SMARTENERGY

Opening Keynote Address - Hydrogen for maritime and aviation applications: How to bring hydrogen closer to the market?

Christian Pho Duc, CTO
European Hydrogen Week
Brussels, 20. November 2024

The "Aviation web"

Source: openflights.org

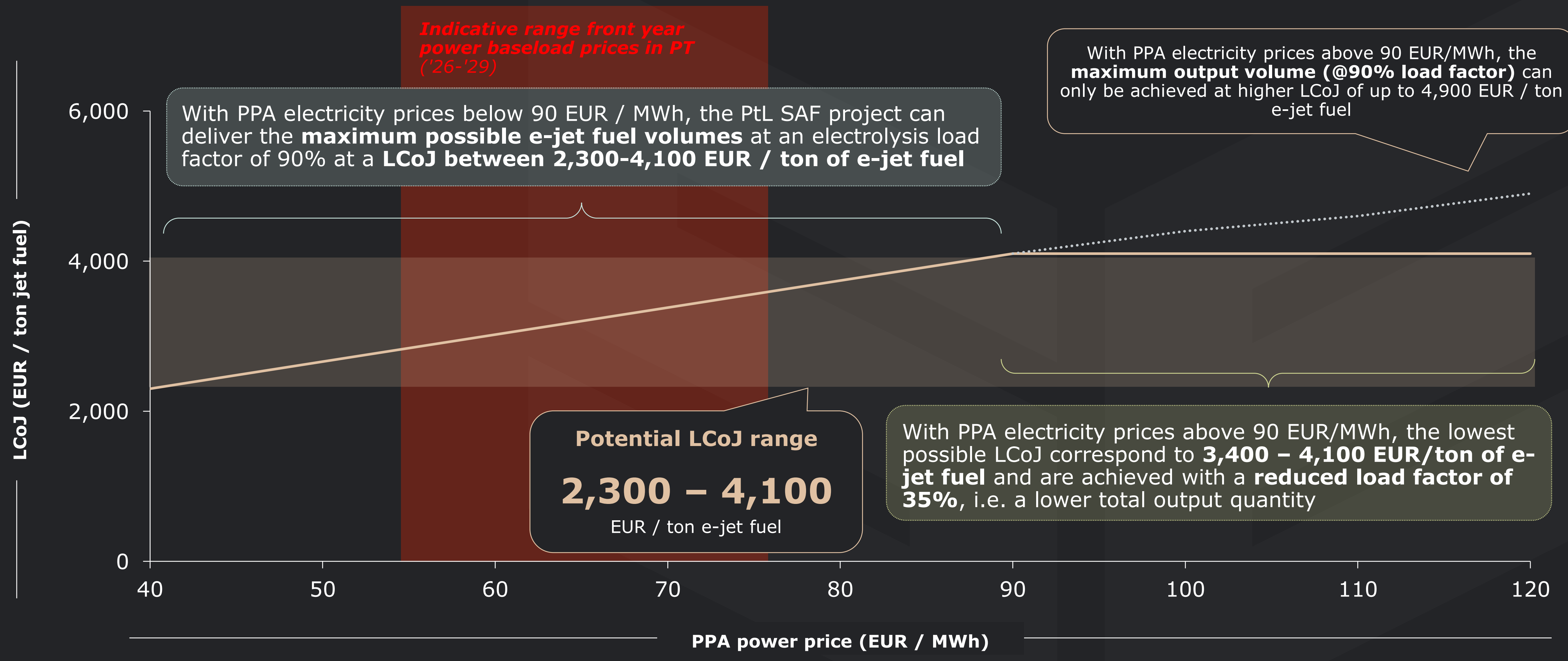
EU Aviation strategy

ReFuelEU Aviation

ReFuelEU Aviation targets
Minimum SAF share within fuel supplied, and additional sub-quota for synthetic fuels

	SAF	Synthetic Fuels
2025	2%	
2030	6%	**1.2%** (2030-31) **2%** (2032-34)
2035	20%	**5%**
2040	34%	**10%**
2045	42%	**15%**
2050	70%	**35%**

