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Leveraging autonomy to create sustainable and cost-effective business for intra-European transport

An example of linking short sea shipping to inland waterways to create new automated logistics systems.

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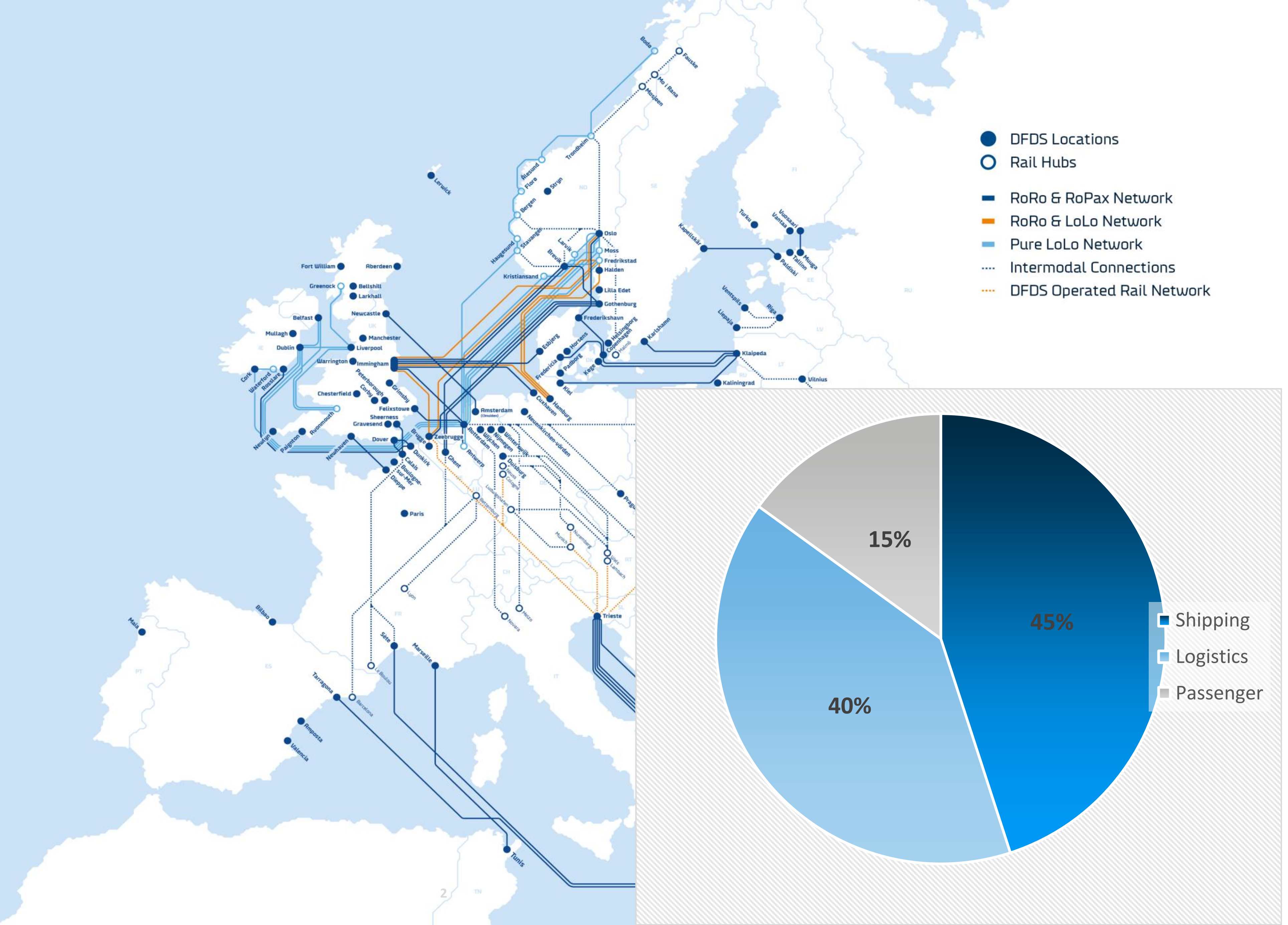
DFDS

