

The inland shipping fleet of the future

Symposium 10 years of CESNI
Rotterdam, 29 October 2025
Bart Kuipers

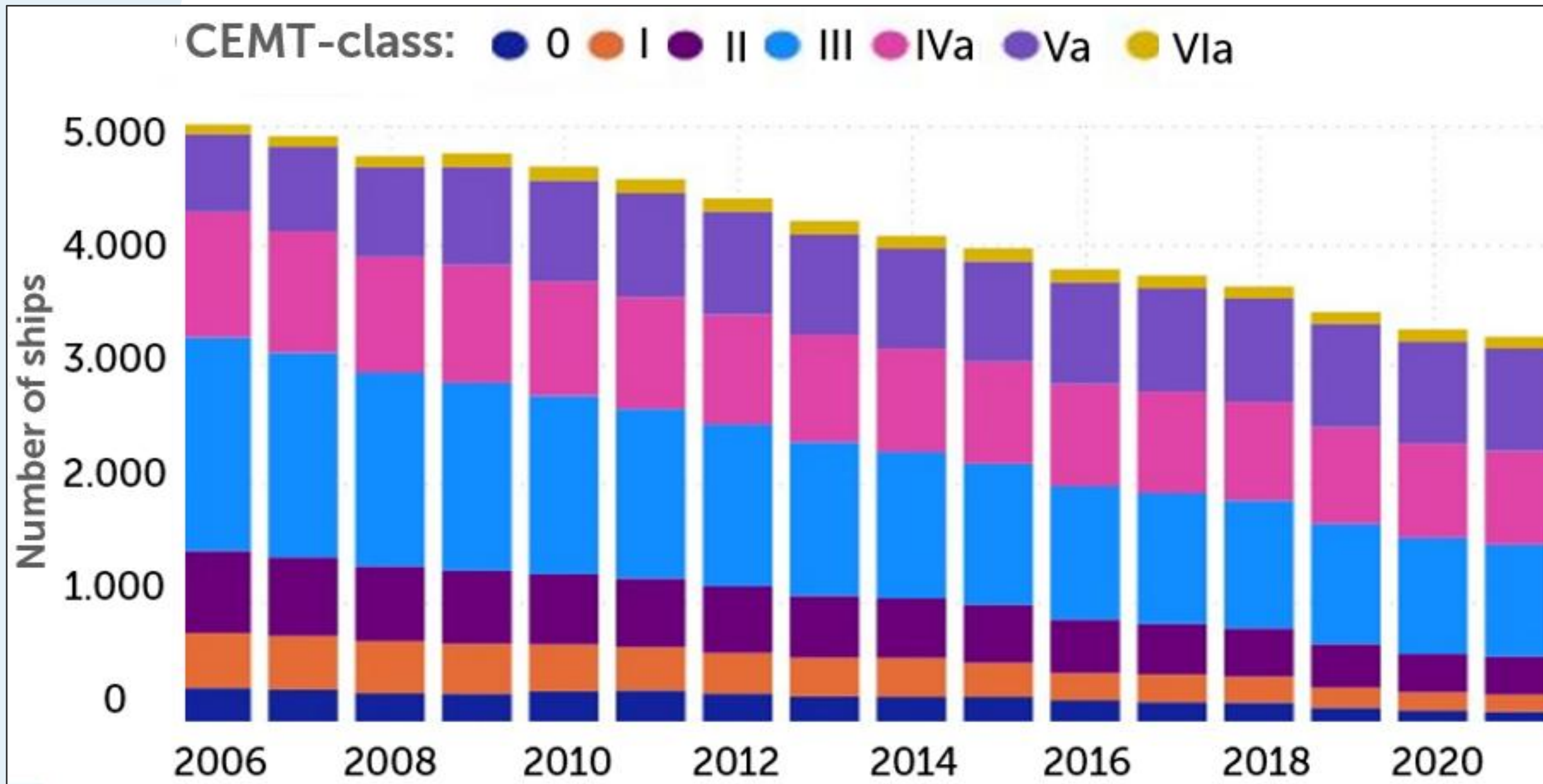


Agenda

1. Development IWT-system of the past
2. Recent scenarios for 2060
3. Impact most important IWT-driver of the last 50 years
4. 8 trends that are driving the future of IWT and its fleet
5. What is needed?

