Journey from fossil fuels to zero emission shipping

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Together with customers and partners Nordea enables the transition towards a sustainable future
Slow steaming

Fuel efficient propels

More efficient vessels designs

“Nose job” – Bulbous Bow
High fuel costs trigger investments in new and cheaper alternatives

Høy oljepris skaper problemer for fiskerinæringen

New regulations on sulphur, NOx and CO2 will push the development of new energy sources and new technology

U.N. shipping agency reaches deal to cut CO2 emissions

Jonathan Saul, Nila Chestney

LONDON (Reuters) - The United Nations shipping agency reached an agreement on Friday to cut carbon emissions, following years of slow progress.

IMO sets 2020 date for ships to comply with low sulphur fuel oil requirement

FILE PHOTO: Shipping containers are being loaded onto Xin De Yang Zhou ship from Shanghai, China at Port 1 at the Port of Long Beach in Long Beach, California, U.S., April 4, 2018. REUTERS/Bob Riha Jr.
What will happen to fuel prices in 2020?

Price of marine diesel could rise or the market is flooded with products such as:

- **Petrol:**
  Low prices could trigger car use at the expense public and low emission choices

- **Heavy fuel oil:**
  Could end up being burnt in power plants in emerging markets
The big trend shifts
Digitalisation

Traditional car industry

Disruptive technology

New companies
New technologies will challenge the existing fleet and business concepts. The question is how fast will it go?

Wärtsilä and Rolls-Royce launch eco marine technology to boost shipping automation

Namrata Nadkarni, deputy executive editor | 8 April 2018

3D Printing to cause major blow to shipping

Michael Hollmann, Germany correspondent | 6 October 2017

![Image of a 3D printer and a container ship](image)

Rolls-Royce Intelligent Awareness Navigation System (pictured) uses sensors to give seafarers a 3D model of nearby vessels and hazards. Credit: Rolls-Royce

Locally printed goods could substitute traditionally manufactured products, says report. Credit: Getty Images

Source: The Guardian, Wartsila
«Be an innovator – not an immitator»
Smart harbours, smart logistics, from owning to leasing/sharing…

Q&A. Wärtsilä’s Smart Shipping Vision
Maritime Industry / Ships / Terminal Equipment

INNOVATION FOCUS / January 5, 2018

Source: NauticExpo e-magazine
Biggest Threat to Humanity? Climate Change, U.N. Chief Says

By Somini Sengupta  March 29, 2018

António Guterres, the United Nations secretary general, said, “I am beginning to wonder how many more alarm bells must go off.” Giuseppe Lami/European Pressphoto Agency, via Shutterstock.
Climate Risk
“A Sense of Purpose”
BlackRock’s CEO Laurence D. Fink, Januar 2018

“Society is demanding that companies, both public and private, **serve a social purpose.**

To prosper over time, every company must not only deliver financial performance, but also show how it makes a **positive contribution to society.**”
Investors are pushing companies to report on their climate exposure
Pricing of climate risk will influence the direction in which capital flows are moving – from fossil to green. A high climate footprint will have an impact on:

- **Lower credit rating**
- **Refinancing of loans**
- **Worsen credit terms/**
- **More expensive loans**
- **Limited or no access to capital and new financing**
Sharp fall in production cost of solar and wind power

Solar and wind power cheaper than fossil fuels for the first time

Despite the low price, not enough money is being put into renewable ways of generating electricity

Andrew Griffin | @_andrew_griffin | Wednesday 4 January 2017 11:58 GMT | 104 comments

Source: The Guardian
Investments in green energy increasing markedly – China is driving the development

Source: Bloomberg New Energy Finance
Green hydrogen from hydro or from natural gas with carbon capture and storage (CCS)

Carbon Capture and Storage

Hydrogenplant in Bærum. (Photo: Marius Valle)

En av verdens største fabrikker for «grønn hydrogen» etableres i Norge

Kilde: Gassnova, Teknisk Ukeblad
There are currently 201 confirmed LNG ship fuel projects.

Additional orders beyond 2018 are confirmed.

Excluding LNG carriers and inland waterway vessels.

Updated 20 March 2017

Source: DNV GL
Are nuclear fusion the next black swan?

Nuclear fusion on brink of being realised, say MIT scientists

Carbon-free fusion power could be ‘on the grid in 15 years’

Fusion ships

[Image: A visualization of MIT’s planned fusion reactor. Photograph: Ken file/MIT]
From linear to circular economy

From produce, consume and scrap...

...to Reduce, Reuse and Recycle

Source: Circular Norway, Jakhelln
Nordea joins Initiative for Responsible Ship Recycling

Banks Join Ship Recycling Debate
Thank you!
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