Bringing hydrogen close to the aviation market requires to minimize the price gap of eSAF to conventional kerosene

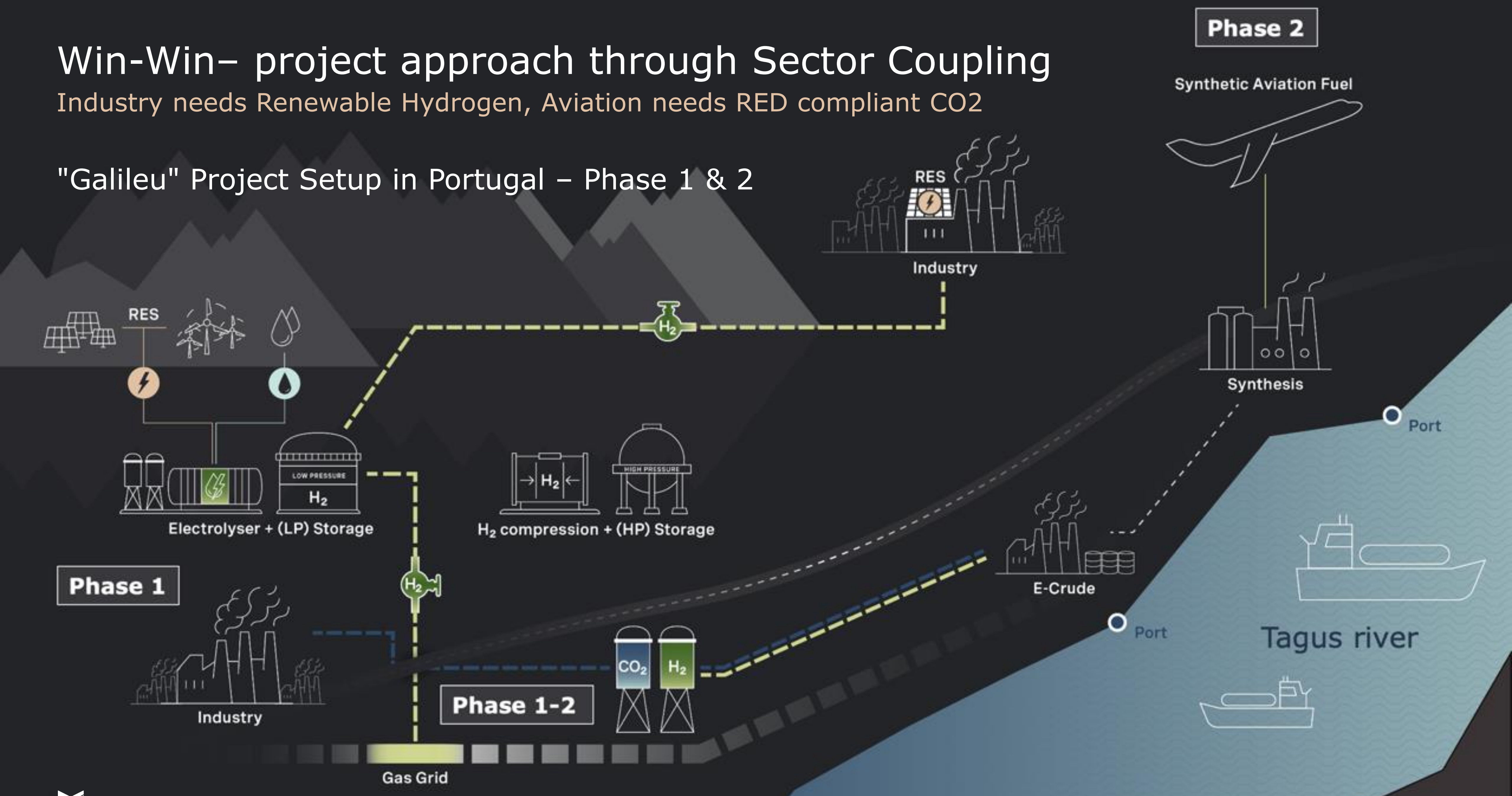


Source: OMIP, Pexapark

Win-Win– project approach through Sector Coupling

Industry needs Renewable Hydrogen, Aviation needs RED compliant CO2

