

How can AI, digitalisation, and greening ensure smart and sustainable growth for EU regions and cities?

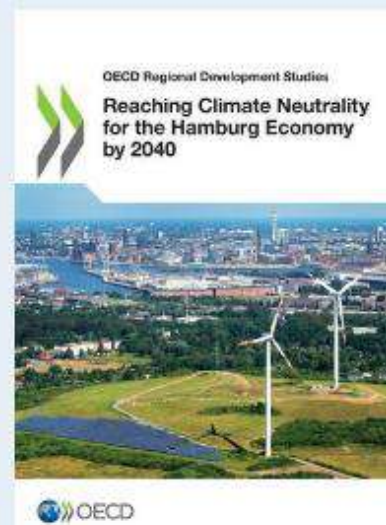
CLIMATE NEUTRALITY FOR THE HAMBURG ECONOMY BY 2040

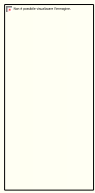
A project with the support of the Hamburg Chamber of Commerce

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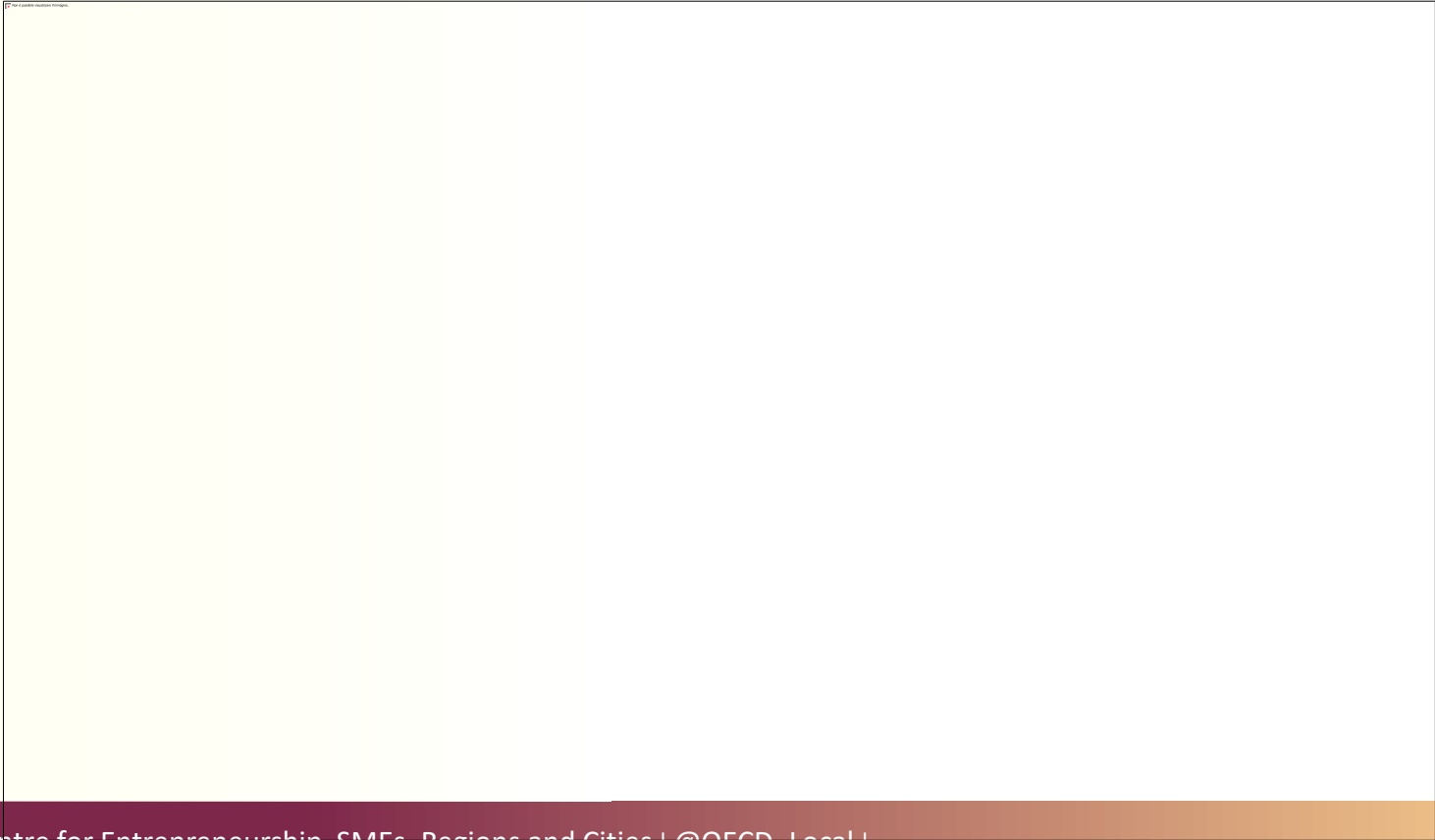
Overview

