



Knowledge grows

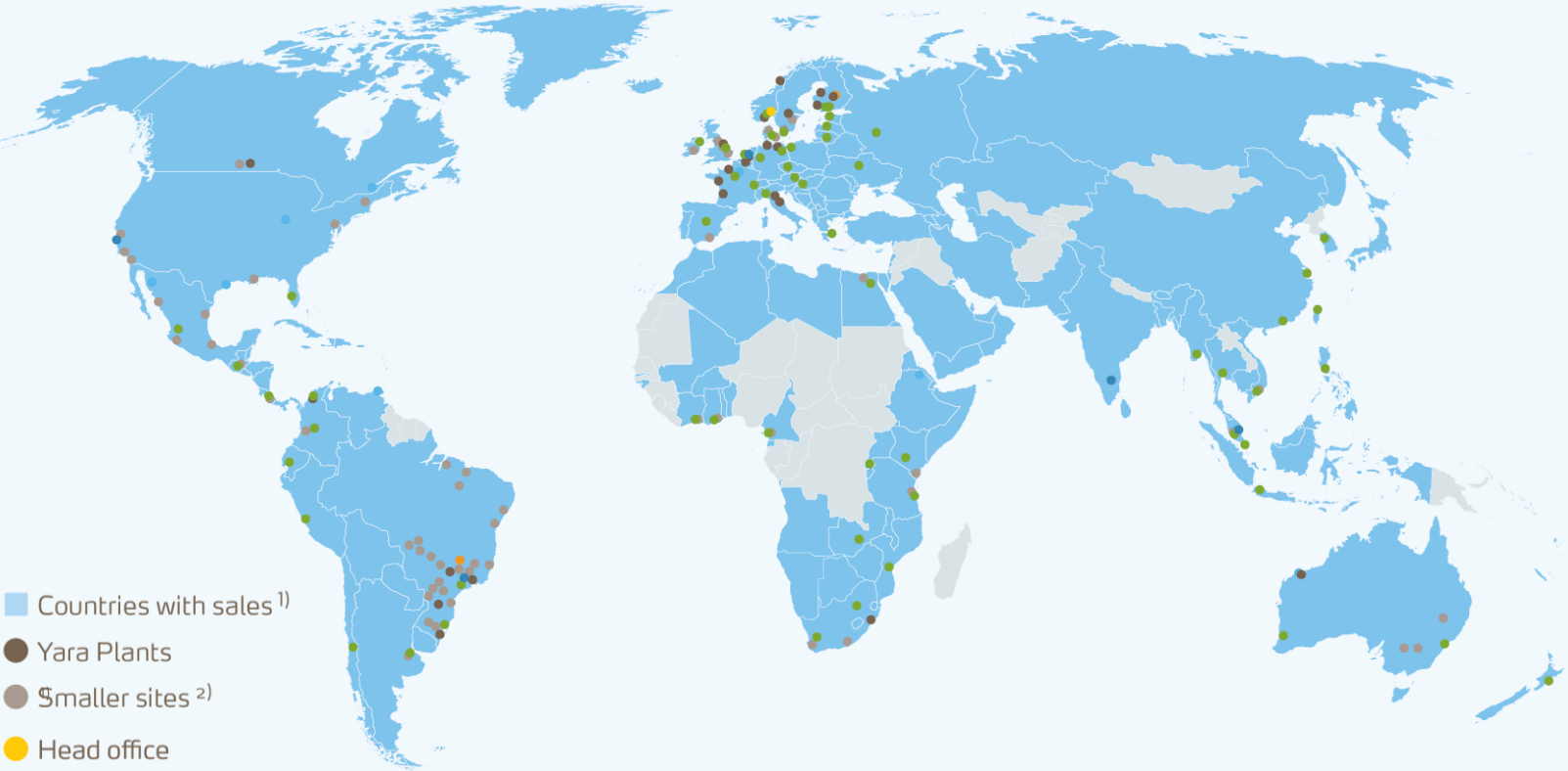
Yara Birkeland

Fully electrical and autonomous
container ship

Jon Sletten, 31.10.2023



Yara: Global mission, global presence



- Countries with sales ¹⁾
- Yara Plants
- Smaller sites ²⁾
- Head office
- Phosphate mines
- Joint ventures
- Sales offices and R&D sites
- Digital Hub

