



**TAL
TECH**

ESTONIAN MARITIME
ACADEMY

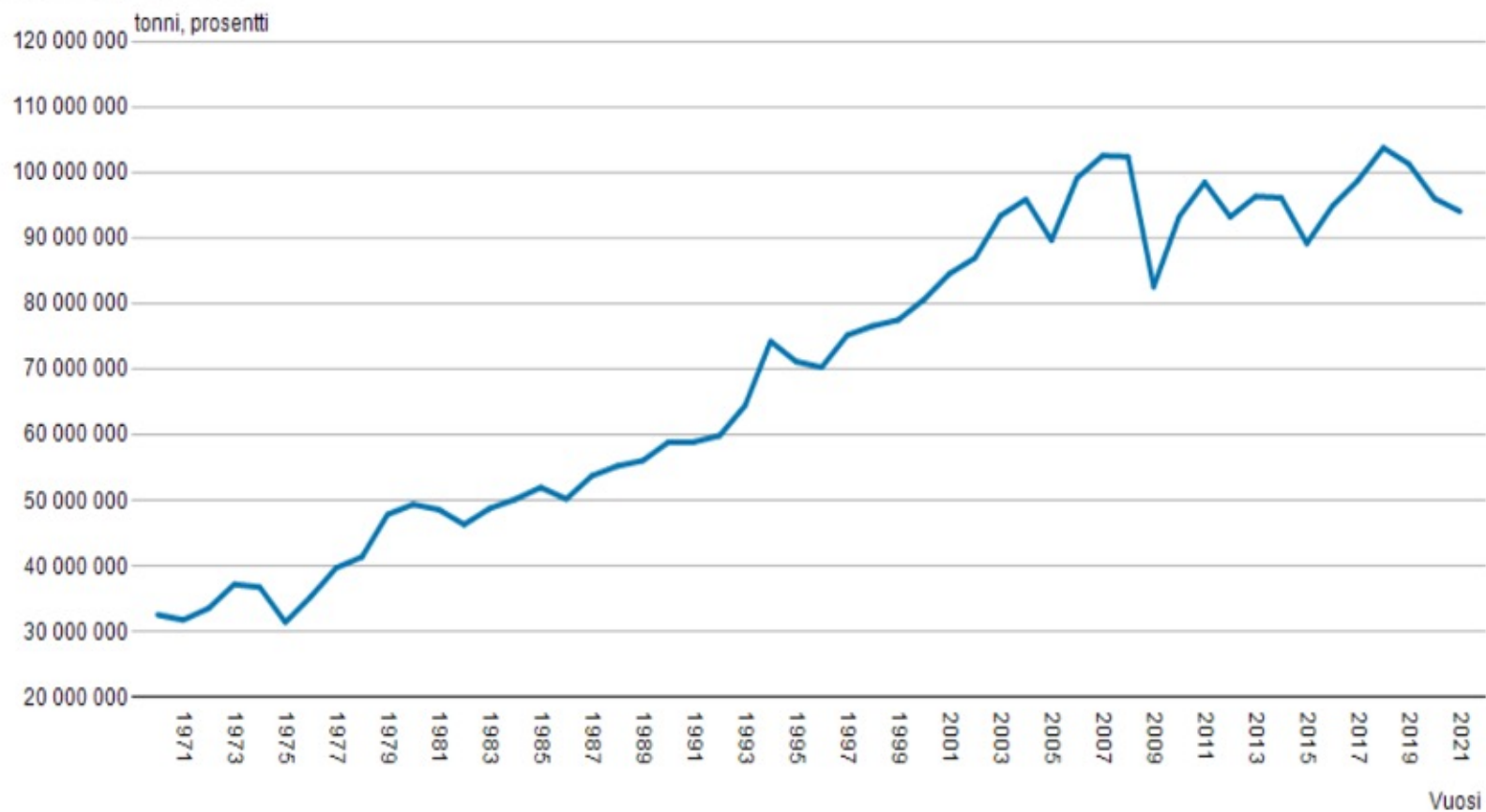
FINNISH-ESTONIAN SEA CONNECTION – LIFELINE FOR FINNISH ECONOMY

Ulla Pirita Tapaninen
Tenured Associate Professor, Maritime Transport
Estonian Maritime Academy
Tallinn University of Technology

19.1.2023

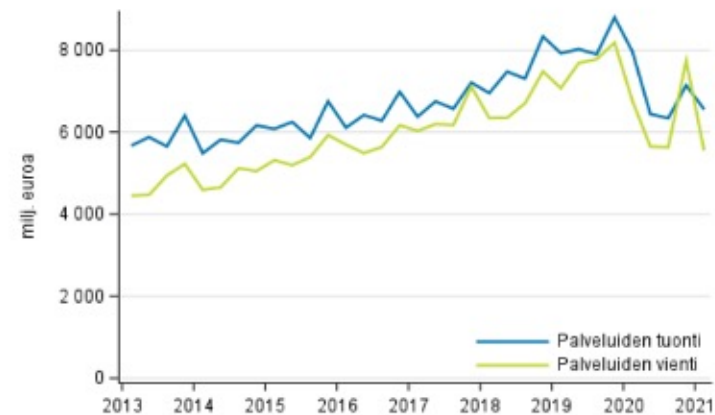
FINNISH EXPORT AND IMPORT HAVE NOT GROWN IN 20 YEARS

Ulkomaan merikuljetukset satamittain ja tavaralajeittain muuttujina Vuosi. Yhteensä, Yhteensä, Yhteensä, Tonnia.



