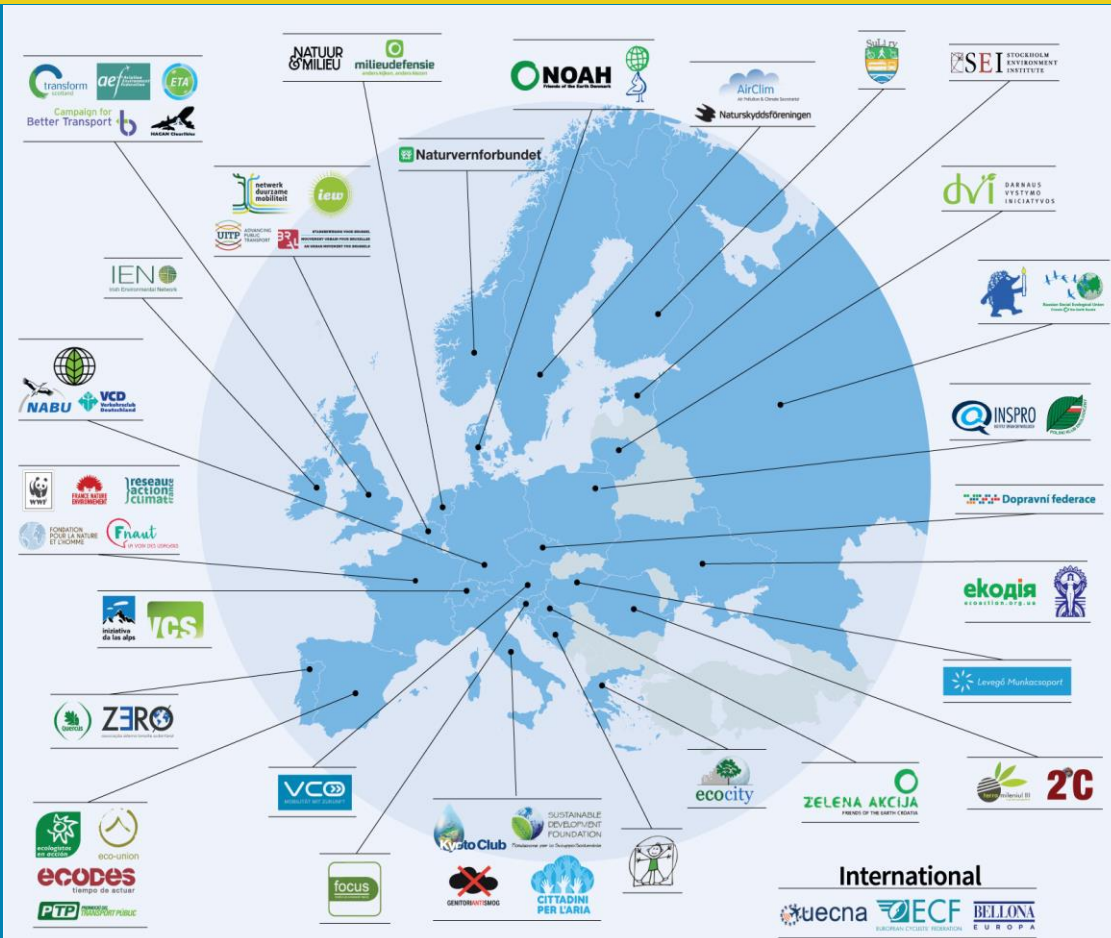VCÖ – Mobilität mit Zukunft
Founded in 1988

NGO, non-profit, politically independant,

working to limit the environmental and health damages from transport and mobility as well as to ensure mobility for all