1) More than 10,800 Yara-branded retail outlets around the world
2) Yara operated terminals and logistical production sites

17,000

Employees worldwide

11.6

Billion USD
revenue

28

Production
plants

160

Countries
with sales

10,800

Yara-branded retail outlets globally

Yara Porsgrunn in numbers

500

Employees in production

730

Yara employees in total at Herøya

Production

3,7

mill ton

**Deliver
products to**

90

countries

Turnover

9,0 mrd

NOK in 2022

Export share: 95%

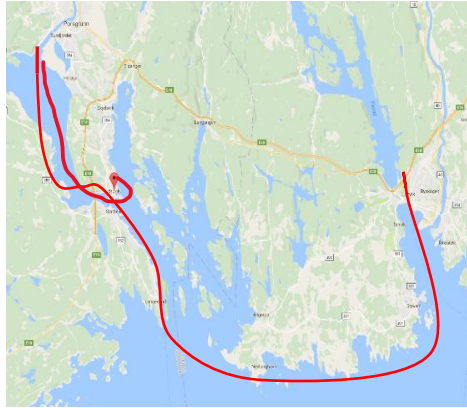
Most important markets: USA, China, Brazil, Thailand

Delivery chain from Porsgrunn

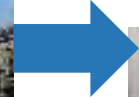
Total production: 3.700 kton/yr



