

Navigation on the Rhine and Climate change

**“Main ports and inland navigation: the
environmental potential”**

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CONTENT

- The importance of inland navigation
- Total emissions in the port of Antwerp
- Modal split
- Improvement of infrastructure
- Consolidation of small volumes
- Barge traffic project
- Reduction of emissions of VOC's
- Conclusions

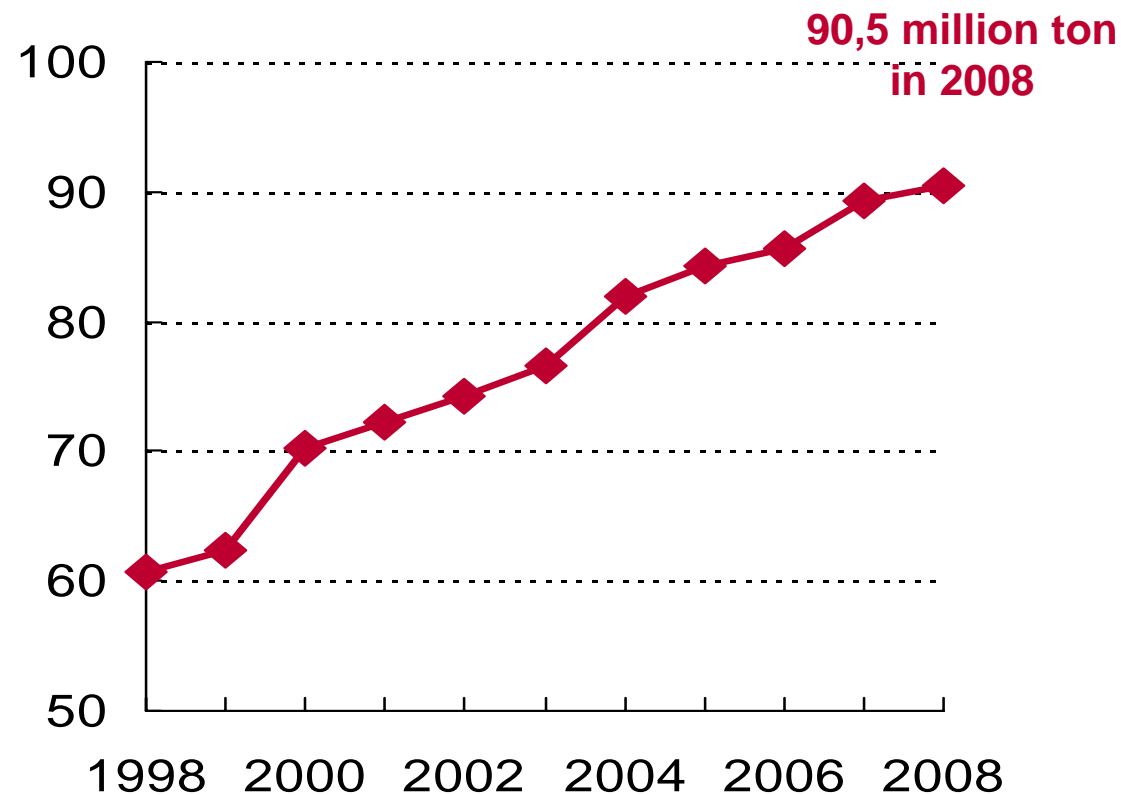
Barge transport

- Connected to the European waterway network by Scheldt-Rhine canal and Albert canal
- Main inland terminals within easy reach: Liège, Duisburg, Ludwigshafen, Basel, etc.



