



Logistikk- og transportindustriens Landsforening

The Norwegian transportation sector, challenges and opportunities

How to reduce CO₂-emissions substantially within 2-5 years

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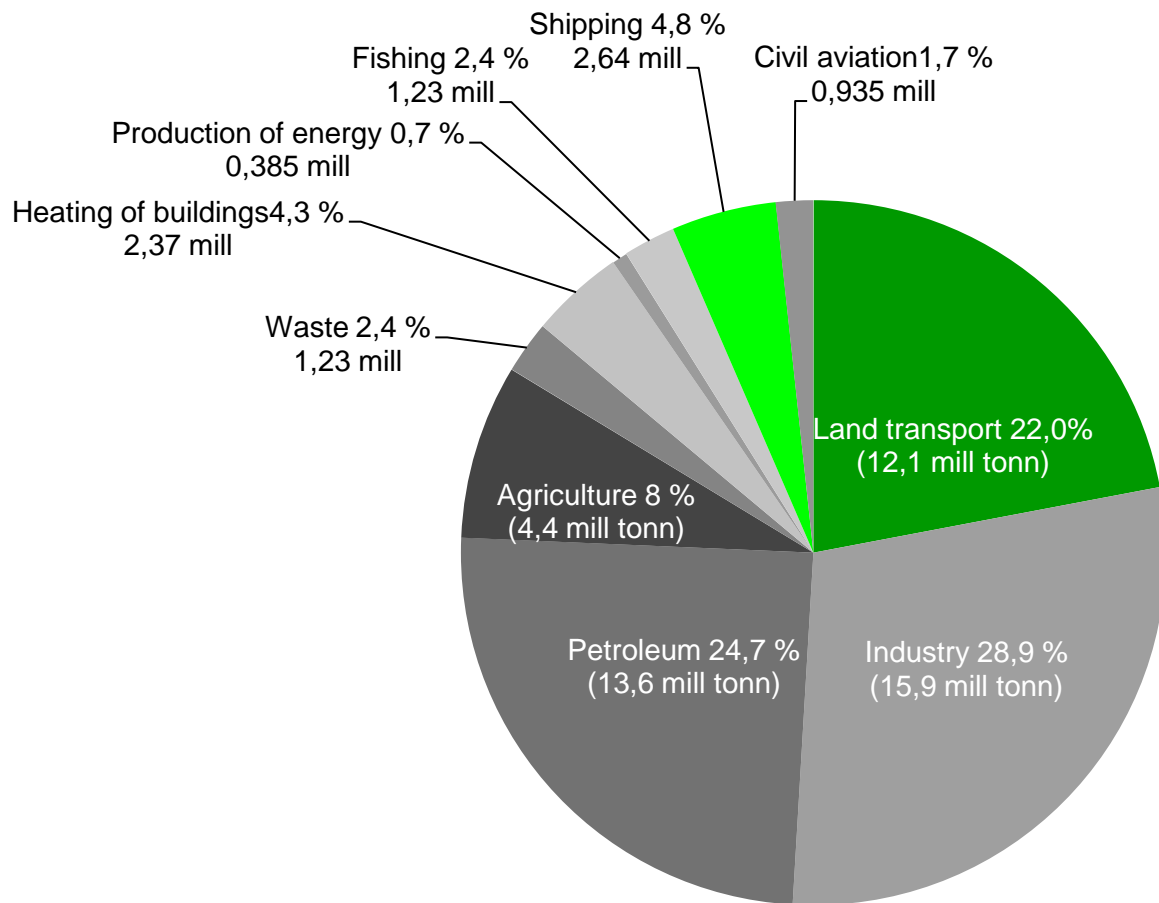
4 ways to reduce emissions from the transport sector

- Reduce the amount of energy consumption for a transport mode when performing an activity
- Reduce the GHG emissions by shifting to alternative energy sources or fuel (consider the w2w-factor)
- Reduce the transport volume
- Change the modal split

