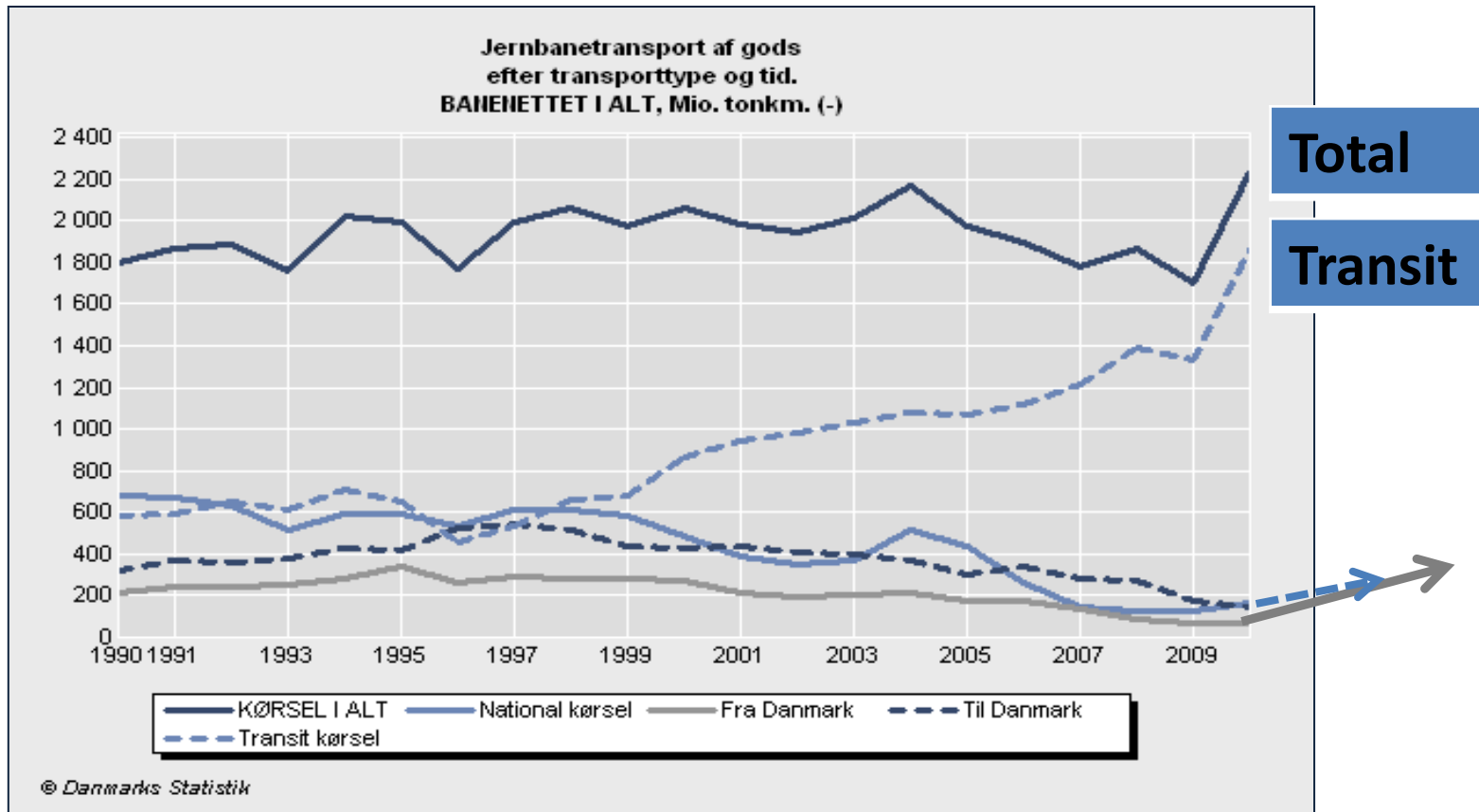


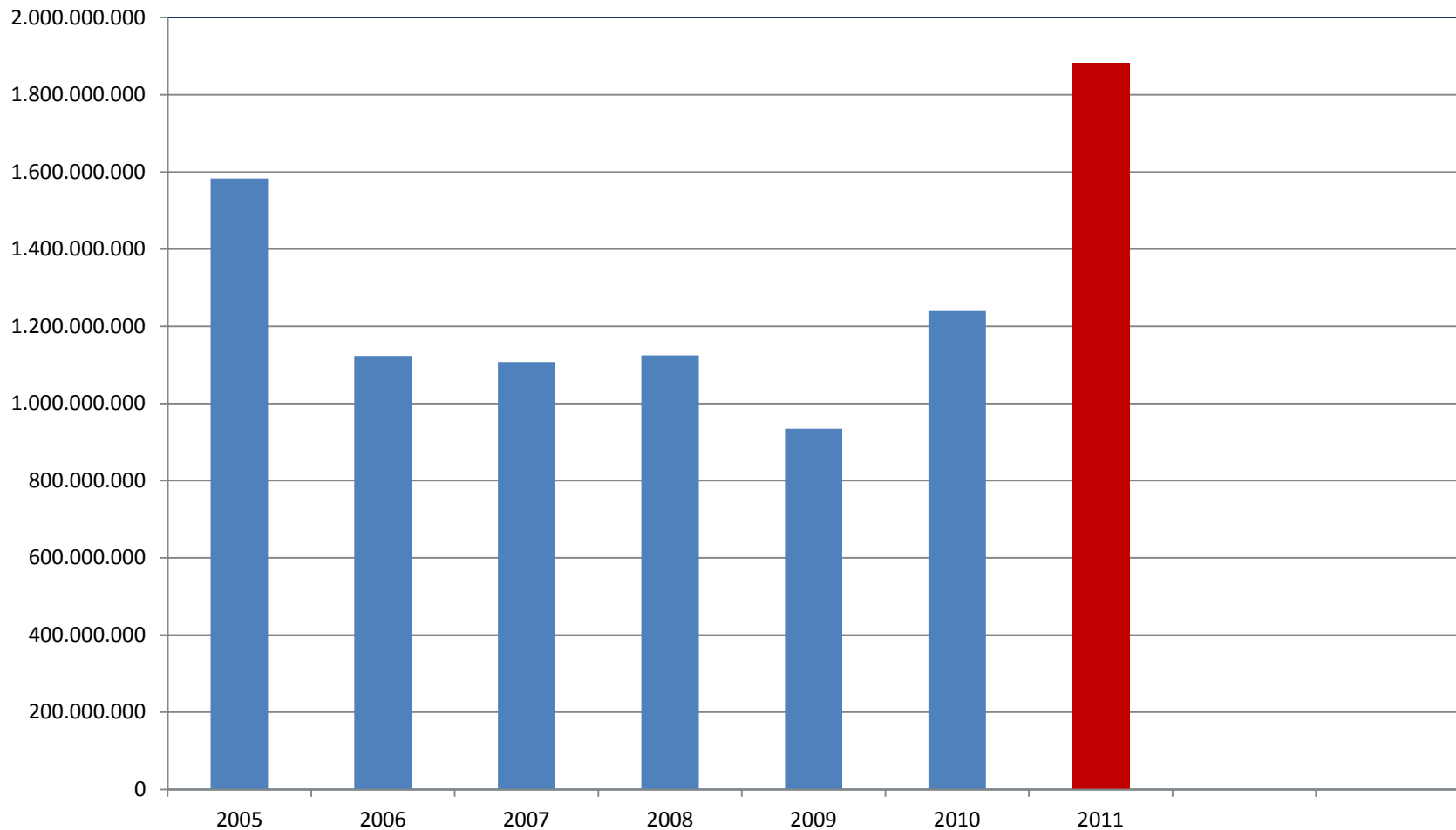
# Capacity limitations for development of goods transportation in the Fehmarn corridor