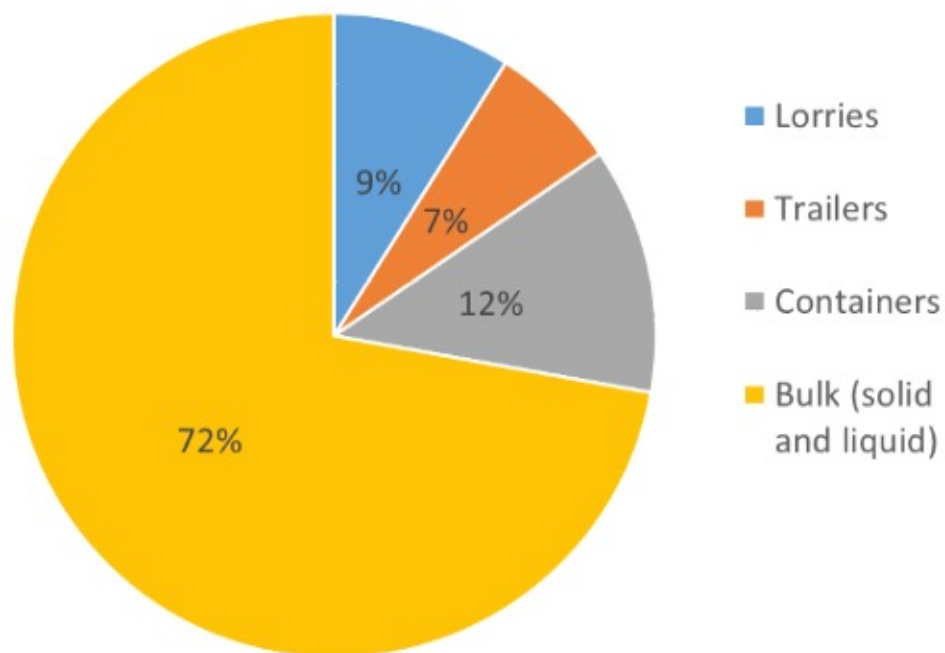
IAH
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Kuvio 1. Palveluiden tuonti ja vienti neljännesvuosittain