"Galileu" Project Setup in Portugal – Phase 1 & 2



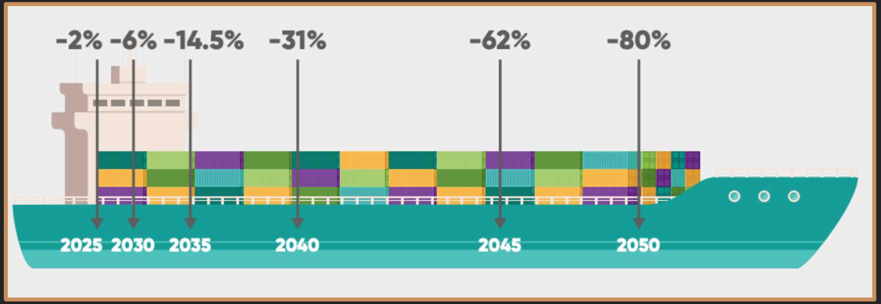
The “Shipping web”

Source: shipmag.org

EU Maritime strategy

FuelEU Maritime

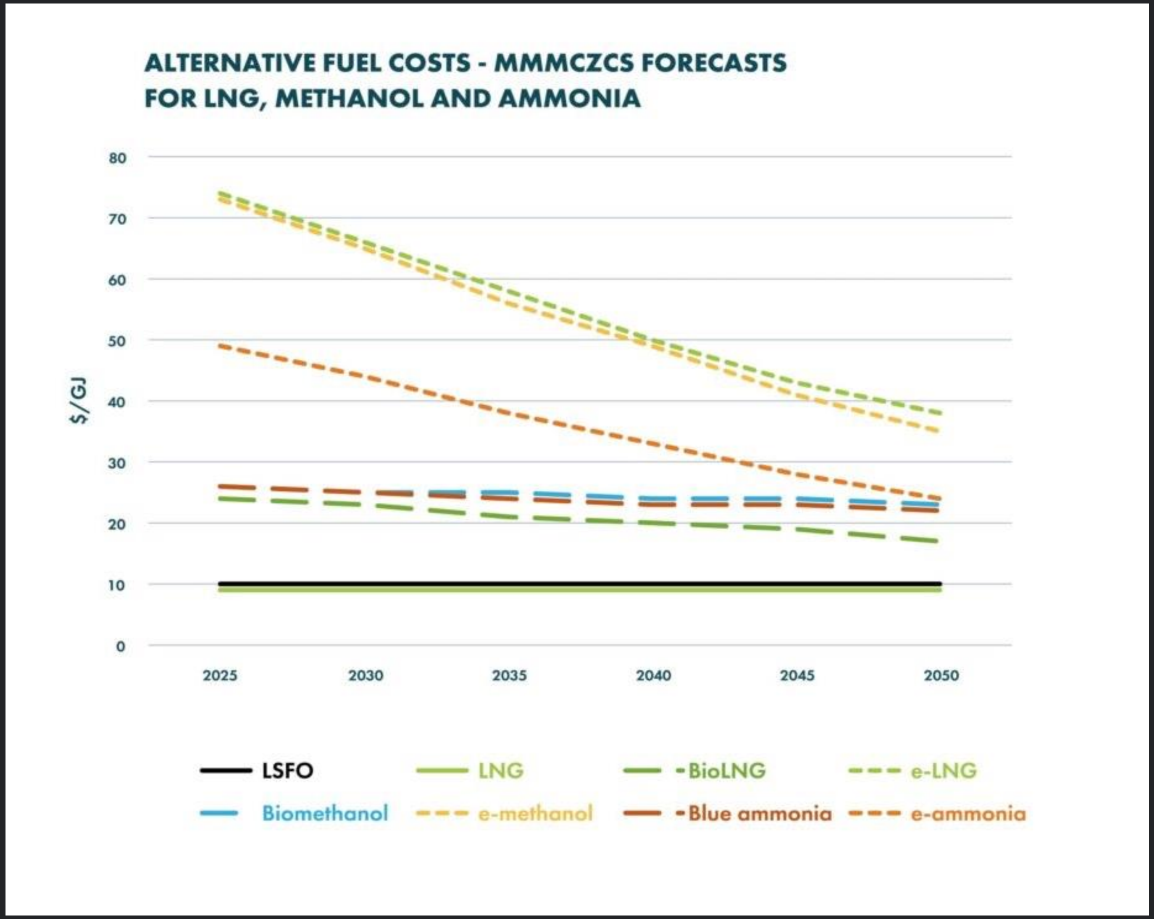
- Ensure the decreasing of **greenhouse gas emissions (GHG)** from ships over 5000 ton by :