*Hans Ege, Railnet Denmark*



# Goods train transport in Denmark 2005-2010 - og forecast for 2011

Godston-km i Danmark



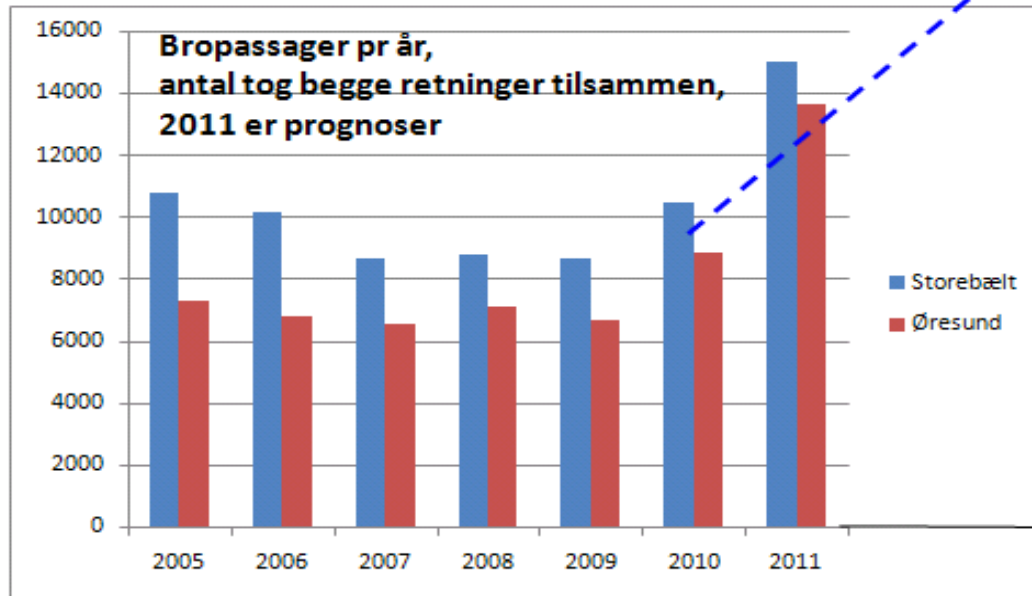
# Reasons for growth

- 2000-2011: Öresund Bridge and multi-system-locomotives
- Crisis slowly ending
- Congestion
- Economy  
(energy prices, strategy changes under crisis, MAUT)
- Better trailer-techniques
- General economic growth

- **All reasons and others expected to continue**

# Primitive demand forecast

Goods transport in Danmark (ton-km)  
Doubling 2010-2014. Tripling 2010-2020.



# Market demand from 2020

- Trains will save 160 km  
(not using Great Belt-link anymore)
- Congestion on roads,  
economics,  
probably prices of energy .....
- General economic growth
- ERTMS



increased demand for goods train capacity

# Limited number of slots in 2020 /2027

## **Femern link**

2 slots per hour per direction reserved for goods trains,  
in practice totally 78 trains per direction per 24 hours – on  
the danish side

## **Great Belt link**

1 slot per hour per direction

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Total: 3 slots per direction per hour through Denmark

To day: up to 5 applications for slots per hour per direction,  
but about 25 trains through Denmark per day.

# Main bottle necks

- **Storstrømsbridge**, max 2 goods trains + 3 passenger trains per hour per direction
- **Amager/Sound-connection**, 3 alternative solutions, reduce tunnel restrictions for goods trains
- **The mixture of trains** will limit the capacity significantly, extra tracks for overtaking