- **Business perspective**
 - **Regional economy perspective**
- **1. Making climate neutrality operational for businesses**
 - **2. Cross-sector transformations**
 - **3. Climate neutrality in freight and industry**
 - **4. The circular economy**

*Business actions **individually** and **collectively***

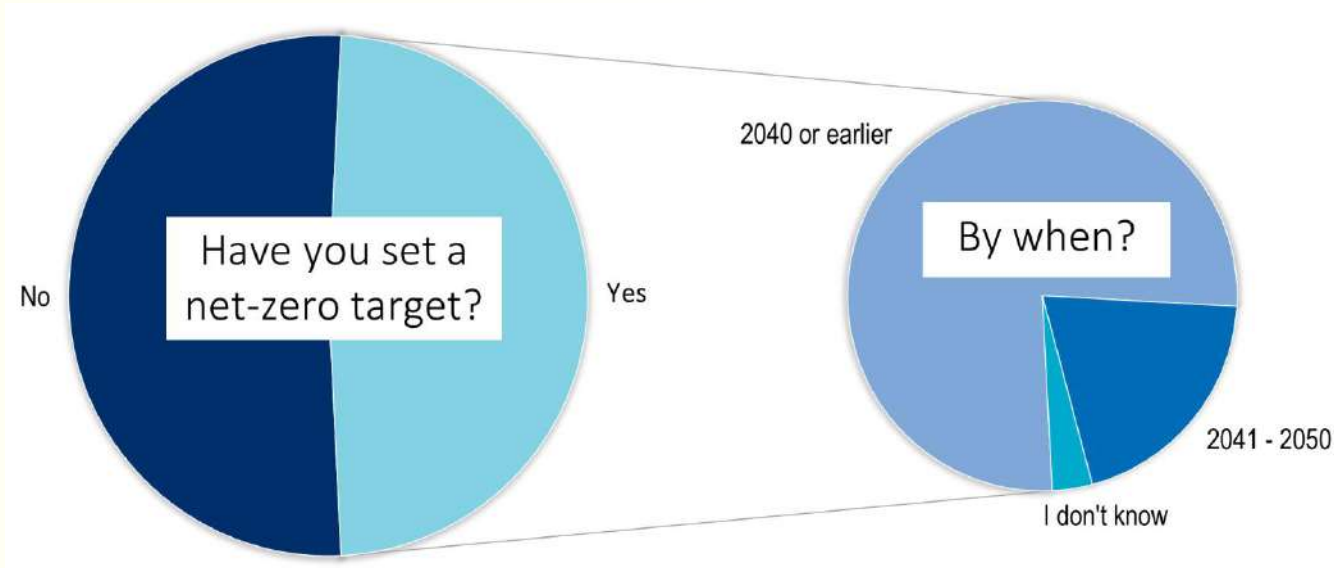


Hamburg and its port



1. Making climate neutrality operational

Results of a survey of Hamburg businesses



Some companies already set climate targets, often by 2040



