



# Decarbonizing Shipping

A pledge and a call to action!

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Waves of cleantech 2019 - Solstrand

# A.P. Moller– Maersk at a glance

Present in  
130+  
Countries

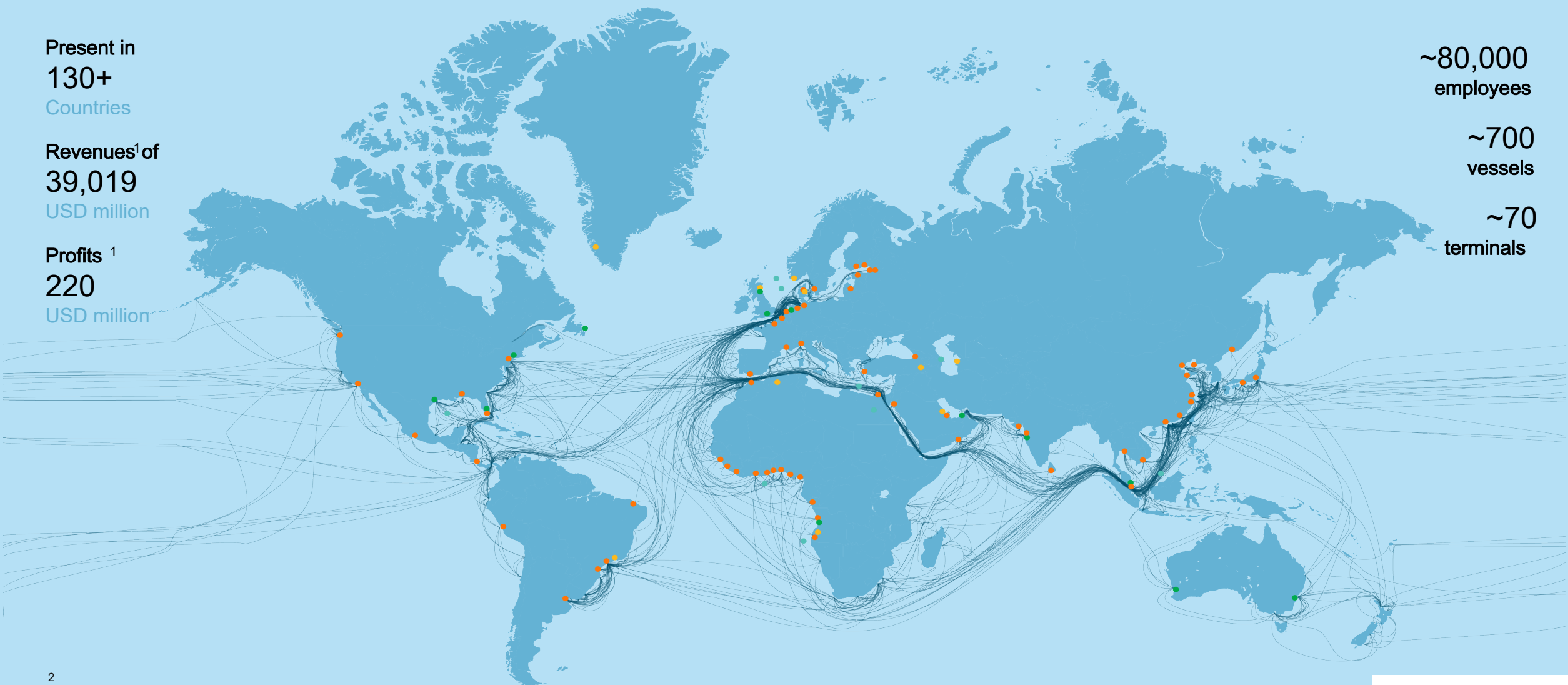
Revenues<sup>1</sup> of  
39,019  
USD million