## Limited number of slots + increasing demand

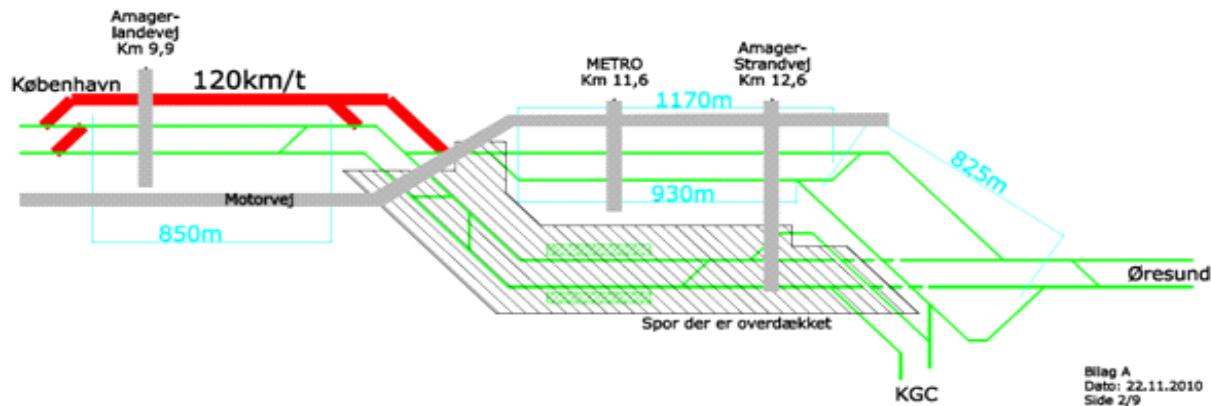
**get the most out of the slots we get**

- - extended length (1.000 m trains)
  - increased weight (25 tons)
  - extended profile (find European standard)
- Corridor 3 (B) can play significant role, but important bottlenecks may be defined soon
- We need detailed data about length, weight and more. Which is the most limiting factor. Rail Net Denmark is starting up gathering consistent statistics

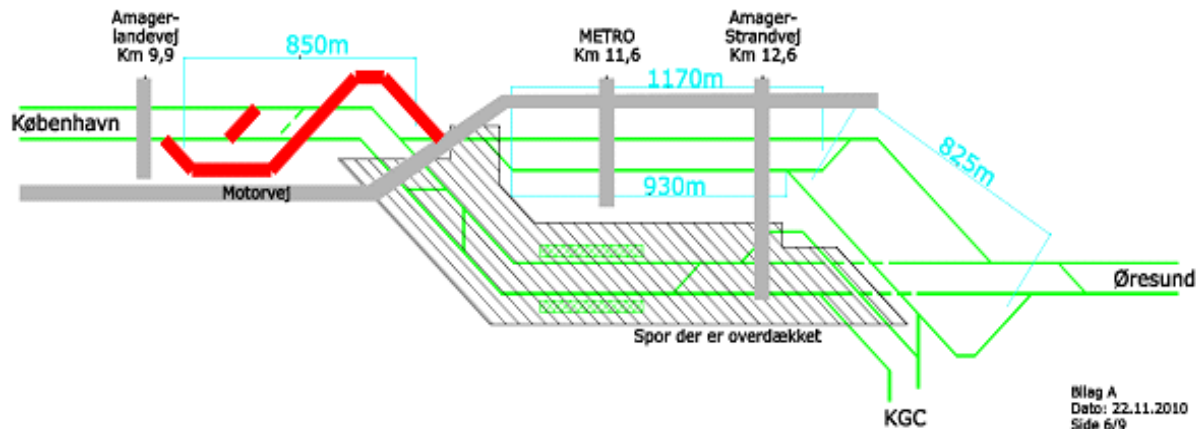
**EU white book, Traffic 2050**, 60 % reduction of CO<sub>2</sub> from traffic in 2050,  
30 / 50 % of lorry-transport > 300 km transfers to rail and sea-ways, GOSH

