

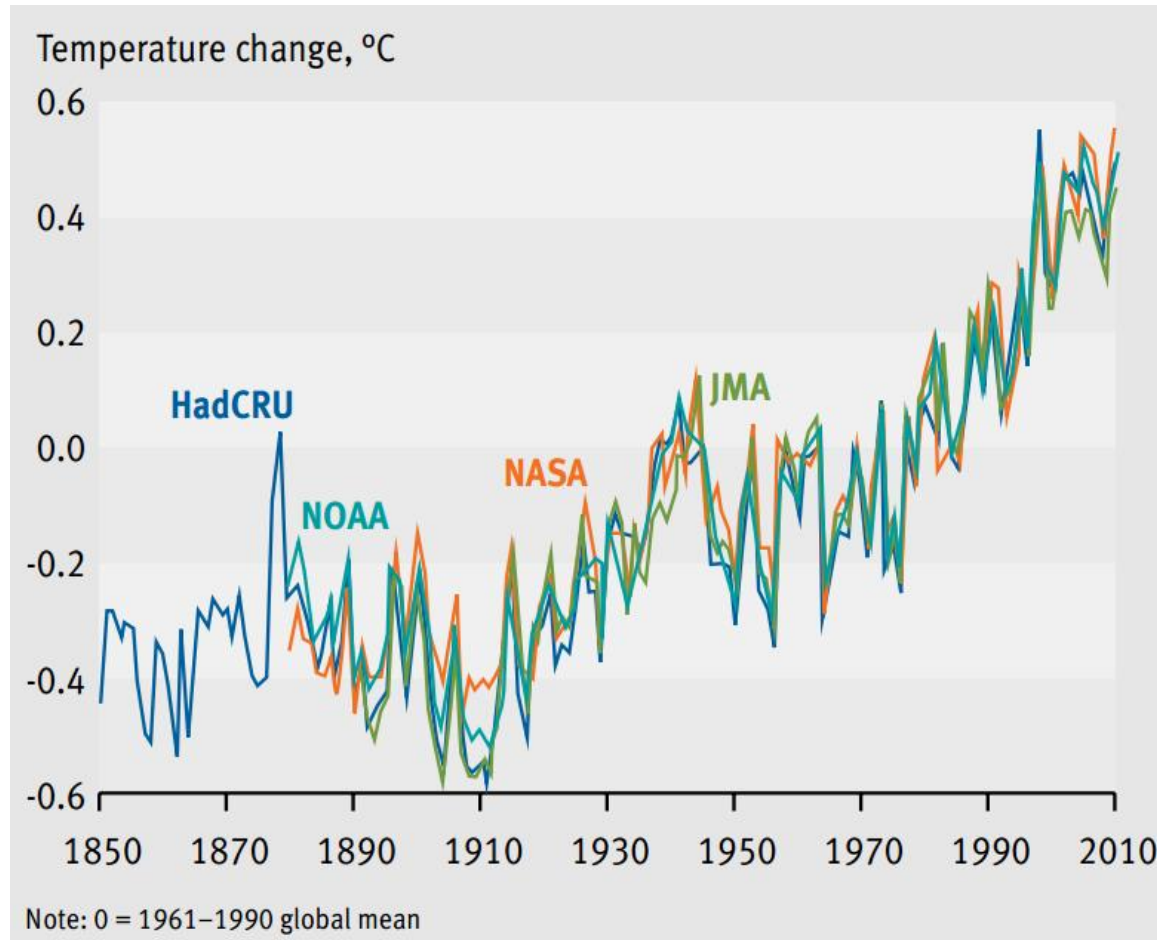
How can transport meet European Climate Challenges

