



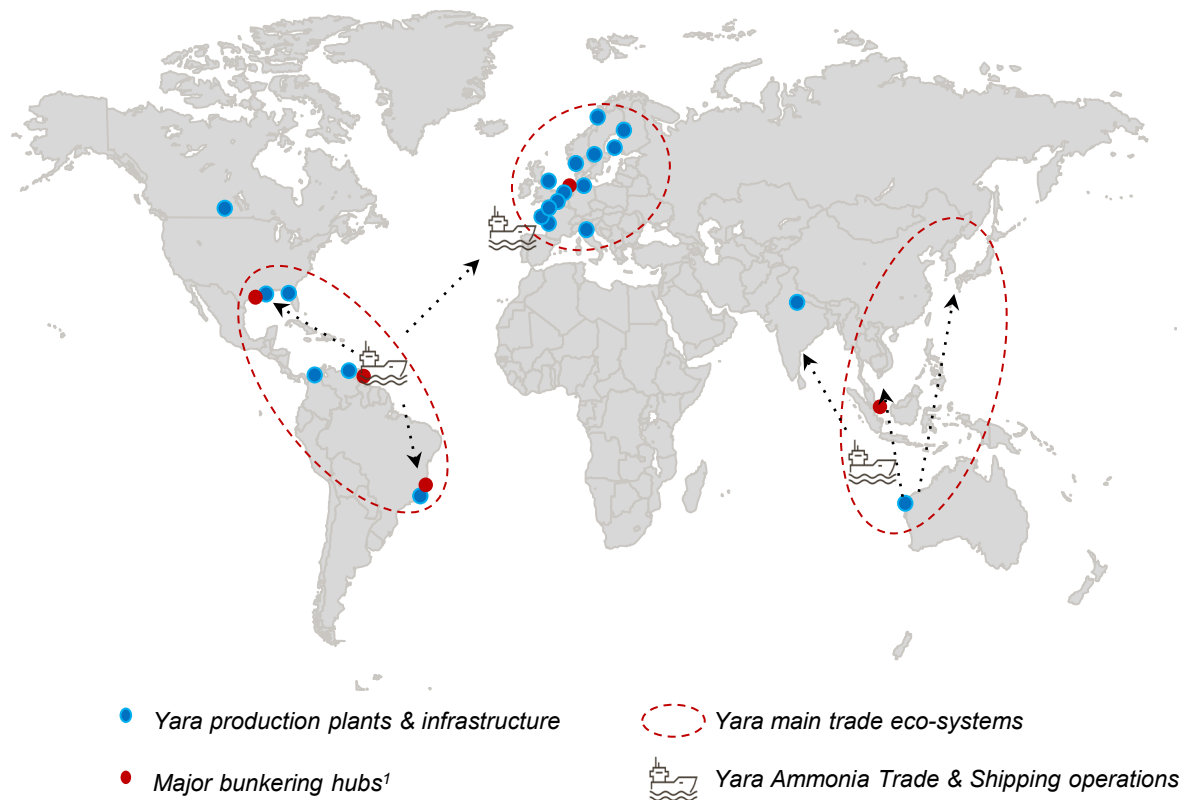
Knowledge grows

Ammonia for Green Shipping Corridors

Ammonia Energy Conference 2022
Melbourne, Australia
24th -26th August



Yara has a Global end-to-end position in Ammonia



Production

- 8.5 mt capacity across 17 units
- Proximity to major bunkering sites
- Electrolysis can replace SMR step; rest of infrastructure can be utilized
- Three green ammonia pilots, start-ups scheduled for 2023-25

Trade

- Global trader with > 20% market share
- ~3.7 mt of global export capacity with multiple downstream outlets
- Industrial solutions and logistics expertise

Shipping & storage

- +200 kt maritime transport (11 ships)
- 580 kt ammonia storage capacity
- 18 marine ammonia terminals
- Connecting green supply and demand