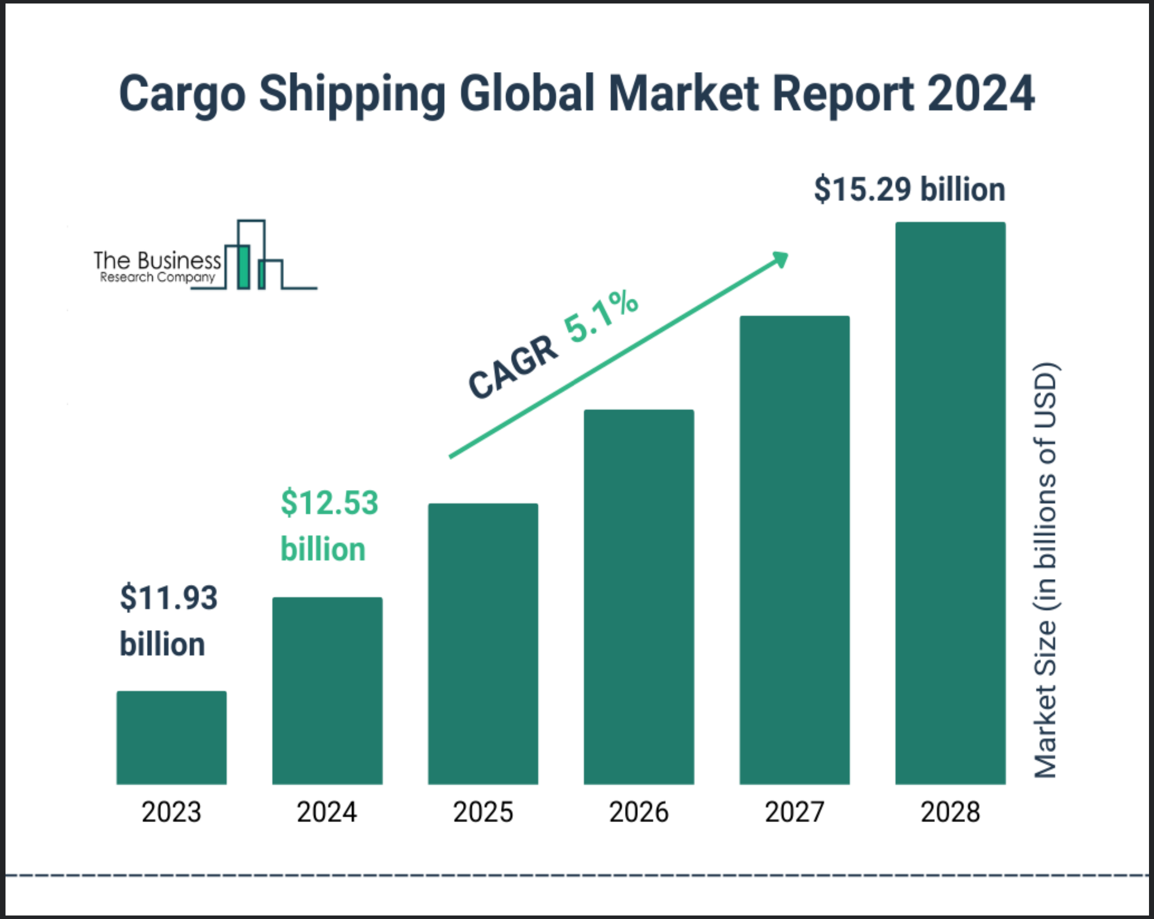
Source: Hydrogen Europe

- **Main pathways:**
  - **Green Methanol**
  - **Green Ammonia**

In a growing shipping market, the sustainable fuel costs need to