Susanne Krawack



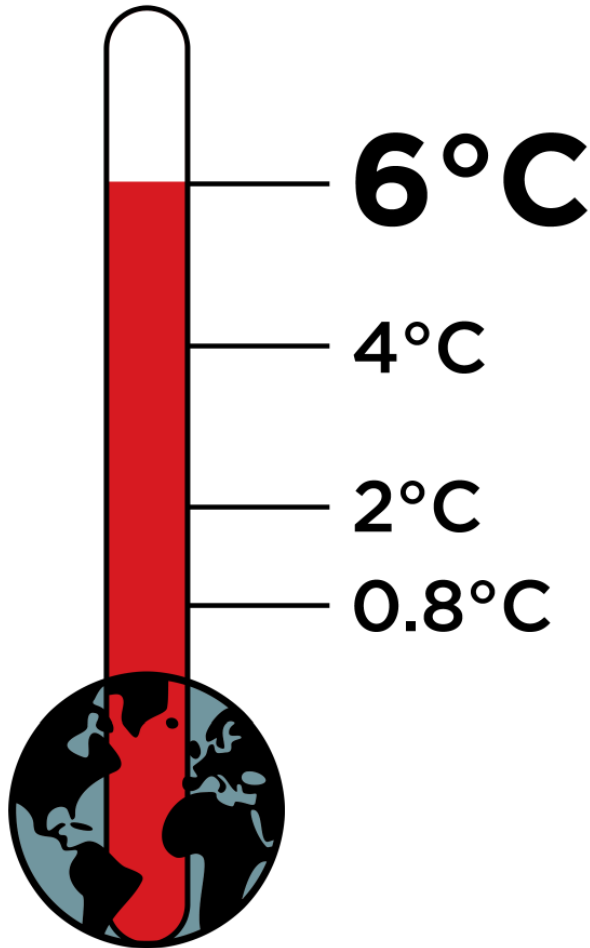
CONCITO

Globale temperatures



Kilde: GEO5

Where are we heading?



IPCC and København 2009 recommended a 2 degree target

If current reduction targets are met, we will reach 4 degrees

If all countries continue "business as usual", we reach 6 degrees

The impact from climate change, we already experience is due to a temperature rise of 0,8 degrees

Illustration: David Roberts, Grist.org

The Climate challenge

IPCC's conclusion:

- Irreversible "tipping points" at a rise in temperature of 2 degrees
- CO₂ emissions must reach a max in 2015 and reduce by 50-80% before 2050

PwC: Low Carbon Economy Index 2012

Carbon intensity in the global economy was each year - from 2000 to 2011 - reduced by

0.8%

If we are to reach the 2 degree target, carbon intensity must each year from 2012 to 2050 be reduced by:

5,1 %

IEA: World Energy Outlook 2012

If we are to reach a maximal temperature rise by 2 degrees in this century,

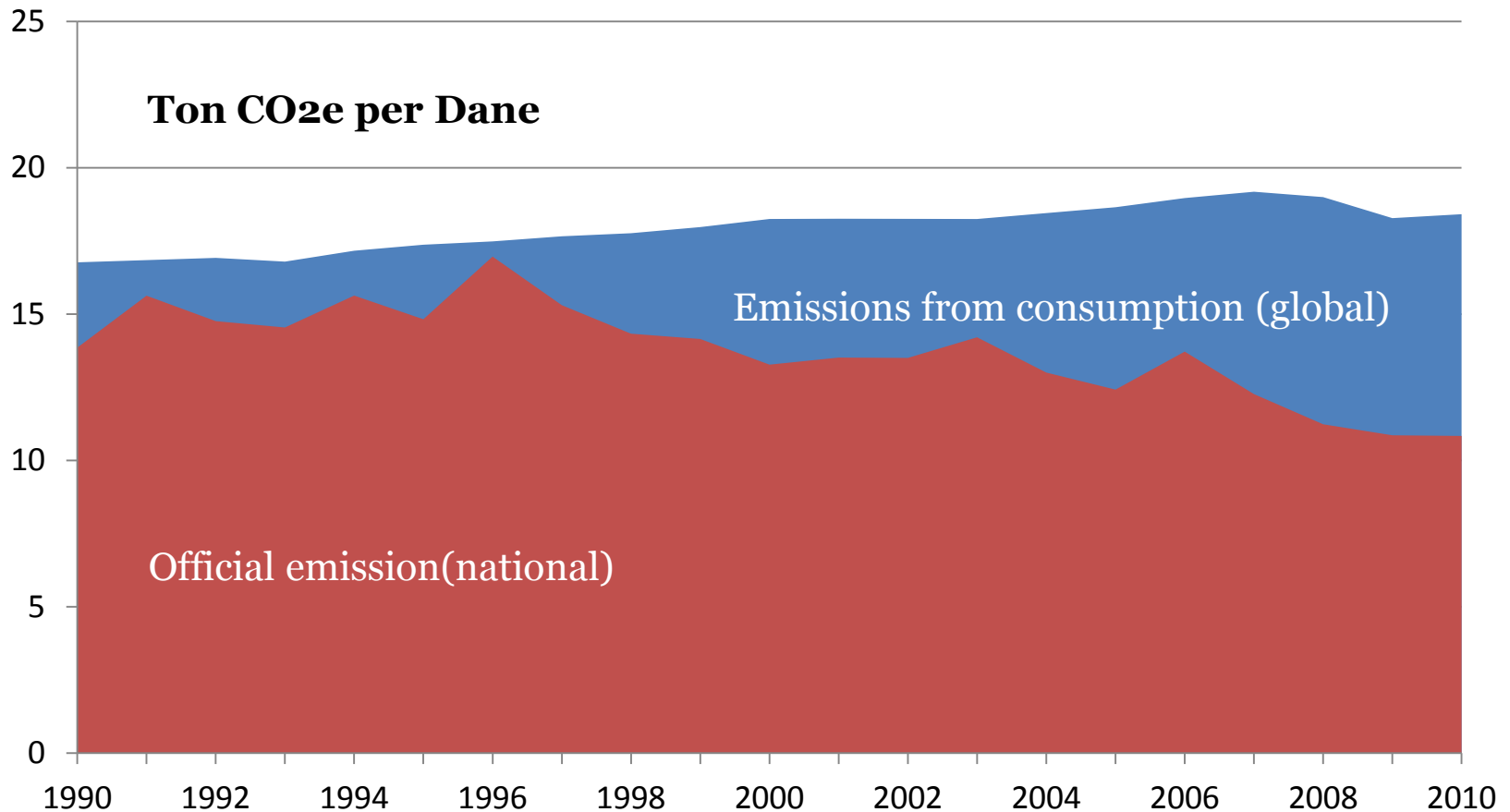
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of known fossil energy reserves must stay in the underground

