

Reducing CO₂ emissions by using less and renewable energy

by Michael Borre, Rail Net Denmark

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The Speaker

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Agenda



- Why is trains important for reducing CO₂ emissions?
- Trains running on CO₂-neutral electricity
- Using less energy and getting the same done.



Railways in Denmark

Trains per day 1400 intercity/
 local trains
 1100 S-trains
 170 freight trains

Section length 2.323 km

Track length 3.240 km

Bridges 2.342

Passengers 160 mio./year

Freight 7 mio. tons/ year

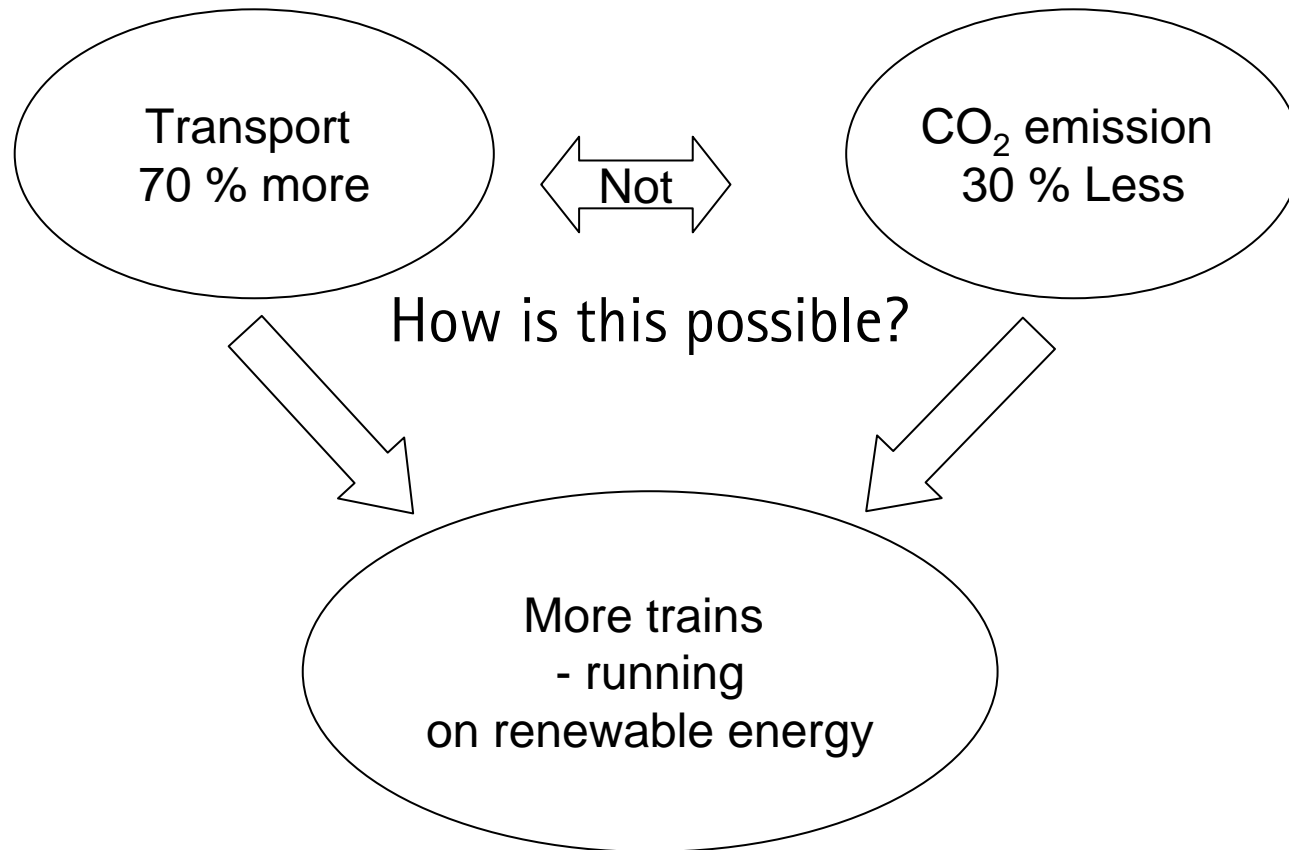


The United Nations Climate Change Conference in Copenhagen 2009



- In December 2009 the Danish government will host the most significant United Nations gathering for climate change since the Kyoto meeting in 1997.
- The goal is less pollution and less global heating.
- A new treaty is mandatory to send the right signal to global business that new regulations and thereby new innovative products and technologies are necessary.

In year 2030 the problem is:



Railway transportation is a necessary player to reach the goal for a responsible future with climate stabilisation and economic growth

Why is this important for the Climate?



- The Danish Minister for Climate and Energy, Connie Hedegaard: The transport sector is obliged to contribute to the Danish climate goals.

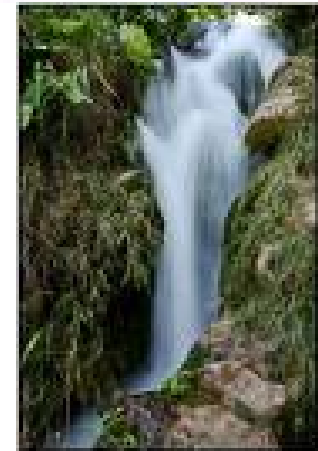


- The Danish Minister of Transport, Carina Christensen: The Danish people must in the future use the train much more than their cars when going to work in the city, because of the environment and problems with traffic jam.



