

# PORT READINESS LEVEL



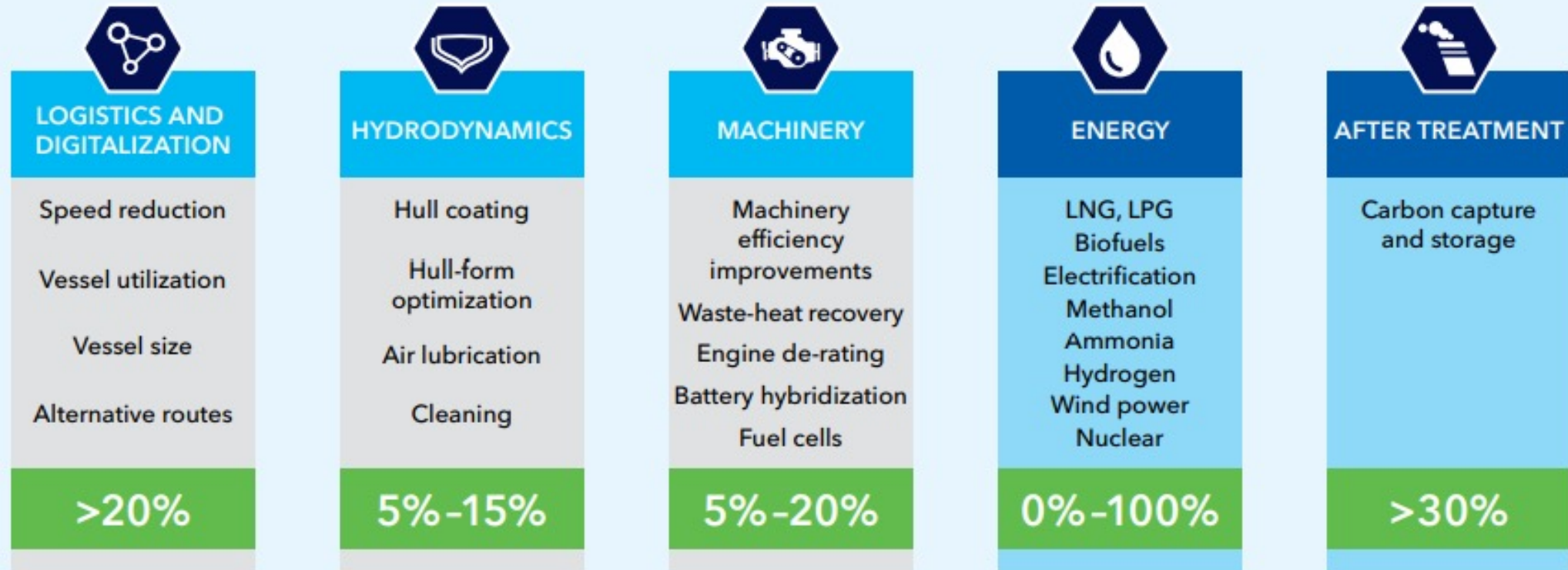
Autonomous and sailing on Hydrogen:  
SeaShuttle-project Samskip / Ocean Infinity