Clean Ammonia Marine Fuel – turning barriers into possibilities

Renewable energy



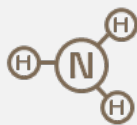
Costs



Renewable H2
Electrolysis



NH3
Production

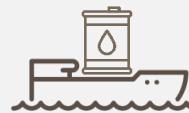


Clean ammonia
energy

Safety



Distribution
Storage



Ammonia
bunkering

Regulation



Customer



Technology
Services



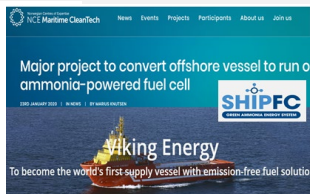
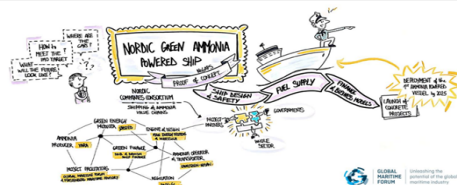
Crew

Bunkering-services

Production and Distribution

Cargo and vessel owners, OEM's, shipyards etc

Standards, Regulatory, Register, Policies



Yara Clean Ammonia

Building a Scandinavian ammonia bunker network



- YCA have pre-ordered 15 Bunker Barges from Azane Fuel Solutions, the first unit to be operational in 2024 in Norway.
- Further YCA have teamed up with NorSea Group to operate the units at their logistics bases. The Scandinavian bunker network will be the worlds first and YCA aims to make Ammonia available as a fuel on a global basis.



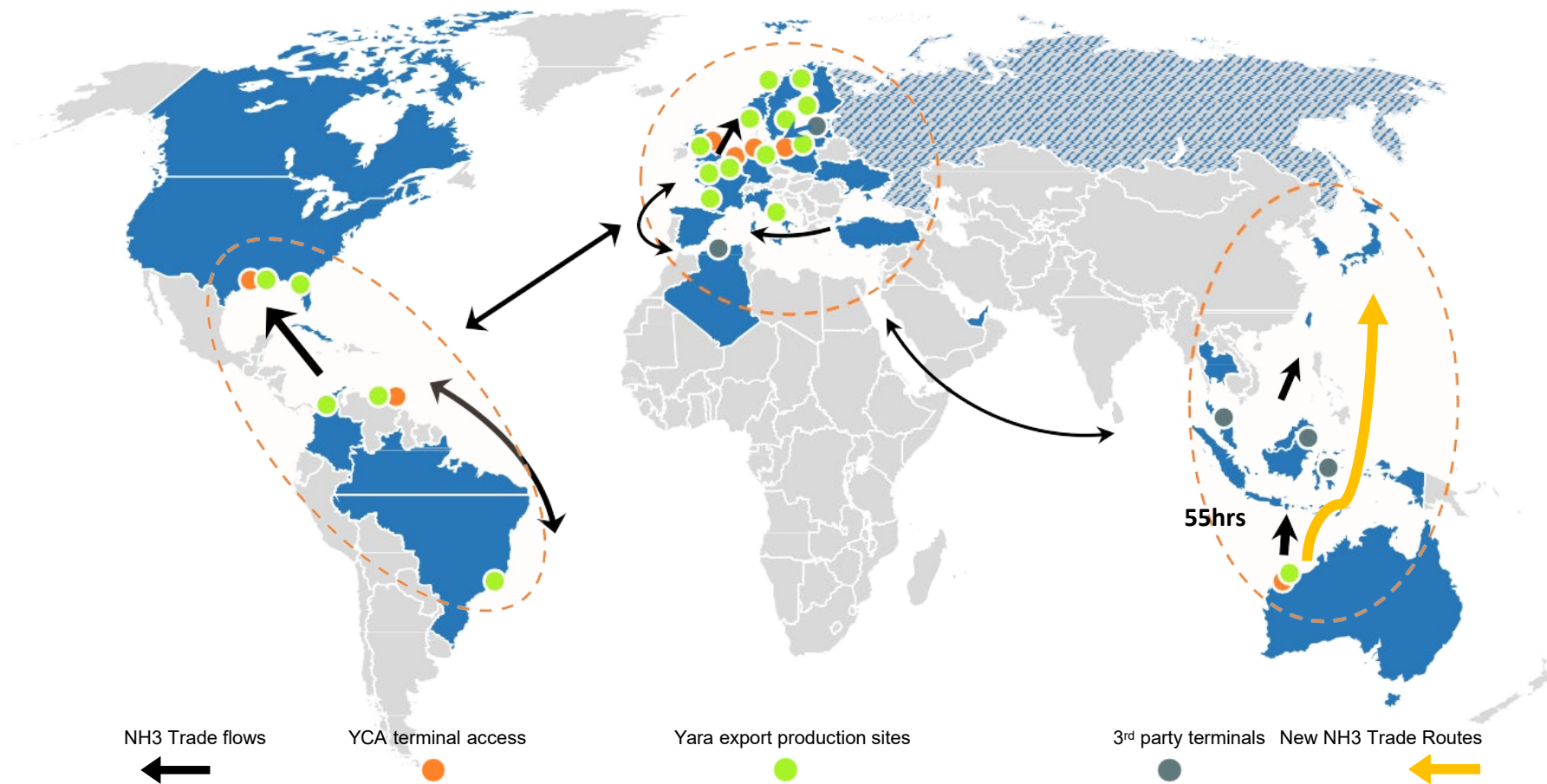
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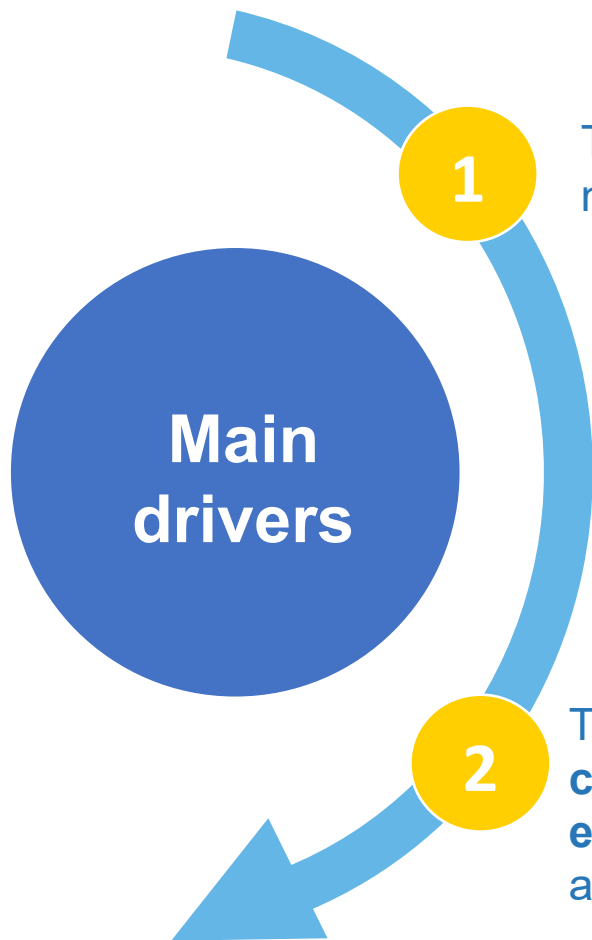
Ammonia as shipping fuel in Western Australia