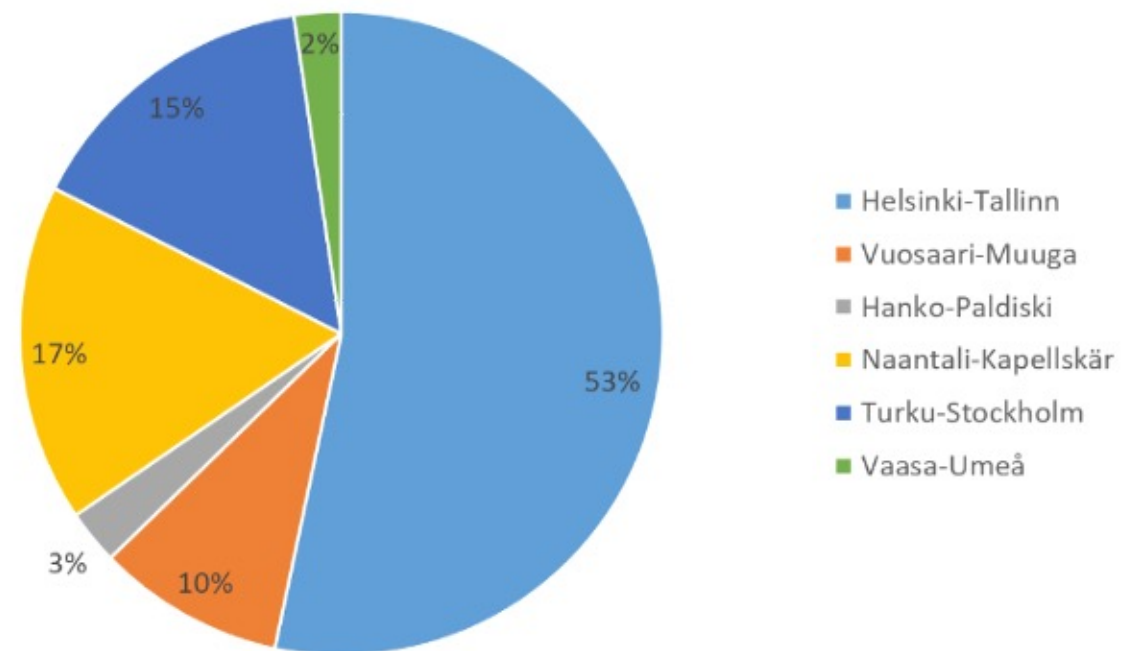


FINNISH MARITIME TRAFFIC

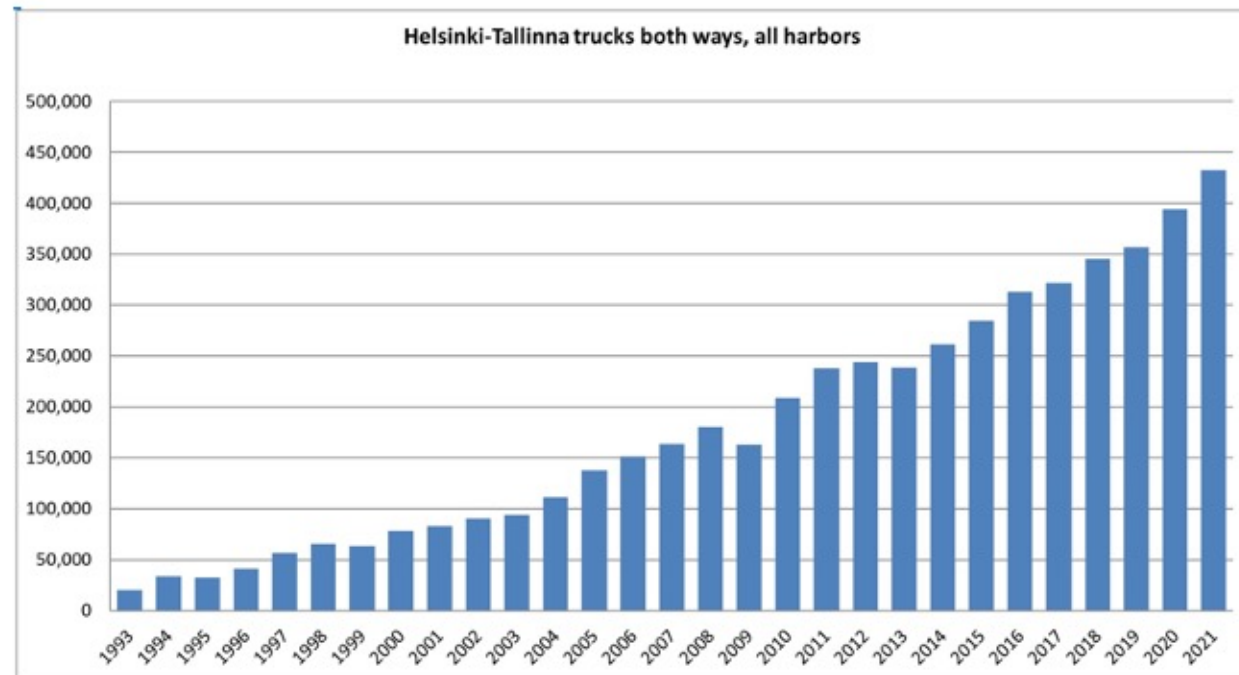
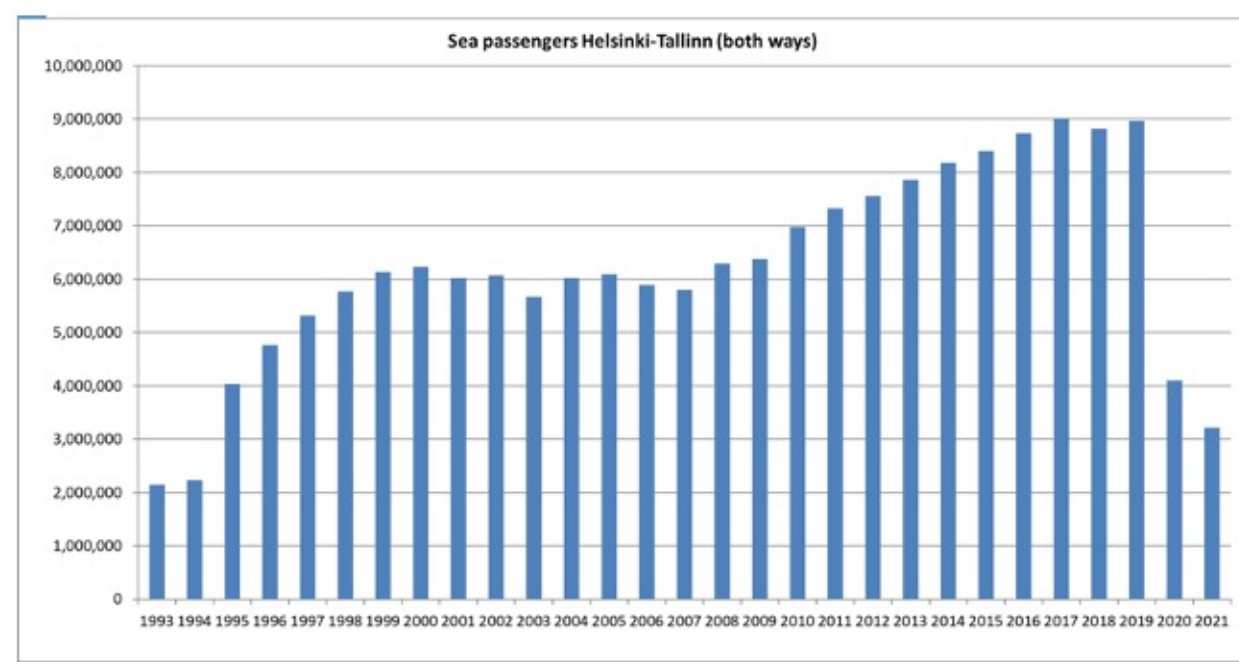
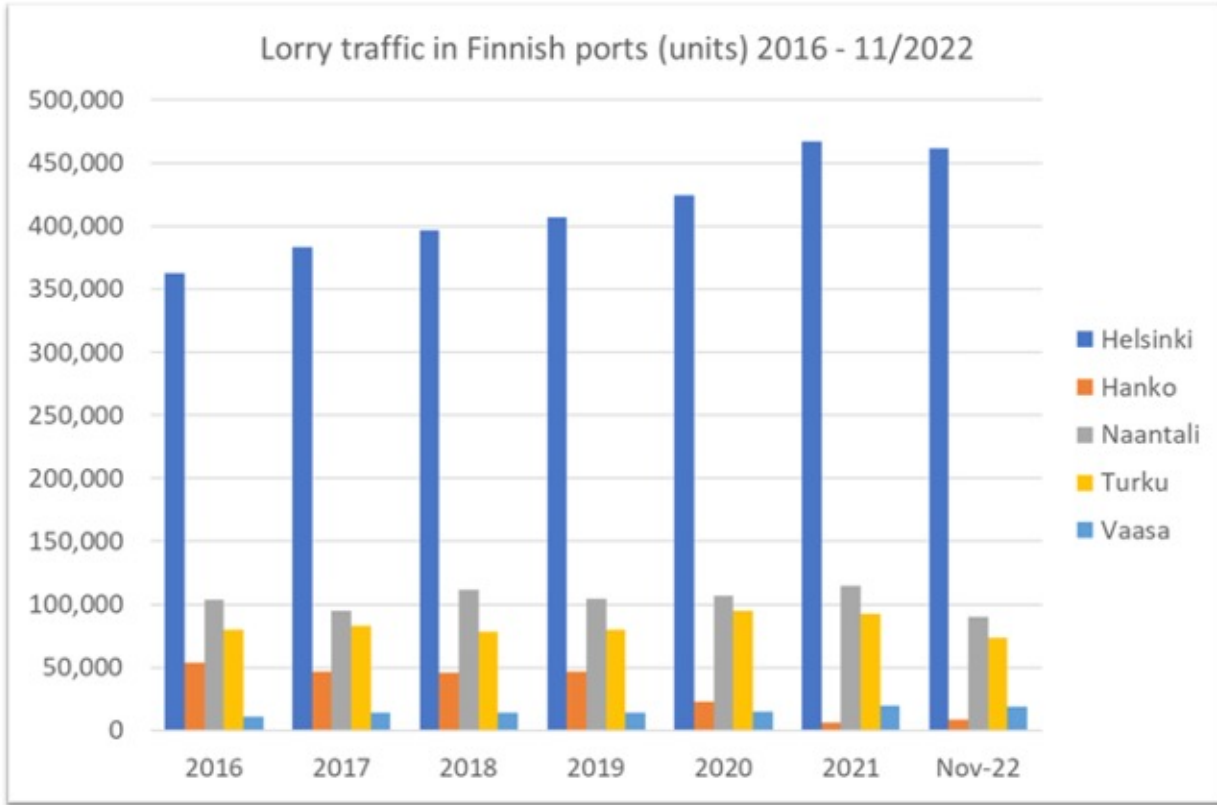
Finnish maritime transport (tons) 2020