**Cees Boon**

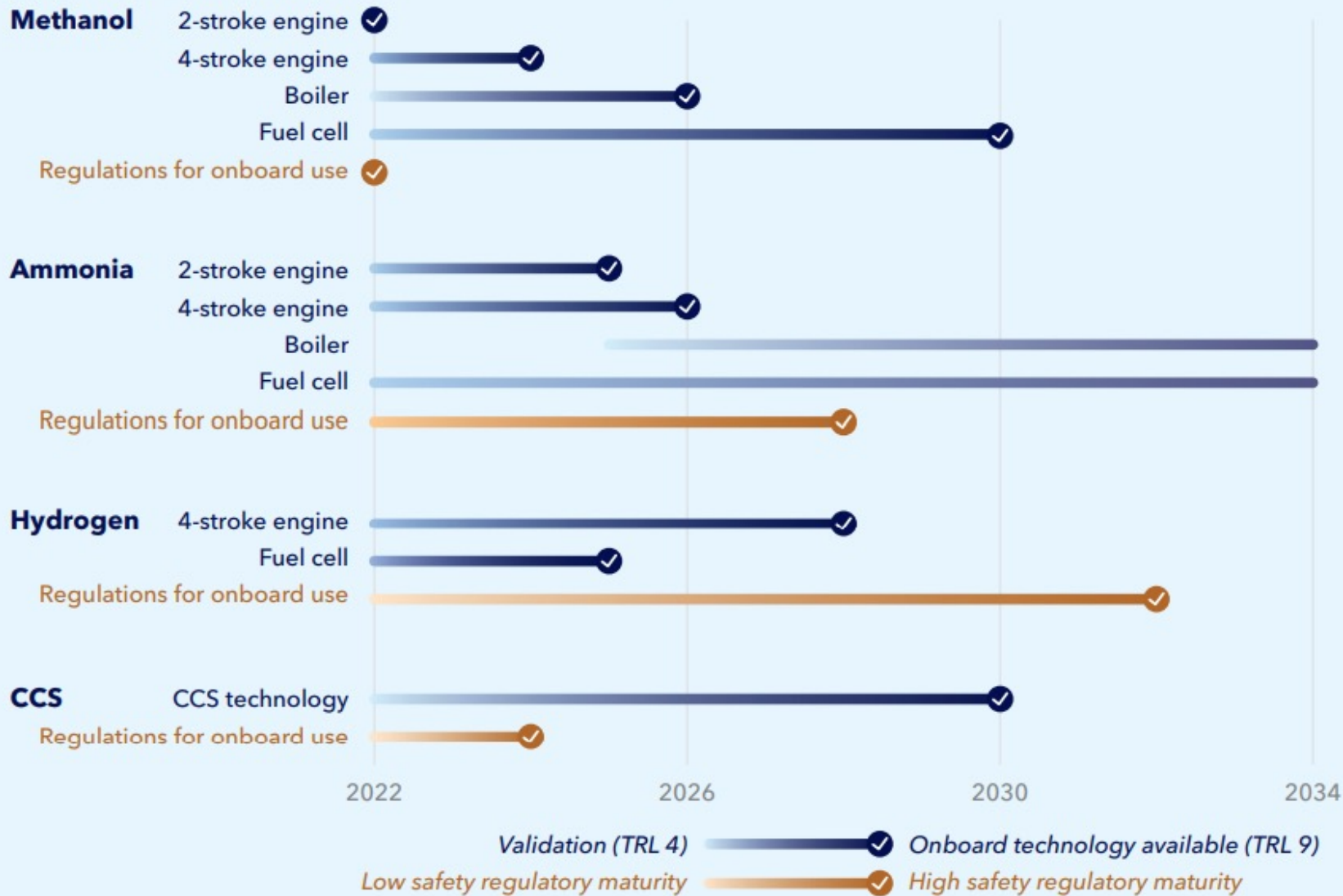
Rotterdam 26-01-2023



## GHG emission-reduction potential of technologies that can contribute to shipping decarbonization



## Estimated maturation timelines for energy converters, onboard CCS technologies, and corresponding safety regulations for onboard use



LNG, Ammonia, Hydrogen, Methanol, LHOC, Electric, Autonomous, Nuclear, Wind.....

Are ports ready for the alternative fuels?



In best practice of industry, and in many reports its stated: The port have to take care of.....  
Policy makers and regulatory authorities directing that ports should be ready for it at .....  
Shipping lines, suppliers and bunker operators have to make their FID.....

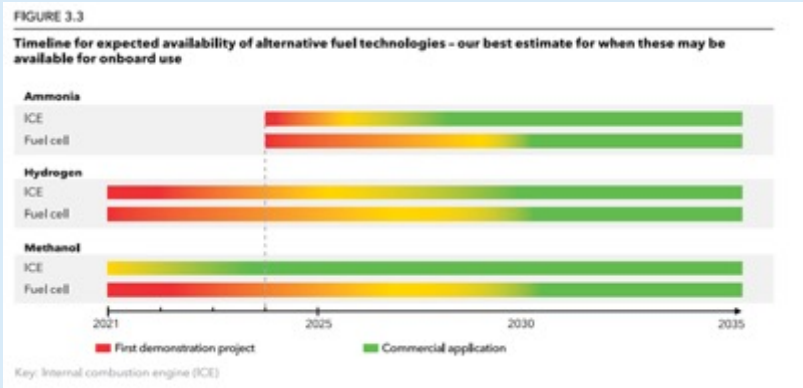
This requires ports to be ready.....



# Port Readiness Level – Alternative Fueled Vessels

“Ready” and the timeline will be different for every port:

Bunker port, Maintenance port, Port of call, Service Port, in-port or at anchorage



or



# Port Readiness Indicator for Alternative Fuels in a Port (community)

Issues on:

- port governance;
- port safety;
- port infrastructure;
- availability of the alternative fuels.

Transparency to stakeholders;  
Expectation management;  
Stakeholder communication;

Deployment  
Development  
Research

9: Vessel call or Bunkering service readily available

8: Vessel call or Bunkering system complete and qualified

7: Vessel call or Bunkering system established on a project basis in an operating environment

6: Vessel call or Bunkering framework demonstrated in a controlled environment

5: Vessel call or Bunkering framework designed

4: Vessel call or Bunkering approach decided

3: Sufficient Information gathered

2: Interest of port stakeholders determined

1: Fuel relevance assessed



## Present state and ambition at the Port of Rotterdam November 2022 →

(Just an example how we can use this tool, not the official status)

Fuel and bunkering	PRL 2022	PRL 2023 ambition	PRL 2024 ambition	PRL 2025 ambition
LNG	9	9	9	9
B-LNG	6	7	8	8
E-Methane	5	6	7	7
Methanol	7	8	9	9
B methanol	6	7	7	8
Ammonia	3	5	6	7
Hydrogen –P (Inland vessels, contained)	6	7	7	8
Hydrogen –L (Inland vessels, tank truck)	3	4	5	6
Hydrogen (Sea going vessels)	2	3	4	5

# WPCAP / CMF program: Port Readiness for Alternative fueled vessels

Outcome 1: Level indicator



WPCAP

(Framework & Indicator )

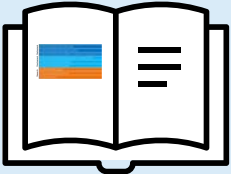
Outcome 2: Assessment tool / Checklist



WPCAP, IAPH/CMF

(Framework & Checklist)

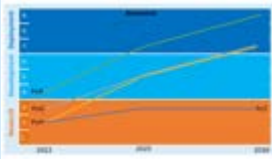
Outcome 3: Best practice guidance



WPCAP, IMO Green Voyage

WPCAP: Framework & Guidance, IMO Green Voyage: Dissimination

Outcome 4: Green corridor profiler



WPCAP, IAPH/CMF, ZESM/MI

WPCAP, IAPH/CMF: Framework & profiler, ZESM/MI:Tool



# Green Corridor Profiler