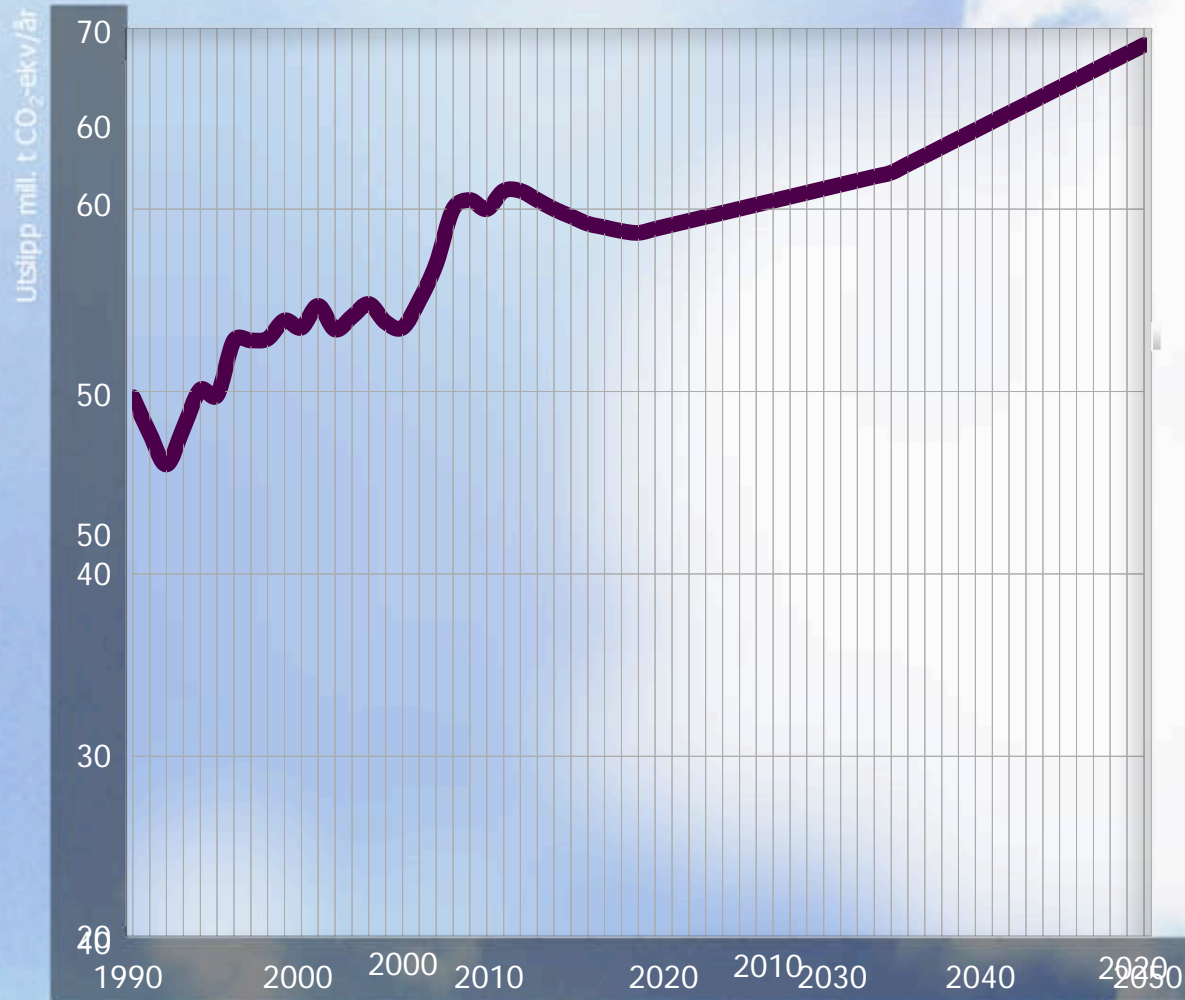




Total emissions in Norway per year Σ 55 million tons CO₂

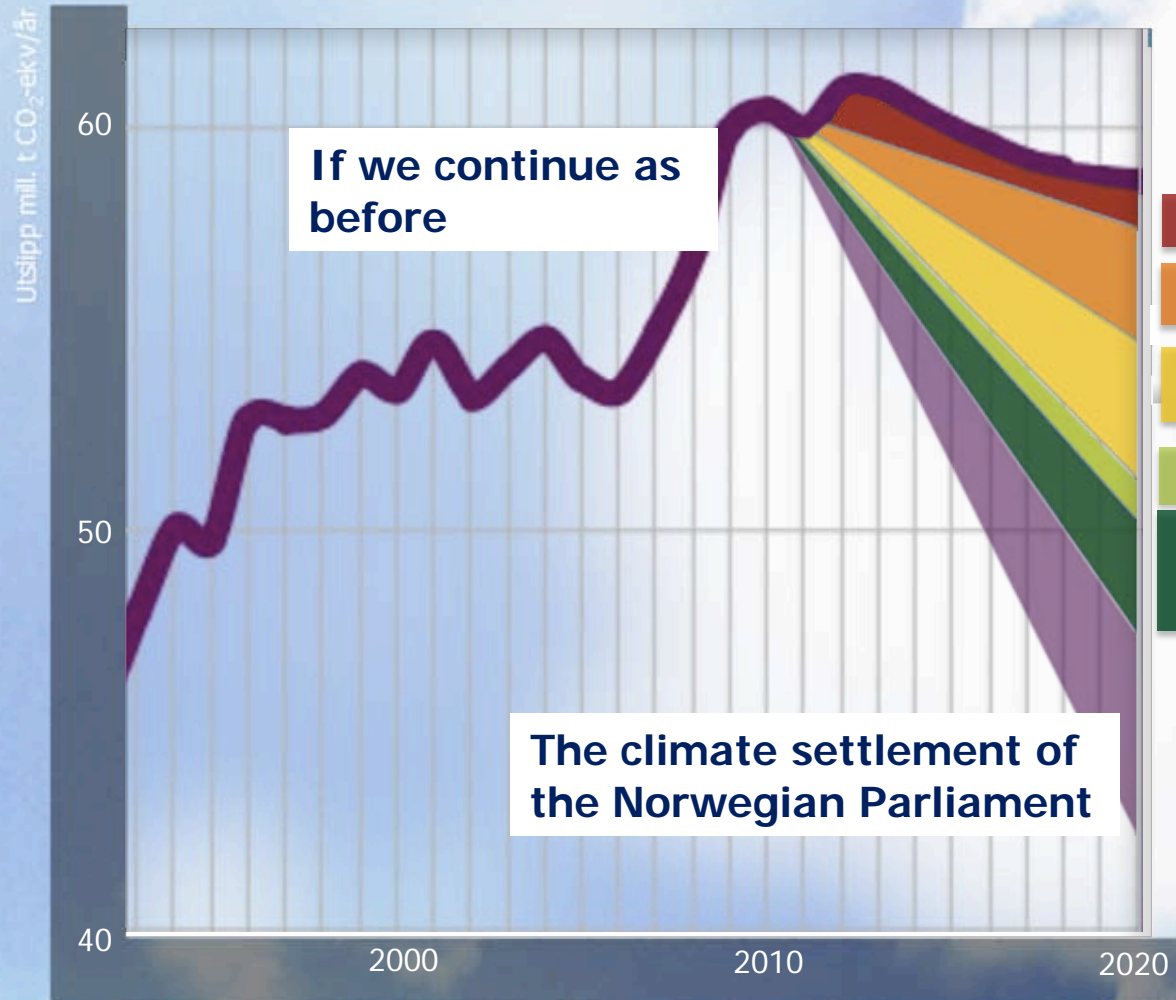