Our Network

- +75 vessels
- +26 routes
- +1200 trucks
- +7000 trailers
- +3500 containers
- 8 multimodal terminals
- 16 warehouses
- +550 ship voyages/week
- +80 rail trips/week



Our business model

Ferry routes

Door-door solutions

For dry goods and cold chain

Contract logistics

For dry goods and cold chain


Support


Custom solutions


Warehouse


Temperature-controlled warehousing

Our Hardware

Ships

Trucks

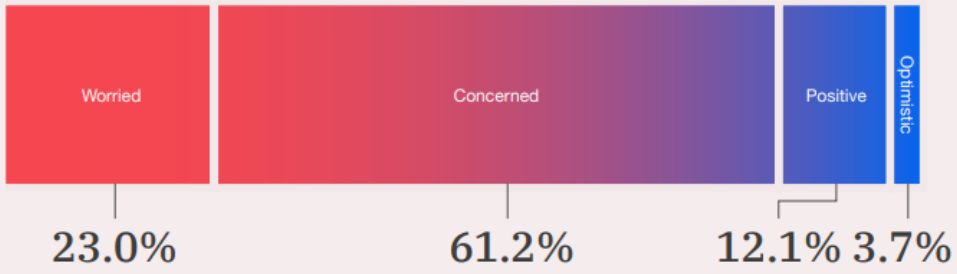
Terminals

Warehouses

Rails

The biggest risks facing our world

"How do you feel about the outlook for the world?"



Source: World Economic Forum Global Risks Perception Survey 2021-2022

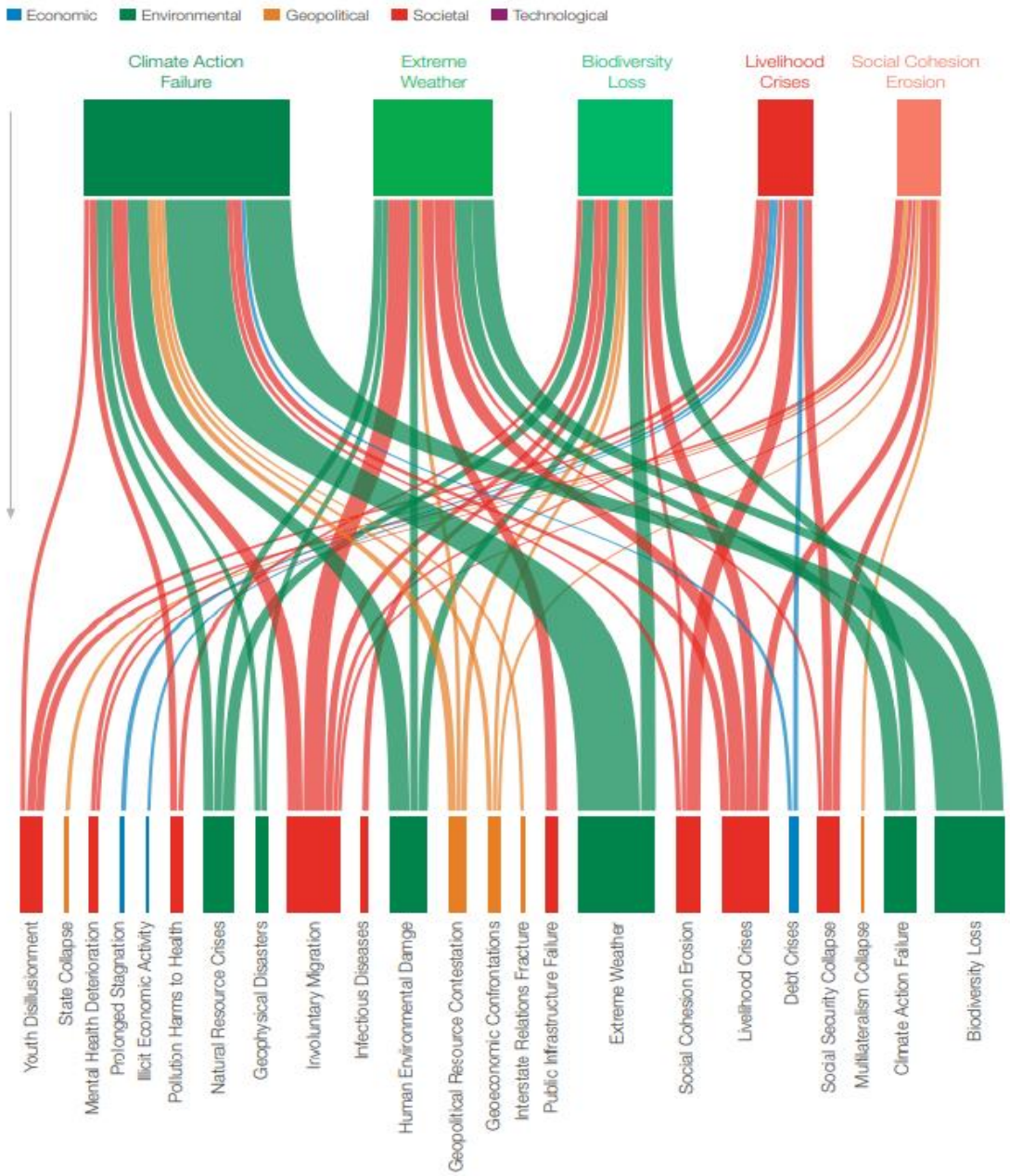
"Identify the most severe risks on a global scale over the next 10 years"