Main Finnish sea traffic for lorries 2020 (units)



FINNISH LORRY TRAFFIC

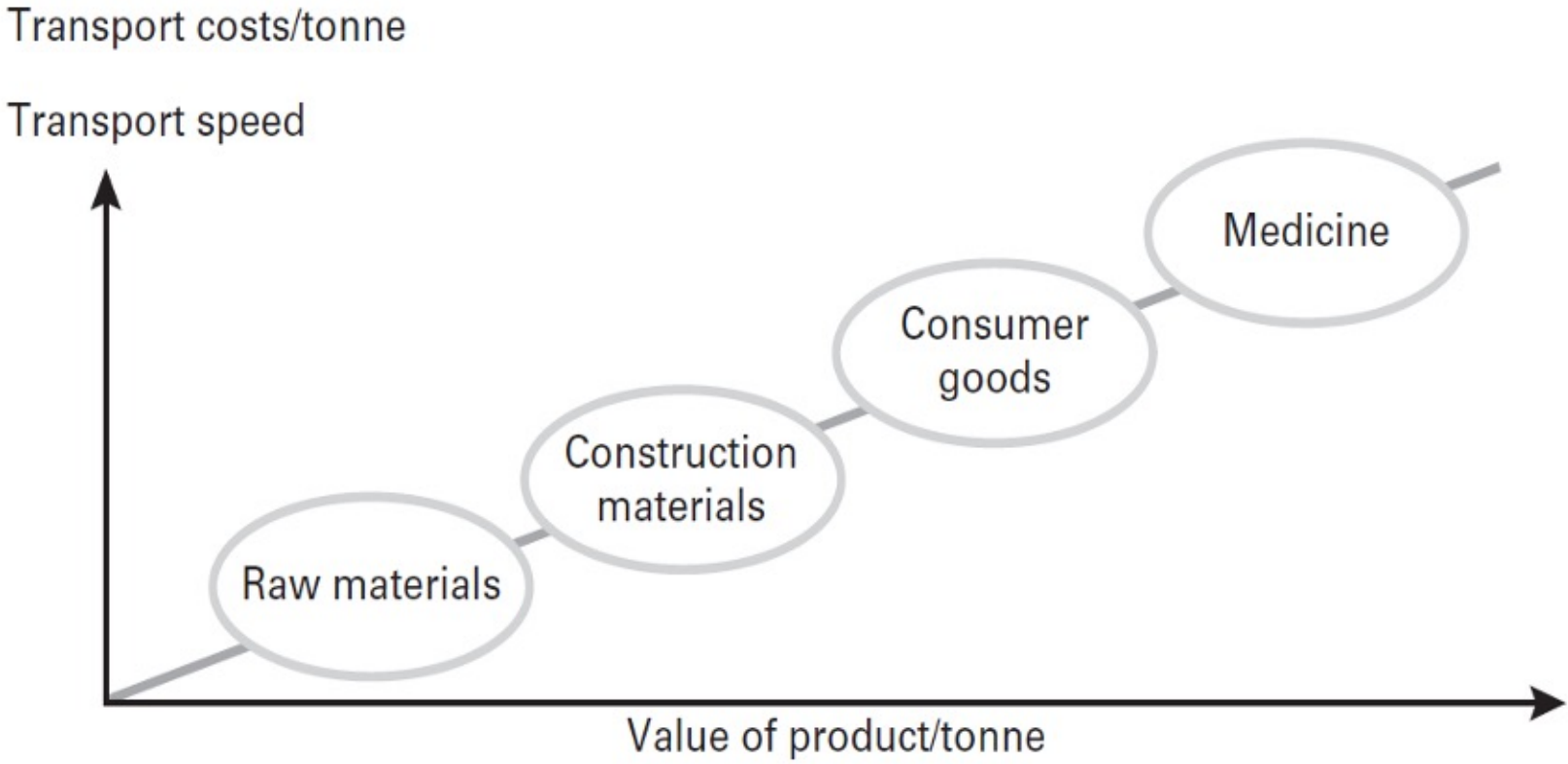


ESTONIAN MARITIME ACADEMY

Note: Air passengers Fi-EE (2022): 263 000

Source: Traficom and Statistics Finland

RELATIONSHIP BETWEEN VALUE OF GOODS AND TRANSPORT SPEED = > UNITISATION TREND



HELSINKI-TALLINN FREQUENT TRAFFIC

Aikataulut ja hinnat Helsinki - Tallinna

laivaliput 12.01.2023

Meiltä löydät kaikkien laivayhtiöiden (Viking Line, Eckerö Line, Tallink, DFDS) liput reitillä **Helsinki - Tallinna**.