Trends driving the future of the IWT-fleet

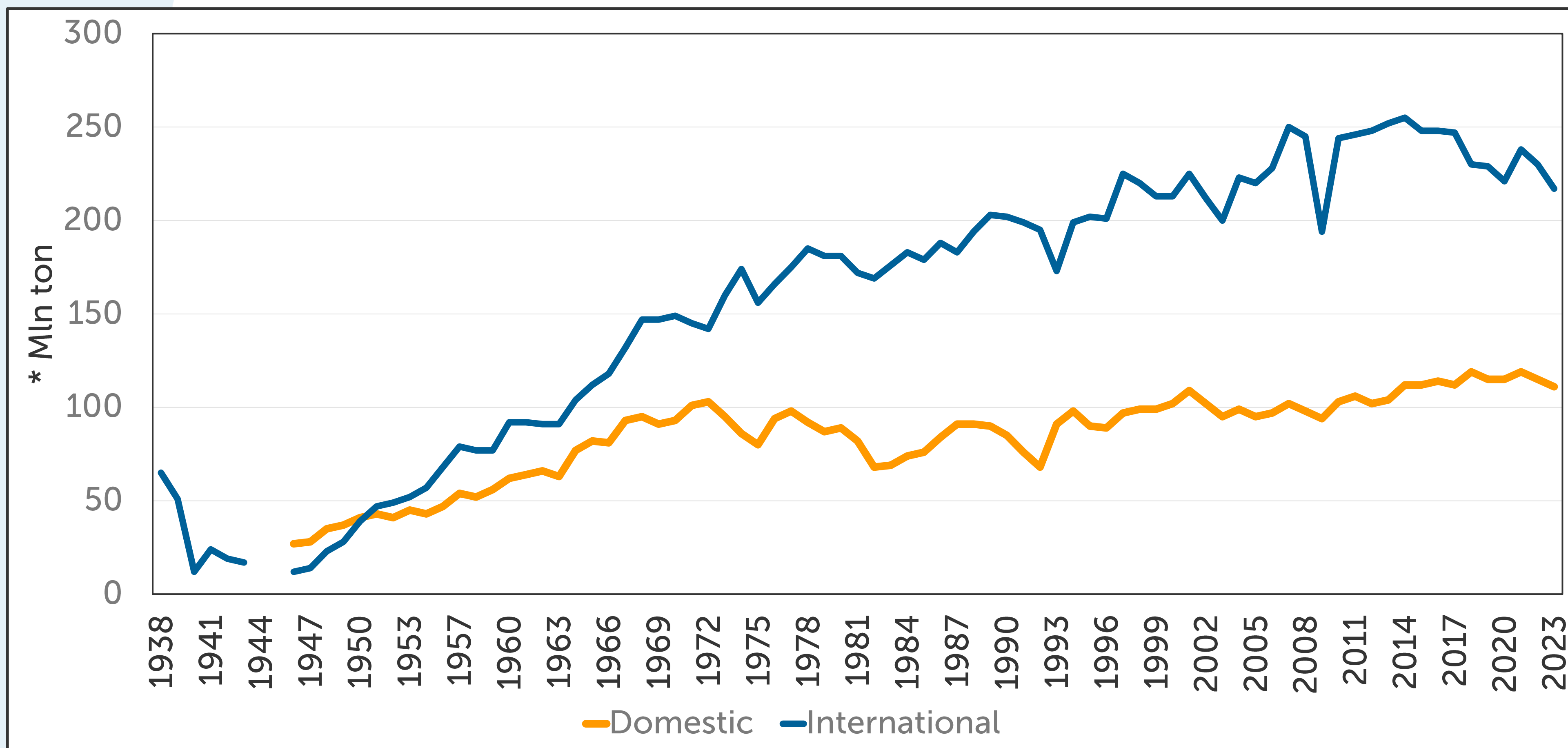
A trend breach will reverse current fleet-developments towards larger and larger ships



Source: Panteia

Dutch IWT: stable pattern last 30 years...

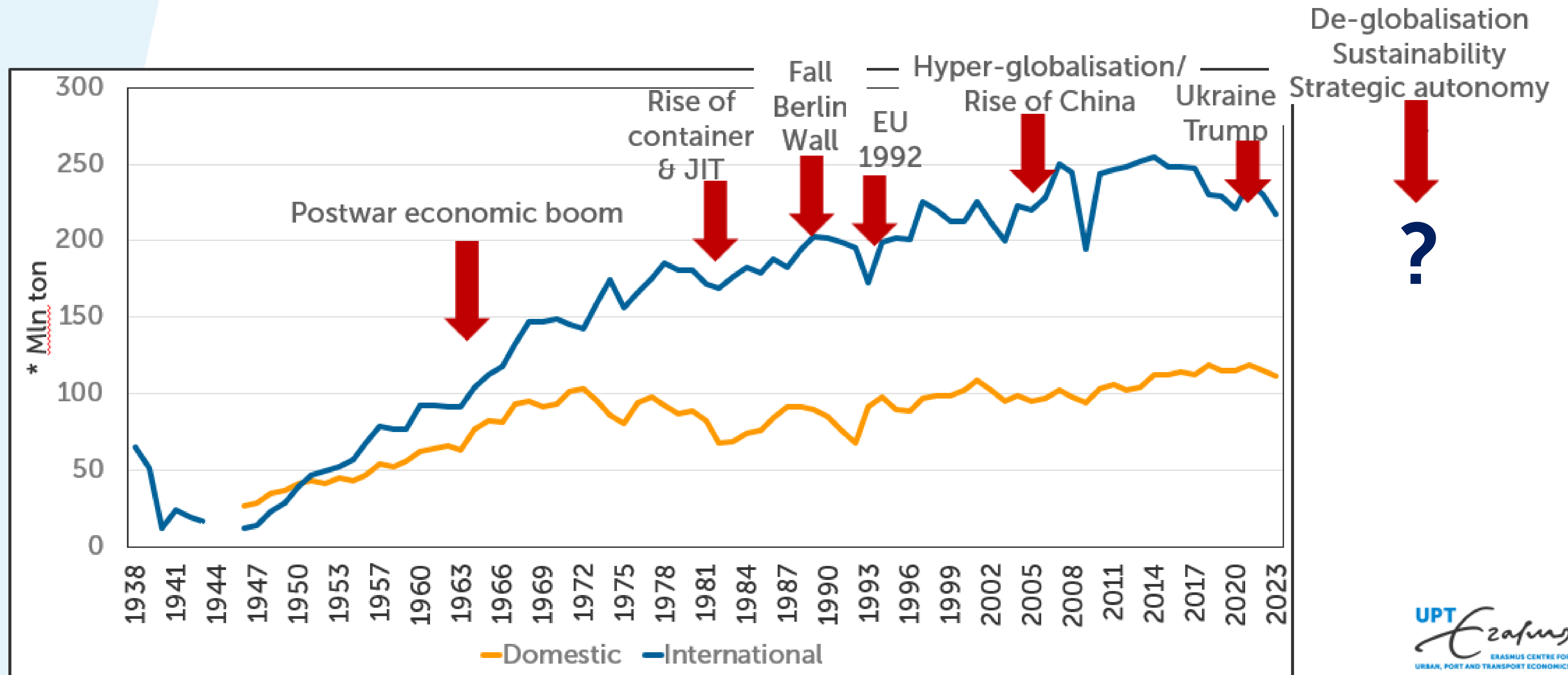
Domestic & international inland shipping, the Netherlands (ton)