Source: World Economic Forum Global Risks Perception Survey 2021-2022

World Economic Forum, The Global Risks Report 2022, 17th Edition, 2022

Global Risks Effects

Most potentially damaging risks (top row) and risks they will aggravate (bottom row)*



The European Green Deal – The Transport Sector (2020)

By 2050, 90% reduction in greenhouse gas emissions in transport.

By 2050, rail freight traffic will double.

By 2030, transport by inland waterways and short sea shipping will increase by 25%.

By 2030, freight transport will be paperless.

By 2030, automated mobility will be deployed on large scale.

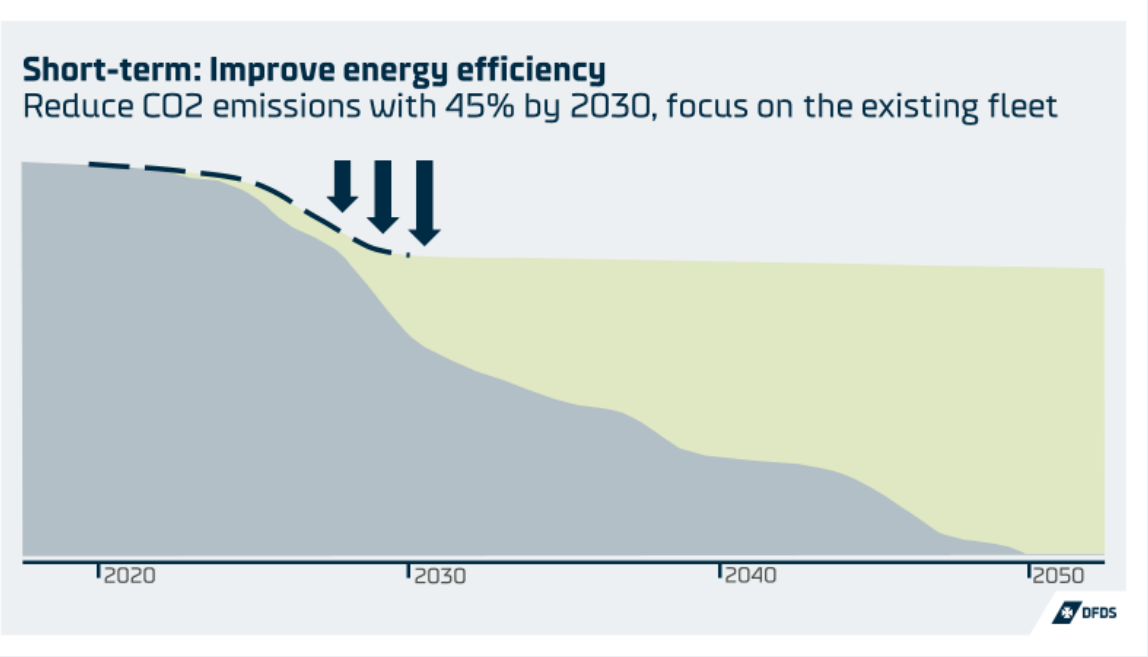
Now, unleash full potential of data.