+ Helsinki → Tallinna

Torstai, 12. Tammikuu 2023

Lähtee	Saapuu	Laivayhtiö	Laiva	Hinta yhteensä
07:30	09:30	Tallink	Megastar	32,00 €
09:00	11:15	Eckerö Line	M/s Finlandia	19,00 €
10:30	12:30	Tallink	MyStar	34,00 €
10:30	13:00	Viking Line	Viking XPRS	20,90 €
11:30	14:00	Tallink	Star	26,00 €
13:30	15:30	Tallink	Megastar	34,00 €
15:15	17:30	Eckerö Line	M/s Finlandia	22,00 €
16:30	18:30	Tallink	MyStar	34,00 €
18:15	20:45	Tallink	Star	26,00 €
19:30	21:30	Tallink	Megastar	34,00 €
20:30	23:00	Viking Line	Viking XPRS	17,90 €
21:40	00:10	Eckerö Line	M/s Finlandia	19,00 €
22:30	00:30	Tallink	MyStar	32,00 €

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ESTONIAI

FINNISH CENTRE OF POPULATION AND PRODUCTION ARE IN HAUHO AND RIIHIMÄKI

PORT OF HELSINKI

Unitized cargo traffic 2021, TOP 3 Countries

Million tonnes

Estonia	5.5
Germany	3.4
The Netherlands	1.4

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Nykyinen Weberin piste kertoo paljon siitä, missä Suomen asutus on. Pisteestä on Helsingin keskustaan hieman yli sata kilometriä. Maan pohjoisimpaan kylään Utsjoen Nuorgamiin matkaa kertyy tuhat kilometriä.



Weberin pisteeltä on Helsinkiin noin sata kilometriä, Nuorgamiin tuhat. Kuva: Hannu Harhama / Yle

Alue- ja väestökehityksen asiantuntija Timo Aro kertoo, että Suomessa vaikuttaa kolme väestöä koskevaa trendiä.

– Meillä on samanaikaisesti meneillään keskittymiskehitys, supistumiskehitys ja vakituisen asumisen autoioitumiskehitys. Väestö keskittyy, väkimäärä vähentyy ja useilla seuduilla jopa eteläisessä Suomessa alueet autoioituvat.

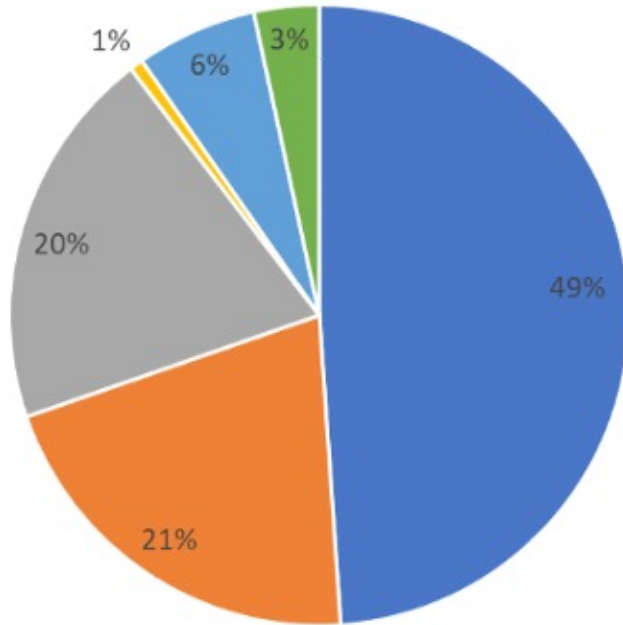
– Ensimmäistä kertaa laskettu BKT:n keskipiste sijaitsee Riihimäen seutukunnassa, Kanta-Hämeen maakunnassa. Riihimäen seutukuntaan kuuluu Riihimäen ja Lopen lisäksi myös Hausjärven kunta. Kuva: Ville Valimäki



Ensimmäistä kertaa laskettu BKT:n keskipiste sijaitsee Riihimäen seutukunnassa, Kanta-Hämeen maakunnassa. Riihimäen seutukuntaan kuuluu Riihimäen ja Lopen lisäksi myös Hausjärven kunta. Kuva: Ville Valimäki

BUSINESS MODEL OF HELSINKI-TALLINN TRAFFIC

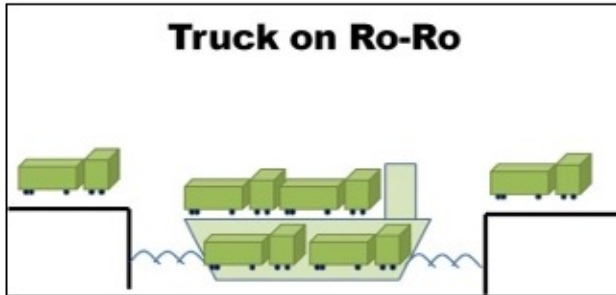
Tallink income 2021



- Restaurants and shop sales on-board and on mainland
- Ticket sales
- Sales of cargo transportation
- Sales of accommodation
- Income from the charter of vessels
- Other