~3.000 kton /yr - bulk

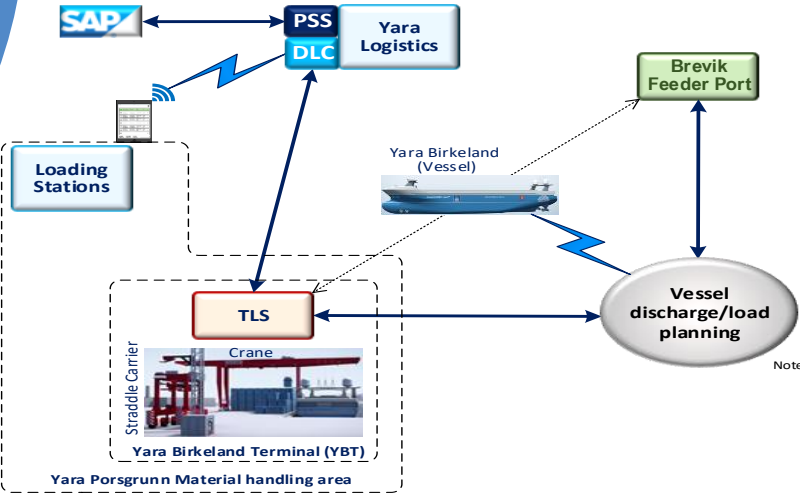
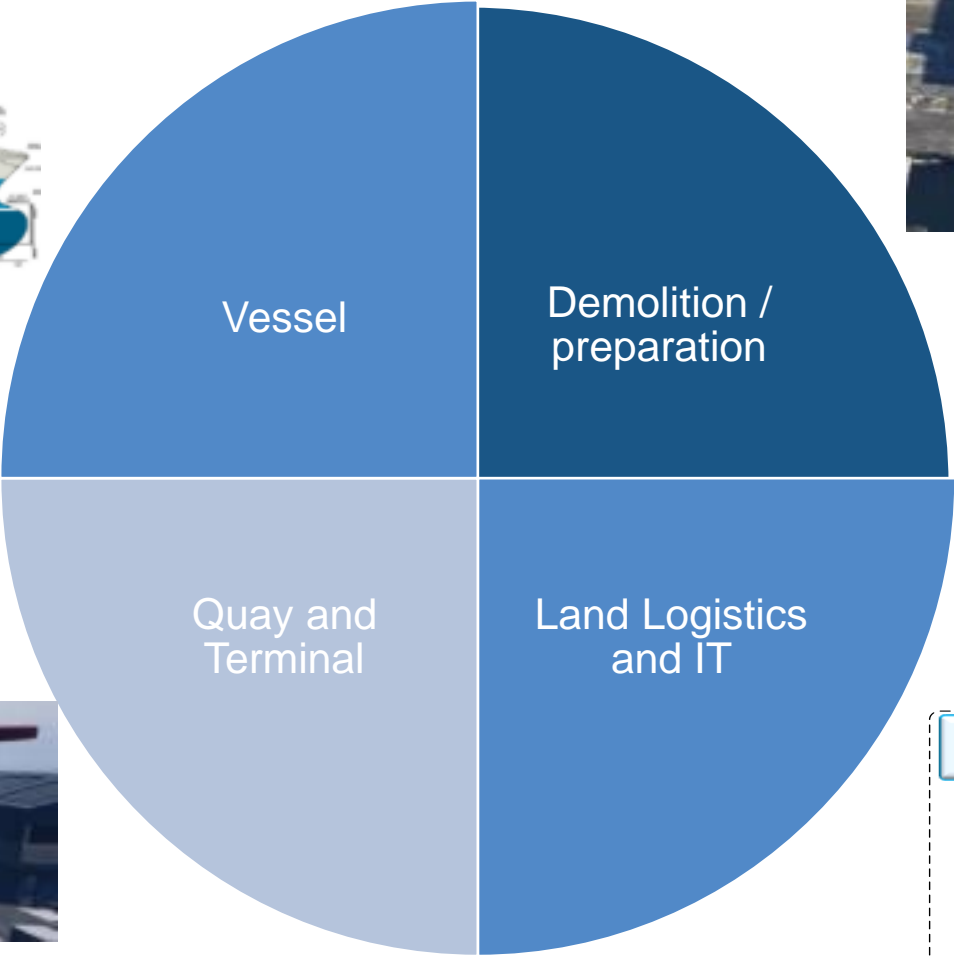
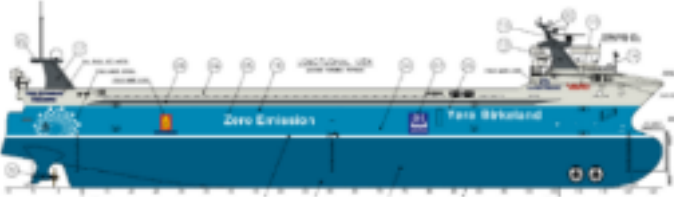


~500 kton /yr - container



Yara Birkeland to replace trucks delivering containers from Yara Porsgrunn to Feeder Ports

Project scope



Vessel FACTS & FIGURES

Open Hatch Container Feeder - fully battery powered solution

Main particulars

LOA	80 m
Beam (width)	15 m
Depth – main deck	8,0 m
Depth – Shelter Deck	10,8 m
Draught (full)	6,3 m

Speed

Eco speed	7-9 knots
Max speed	13 knots

Capacity

Cargo capacity	120 TEU
Deadweight	3150 mt

Propulsion

Azipull pods	2 x 900 KW
Tunnel thrusters	2 x 700 KW

Batteries (LeClanche)