Profits<sup>1</sup>  
220  
USD million

~80,000  
employees

~700  
vessels

~70  
terminals

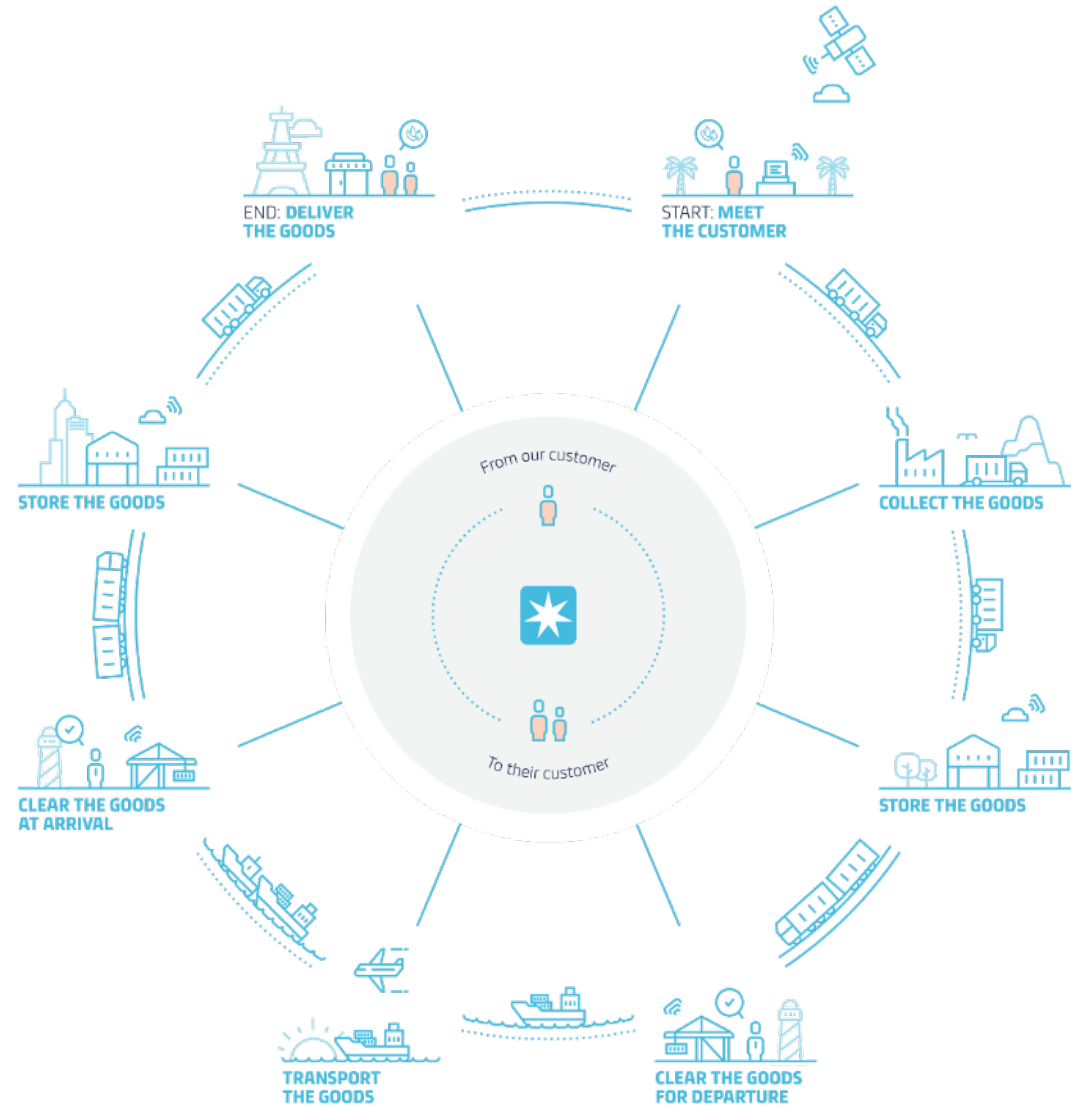


OUR BUSINESS

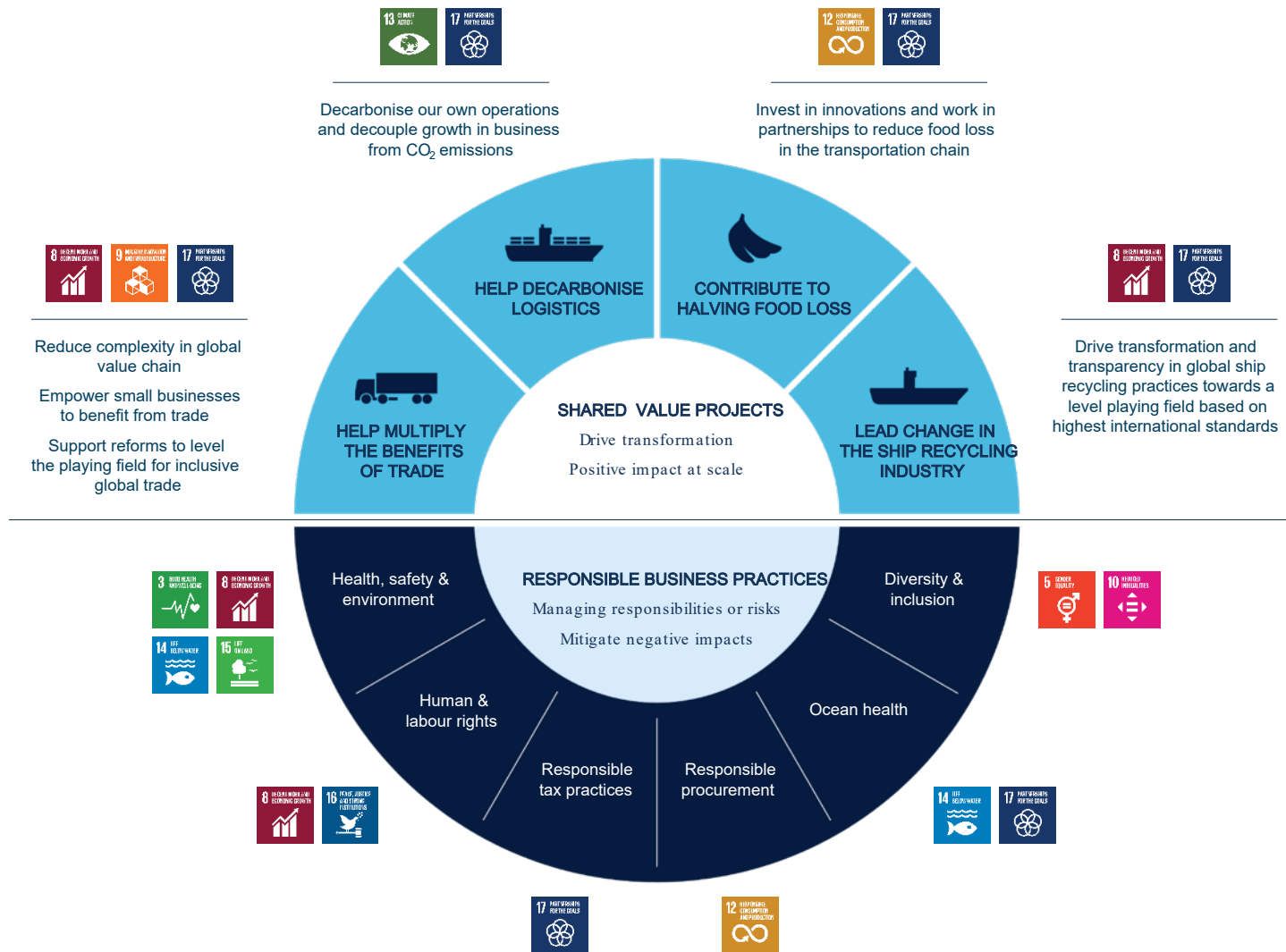
# Connecting and simplifying global supply chains

**A.P. Moller - Maersk enables its customers to trade and grow by transporting goods anywhere.**

Maersk works to provide customers with a simple end-to-end offering of products and services, seamless customer engagement and a superior end-to-end delivery network, taking the complexity out of global supply chains.