Source: CBS

Dutch IWT: stable pattern last 30 years...

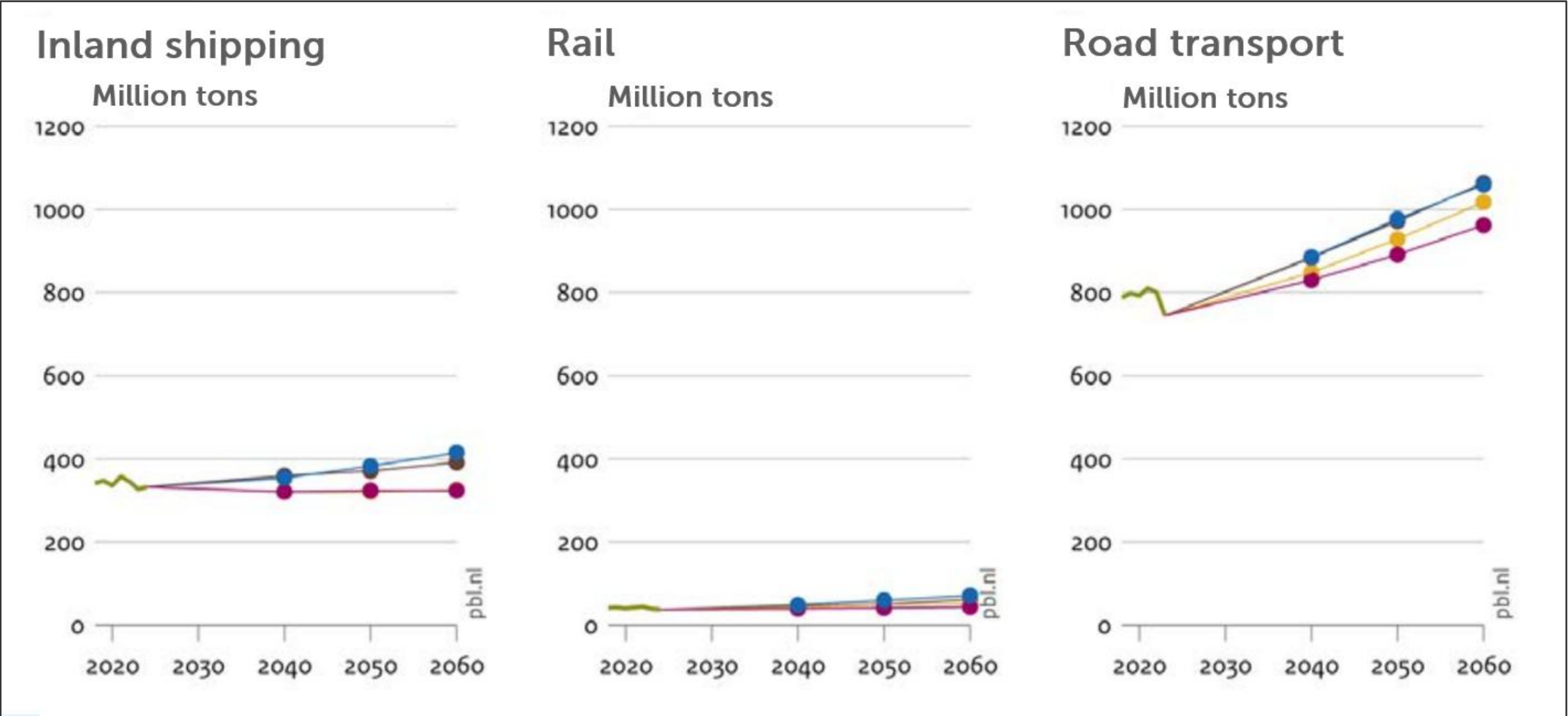
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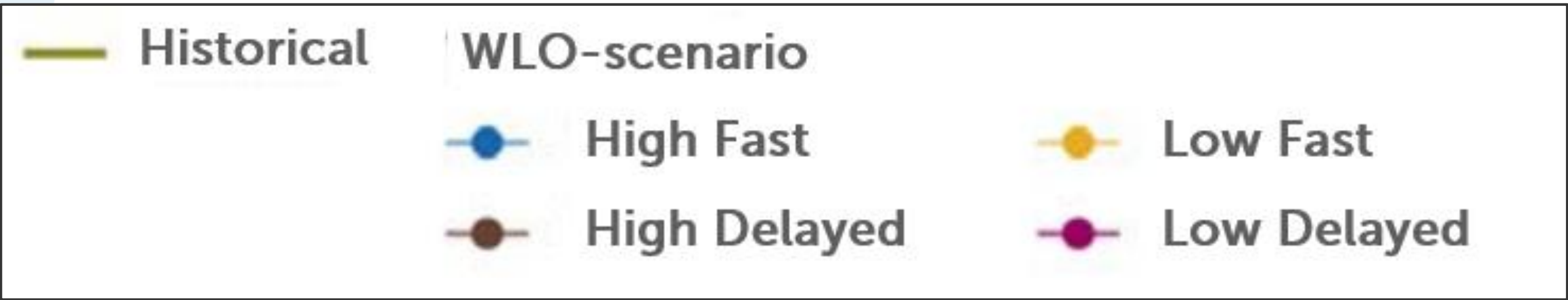
Dutch IWT: stable pattern next 35 years...