Potential for emission reductions



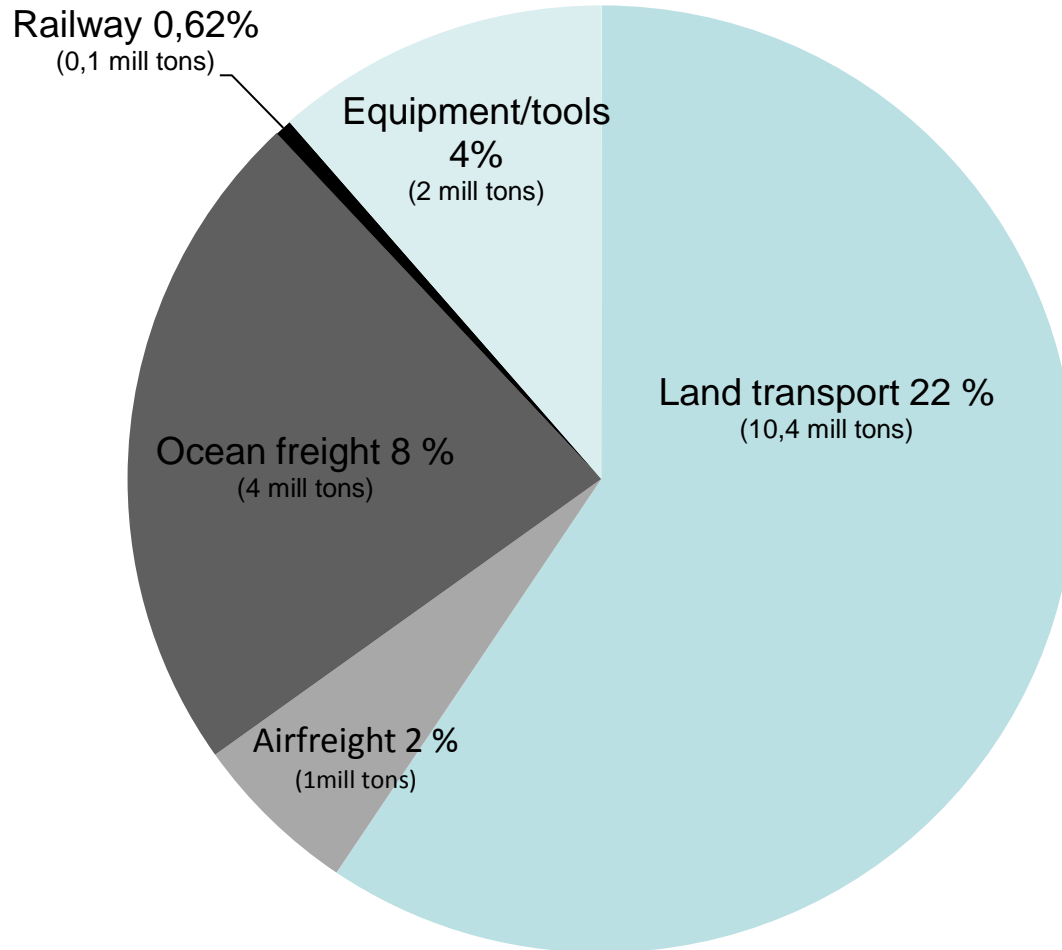
If we continue as before