# Sustainability strategy



# Working toward carbon-neutral shipping - A pledge and a call to action



Shipping is responsible for  
**2 – 3%**  
of global emissions

“ We have begun a journey towards having net-zero CO<sub>2</sub> emissions from our own operations by 2050. This is an important ambition and one we can only deliver on in collaboration with many other stakeholders. ”

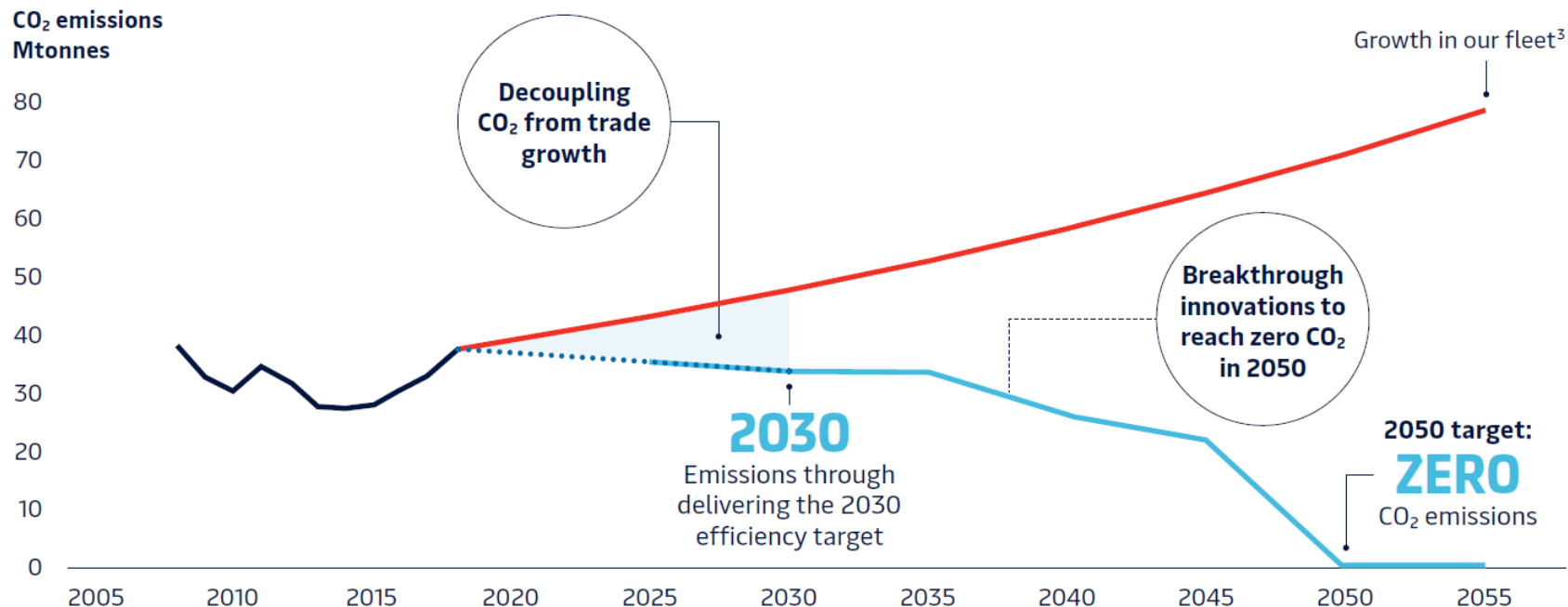
Søren Skou, CEO of A.P. Møller - Mærsk A/S

New targets	<b>60%</b>	2018 performance
<b>ZERO</b>	Relative reduction by 2030 (compared to 2008)	<b>41%</b>
Net emissions from our own operations by 2050		Relative reduction YTD (compared to 2008)

# How could a Carbon Neutral 2050 Scenario be developed?

## 2050 SCENARIO

— Historic emissions — Number of vessels — Projected emissions 2030 efficiency target — Pathway to zero CO<sub>2</sub>



## WE NEED TO START THINKING NOW!

- Vessels built after 2025 will be part of the 2050 fleet, and assumed to be prepared for later retrofit to Carbon Neutral fuels
- First dedicated Carbon Neutral vessel must be introduced by 2030 followed by a slow ramp-up allowing maturation of technology and supply chain
- From 2045 Carbon Neutral ready vessels are being retrofitted to Carbon Neutral
- From 2050 Carbon Neutral fleet