The Climate challenge

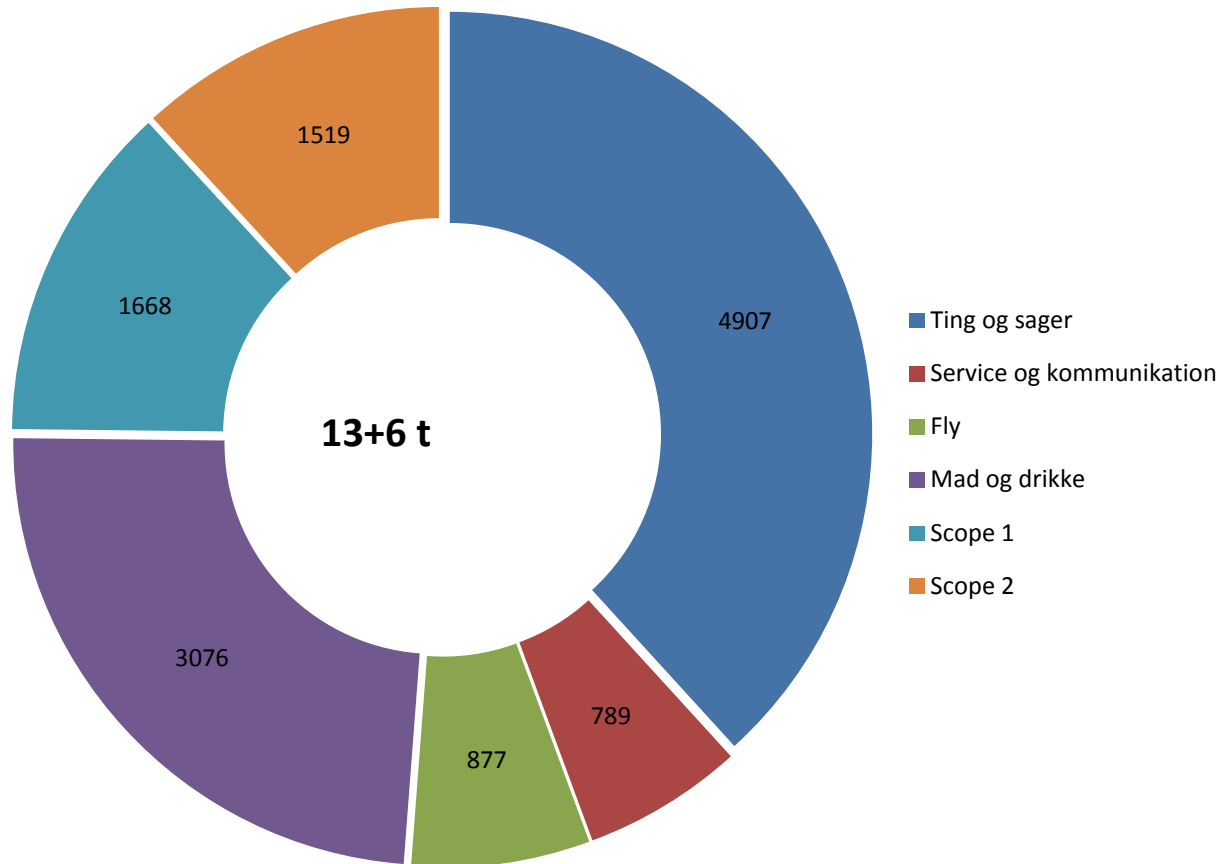
- We expect 9 mia. people on the earth in 2050
- If all equally share CO₂ emission, there will be **2-3 tons** per person per year
- Today an average dane has a CO₂ emission of **18 tons** (incl. consumption)