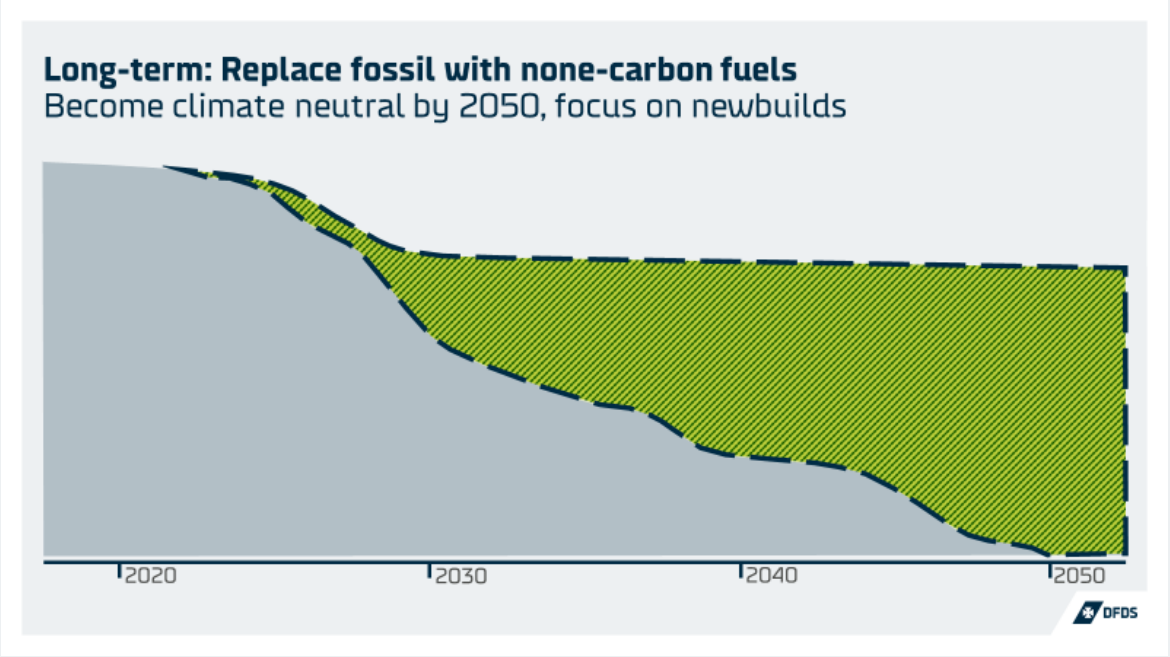
By 2050, a fully operational, multimodal Trans-European Transport Network for sustainable and smart transport with high speed connectivity.

By 2050, the death toll for all modes of transport in the EU will be close to zero.