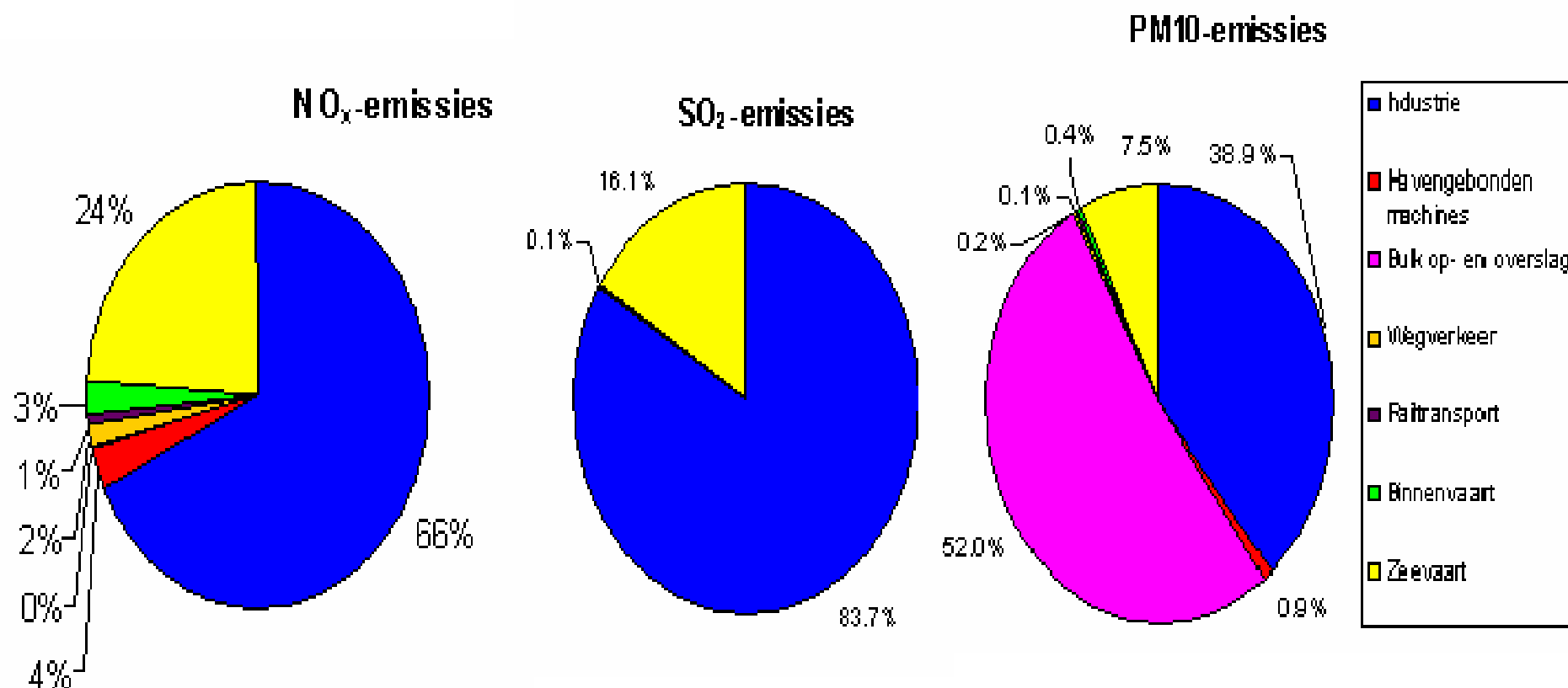
Inland navigation 1998 – 2008

Total traffic



Source: statistical department Port of Antwerp

TOTAL EMISSIONS IN THE ANTWERP PORT AREA



INLAND NAVIGATION: THE ENVIRONMENTAL TRANSPORT MODE.

- 3% of the NOx emissions in the port area
- 0.1% of the SOx emissions
- 0,4% of PM10 (fine dust)
- How can we further improve the situation as a port authority?