Danish climate gas emission



Carbon footprint

19 tons CO₂e/dane/year



Scope 1: direkte energiforbrug, benzin, gasfyr, mv.
Scope 2: el og fjernvarme

The climate challenge

- It is serious!
- We must find technologies, which can reduce emissions and maintain energy production
- We also have to change our way of life



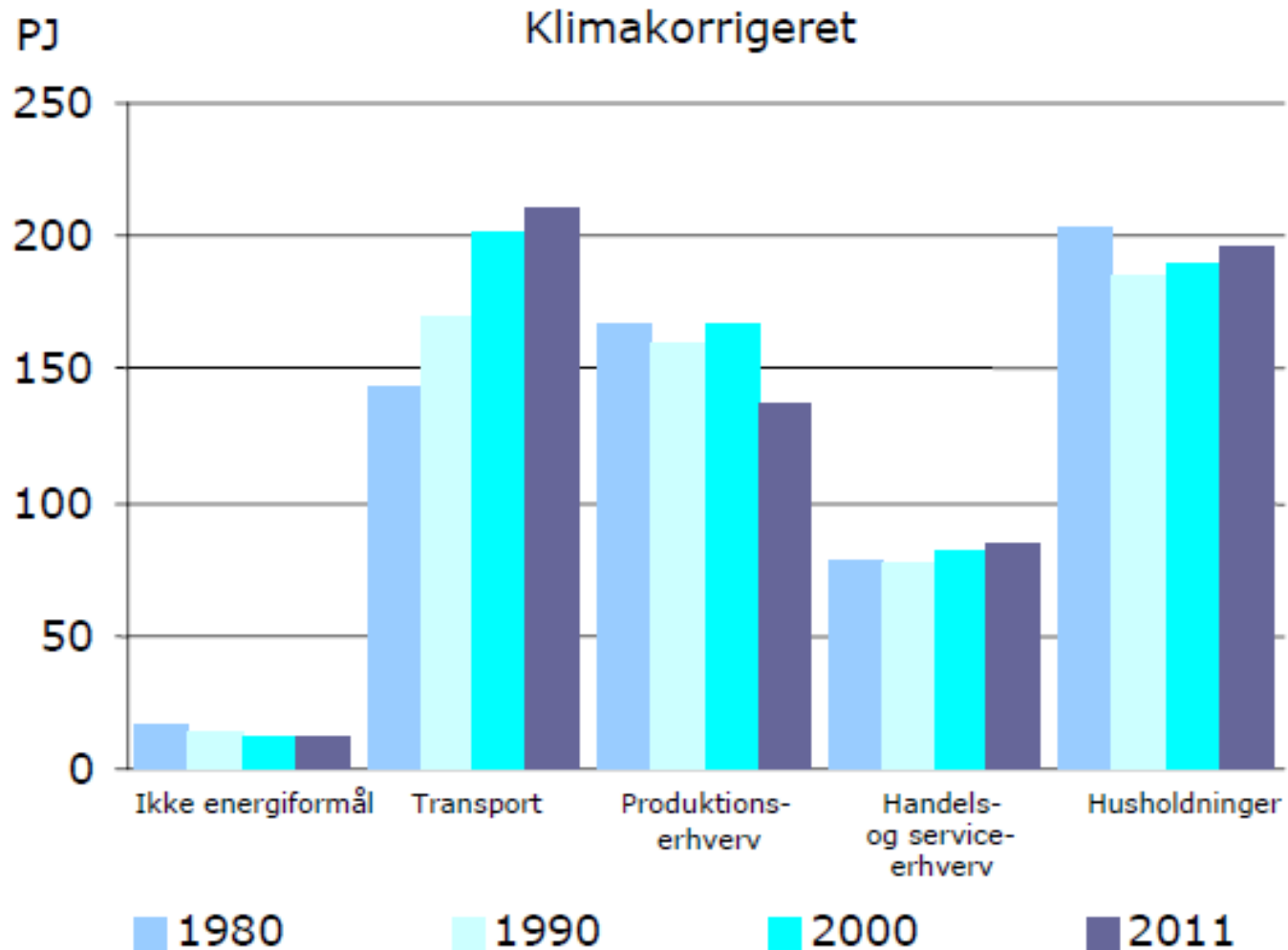
Challenges for the transport sector

Targets:

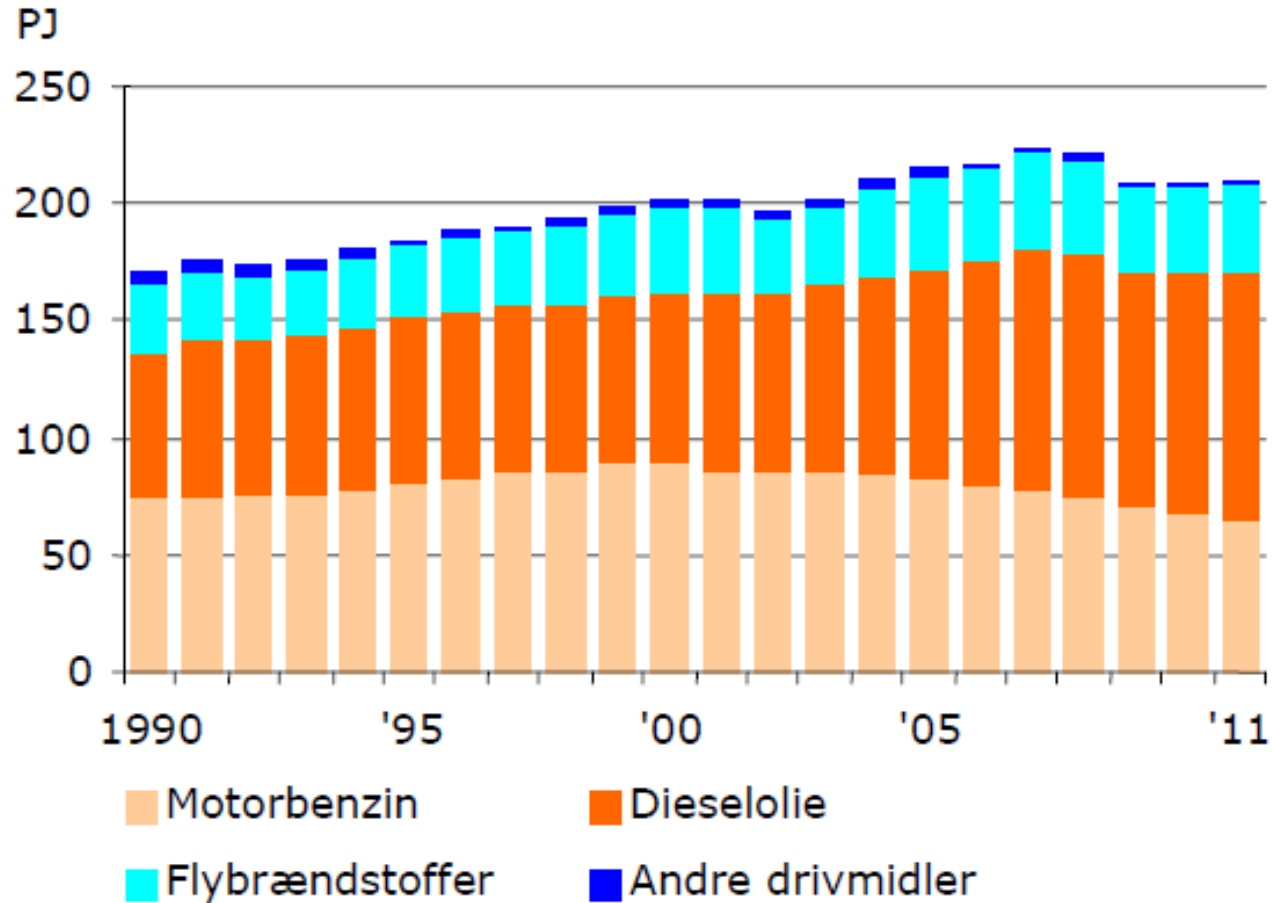
- 10% VE in the transport sector by 2020
- 20% reduction in CO₂ emissions from transport by 2020
- Phase out petrol and diesel by 2050

How can we do that - and what are the impact on mobility and economy?