Member of T&E
(the European Federation for Transport and Environment)
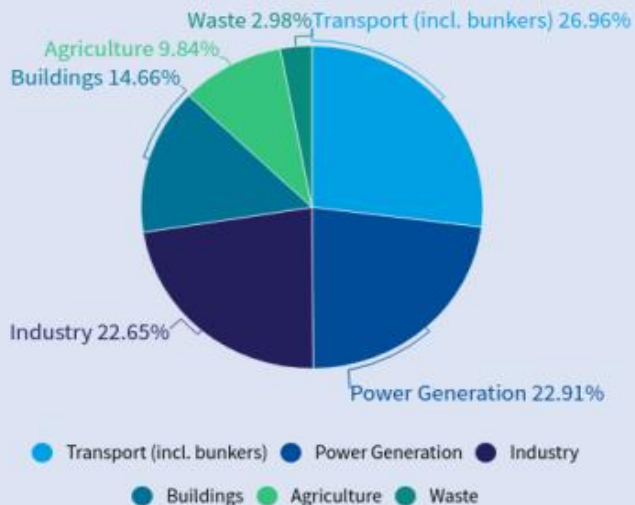
29 Countries
60 members and supporters

www.transportenvironment.org

Green Mobility – meaning what exactly?

- Using less energy per kilometer?

- Emitting less CO_2 per kilometer?

- Not contributing to air pollution?

- Over the products entire lifecycle?

- Including emissions in other countries?

- Including resource-use (raw-material, land-use, soil sealing, nature destruction?)

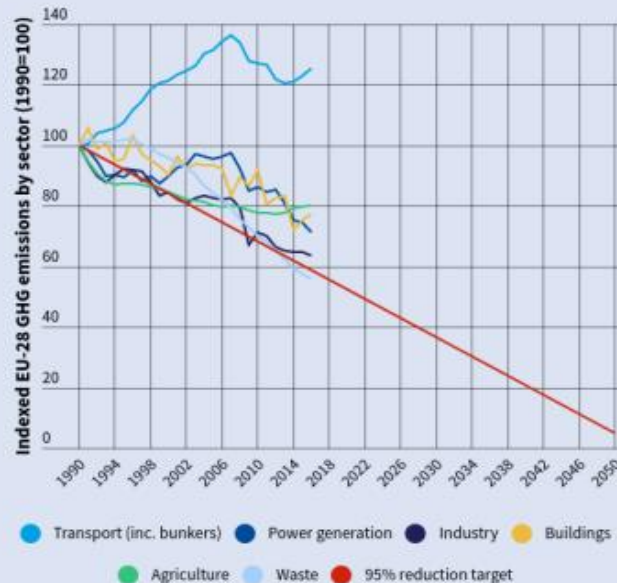- What about rebound-effects – how are the prevented?

Transport in 2016 is Europe's biggest climate problem

Waste 2.98% Transport (incl. bunkers) 26.96%
Agriculture 9.84%
Buildings 14.66%

Industry 22.65%

Power Generation 22.91%

- Transport (incl. bunkers)
- Power Generation
- Industry
- Buildings
- Agriculture
- Waste