Potential for emission reductions





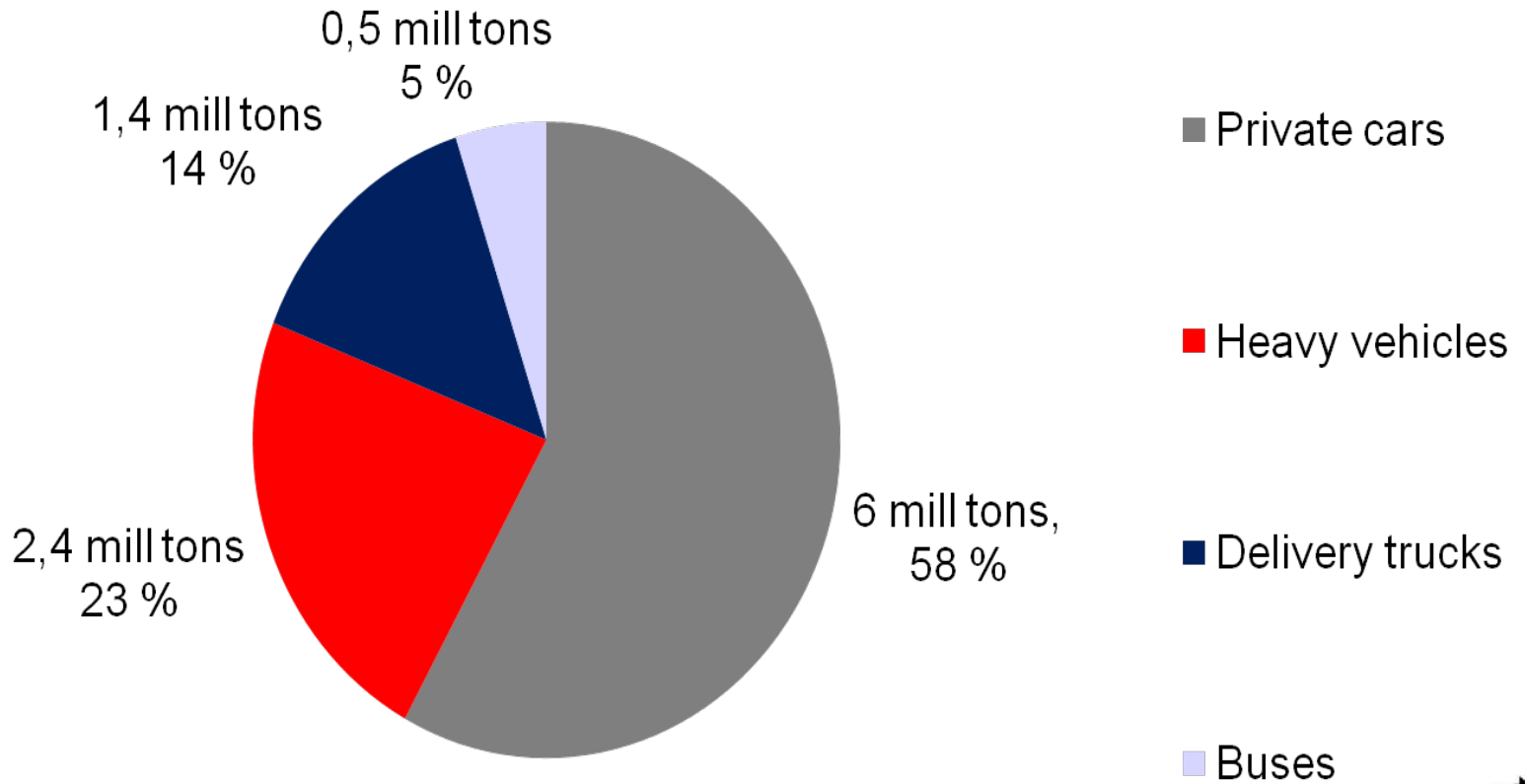
Emission from transport Σ 17,5 mill tons CO₂