IWT not able to increase market share according to scenarios



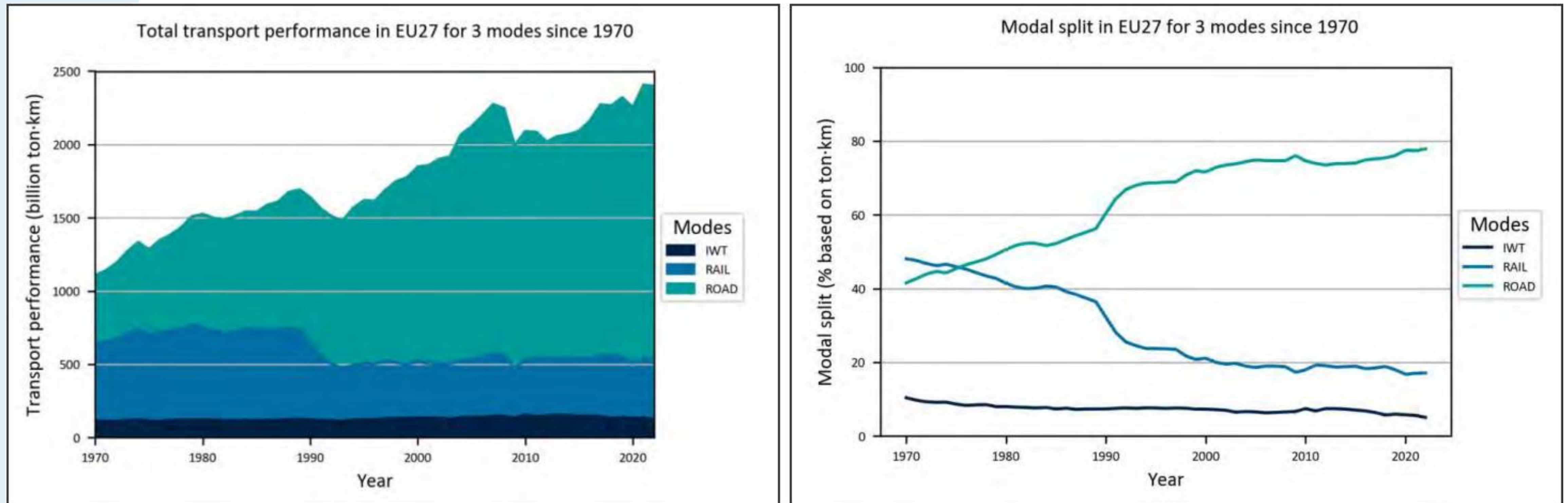
WLO-scenario's 2060:
- High or Low economic growth
- Fast or Delayed climate transition