European Union, The European Green Deal, 2020

DFDS' Climate Action Plan



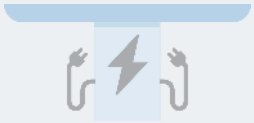


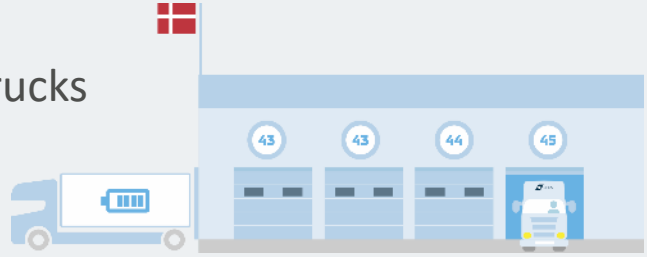
Decarbonization opportunities in DFDS

Short term (2022-23) | Medium term (2023-24) | Long term (2025+)

HVO trucks

Electric trucks





Hydrogen trucks

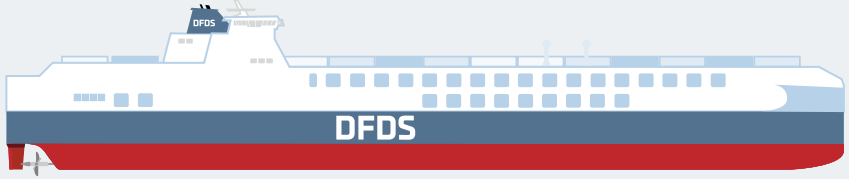
Electric barges

100% biofuel

Slow-steaming

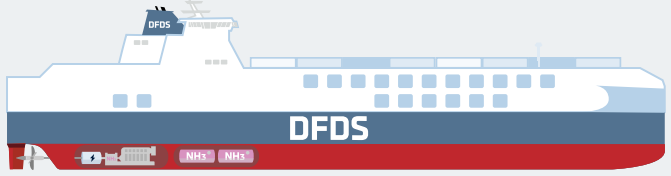
Methanol conversion

Jinling



Ammonia NB RoRo

H2 NB Ropax



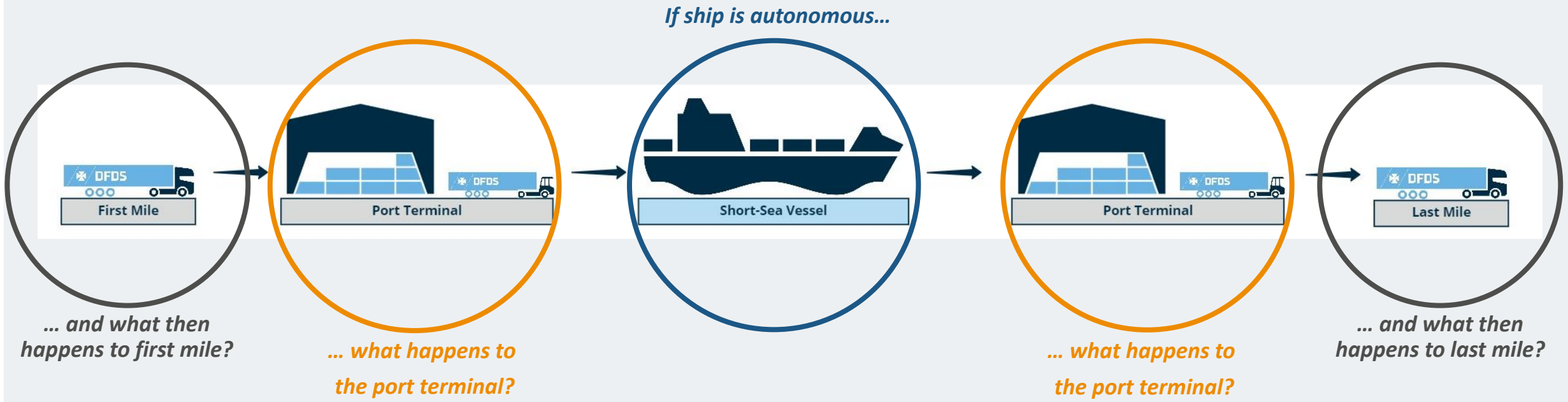
Autonomy as an enabler for the green transition