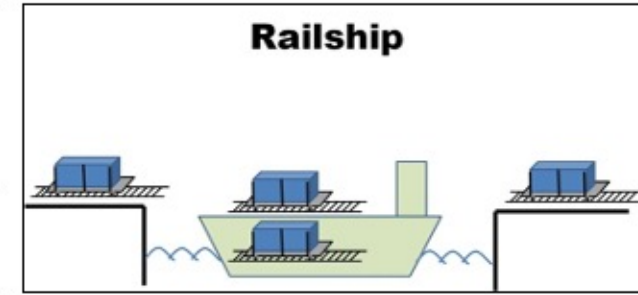
VARIOUS SEA TRAVEL MODES, CO₂ DATA 2011



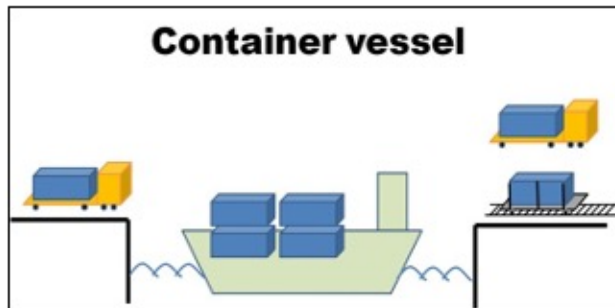
CO₂ emissions / unit 222 kg
FAST and FLEXIBLE