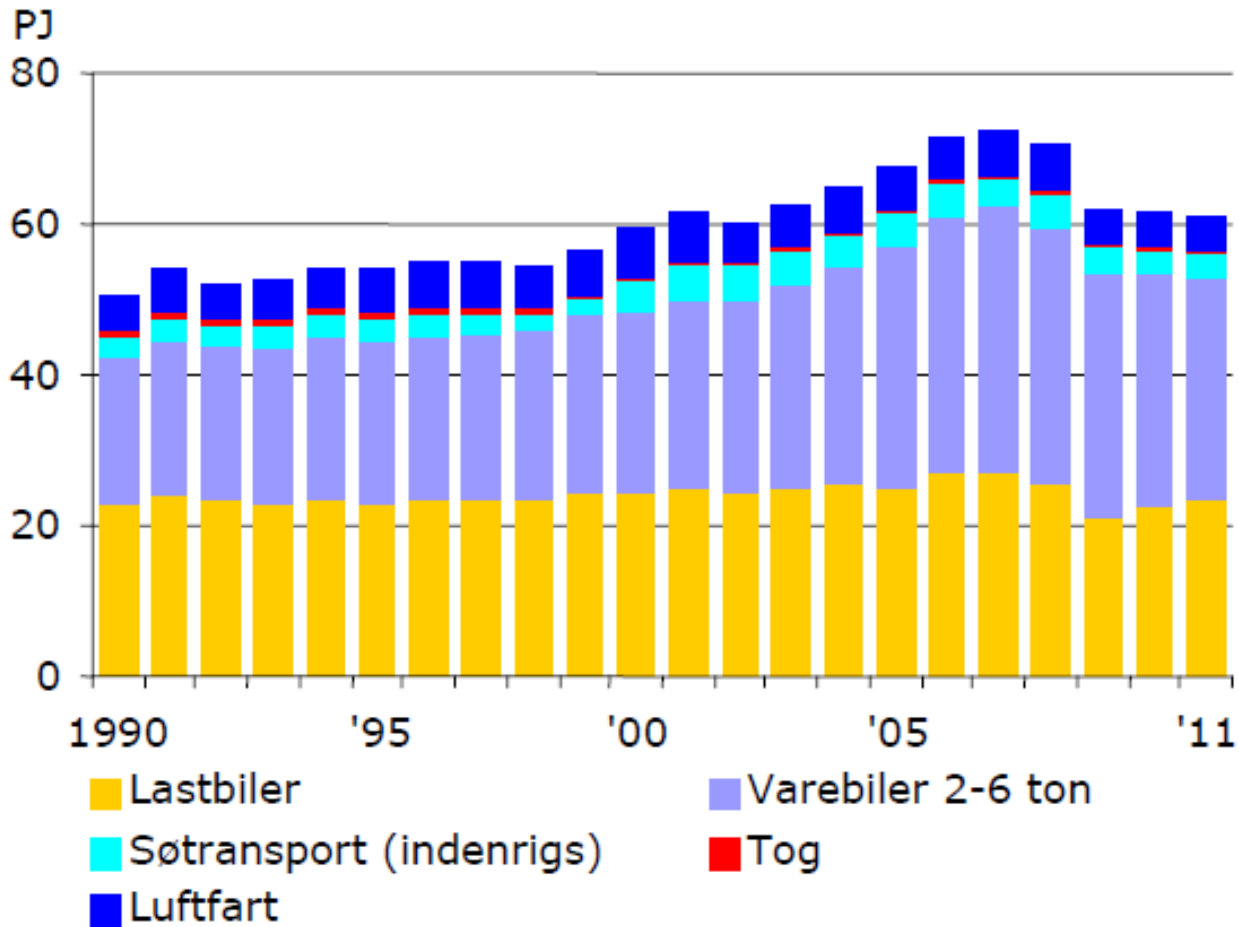
Endeligt energiforbrug fordelt på anvendelser