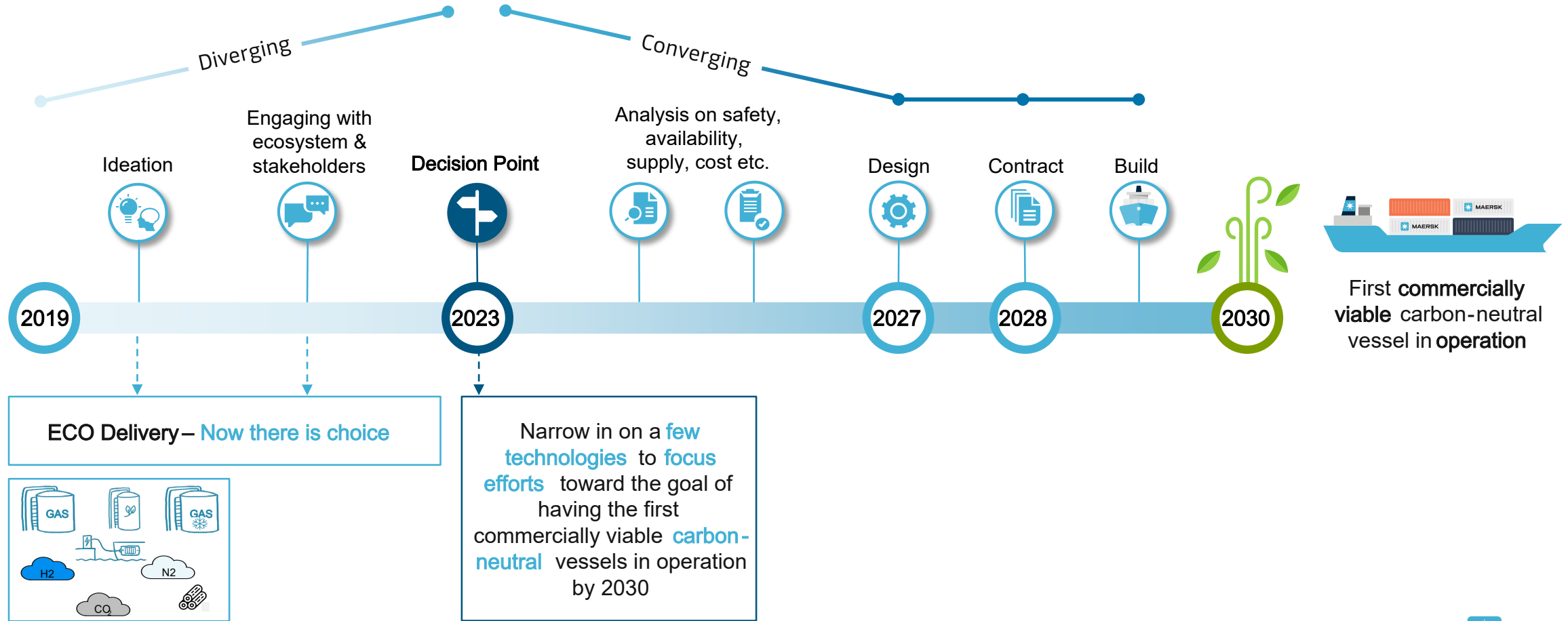
1 Global Warming of 1.5°C, Intergovernmental Panel on Climate Change, 2018.

2 Our target is net-zero CO<sub>2</sub> emissions, because using e.g. biofuels will emit CO<sub>2</sub> when burned on a vessel. However, if the feedstock used to produce the biofuel absorbs CO<sub>2</sub> equal to the emissions produced when burned (and the production process of the fuel is also CO<sub>2</sub>-neutral) then specific biofuels can be CO<sub>2</sub> neutral.