Source: PBL/Significance



IWT not able to increase market share in EU

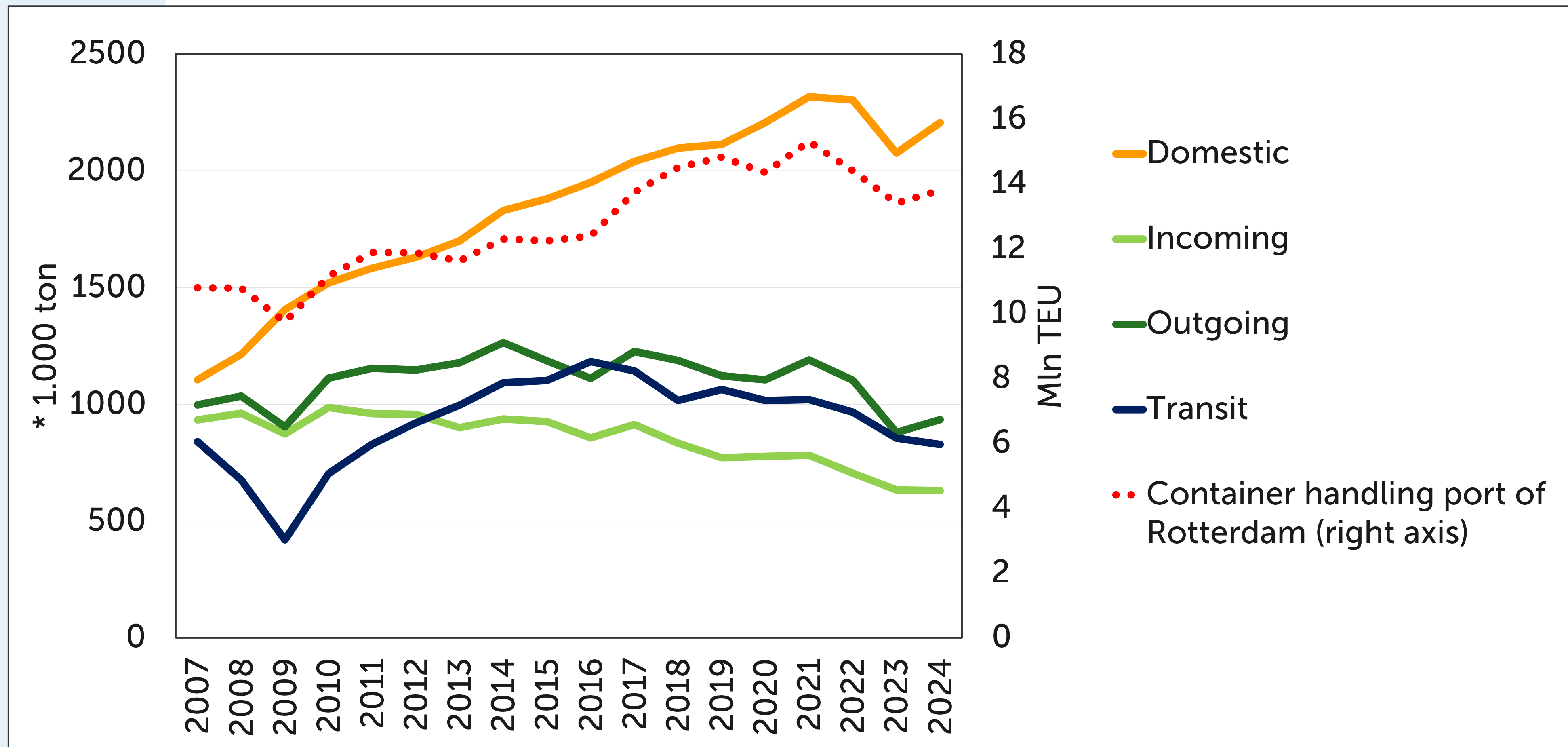
Modal split (ton-kilometres) EU27: slowly decreasing share IWT



Source: Cornelis van Dorsser/BVB/EICB/KBN

Behind the stable pattern: strong dynamism

Container transport booming: changing European landscapes



Source: CBS

Strong inland container network EU

I INLAND SHIPPING EUROPE WESTERN EUROPE - west



II INLAND SHIPPING EUROPE WESTERN EUROPE - east









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8 trends are driving the future of IWT

...and have serious impact on the characteristics of the future IWT-fleet...

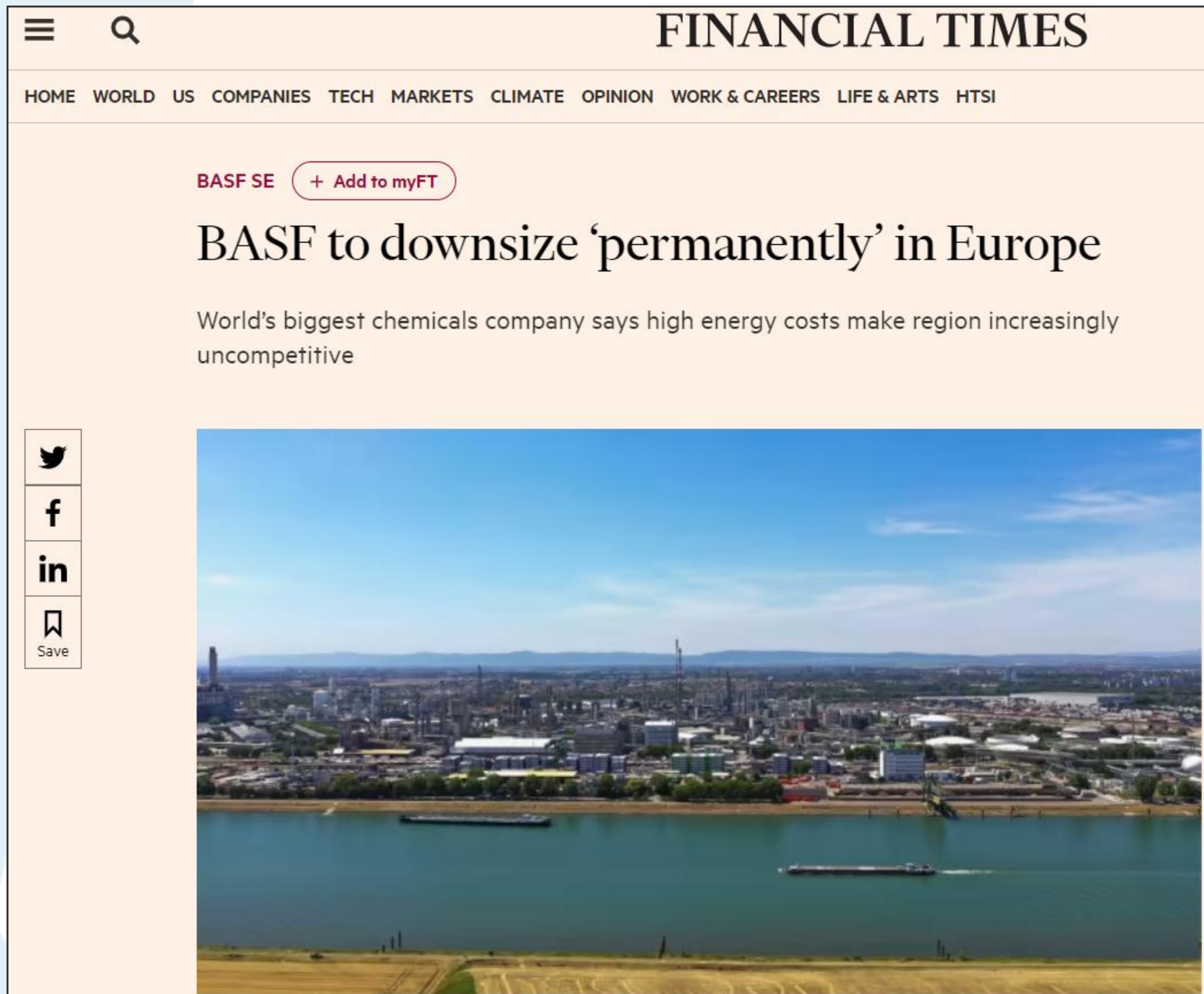
1. New types of cargo: transition from dry & liquid bulk to circular economy