GHG from the Norwegian land transport sector

Share of greenhouse gas emission in tons and %



Passenger transport Norway – modal split – on a total yearly basis



(Millions)	Total	Railway	Car	Underground / tram	Bus	Boat	Airplane
Trips	4800	55	4240	100	340	51	15
Share	100%	1,2%	88%	2%	7%	1%	0,2%



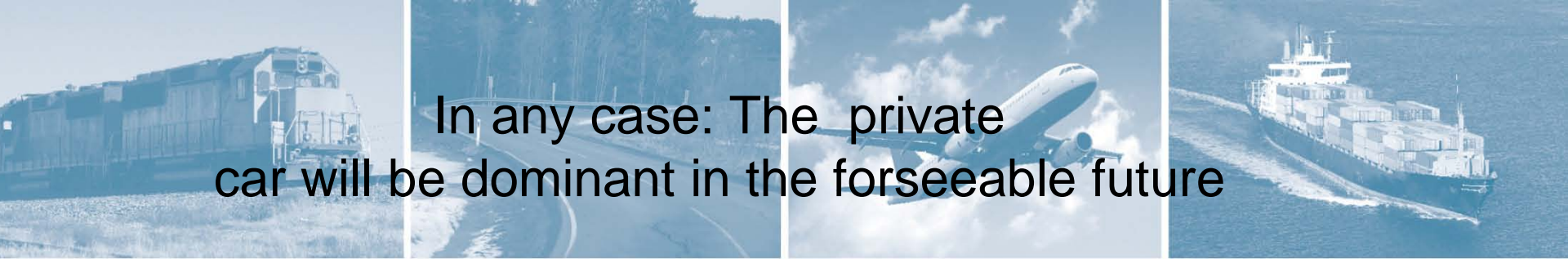
Passenger transport – travel distances and market shares

Trips	Total	Cars	Bus/Subway	Train	Airplane
Up to 30 km	4200 100%	3760 89%	400 10%	40 1%	0 0%
30-100 km	420 100%	365 87%	50 12%	5 1%	0 0%
100-400 km	120 100%	104 87%	10 8%	5 4%	1 1%
Over 400 km	60 100%	40 66%	3 5%	3 5%	14 23%
Sum	4800 100%	4269 89%	463 9,6%	53 1,1%	15 0,3%

Passenger transport – Allocation on means of transport – on a total yearly basis / possibilities with a national public transport strategy



(Millions)	Total	Railway	Car	Underground / tram	Bus	Boat	Airplane
Trips	4800	55 65	4240 4110	100 120	340 440	51	15
Share	100%	1,2 % 1,3 %	88 % 85 %	2 % 2,5 %	7 % 9 %	1%	0,2 %