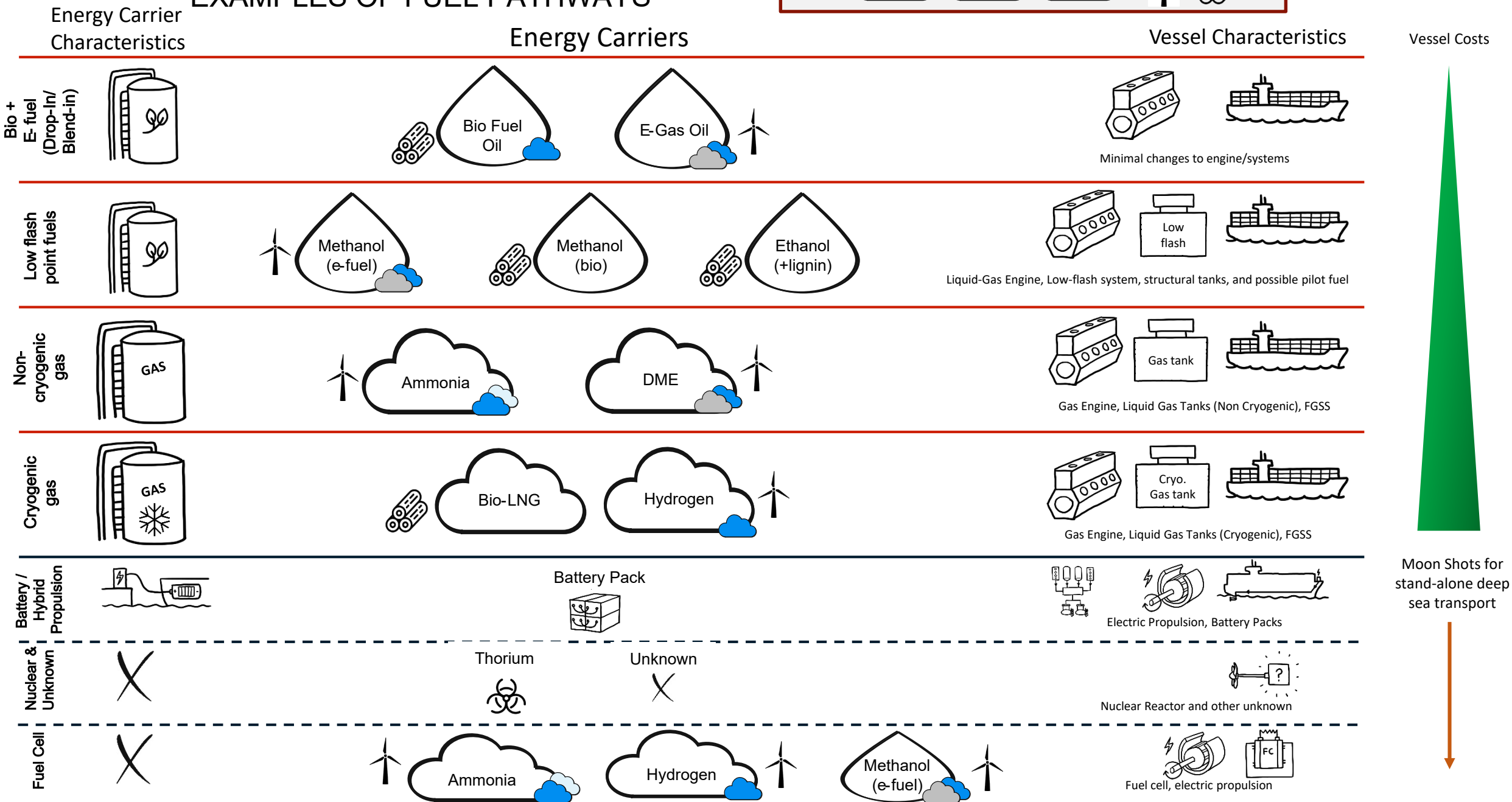
3 The 2050 scenario is based on a simulation, which builds on our expectations for the development of our business activities until 2050 and the reductions coming from exchanging old vessels with zero carbon vessels. It does not however, include post 2030 reductions coming from further reductions on the remaining part of the old fleet.