Capacity	6,9 MWh
8 battery rooms	

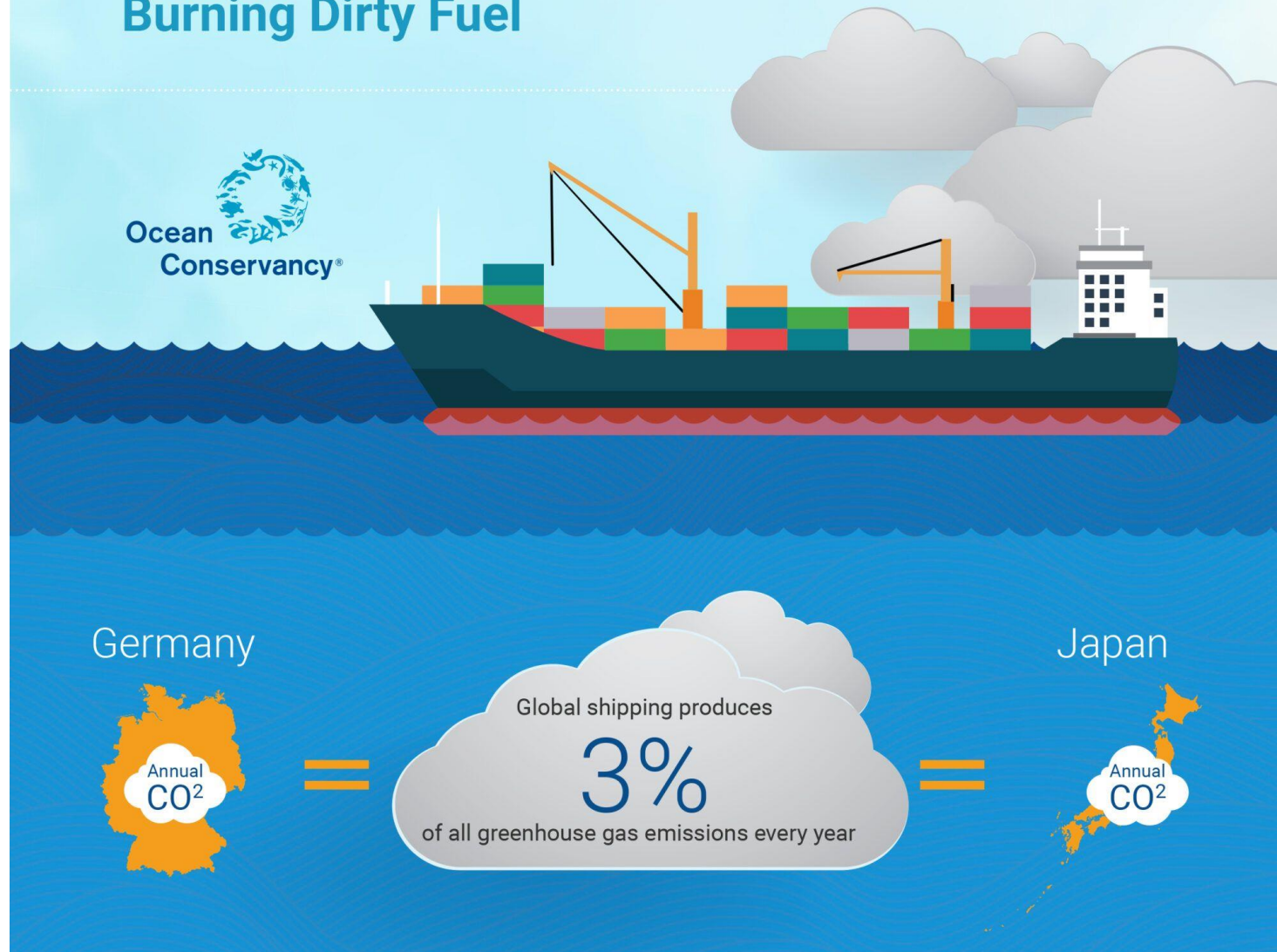


*TEU = Twenty-foot equivalent unit

Why Yara Birkeland?

- 3% of global GHG emissions is from shipping
- Catalyst for other «green» projects within shipping
- Move from road transport to sea transport
- Ambitious environmental project
- Status
 - Commercial operation since April 2022
 - Crew is reduced (5->3->2)
 - 1st autonomous test voyage is done
 - Good progress on regulatory
 - Fully autonomous in 2022?

Global Shipping is a Dirty Industry Burning Dirty Fuel



Yara Birkeland, a global celebrity

Hello

I am publishing a children's information book about robotics in industry and would like to feature the Yara Birkeland in the book. The book will be published in North America and then elsewhere in the world. It will appear in school libraries. If you would be happy to provide one photos for the publication I would be very grateful.

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Birkeland in the book.

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Is Yara Birkeland a success?