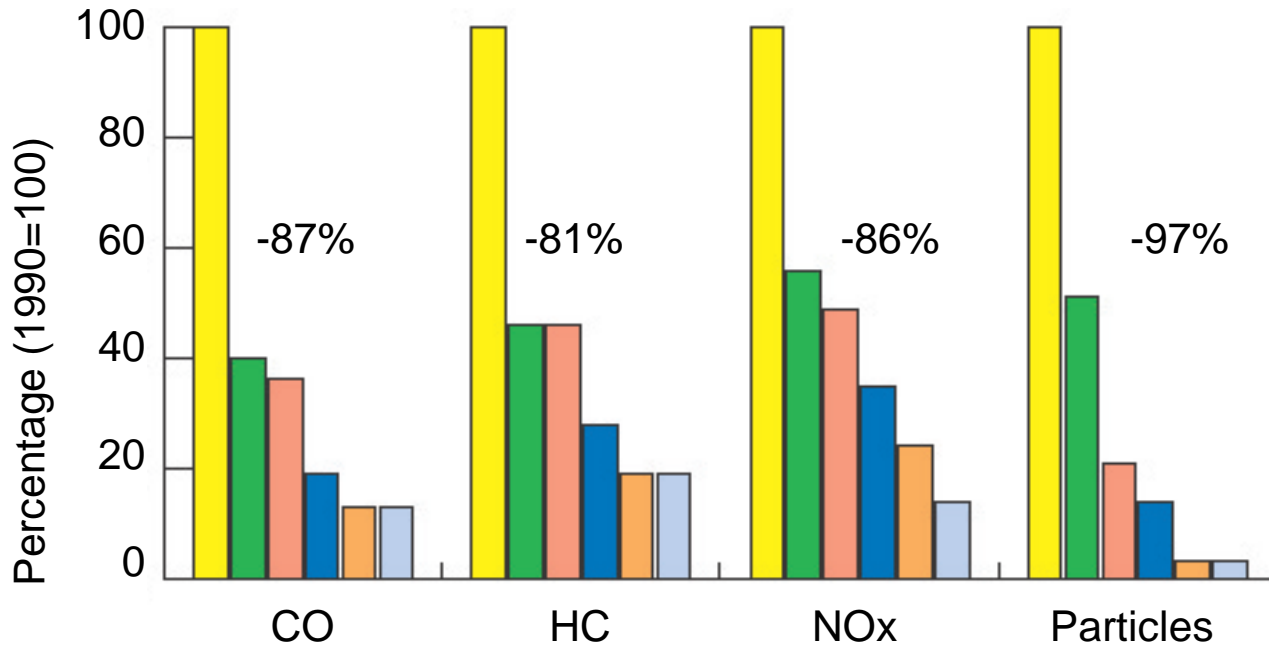
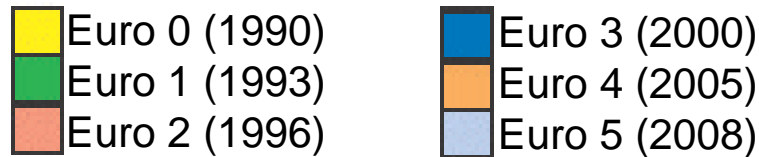


In any case: The private car will be dominant in the foreseeable future

- Emission from private cars 6 mill. tons
- Goal for reduction 20 %: 1.2 mill. tons
 - Road pricing in towns&cities
 - A low mixture bio fuel
 - Parking restrictions
 - A high scrap vehicle deposit which stimulate the renewal of more environmental friendly cars
 - A change in the tax system which stimulates purchase of
 - Cars with little use of fuel
 - Plug-in hybrid cars
 - Electrical cars
 - Building of charging stations



Waste gas and particles; heavy vehicles 1990-2008; The Euro motor is a success





LTL: 4 point strategy

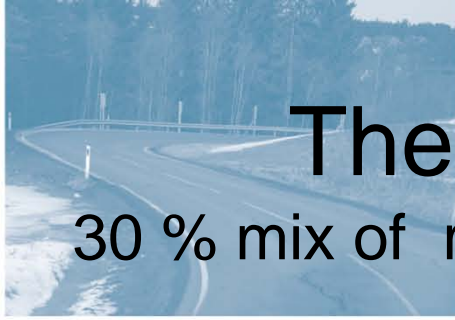
- The driver
- The fuel
- The vehicle
- The logistics solutions and way of transport