Sustainable Transport

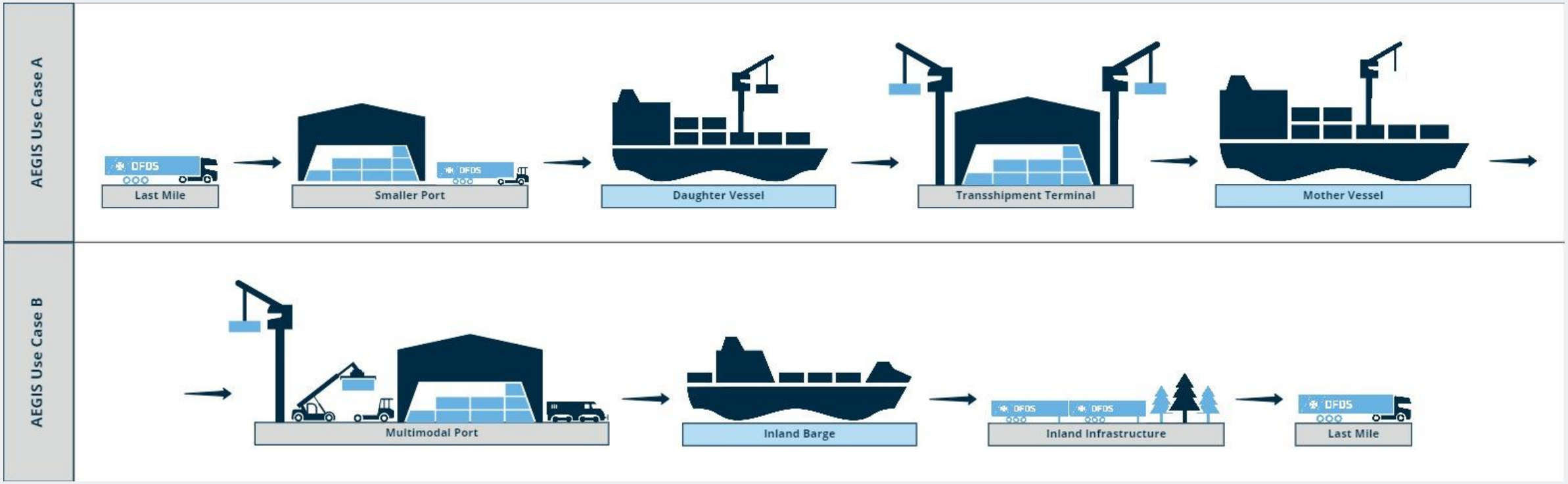
Green Fuels

Autonomy

Thinking in transport networks, not transport legs



AEGIS Intra-European Transport Networks (simplified)