1. Making climate neutrality operational

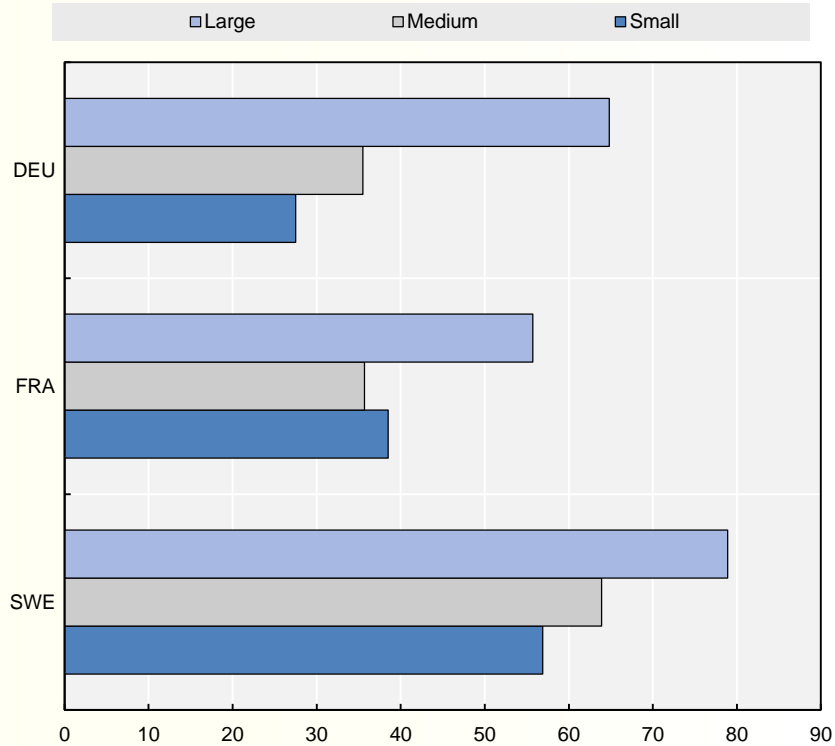
Key actions

- Develop climate neutrality targets, action plans and progress reports.
- Reach net zero GHG emissions for Scope 1 and 2 emissions by 2040 and follow emission reduction scenarios consistent with the Paris Agreement for Scope 3 emissions.
- Cut own emissions instead of relying on international offsets.
- Use carbon capture and storage (CCS) to process emissions in industry.

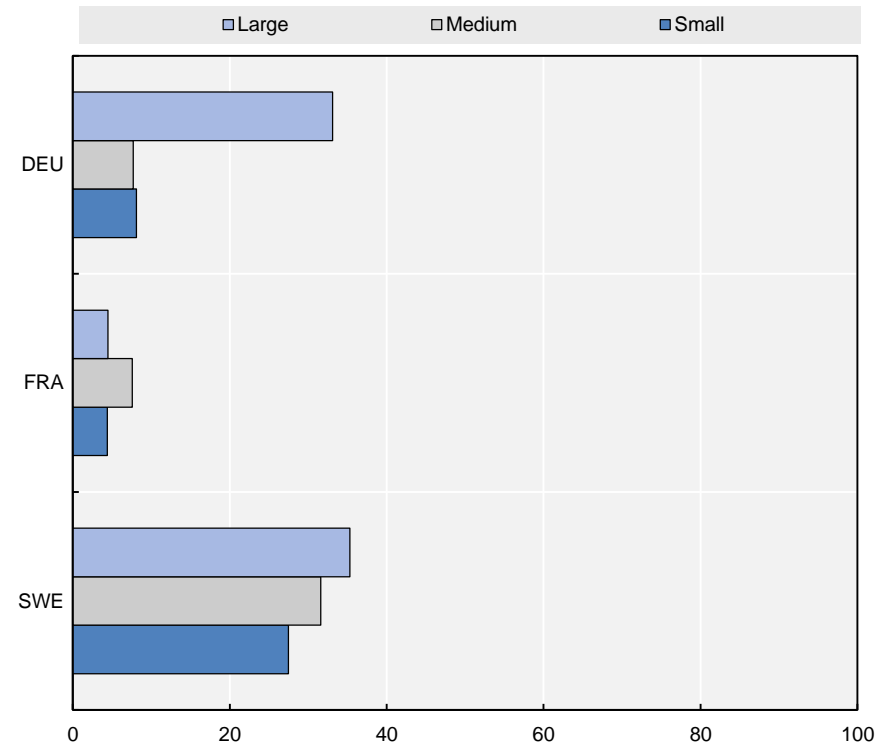
2. Cross-sector transformations.