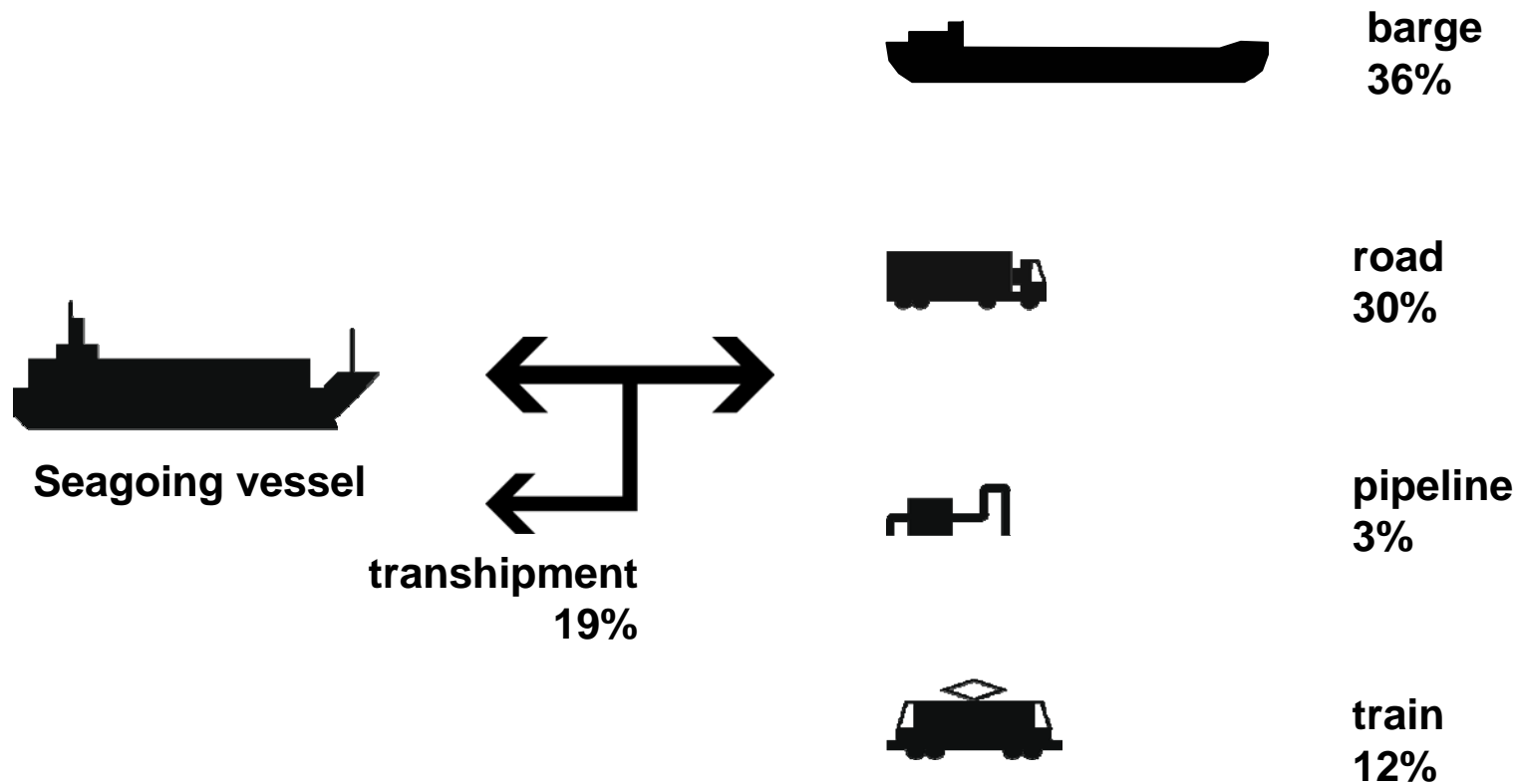


PROMOTE THE USE OF INLAND NAVIGATION: MASTER PLAN

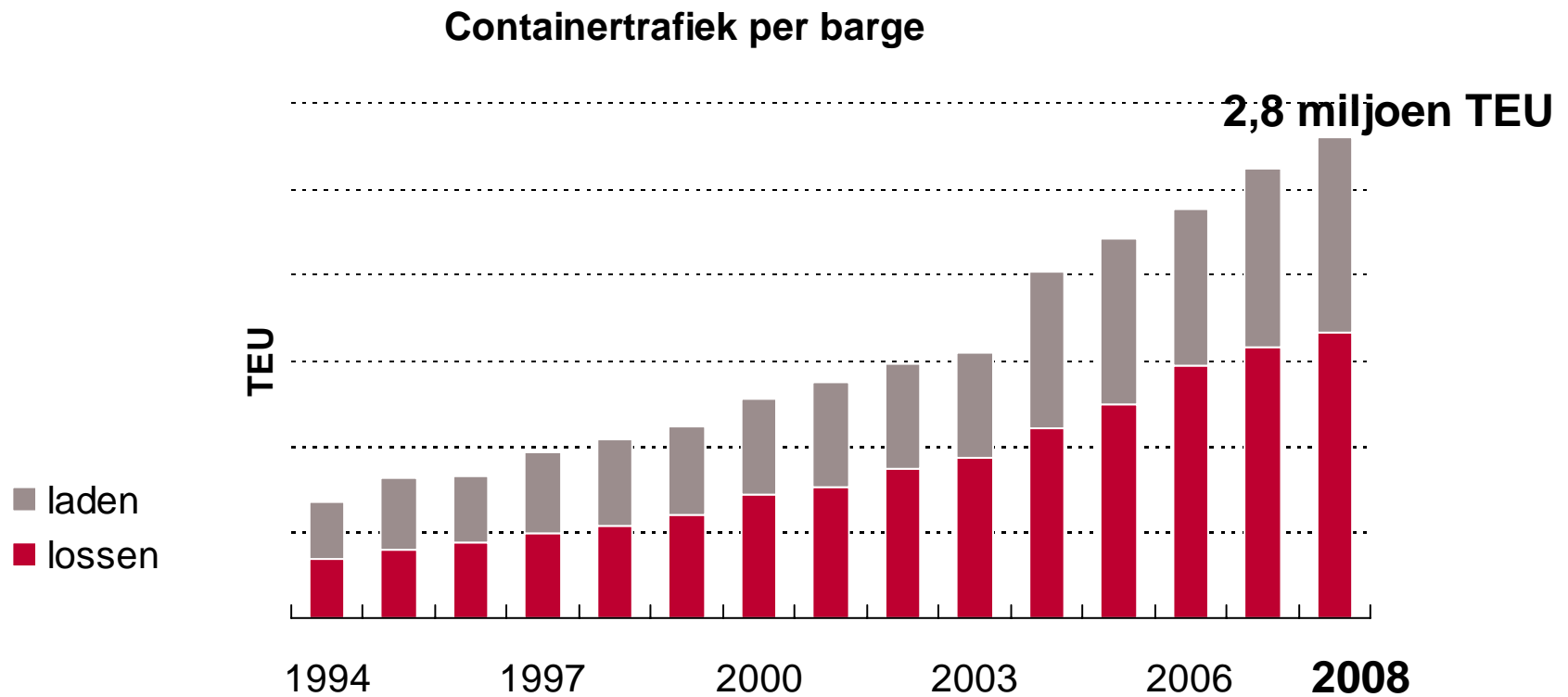
- Master plan inland navigation 2009-2018:
 - Improve modal split
 - Consolidation of small volumes
 - Barge Traffic System
 - Improvement of infrastructure