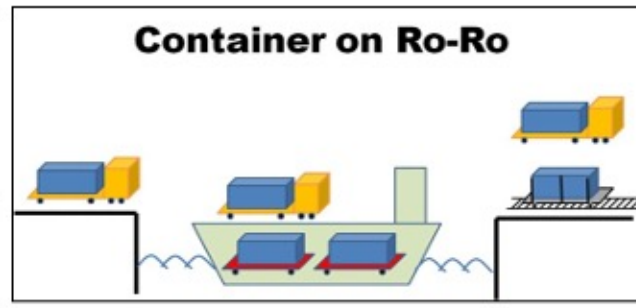
CO₂ emissions / unit 174 kg



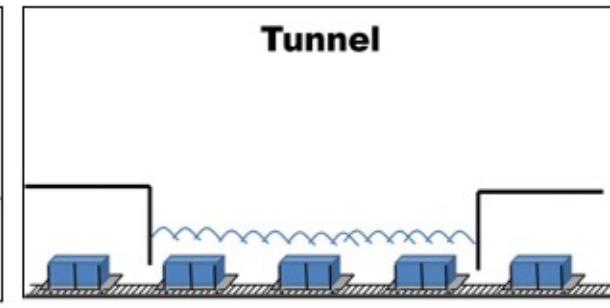
CO₂ emissions / unit 258 kg



CO₂ emissions / unit 91 kg

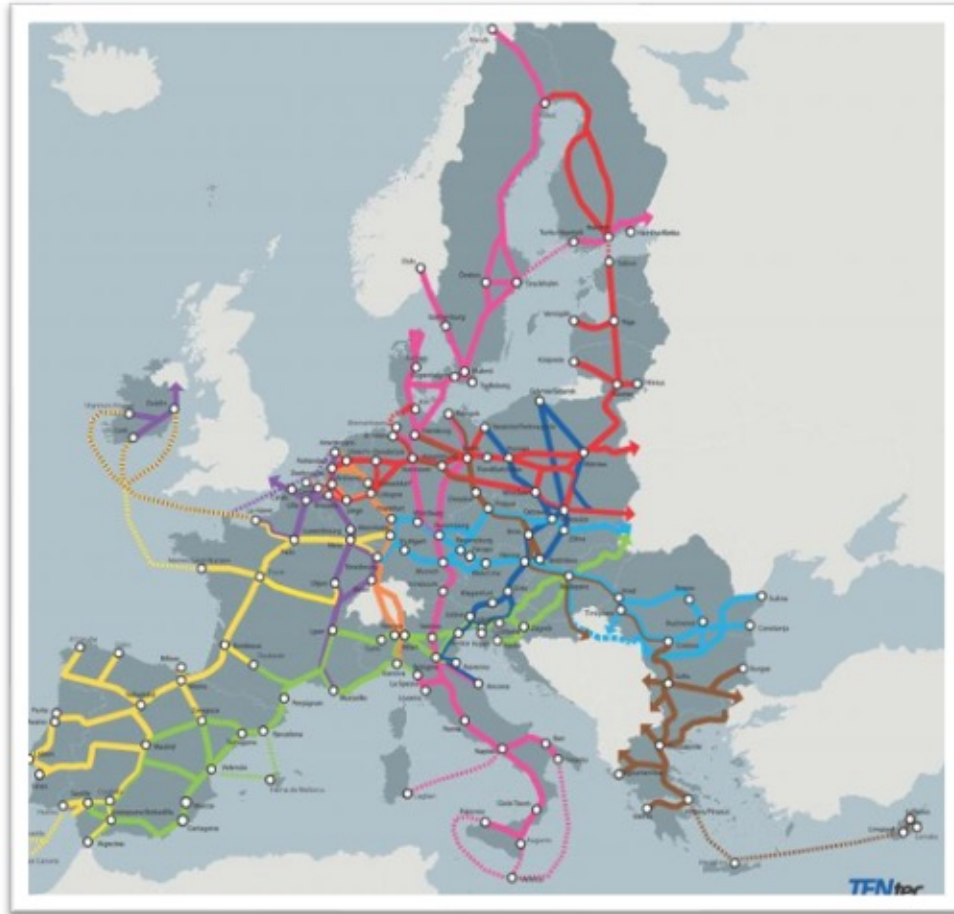


CO₂ emissions / unit 217 kg / 170 kg



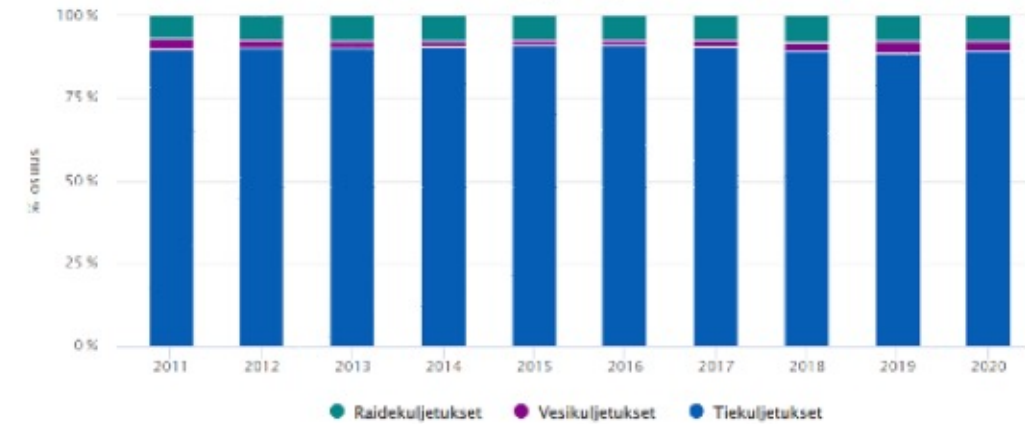
CO₂ emissions / unit 61 kg

LINKS TO EUROPEAN RAIL AND ROAD NETWORKS



Kuljetusmuotojen osuudet kotimaan kuljetuksista

(milj. tonnia)



Not enough goods for the Amber Train

NEWS

ERR
30.12.2022 08:05



Marine containers loaded onto a cargo train at Port of Muuga. Source: Raul Mee / Operal

Dwindling goods transport volumes and competition from trucks mean there are not enough customers for the Amber Train that has not started

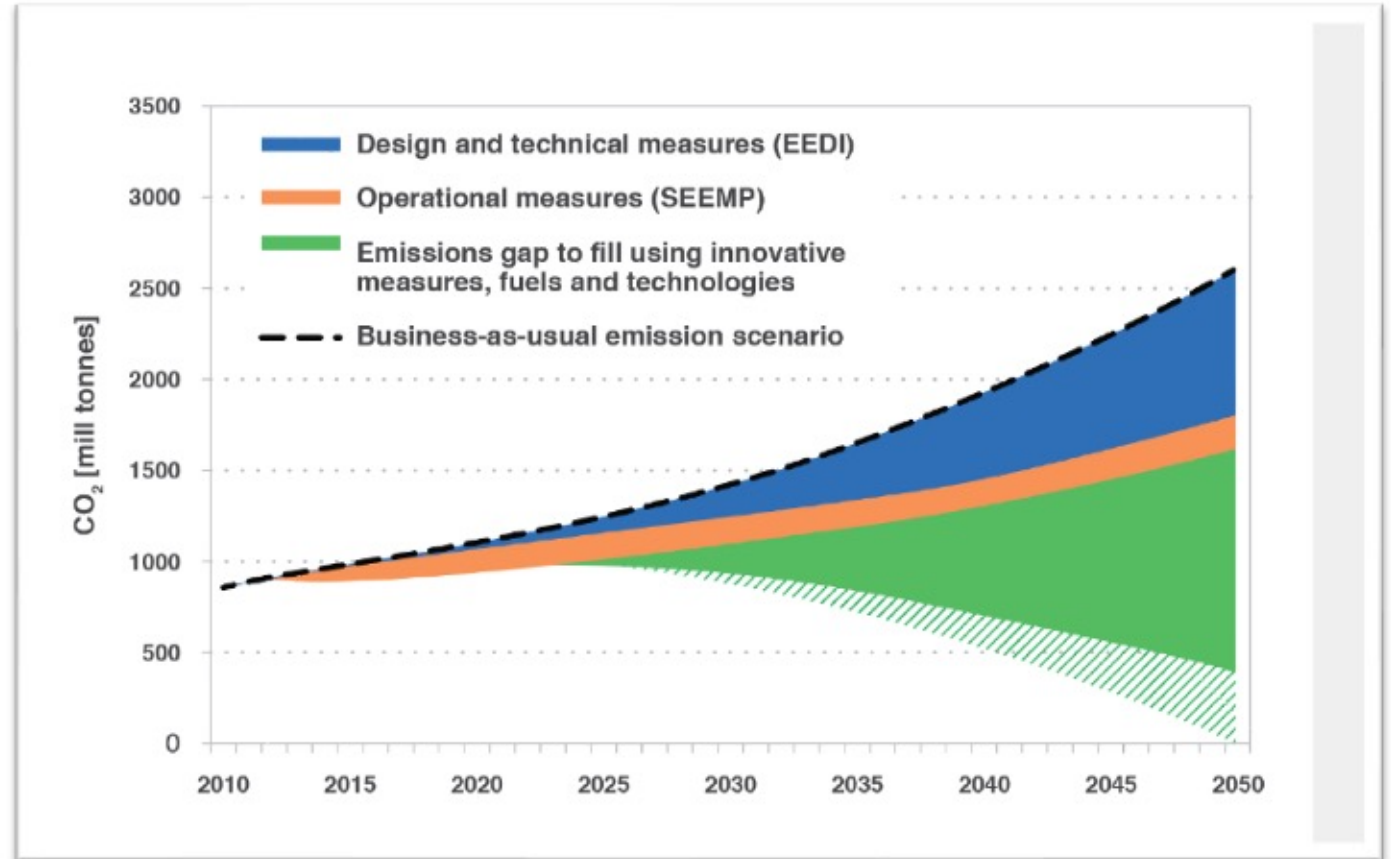
GHG REDUCTION PATHWAY



Dr Martin Stopford |
President Clarkson
Research

Coronavirus, Climate Change & Smart Shipping
THREE MARITIME SCENARIOS
2020 – 2050

“In the next 20 years the maritime industry must rebuild its cargo fleet. If this is done with the radical technologies now available, it will lead to the biggest change in ship design since steam replaced sail in the 19th century.”