Innovative firms cooperate more in networks than non-innovative ones

Share of cooperating firms among innovative firms



Share of cooperating firms among non-innovative firms

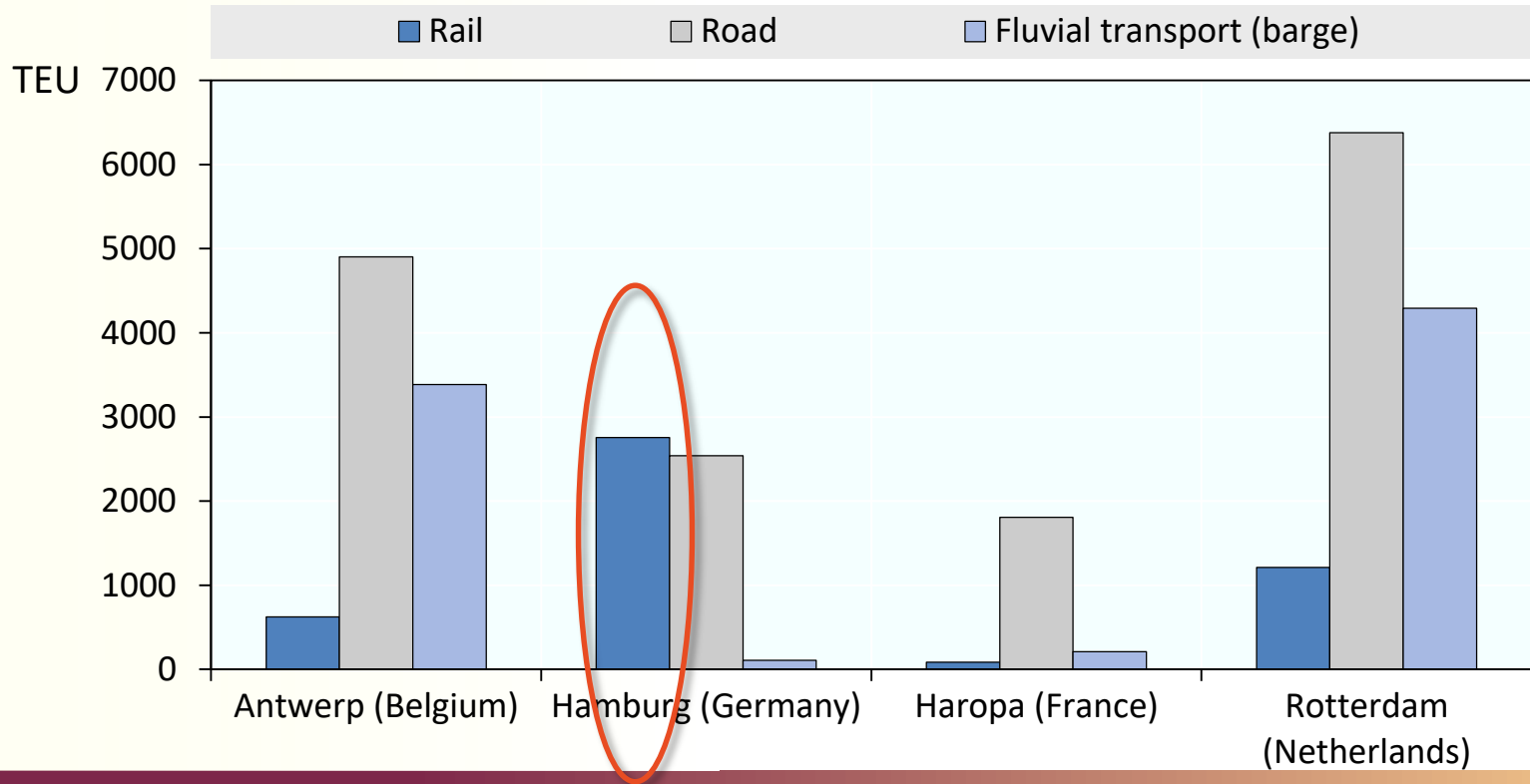


Types of networks

- **Supply-chain network:** connects actors (e.g., suppliers, multinationals) along a value chain.
 - ✓ *Apple's Supplier Clean Energy Program: Apple works closely with its suppliers to identify and implement solutions to reduce their energy consumption and carbon footprint.*
- **Knowledge network:** collaborative framework to develop and share knowledge and innovation.
 - ✓ *EIT Climate-KIC, brings together green innovation actors (companies, universities, other public institutions), raises and invests funds, develops educational programs, and has an incubation program.*
- **Strategic product partnership:** formal collaboration between two or more entities (e.g., start-ups, multinationals, or universities) to develop and market new products.
 - ✓ *Yulex Corporation and Patagonia: collaborate in the development and use of plant-based materials in synthetic textiles.*