MODAL SPLIT PORT OF ANTWERP 2008



CONTAINER TRAFFIC BY BARGE

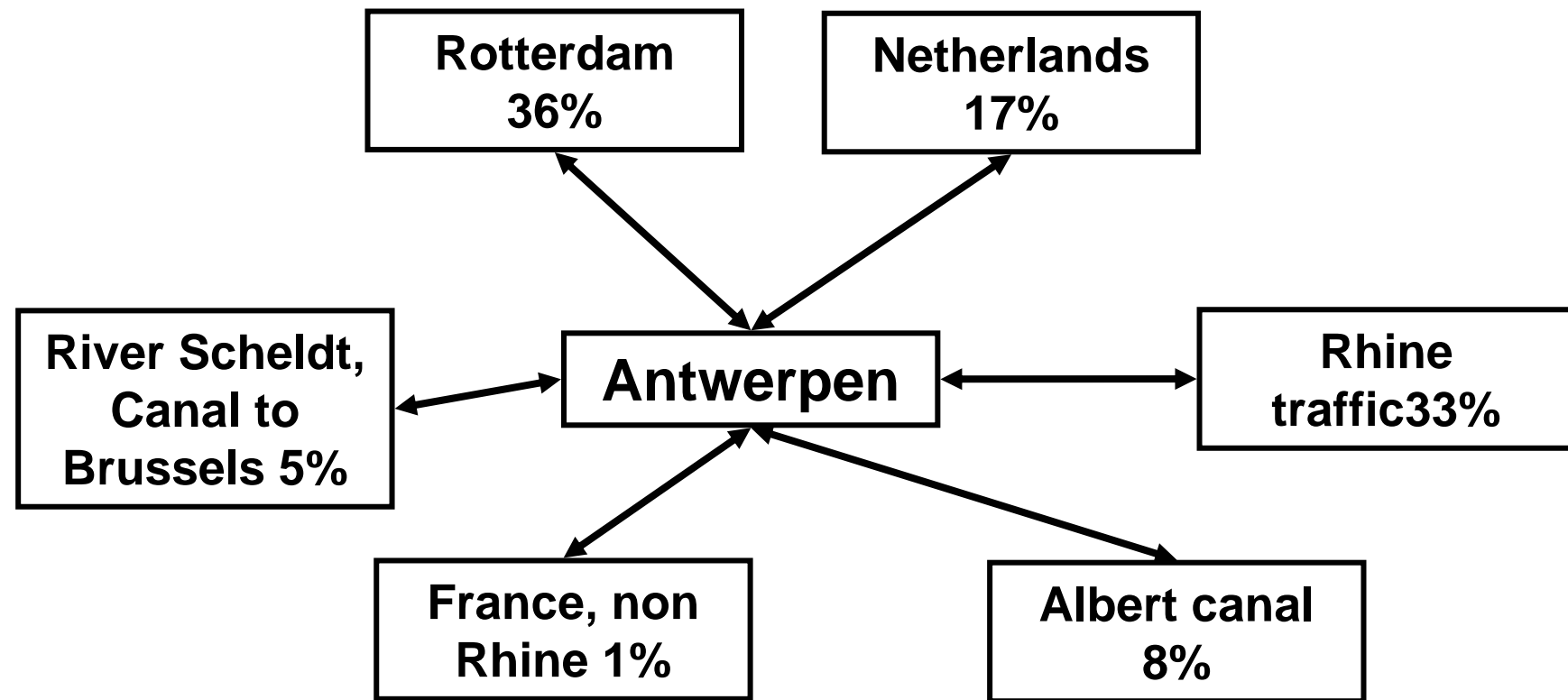


Source: port of Antwerp: 1 TEU = 8,5 ton

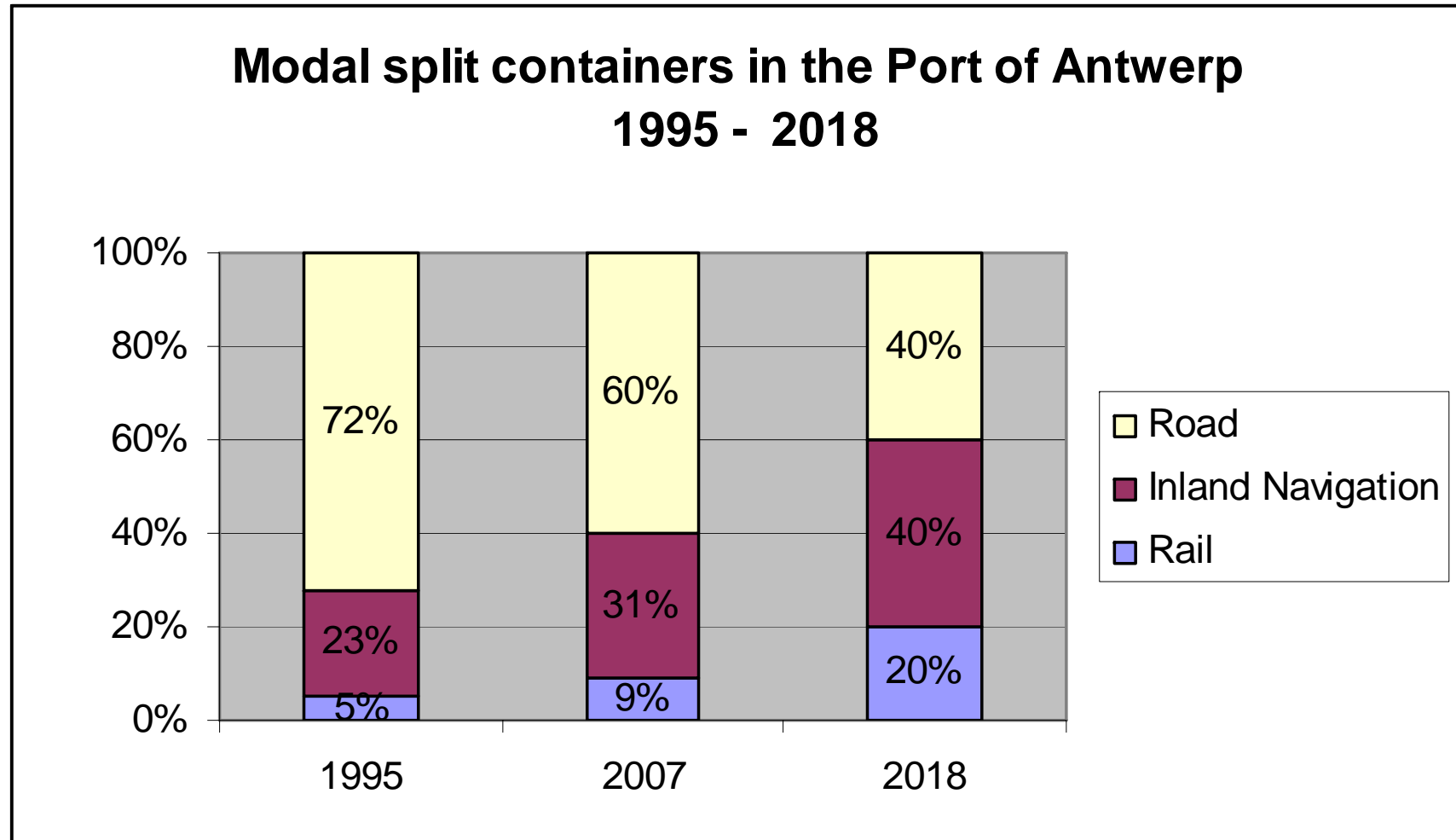
Container barge 470 TEU



Transportation of containers per sailing area

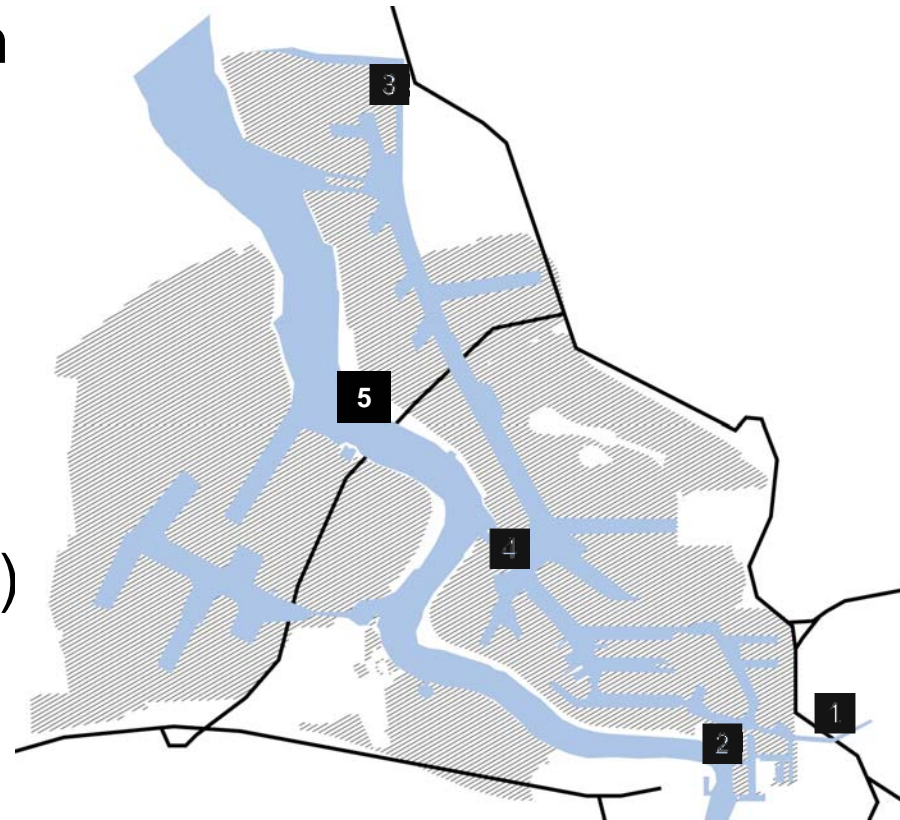


Modal split containers



IMPROVEMENT OF INFRASTRUCTURE FOR INLAND NAVIGATION

- 1 Albert canal (port- Wijnegem - 2010)
- 2 Renovation Royers lock (2013)
- 3 Additional mooring places Noordland bridge (2010-2011)
- 4 Renovation of the Van Cauwelaert lock (2008-2011)
- 5 Mooring places in the River Scheldt (Lillo)