Energy consumption in transport



Energy consumption in freight transport

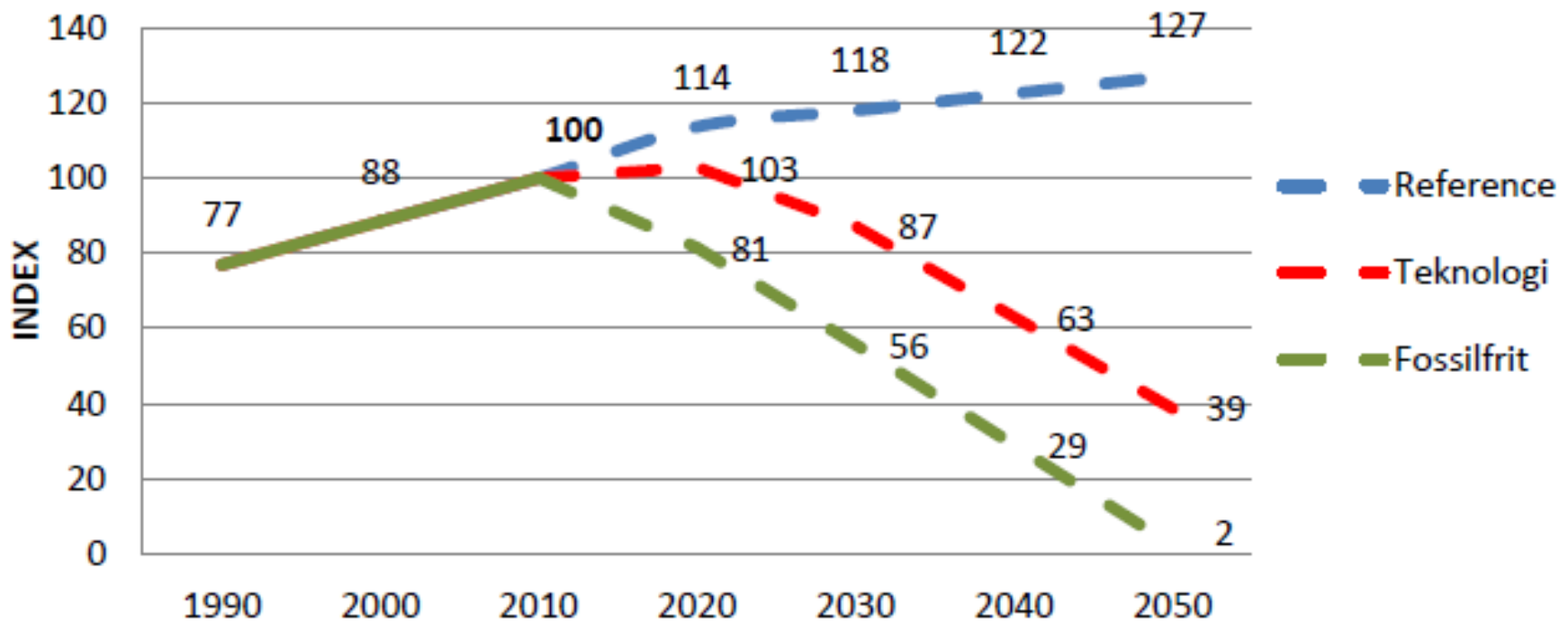


Challenges for the transport sector:

- The sector growth with GDP – at least!
- The sector is 90% based on fossil fuels
- A need for:
 - Higher efficiency
 - Change of fuels
 - Change of behaviour / mode choice

Scenarios for the transport sector

Transportsektorens CO2 udslip 1990-2050



Scenarios for the transport sector

Technologi scenarium:

- Bio fuels: DME, bio –diesel, bio-ethanol, biogas,
- Electric vehicles: batteries, fuel cells and other VE based fuels
- More efficient vehicles

If optimistically applied, they can reduce emissions by 60% of 2010 level.