3. Climate neutrality in freight and industry

Modal shares in land transport from and to the port

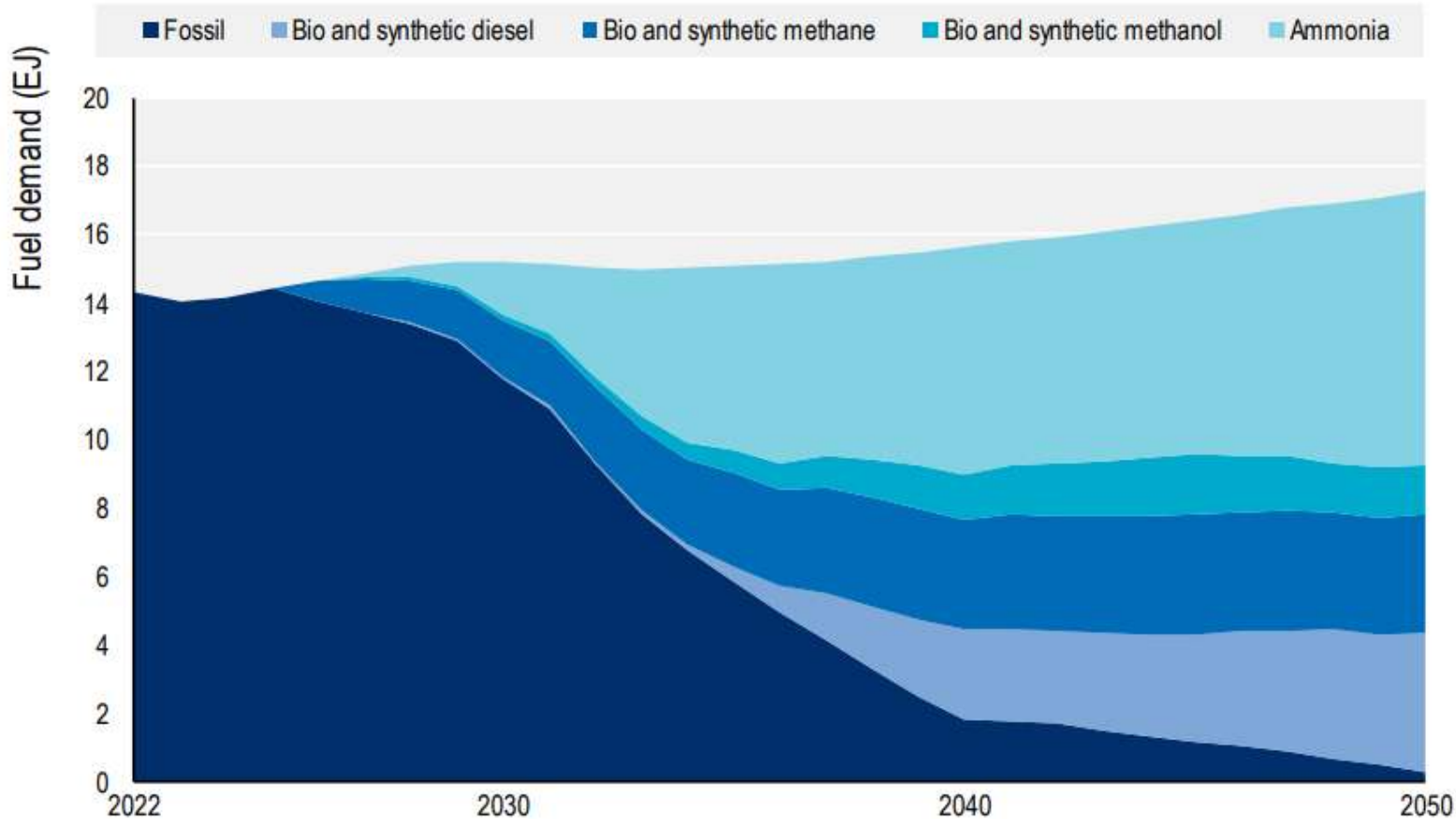


3. Climate neutrality in land freight

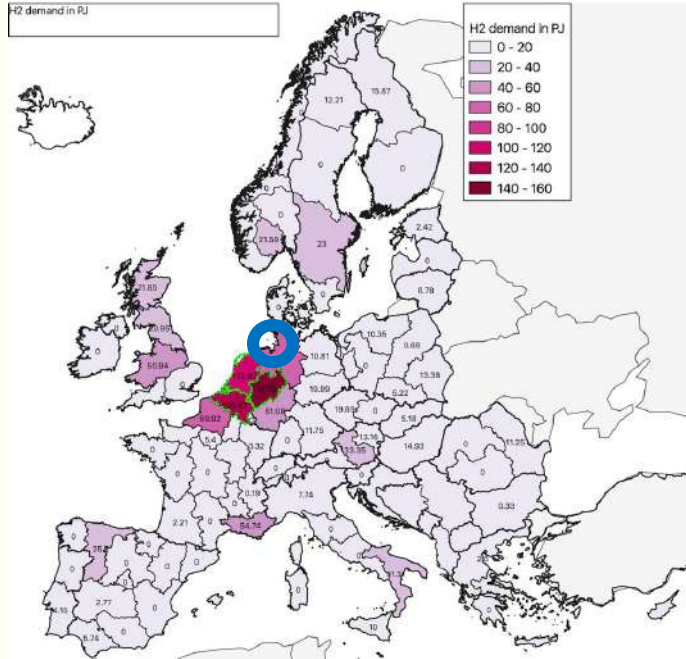
Key actions

- Advocate steps to address rail infrastructure bottlenecks as well as advance the digitalization of rail freight from and to Hamburg port.
- Coordinate rapid action to prepare the delivery of charging infrastructure for the decarbonisation of road freight.
- The Hamburg Chamber of Commerce could prepare hinterland freight transport green corridors through cooperation among transporters, vehicle manufacturers and infrastructure providers.
- The Hamburg Chamber of Commerce could promote coordinated energy-saving logistics by providing information and networking.