- Yara Clean Ammonia and Pilbara Ports Authority (PPA) signed collaboration Agreement this summer (28th July 22) to jointly facilitate the uptake of clean ammonia as a marine fuel in the Pilbara region in Western Australia.
- The Scope for the study with a one year timeline is to go into details on the following;
 - Market study – what is potential short and long term
 - Modality study – ship to ship
 - Safety Study – bunkering operations
 - Regulations Study – gap analysis & development



Pilbara is a strategic location for bunkering

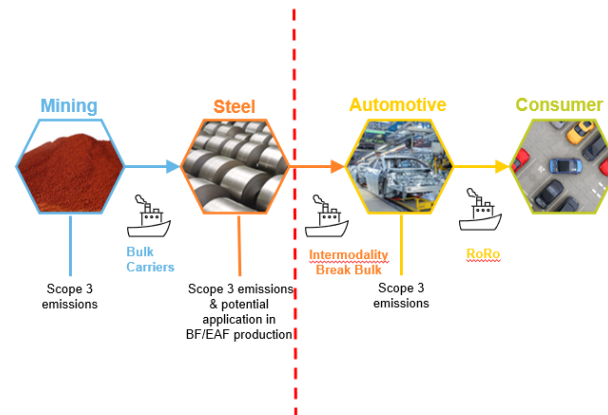
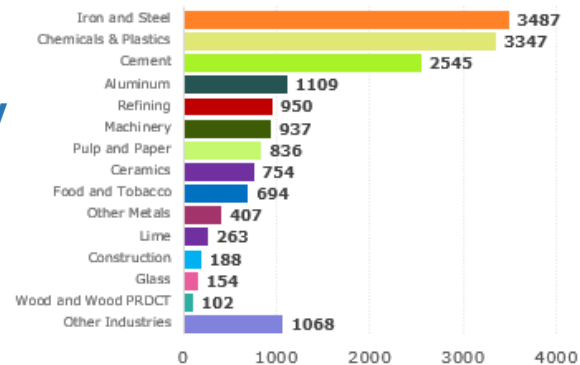