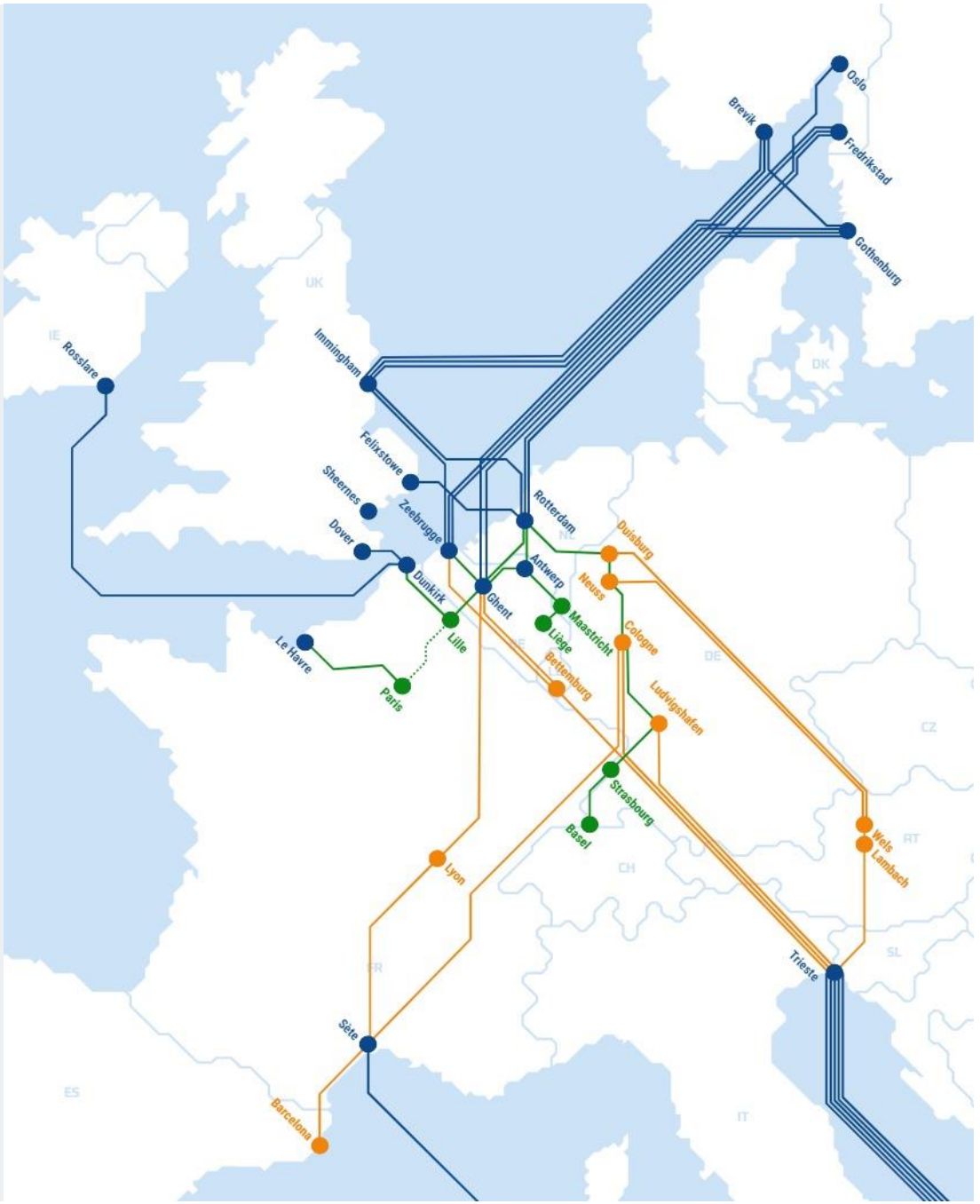
We have to reconsider the boundaries of our equipment: where should things live?

Network integration

- Integrating a stronger logistics network that offers resilient alternatives to truck transportation.

- Customer Case 1:
  - Gothenburg → Ghent : Short Sea Vessel
  - Ghent → Antwerp/Rotterdam : Inland Barge
  - Antwerp/Rotterdam → World: Deep Sea Vessel

- Customer Case 2:
  - Africa → Liège : Airplane
  - Liège → Rotterdam/Zeebrugge : Inland Barge
  - Rotterdam/Zeebrugge → Immingham : Short Sea Vessel