Zero emission maritime shipping fuels need to become available



Potential for hydrogen-ammonia hub in Hamburg

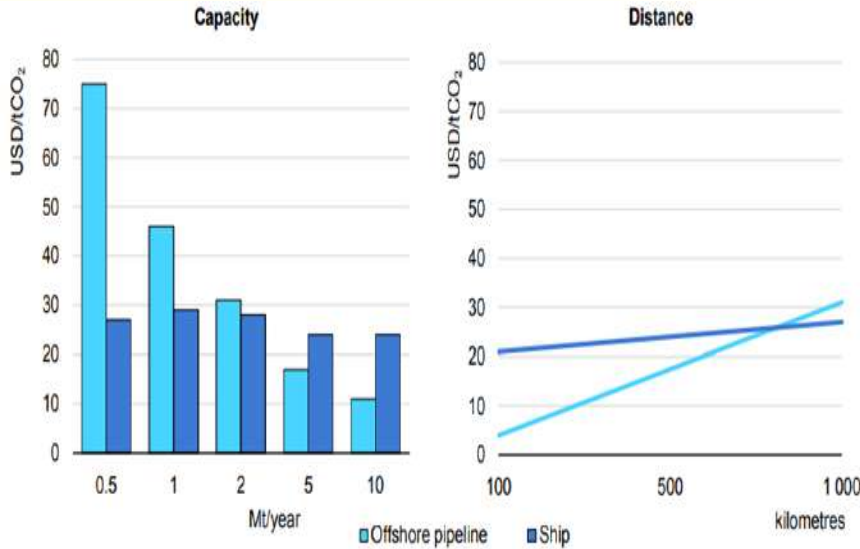


- Local and regional industrial demand can create scale economies
- Demand must be met with imports. Maritime shipping may play a role.
- Identify source countries
- International certification of green hydrogen

Spatial distribution of hydrogen demand for decarbonising chemicals and steel production

Source: Wuppertal Institute, 2019, based on ENTSO-E, 2014

Carbon Capture and Storage (CCS)



- CCS for some emissions in industry, notably cement
- Potentials in the North Sea.
- Transport options for hub function

Shipping and offshore pipeline transportation costs

Source: IEA, 2020

3. Climate neutrality in shipping and hydrogen

Key actions

- Establish green shipping corridors between major hubs that support zero-emission fuels.
- Assess development of technologies to lower costs for shipping hydrogen
- Scale up infrastructure development to connect areas of hydrogen production, import and demand.

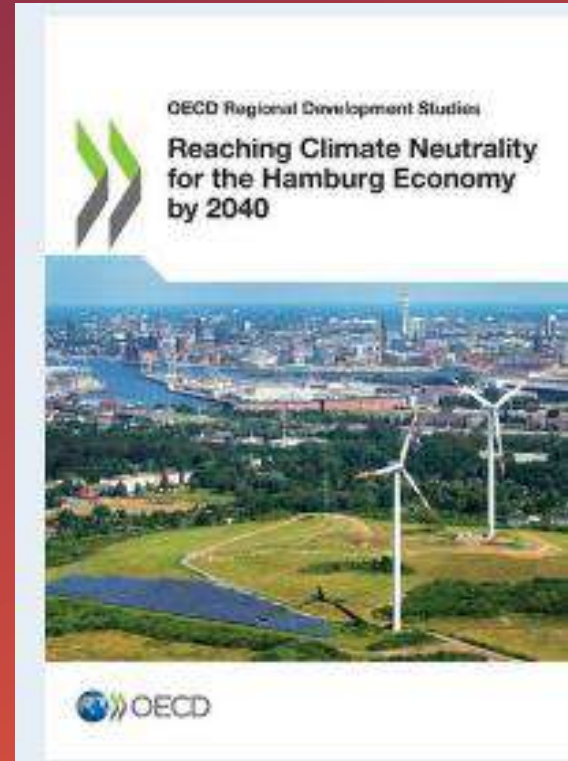
Thank you!