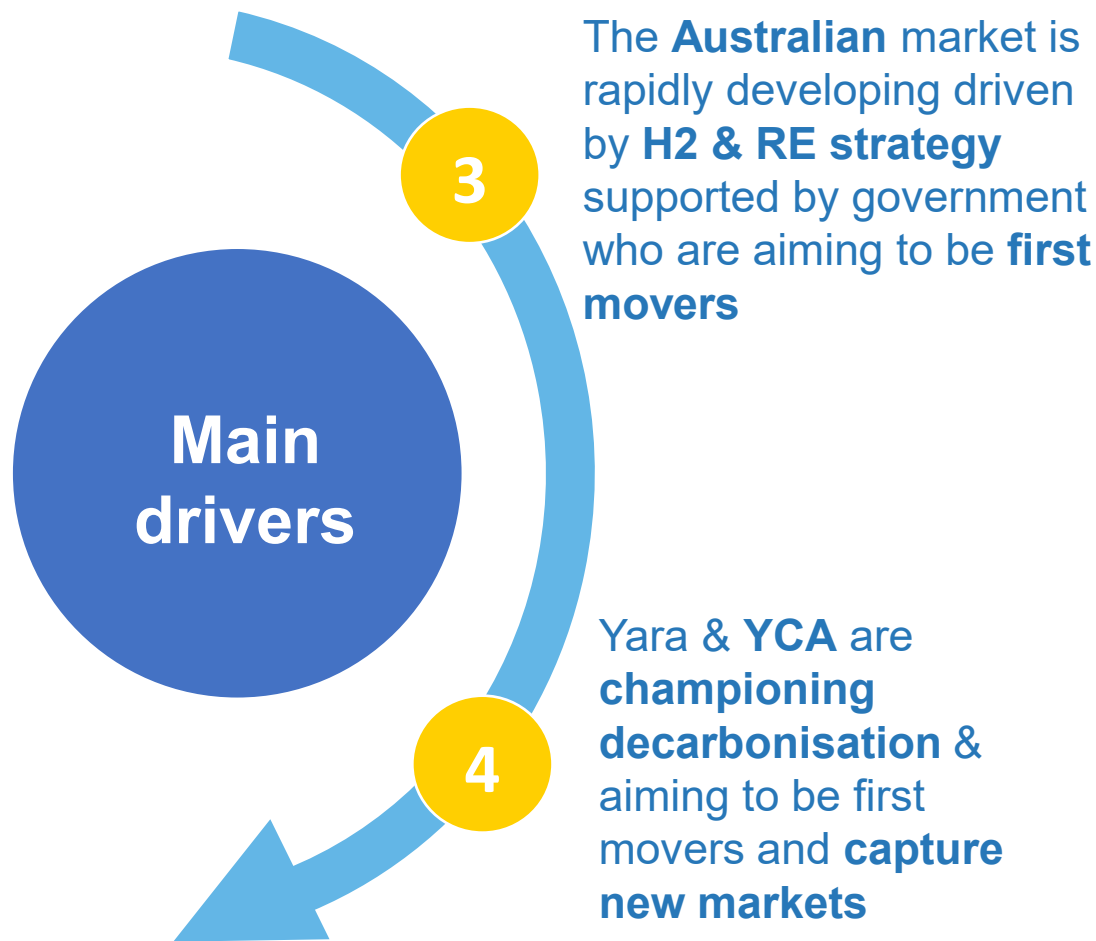


1 The iron and steel industry needs to **decarbonise**.

2 The iron ore bulk carriers considered as **early adopters** of ammonia.

Global GHG Emissions by Industry
(MtCO₂e – values from 2014*)





Federal government backs Pilbara and Kwinana hydrogen hubs

🕒 April 21, 2022 📁 News

PM promises thousands of jobs to ‘turbocharge’ WA regions

By Hamish Hastie and Peter Milne
April 19, 2022 – 12:16pm

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“No one is better positioned than Yara to capture value in the clean ammonia market, as the world's second largest ammonia producer, with the world's largest export and trading network.”

Svein Tore Holsether, President and CEO



Yara Clean Ammonia

Thank you for your attention!



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