# Our approach to low carbon innovation

## Milestones to deliver the first carbon neutral container vessel



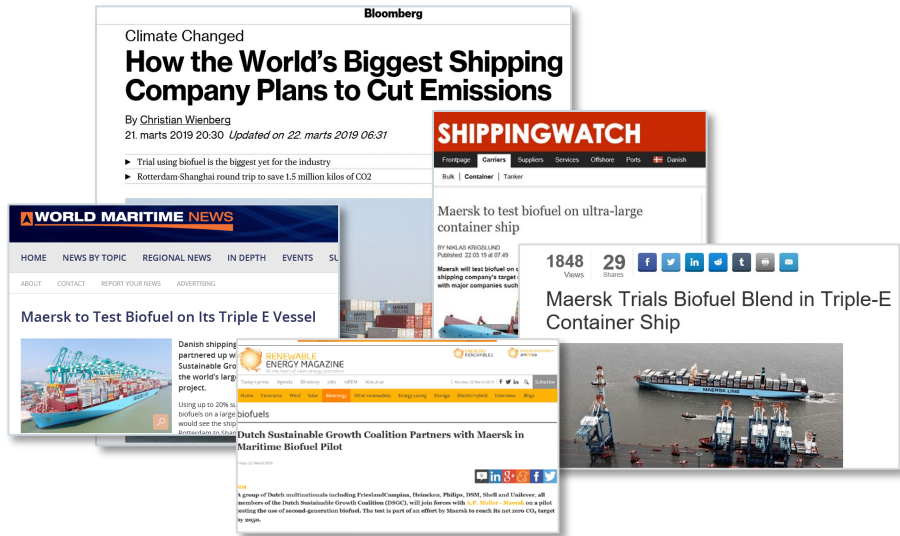
# DECARBONIZED MARITIME TRANSPORT: EXAMPLES OF FUEL PATHWAYS





# Live innovation project

## World's largest biofuel pilot



✓ Maersk collaborates with the DSGC:



✓ Key statistics:

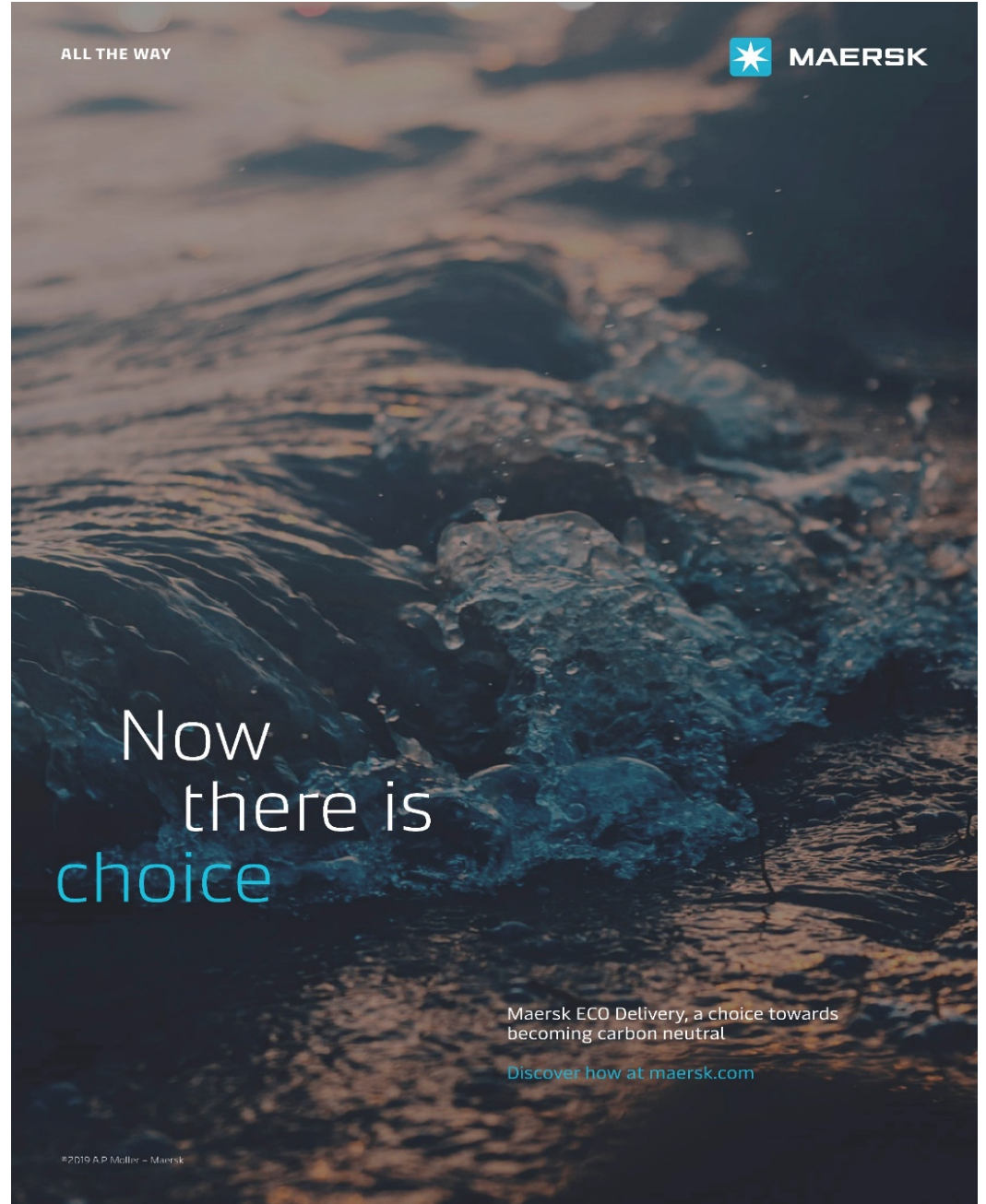
- ✓ 1.5M kg of CO2 saved on the journey
- ✓ Up to 20% bio-blends tested
- ✓ Full roundtrip on biofuel blends alone (25.000 nautical miles)