Scenarios for the transport sector

Fossilfrit scenarie:

Increase capacity utilization

- 1,7 to 2,1 persons per car
- 42% to 63% in trucks

Reduce demand for transport:

- Mobility management
- Urban planning
- Video conferences, work from home
- Higher transport taxes

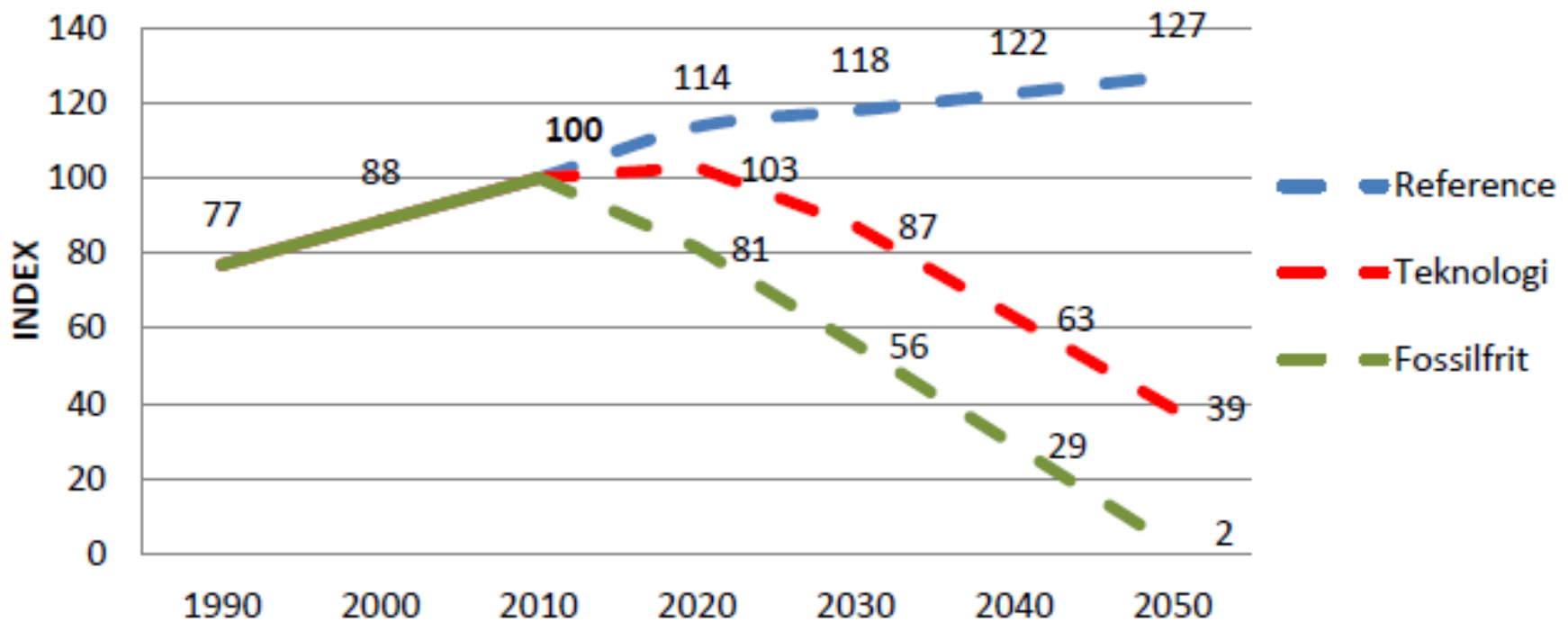
Modal shift to less consuming modes:

- From car to bike and public transport
- From road to rail and sea in freight transport
- From air to rail on holidays



Scenarios for the transport sector

Transportsektorens CO2 udslip 1990-2050



Lower demand for new infrastructure

Growth in traffic flows has already "lost" 5 years due to the economic crises

Increased efficiency in transport will lead to the same transport volumes and fewer vehicle km

Modal shift will change demand from road to rail and from air to rail

CO₂ emissions from the Construction works are significant

CO2 emission

The Danish transport sectors total emission is 15 mio. tons per years (33% of total CO2 emission)

Construction of a HH tunnel will emit 2 mio. tons CO₂

Construction of 1 km motorway will emit 10.000 tons CO₂

Construction of 1 km high speed rail will emit 18.000 tons CO₂

What we need is to reduce, not increase CO₂ emissions

Conclusions

- The Climate challenge is serious and the sooner we act to reduce emissions the better and cheaper
- A Green transition of the transport sector is possible
- Both a change in behavior and technology is needed
- As well as increased efficiency
- This leads to a reduced demand for new infrastructure

A photograph of a massive, towering glacier wall made of jagged, blue-tinged ice. The glacier meets the ocean, where a large plume of white water and ice chunks is being discharged. The sky is dark, and the water is a deep blue-green.

Thank you for your attention

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