drop fast to allow an even faster share to comply with the CO2 reduction targets

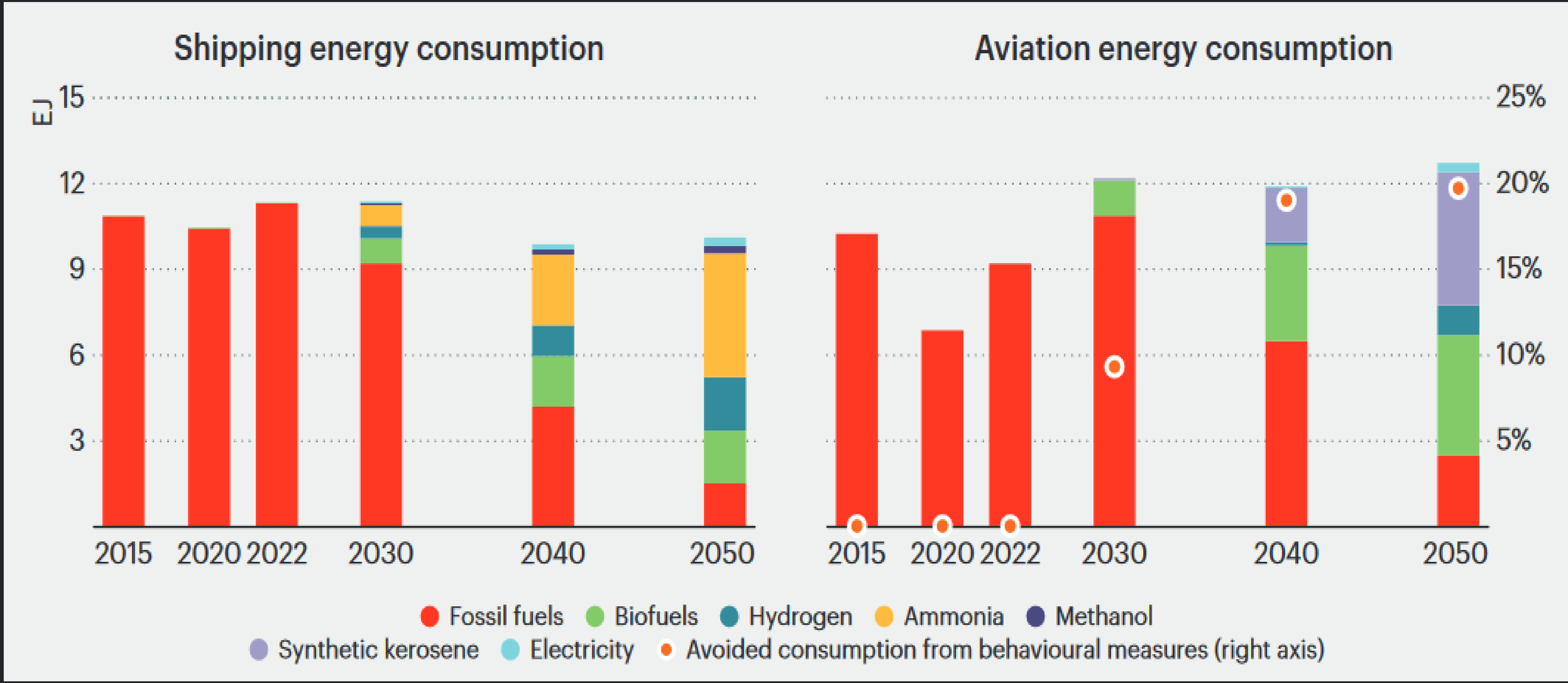


Source: Mærsk Mc-Kinney Møller Center for Zero Carbon Shipping (MMMCZCS)