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3. Climate neutrality in land-based freight

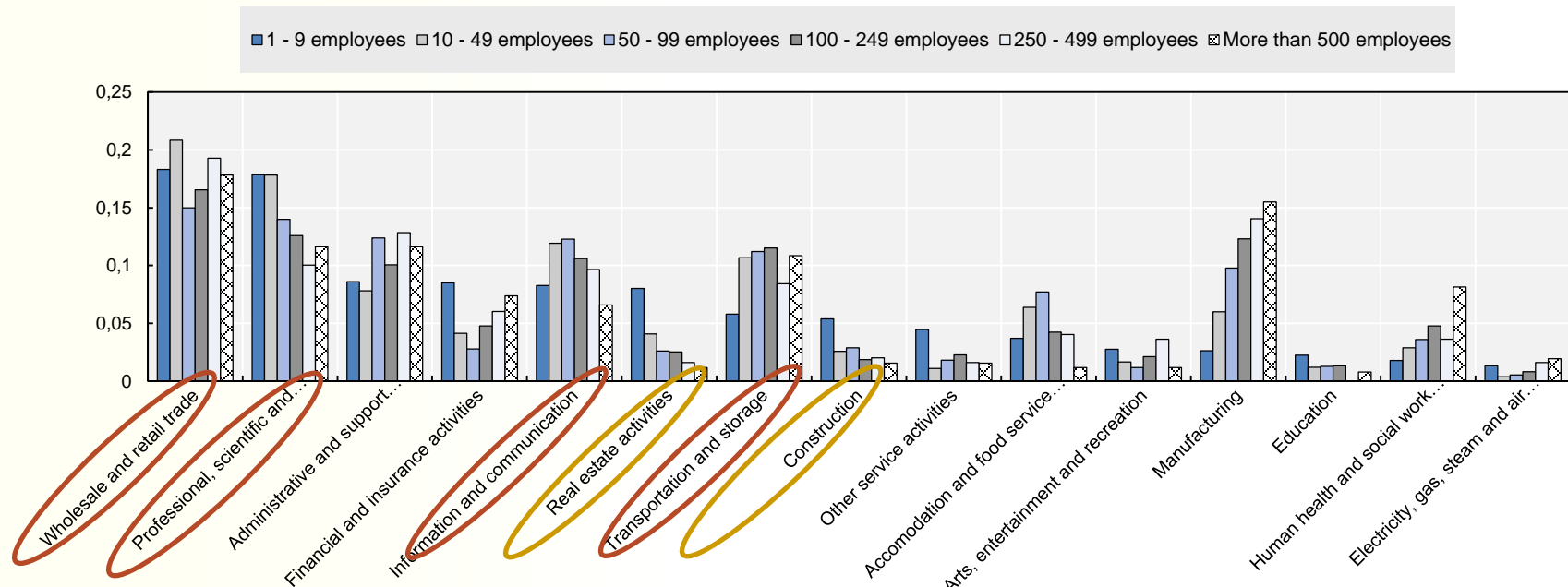
Key actions for HCC

- Advocate steps to address rail infrastructure bottlenecks as well as advance the digitalization of rail freight from and to Hamburg port.

Key actions for businesses

- Coordinate rapid action to prepare the delivery of charging infrastructure for the decarbonisation of road freight from and to Hamburg port, including port authority, electricity utility, freight operators and local government.

Small and Medium sized Enterprises (SMEs) are key actors to achieve net zero emissions