Source: Adapted by T&E from EEA, Approximated EU greenhouse gas inventory 2016

Notes: 2015 emissions shares are used as a proxy to split the 2016 'Energy Industries' (IPCC sector 1.A.1) emissions into 'Power Generation' (IPCC sector 1.A.1.a) and 'Industry' (IPCC sectors 1.A.1.b, 1.A.1.c, 1.A.2. 2), as these splits are not available until official reports are released in spring 2018.
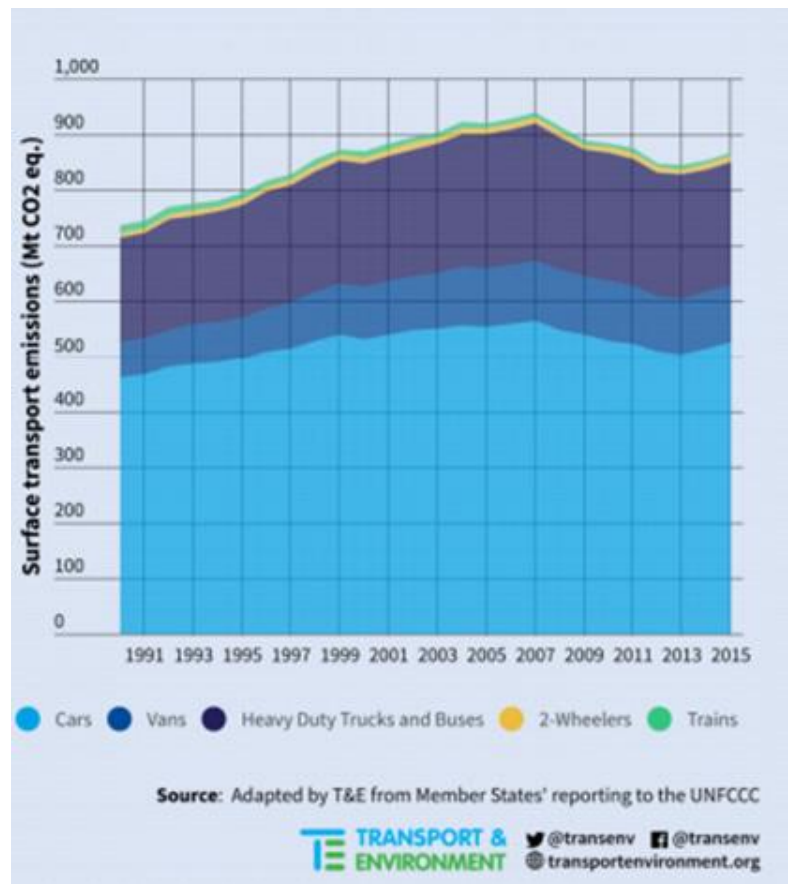
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Off track: transport taking wrong turn to reach EU climate targets

Indexed EU-28 GHG emissions by sector (1990=100)

- Transport (inc. bunkers)
- Power generation
- Industry
- Buildings
- Agriculture
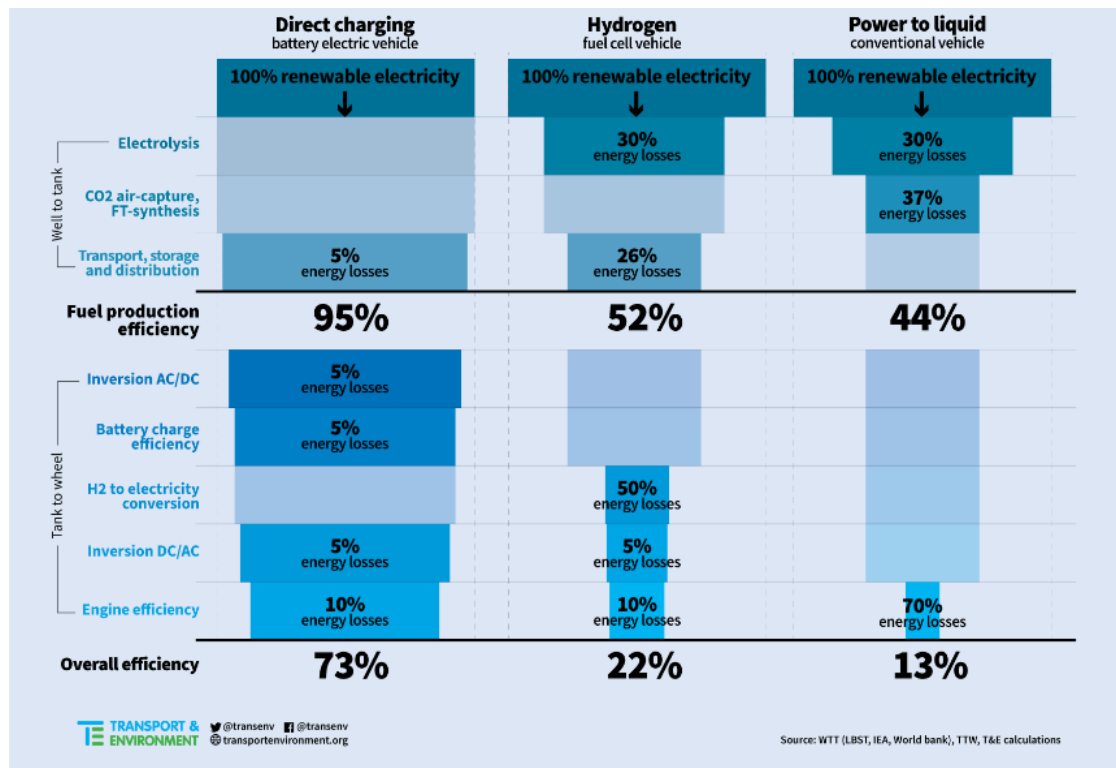- Waste
- 95% reduction target