Source: The Business Research Company

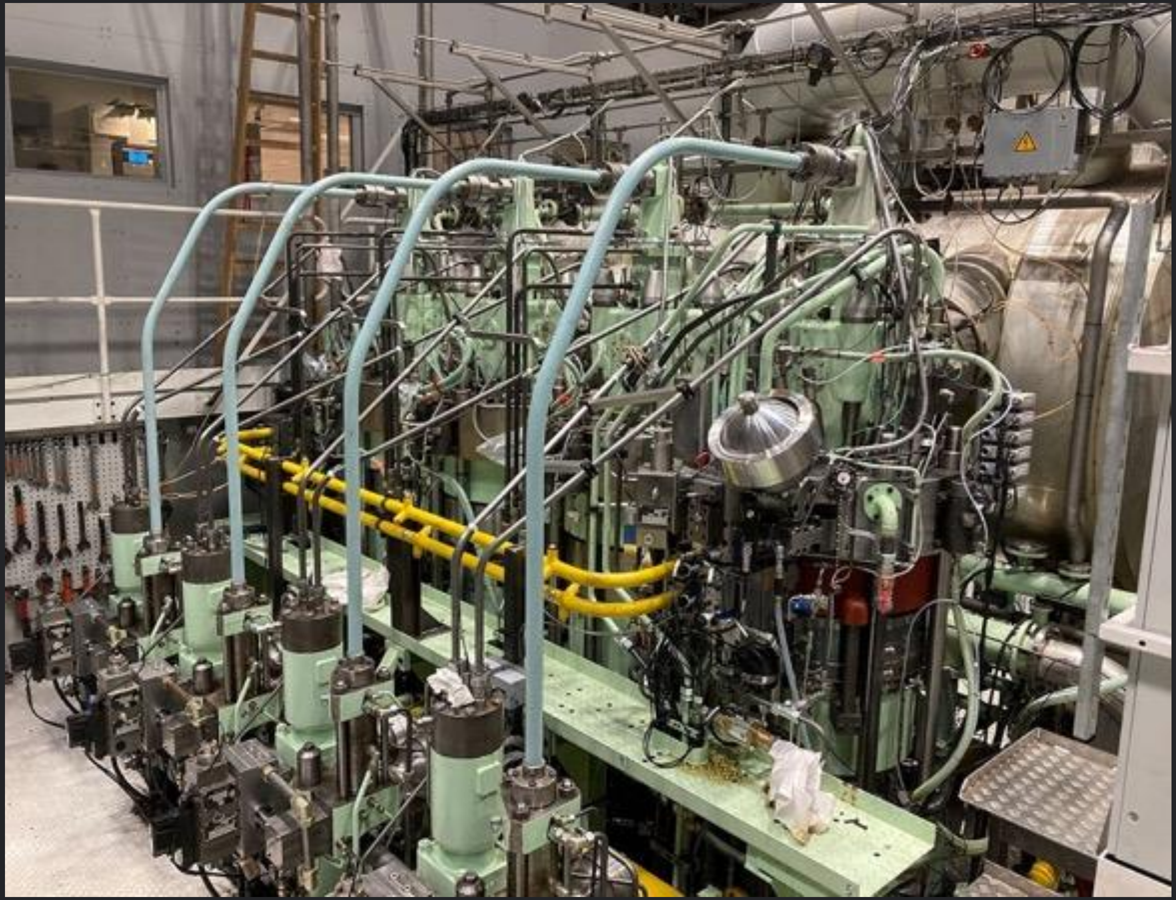
A potential pathway to decarbonization for shipping and aviation



Source: Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach (IEA, 2023)

Sailing is great but switching off the engine is not a solution

Getting close to the market - Running MW scale ammonia shipping engine



Source: MAN Energy Solutions

Source

Thank you!

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