Reversed flows: from smaller regions to ports: smaller ships





Structure EU economy: de-industrialization Europe: loss of traditional markets



Closure of plants,
investment not in
Europe anymore

Recycling plastics/
circular economy
is alternative for the
future

2. New types of energy: transition towards electric/hydrogen/other carriers

Tankers for ammonia and CO2: HGK Shipping as a pioneer

HGK Shipping is pioneering with gas tanker for liquid ammonia and CO2

+ Nieuws, Binnenvaart

Koen Heinen 18 apr 2024 om 08:05

Flows

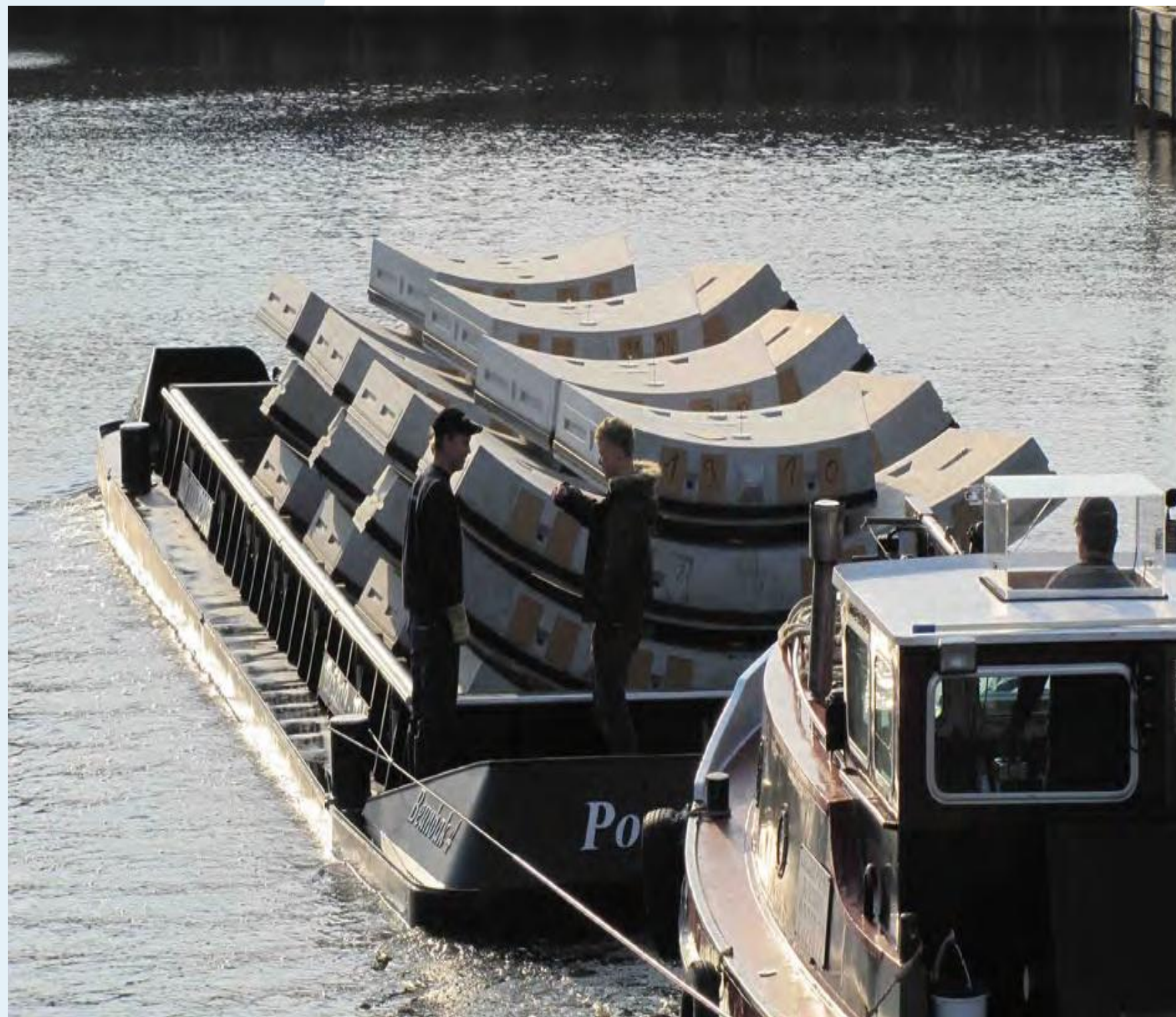


Een impressie van hoe de 'Pioneer' er zal uitzien. © HGK Shipping



3. IWT for construction/city logistics

Vulnerable city centres ban trucks: 'building hubs' in inland ports



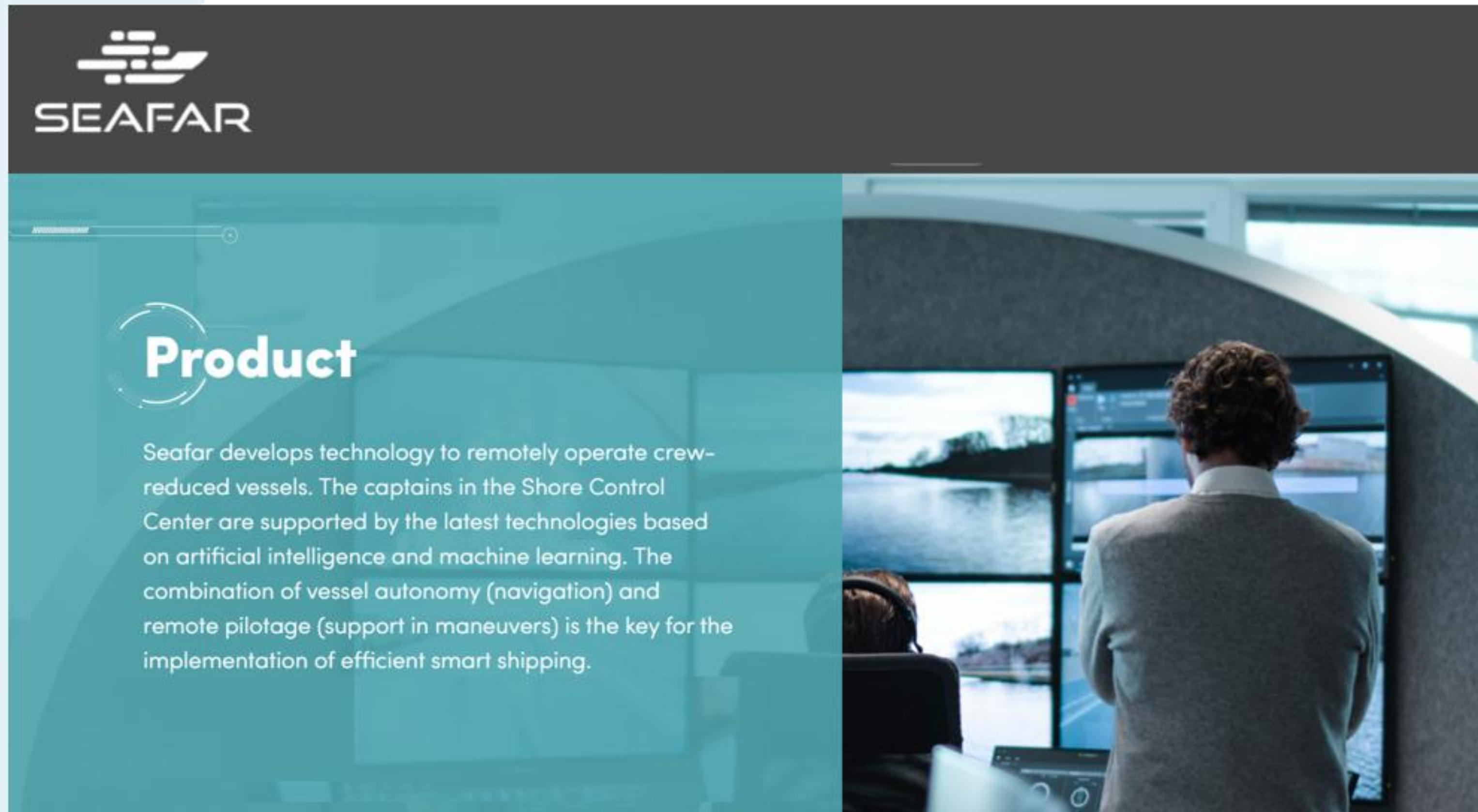
4. New types of ships adapted to low water levels/increasing climate disruption

BASF SE and Stolt Tankers introduce the low-water chemical tanker *Stolt Ludwigshafen*



5. Ships adapted to scarcity of labour/ new working practises: Gen Z

Autonomous transport: Seafar technology supplier IWT



The image shows a screenshot of the Seafar website. At the top left is the Seafar logo, which consists of a stylized ship icon above the word "SEAFAR". Below the logo, on the left side, is a teal-colored box with the word "Product" in white. To the right of this box, there is a paragraph of text describing Seafar's technology. On the right side of the screenshot, there is a photograph of a person from behind, looking at a large curved screen that displays a ship's navigation interface.