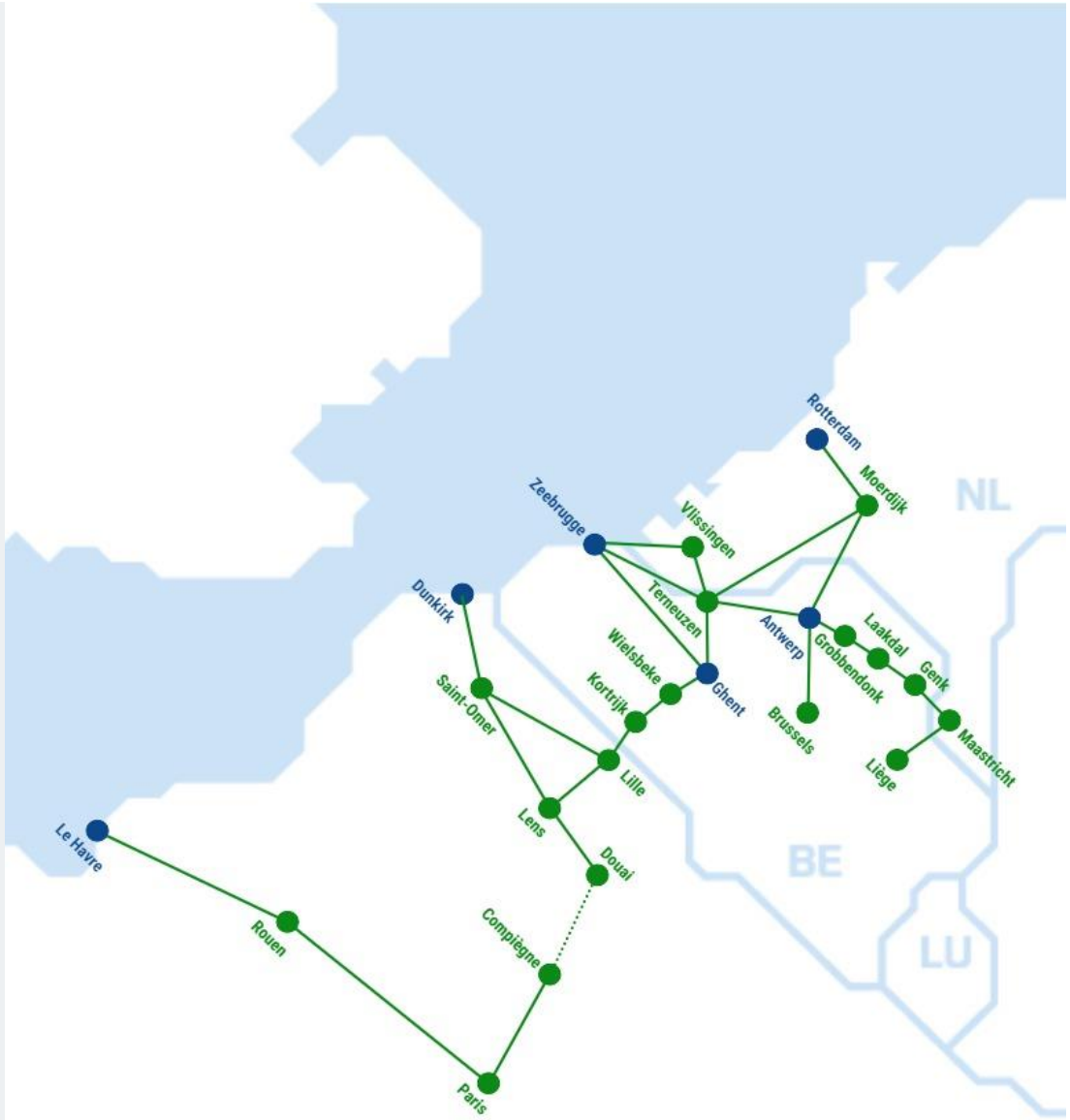


Hinterland distribution

- Providing first and last mile transportation via waterborne transport modalities to decrease the “individual deliveries” to the shortest possible route.

- Direct runs offer high cargo volumes to be transported between two given points as fast as possible, but in turn requires that a sufficiently high cargo volume exist between the two points (= less flexible, but faster)

- Milk runs offer connectivity to areas with smaller cargo volumes, but at the cost of longer transportation time and complex vessel stowage requirements (= more flexible, but slower)



THANK YOU

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