Trains run on CO₂-neutral electricity

- In cooperation with the operators the electricity to personal transports by train in Denmark is produced 50 % from wind in Denmark and 50 % from water in Norway, Austria and Switzerland.
- This is ensured by Renewable Energy Certificates (RECs). The certificates prove that the electricity was generated from a renewable energy source.
- Even that it didn't have the expected positive effect in the Danish press, we still believe that it's the right way to show the way to a responsible future with climate stabilisation and economic growth.



The cheapest and most environment friendly kWh is the one that isn't used and produced.



- The Danish Society of Engineers (IDA) have calculated that 1 DKK spent on energy efficiency gives 7 times more CO₂ reduction than 1 DKK spent on windmills.
- Rail Net Denmark is committed to implement energy reduction projects.
- We believe that we can get the same output, but for a lower energy consumption.



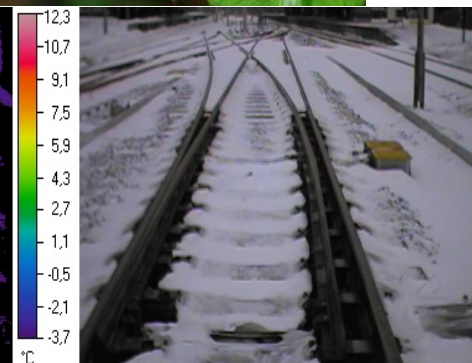
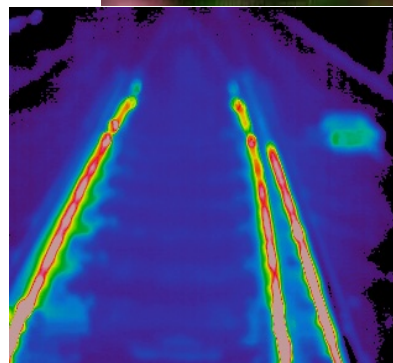
Some examples for reducing energy

Tune off unnecessary consumption

- light, Computer and Standby current, Heating at rail turnouts and reduction of operation time on ventilation

Buying energy efficient equipment

- Energy saving light bulb, LED light, head pumps and virtual servers.



Conclusions – what works?

- Moving traffic from road to rail
- Using renewable energy
- Reducing the total energy consumption

