

OPPORTUNITY #27

CAN WE SPEED UP SHIPPING?

SINKING LOGISTICS FOR SPEEDY DELIVERY

Submarine tunnels will transport goods over 20 times faster than cargo ships

WHY IT MATTERS TODAY

Economic growth and individual well-being rely on the efficient movement of goods that are critical for survival and everyday life.

The global maritime freight transport sector is expected to grow by 4% between 2021 and 2026²⁶⁷ as more than 70,000 vessels sail the seas to transport goods all over the world, accounting for 80% of international trade by volume.²⁶⁸

However, shipping times vary and increased in the third quarter of 2021 compared to the same period in 2020. Cargo ships can sail from Tokyo to Los Angeles in 11 days, but security measures and customs mean they take 20–28 days.²⁶⁹ In the third quarter of 2021 the average global shipment took 12–17 days, or around 25% longer than the same period in 2020.²⁷⁰

The shipping sector consumes 300 million tons of fuel and accounts for around 3% of the world's CO₂ emissions to the atmosphere.²⁷¹ Efforts are underway to develop new fuels such as hydrogen, ammonia and methanol. However, alternative fuels can increase the cost of shipping by anything from two to eight times.²⁷²

Recognising the impact, the Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping, IRENA, DP World-MAN Energy Solutions, International Maritime Organisation (IMO) and others are exploring and advising on strategies towards decarbonisation for the shipping industry.^{273, 274, 275}

SECTORS

AUTOMOTIVE, AEROSPACE & AVIATION • INFRASTRUCTURE & CONSTRUCTION •
LOGISTICS, SHIPPING & FREIGHT • MANUFACTURING



THE OPPORTUNITY TOMORROW

An alternative to conventional shipping is offered by submarine railway tunnels or 'hyperloops' that are linked directly to terrestrial transport networks and remove the need to offload or load goods in ports. These could re-engineer how shipping is conducted at a global scale, particularly for the 20% of goods that make up some 80% of the global shipping traffic.

Currently, the longest underwater tunnel for both freight and passengers is the 53.9km long Seikan tunnel connecting Hokkaido Island with the Aomori Prefecture in Japan.²⁷⁶

Further advances in tunnelling technology and ultra-high-speed rail technologies can together transform global supply chains and trade. In particular, advances in superconducting magnetic levitation technology have the potential to facilitate shipping hyperloops. Hyperloop train speeds, for example, are expected to reach 1,200km per hour,²⁷⁷ compared with container ships that average 27–30 km per hour.²⁷⁸

BENEFITS

Faster transport solutions benefit both small producers and large manufacturing hubs, improving resilience by increasing supply routes and enabling time-sensitive products to reach markets more quickly. This results in reduced transport costs and increased choice for consumers, boosting growth and prosperity.

RISKS

Although submarine hyperloops have less environmental impact than conventionally powered transport, they also pose risks to marine ecosystems. Other risks arise from the disruption of incumbent shipping and logistics companies. There will also be risks of physical attacks on submarine hyperloops or cyberattacks on their command-and-control centres.