SEAFAR

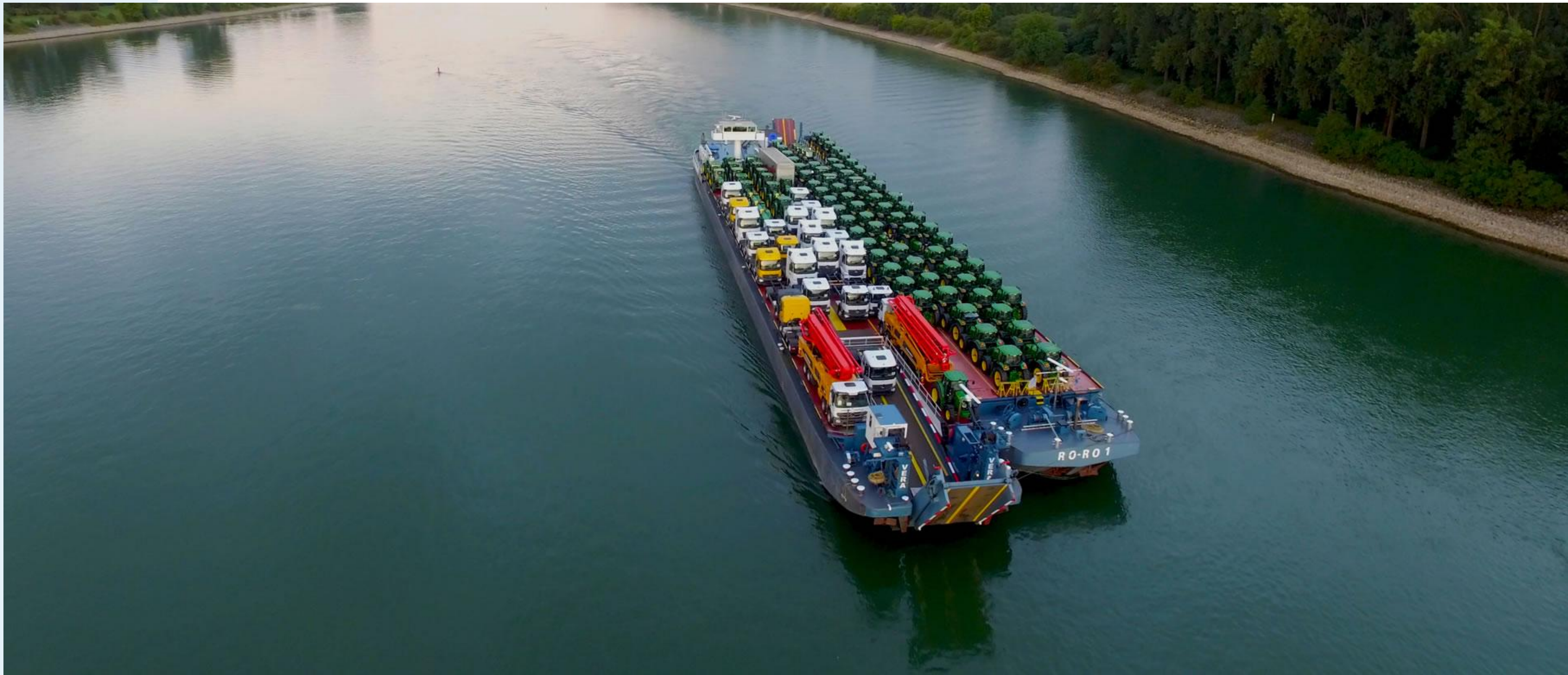
Product

Seafar develops technology to remotely operate crew-reduced vessels. The captains in the Shore Control Center are supported by the latest technologies based on artificial intelligence and machine learning. The combination of vessel autonomy (navigation) and remote pilotage (support in maneuvers) is the key for the implementation of efficient smart shipping.



6. Strategic autonomy/geopolitics

IWT adapted to 'Strategic autonomy'/geopolitics: dual use of infrastructures: military use



7. Leisure/demographics: aging of Europe: *Boomers on barges* (cruise-ships)



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News

17 March 2025

European river cruise market continues to grow


UPT Erasmus
ERASMUS CENTRE FOR
URBAN, PORT AND TRANSPORT ECONOMICS

8. Black Swans: expect the unexpected

IWT very attractive, due to its flexibility and impact



Conclusion: the future calls for a new IWT-fleet

- Fundamentally new types of ship will emerge;
- Ships of the future are:
 - Greener
 - Smaller, more flexible/resilient
 - Low-waterproof
 - Modular/platooning ready
 - Autonomous/digital
 - Dedicated to new types of cargo
- This demands:
 - Importance of small inland waterways due to circular economy
 - New cargo handling infrastructures
 - New bunker infrastructures
 - New safety issues
 - New investment & regulation
 - New skills & working practises IWT



CAUTION
9'6"
HIGH


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our network
your advantage





I thank you very much for your
attention!