Source: Transport & Environment from Member States' reporting to the UNFCCC (1990-2015 data) and EEA's approximated EU greenhouse gas inventory (2016 data)

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Vehicles are the dominant source of CO2-Emissions.

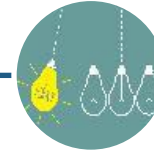72% of European surface transport emissions were from cars and vans in 2015

Surface transport emissions (Mt CO2 eq.)

Cars   Vans   Heavy Duty Trucks and Buses   2-Wheelers   Trains

Source: Adapted by T&E from Member States' reporting to the UNFCCC

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Battery electric vehicles most efficient

	Direct charging battery electric vehicle	Hydrogen fuel cell vehicle	Power to liquid conventional vehicle
	100% renewable electricity ↓	100% renewable electricity ↓	100% renewable electricity ↓
Electrolysis		30% energy losses	30% energy losses
CO2 air-capture, FT-synthesis			37% energy losses
Transport, storage and distribution	5% energy losses	26% energy losses	
Fuel production efficiency	**95%**	**52%**	**44%**
Inversion AC/DC	5% energy losses		
Battery charge efficiency	5% energy losses		
H2 to electricity conversion		50% energy losses	
Inversion DC/AC	5% energy losses	5% energy losses	
Engine efficiency	10% energy losses	10% energy losses	70% energy losses
Overall efficiency	**73%**	**22%**	**13%**

(*Well to tank* and *Tank to wheel* labels on the left)

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Source: WTT (LBST, IEA, World bank), TTW, T&E calculations

Electric vehicles: room for improvement

Improved mineral sourcing

Materials innovation

Battery Second life

Recycling

Biodiesel: cure worse than the disease

Fossil diesel emissions vs first-generation biodiesel

Fossil diesel	Rapeseed	Soy	Palm	Biodiesel average
1.0x	1.2x	2x	3x	1.8x
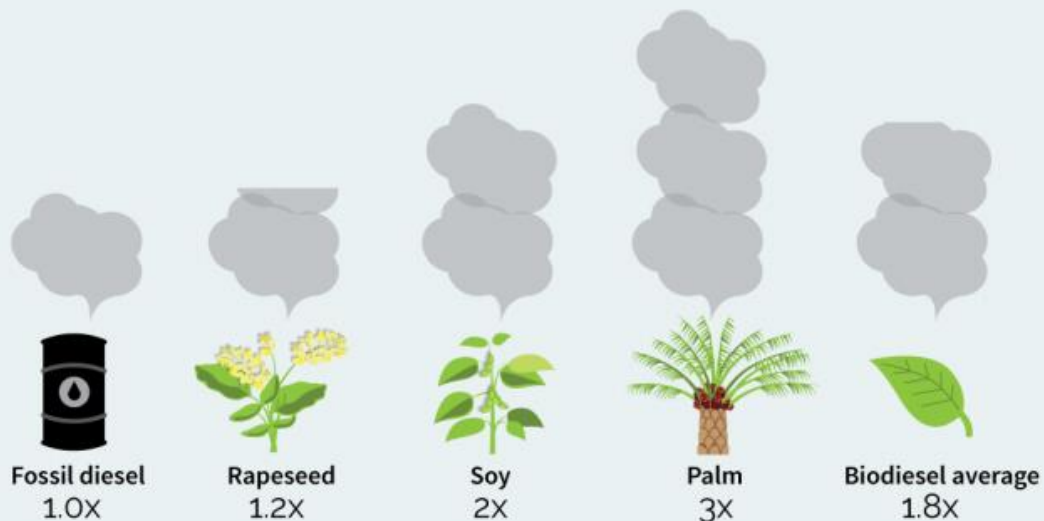
Globiom forecasts these biodiesels will account for 57% of the total EU biofuels market in 2020