The driver:

Driving economically – a major part of the drivers in LTL-member companies





The fuel

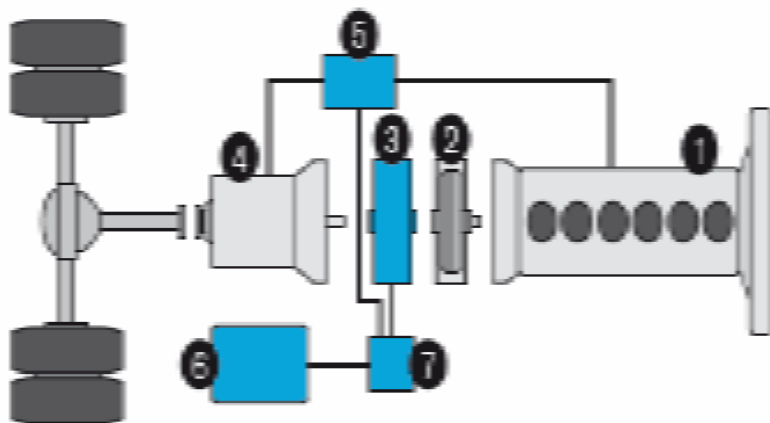
30 % mix of recyclable fuel





The vehicle

Hybrid vehicles



1. Diesel engine
2. Clutch
3. Electro engine
4. ATM* gearbox
5. PMU steering unit
6. Batteries
7. Energy converter

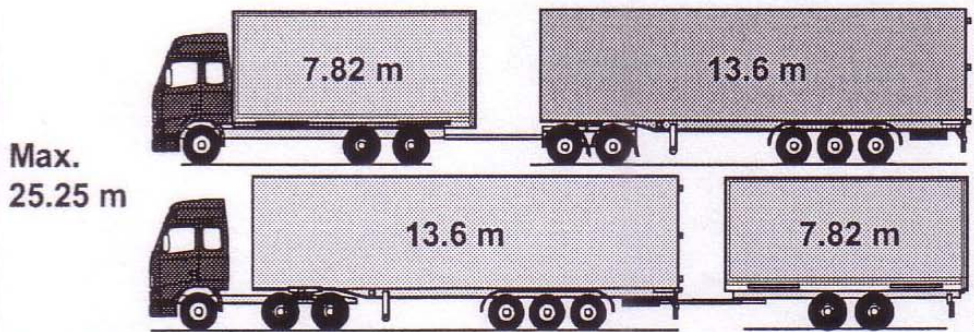




The vehicle

Module vehicle sets

Euro Module System, 16.5 / 18.75 m and 25.25 m

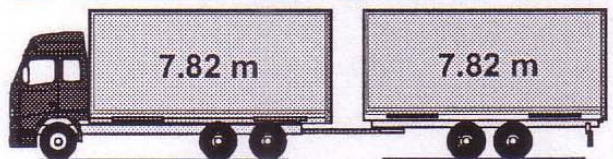


Max.
25.25 m

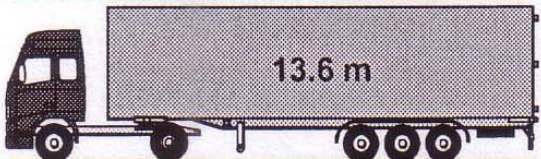
Legal in SWE & FIN

- Two vehicles instead of three
- Same volume of cargo
- Less total fuel consumption
- Less total room on road
- Lower cost per tonkm
- Less road damage
- Less emissions per tonkm
- Possible to recouple to shorter combinations