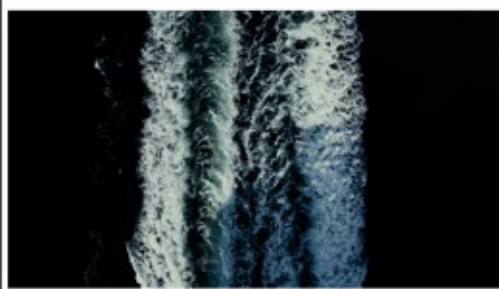


Source: IMO Action to reduce greenhouse gas emissions, 2019

SIX STEPS TO REACH CARBON FREE SHIPPING

1. Improve the energy efficiency in newbuildings.
2. Pilot various technical solutions to increase energy efficiency, e.g. rotor sails; smart IT- solutions to manage data for maintenance, bunker optimization and safety; air lubrication systems; use of batteries in ports and fairways; information for port arrivals, etc.
3. Reduce speed and improve port operations.
4. Be prepared for the new low or zero carbon fuels.
5. Shippers: evaluate alternative transport modes and operations.
6. Regulators: introduce rules and support mechanisms and carbon taxes to help shipping industry to move towards carbon-neutrality

Industry Leaders Collaborate to Develop Ammonia Shipping Fuel Guidance



PUBLISHED APR 17, 2021 3:05 PM BY THE MARITIME EXECUTIVE
 This week, Lloyd's Register's Decarbonization Hub, A.P. Moller-Maersk, MAN Energy Solutions, Mitsubishi Heavy Industries, NYK Line, Total and the Maersk Mc-Kinney Moller Center for Zero Carbon Shipping are joining forces in a new project with the purpose of guiding safe use of ammonia as a fuel for shipping.

marine insight ADMIRALTY INSTA

20% OFF (Limited Time Offer) 4 New Marine Electrical Maintenance and Troubleshooting

World's First Liquid Hydrogen-Powered Ship Delivered

By M News Network | In: Shipping News | Last Updated on July 30, 2021

Engineering and design services provider LMG Math has confirmed that HYDRA, the world's first liquid hydrogen-powered ship, has been delivered to Norway's ferry operator Norfar.

Baltic Transport Journal Finnlines

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Norsepower will fit Vale's VLOC charter with rotor sails

17 May 2021

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Bill Gates

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Home / Sector / Operations / Maersk orders up to twelve methanol-fuelled 16,000 teu ships at Hyundai Heavy

Maersk orders up to twelve methanol-fuelled 16,000 teu ships at Hyundai Heavy

Copenhagen, 26 November 2020

Partnership aims to develop hydrogen ferry for Oslo-Copenhagen

DFDS and its partners have applied for EU support for development of a ferry powered by electricity from a hydrogen fuel cell which only emits water.

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September 9, 2021

Check out the Netherlands' first electric – and it's got swappable batteries

17 November 2021

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FIRST H2 INLAND WATERWAY VESSEL

07 Jan 2021

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Ammonia

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Sam Chambers | April 7, 2021

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Getting access to our website

Start News

Wind-assisted, LNG-electric container ship Trade Wings 2,500 wins BV's AIP

BUSINESS DEVELOPMENTS & PROJECTS

May 10, 2021, by Fatima Bahad

The 2,500 TEU vessel, which has been designed jointly by VPLP Design, Ahava Shipping, SDARI and AYRO, received an approval in principle (AIP) from the classification society Bureau Veritas.

With an overall length of 197 meters and a breadth of 32 meters, Trade Wings 2,500 features six Oceanwings wing sails installed on a vertical sliding mechanism so that they can be retracted partially while the vessel is in port, thus minimising the impact on cargo operations.

Cruise&Ferry

INTRODUCING THE NEXT CLEANSEWAGE MEMBRANE

Ulstein develops new concept for zero-emission vessel

Ulstein Thor and S4 will be able to generate clean electricity using a Thorium Molten Salt Reactor

World's First Zero-Emission Wind and Hydrogen Power Cargo Ship

Concept design for the zero-emission bulk carrier (Egil Ulvian Røder)

PUBLISHED MAR 26, 2021 7:44 PM BY THE MARITIME EXECUTIVE

A Norwegian partnership is moving forward with the development of what they are calling the world's first zero-emission cargo ship. After a six-month competition, with more than 31 ship owners bidding on the project, the contract for the construction has been awarded. The team expected to complete the design this year so that the vessel can enter service by 2024.

SHIPPAX

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Start News

Stena's pathway to decarbonise its shipping operations

The role of shipping's challenge to transition from fossil-based fuels to renewables must not be underestimated. We are a global industry, and ships must be able to serve all ports. There is still no easy answer on which technology to use and vessels built today could operate for up to 30 years.

REPORT

1 + 1 = 3

Man måste hela tiden blicka framåt och fundera på nya utsläppsnåla drivmedel och alternativa bränslen. På korta linjer ser de att eldrivna fartyg börjar dyka upp och kan vara framtida alternativ, rutter som Mariehamn-Kapellskär eller Helsingfors-Tallinn.



hbl.fi

Viking Lines gamla dam Rosella lämnar Östersjön –...
På söndag gör Viking Rosella sin sista tur mellan Åland och Kapellskär i Sverige. Efter 42 år i Viking-...

3.3 Transform the Gulf of Finland into a sustainable transport corridor by making regular Estonia-Finland traffic carbon-neutral by 2035.

To this end, we call for establishing common economic incentives. The governments play a significant role in fostering the development in fields such as battery vessel development and hydrogen fuel engines. We believe that it is better to be ahead of the green transition curve, and aim to market tried and tested solutions to the latecomer markets. This could create economic opportunities for Finnish and Estonian maritime technology firms and the shipping industry at large.

Visionary report on
Estonia-Finland future cooperation



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