✓ Test the technical, sustainable and commercial viability of using readily available biofuels in global shipping

✓ Now commercial offering for select customers (2019)



Maersk ECO Delivery offers you **carbon neutral container transportation** with independent **third party verified CO2 saving**. Easy and flexible to add to your contract.



ALL THE WAY

**MAERSK**

Now  
there is  
**choice**

Maersk ECO Delivery, a choice towards becoming carbon neutral

[Discover how at maersk.com](https://www.maersk.com)

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# New Initiative

## Lignin/ Ethanol Blend

The image shows two screenshots of news articles. The top screenshot is a Maersk press release titled "Maersk join forces with industry peers and customers to develop LEO" dated 29 October 2019. It features a photo of a scientist in a lab and a Maersk ship. The bottom screenshot is from biofuels international, dated OCT 29, 2019, titled "New coalition led by Maersk to explore use of lignin, ethanol blend as marine fuel". It includes a photo of industrial pipes and text describing the LEO Coalition and its goals.

- R&D industry project
- Collaboration between Maersk, Wallenius Wilhelmsen, BMW Group, H&M Group, Levi Strauss & Co. and, Marks & Spencer:



- To test the technical, sustainable and commercial viability of using lignin -infused ethanol biofuels in global shipping

# Future Fuels

## Joint Study with Lloyd's Register

**Maersk Promotes Alcohol, Biomethane and Ammonia as Fuel**

Alcohol, Biomethane and Ammonia are the best-positioned fuels to reach zero net emissions

24 October 2019

Sustainability

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**Zero Net Emissions: Alcohol, Biomethane & Ammonia a Good Start**

Market projections have shown that the best-positioned fuels for research and development into net-zero marine fuels are alcohol, biomethane and ammonia.

According to a new study conducted by Danish shipping major A.P. Møller - Maersk and UK's classification society Lloyd's Register, the greatest opportunities for decarbonizing shipping lie in

Alcohol, biomethane and ammonia the best options for decarbonization, study says

The best opportunities for decarbonization of shipping lie in finding new sustainable energy sources, says a new study by Danish shipping giant A.P. Møller - Maersk and Lloyd's Register which identifies alcohol, biomethane, and ammonia as the best positioned fuels for research and development into net zero fuels.

Alcohol, biomethane, and ammonia the best options for decarbonization, study says

The best opportunities for decarbonization of shipping lie in finding new sustainable energy sources, says a new study by Danish shipping giant A.P. Møller - Maersk and Lloyd's Register which identifies alcohol, biomethane, and ammonia as the best positioned fuels for research and development into net zero fuels.

- Working hypothesis: MeOH/ EtOH, CH<sub>4</sub>, and NH<sub>3</sub> are scalable and can propel deep sea vessels

- Søren Toft, COO at A.P. Møller - Mærsk :

*"It is too early to rule anything out completely, but we are confident that these three are the right places to start. (...) These three fuel pathways have relatively similar cost projections but different challenges and opportunities."*

- 80% of internal APMM research into long-term solutions (zero emissions) will be centered around CH<sub>4</sub>, NH<sub>3</sub>, and MeOH/ EtOH
- 20% of internal APMM research into long-term solutions (zero emissions) will be centered on other fuels and technologies
- Short-term solutions also need to be identified!

Thank you

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