# Kapacitetsproblemer rundt Copenhagen Airport

## Kapacitetsudvidelse Øresundsbanen Grundløsning (Nyt hovedspor til 120km/t)



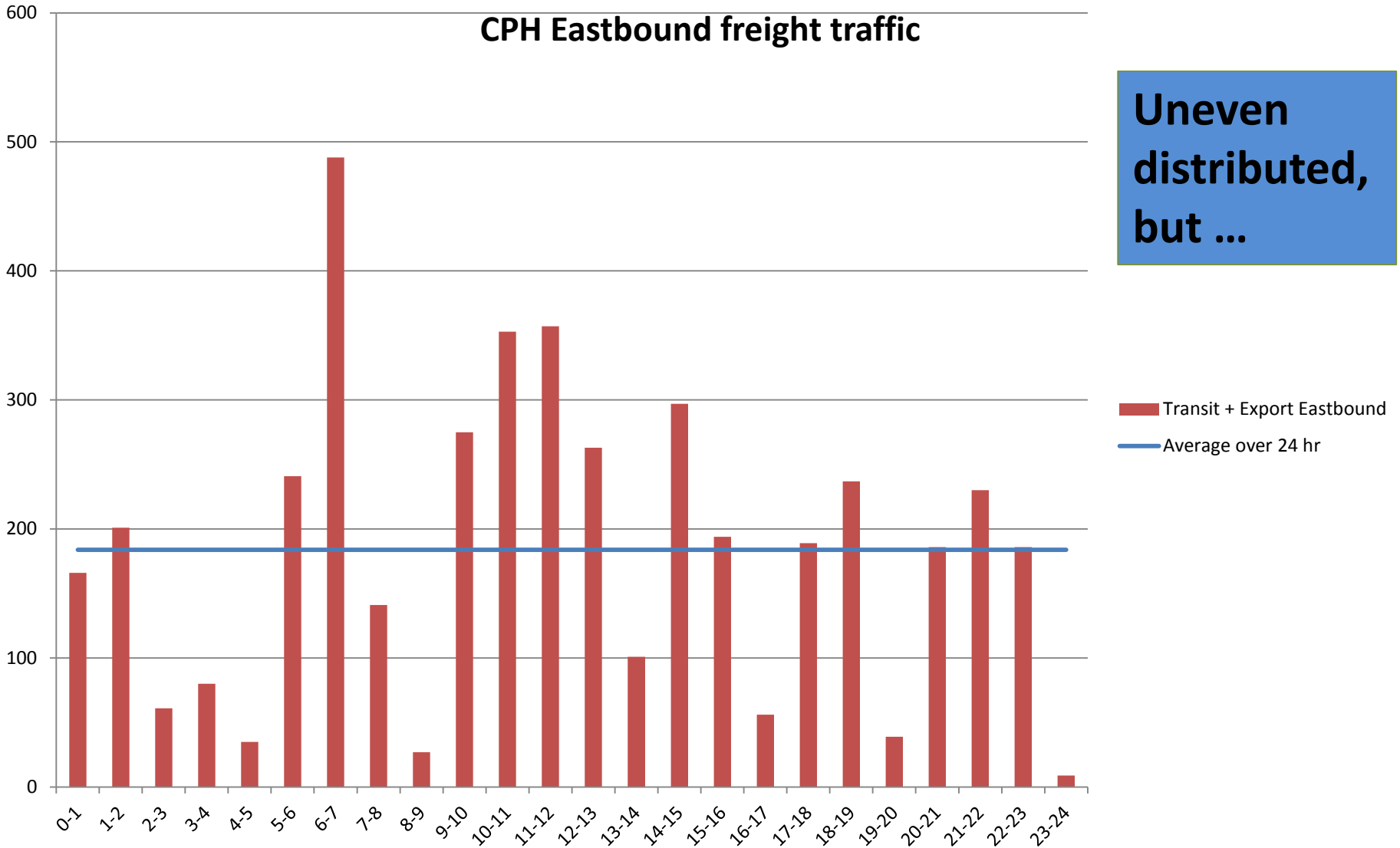
## Kapacitetsudvidelse Øresundsbanen Alternativ 2, Fly-over over banen



**2 infrastructure solutions  
+ directionwise operation**



# Goods trains, Copenhagen Airport, 2010



# Day distribution, The Sound Connection

## 2006 to 2010, remarkable development

Share of the goods trains in the 3 biggest hours  
out of 24 hours

2006	35 %
2010	24 %

**Total number of trains in the 3 biggest hours approximately the same in the 2 years**

About 50 % of the trains are not bound to certain slots.

Economical "train pricing" will probably have an effect!

Thank you for the attention