Source: Lifecycle analysis by T&E based on Globiom study (2016)

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Transforming mobility

- Transport is NOT an end in itself
- As with other ressorces, we should aim for as little transport as possible, as much as necessary
- Main objective is reducing demand for transport, then modal shift and then increasing efficiency
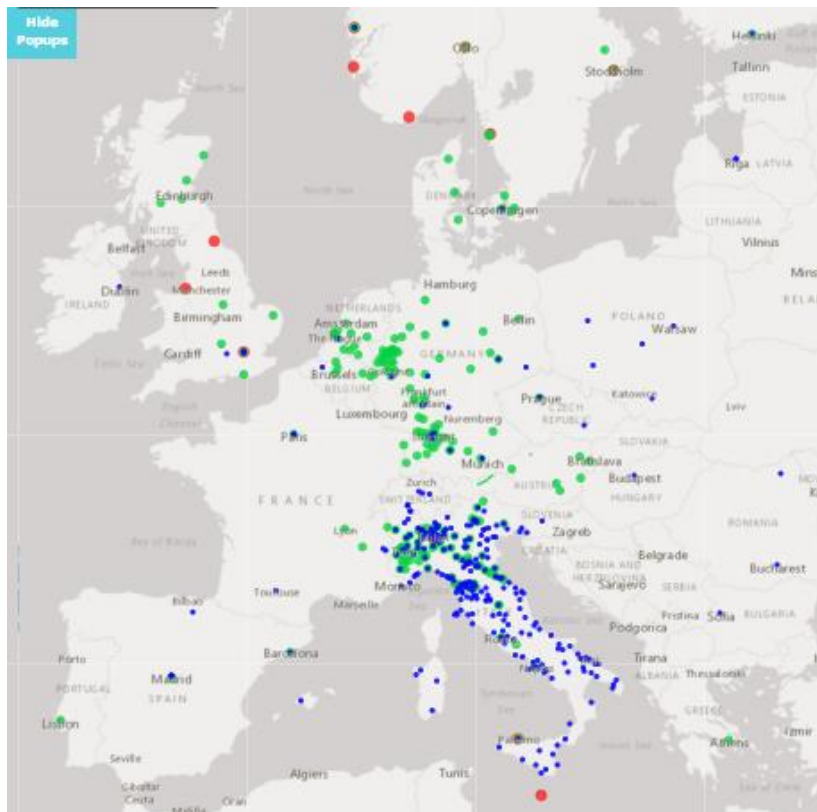
More than 250 schemes controlling vehicle urban access in operation in the EU

● Charging

● Low Emissions Zone

● Urban Vehicle Access Restriction

http://urbanaccessregulations.eu/userhome/map

Key Messages

- Transport is Europe's biggest climate offender
- The future mobility is electric and a lot more than cars
- The electricity needs to be renewable
- Therefore, we need to reduce the transport demand, not just think in tecnological innovation
- The needed shift in mobility needs effort form all players, cities and businesses play a major role

Don't forget the active modes

Don't forget the people

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