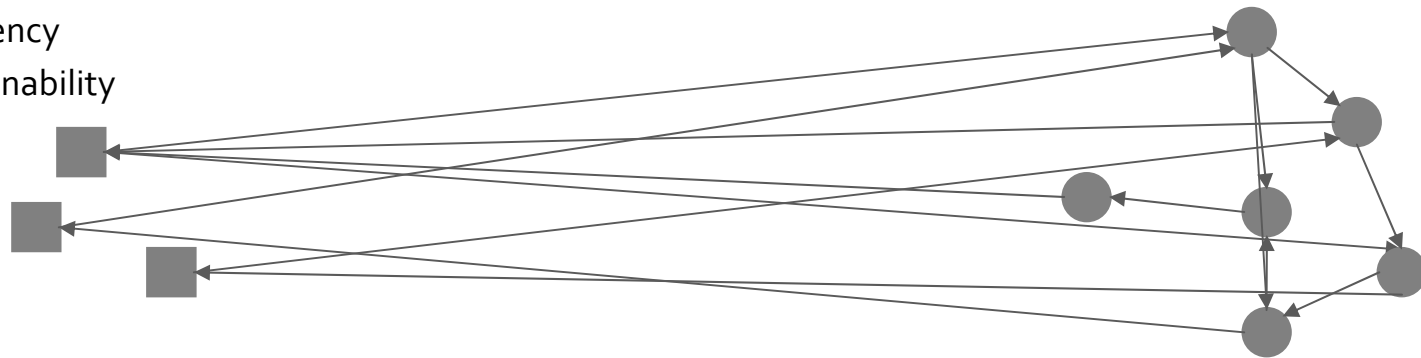
ORCHESTRATION OF THE SUPPLY CHAIN

Point-to-Point: simple

Low effectiveness

Low efficiency

Low sustainability

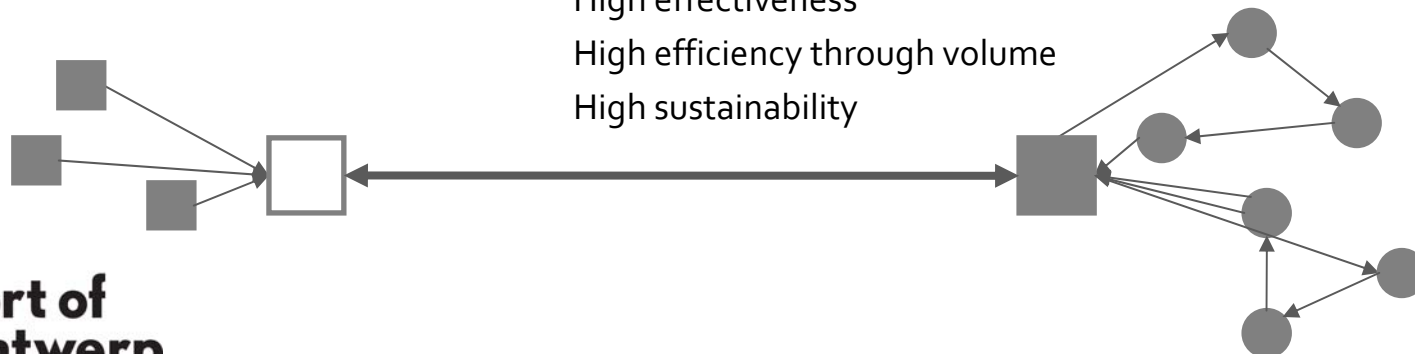


Decoupling: challenging

High effectiveness

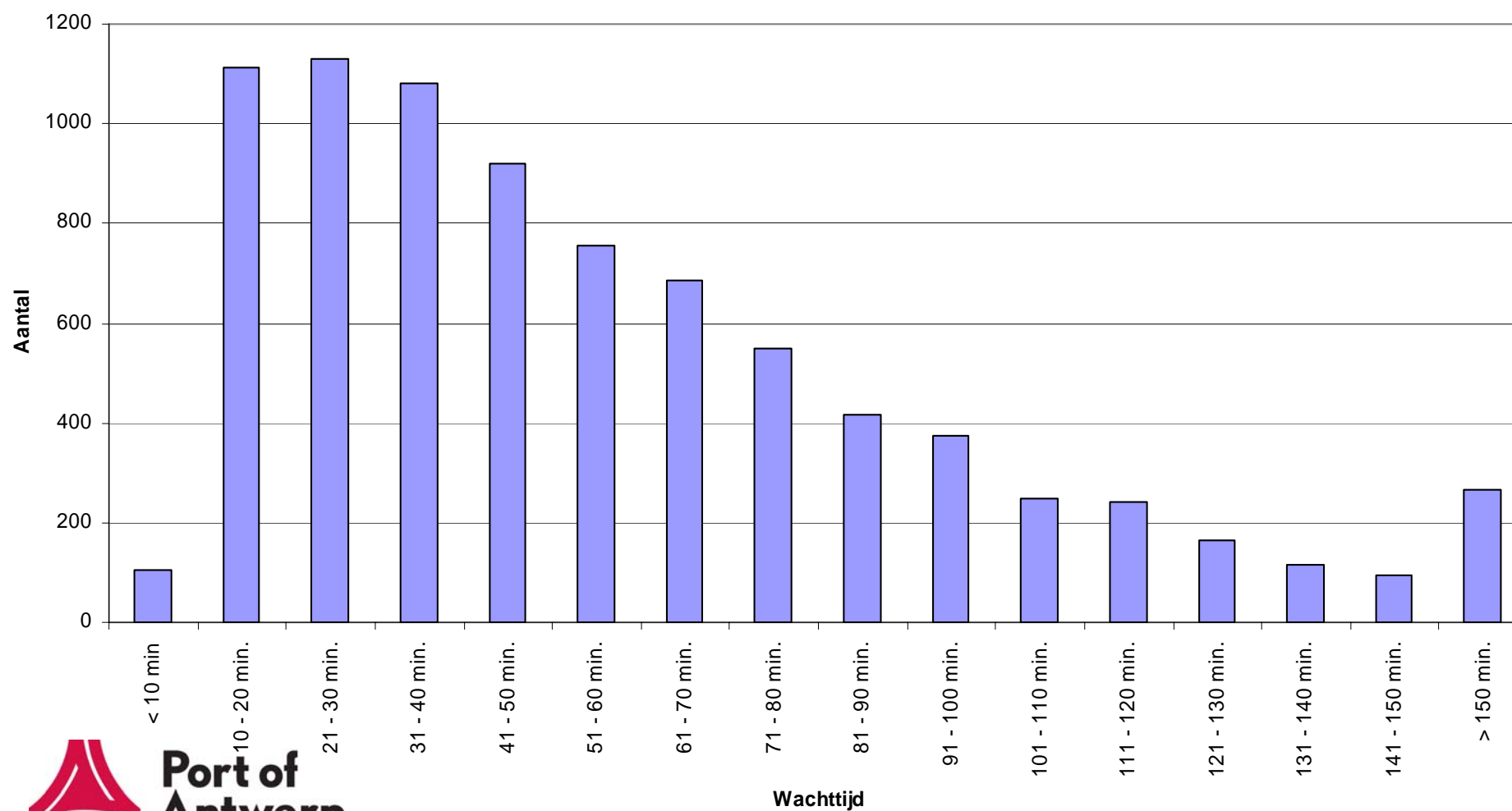
High efficiency through volume

High sustainability



BARGE TRAFFIC SERVICES: DELAYS

Wachttijd tussen melding en sluis in/uit: aantal volgens wachttijd



REDUCTION OF EMISSIONS OF VOC'S



CONCLUSIONS

–The port authority can promote the use of inland navigation, and by such contribute to a better environment by:



- Improving the modal split in favour of barge transport
- Improving the infrastructure for barges
- Bundling small volumes to fill up barges or trains
- Improving the coordination between infrastructure, terminal and barge in order to avoid waiting times
- Improving environmental infrastructure on land in order to reduce volatile organic compounds via vapour recovery systems or (vapour) treatment facilities (absorption...)
- Providing shore side electricity

–THANK YOU