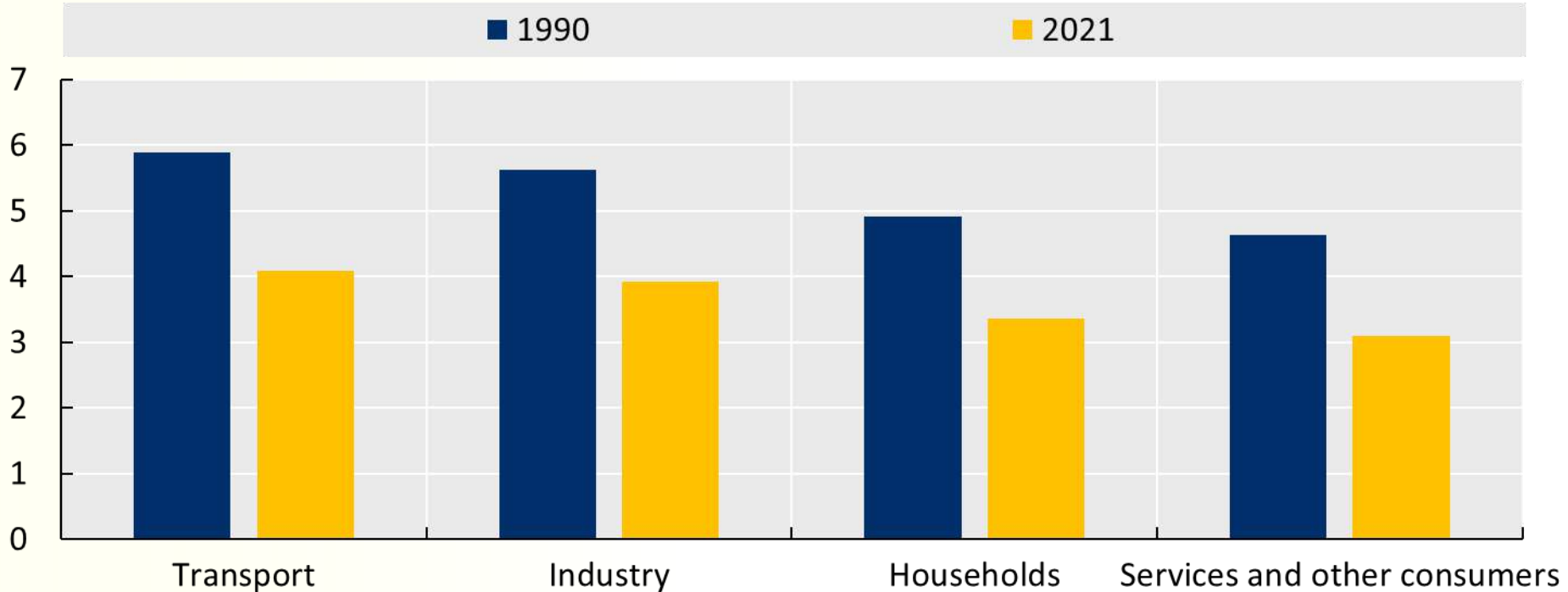
SMEs are primarily found within the sectors of trade and business services

Note: Sectors representing less than 1% of companies in any category are not taken into account.

Source: Hamburg Statistics Office, 2022

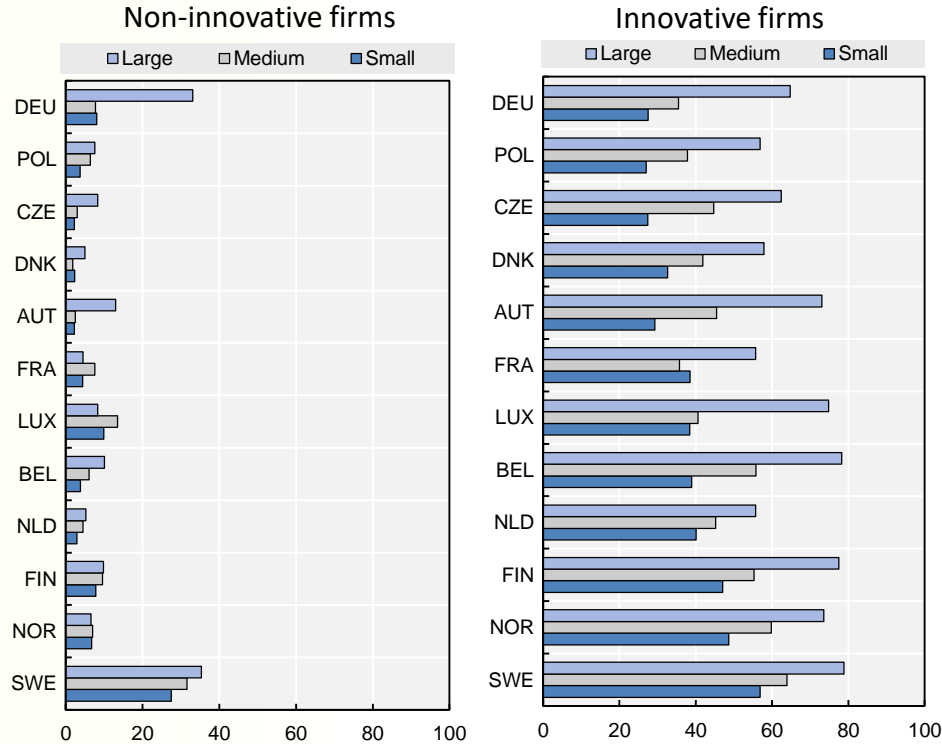
1. Making climate neutrality operational

Scope 1 and Scope 2 CO₂ emissions in Hamburg (million tCO₂)



Business networks are key for SMEs

Innovative firms cooperate more than non-innovative ones



4. The circular economy

Key actions for HCC

- **Raise awareness** on circular principles and promote circular business models to enhance sustainable production and consumption practices.
- **Build capacities** among the business community to increase knowledge and open business opportunities.
- Collaborate with the local government to **support market innovation** with the creation of incubators, hubs, and spaces for experimentation.

Energy use relies on natural gas, especially in metals production