Max.
18.75 m



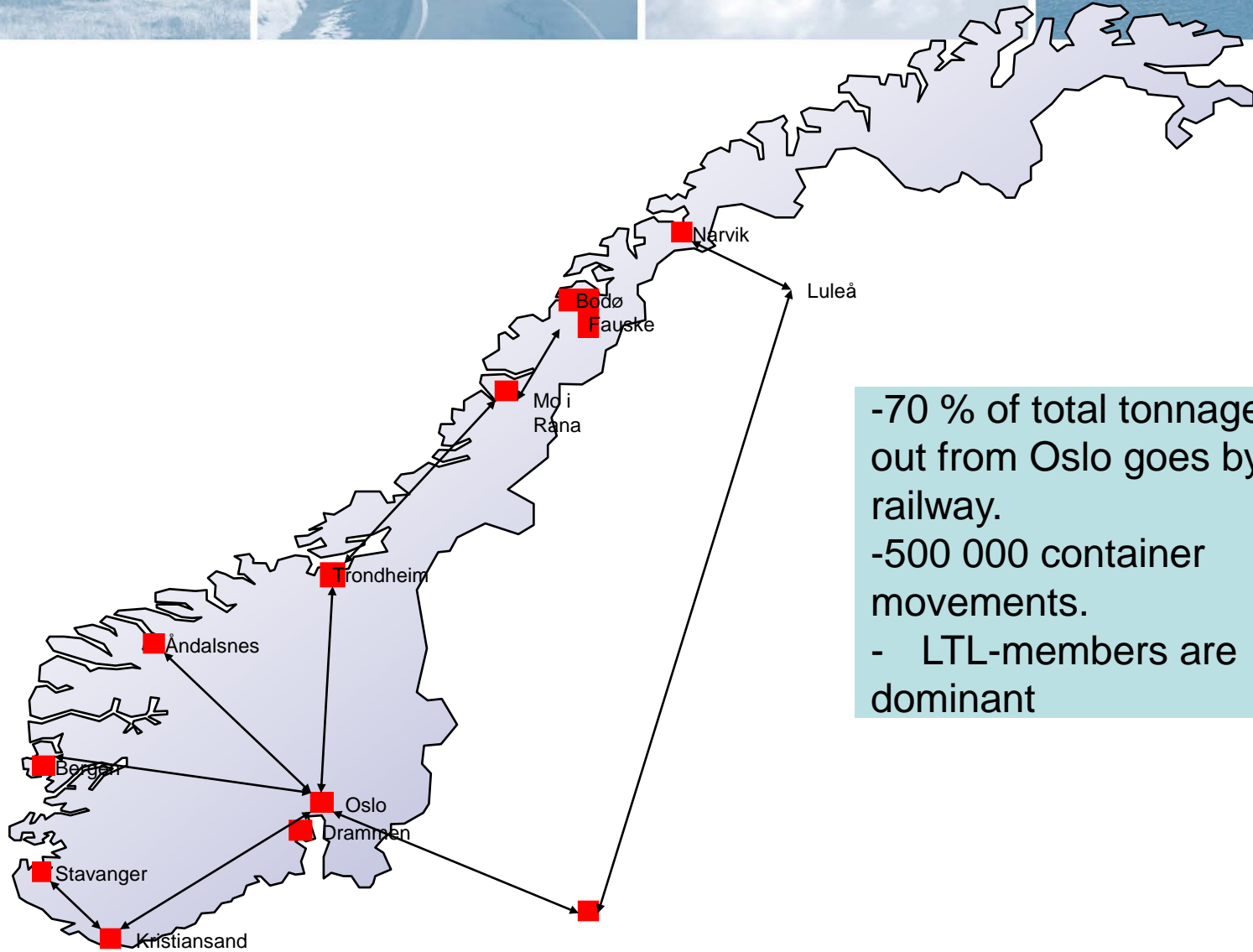
Max.
16.50 m



Legal in EU

Logistics solutions

Transport modes



-70 % of total tonnage out from Oslo goes by railway.
-500 000 container movements.
- LTL-members are dominant



Summary



The four ways

1. Reduce the energy consumption

Activities

- Road pricing, to reduce the total volume & congestions
- Taxation on parking at employers parking lots
- Driver training environmental friendly driving
- More efficient engines.
- More weight/volume per vehicle/engine



Summary



The four ways

- Alternative energy recourses

Activities

- Governmental incentives on
 - bio fuel,
 - clean hydrogen demonstration projects,
 - Plug in hybrid LDV and trucks/buses



Summary



The four ways

- Reduce transport volume

Activities

- Area planning in cities, housing&work co-located
- Less long distance cargo transportation (far East to Europe)
- Increase use of home office activities when on work.



Summary

The four ways

- Change modal split between transport means

Activity

- Governmental investments in public passenger systems
- Subsidy in public passenger transport to reduce ticket price &/or to offer high frequency and extensive coverage on the road network
- Shift from cargo trucks to rail transport
- A national bicycle strategy, ex 10% of all short trips in towns on bicycle

