

Marine sector decarbonisation – industry initiatives and resources

This information note is one of a series focused on all aspects of emissions reduction in the marine contracting sector, to support the IMO strategy and to help members optimise their activities.

Summary

The construction vessel sector finds itself confronted with a pressing need to address its environmental footprint and actively participate in global shipping initiatives aimed at mitigating climate change. Operating as an essential component in the establishment of offshore wind farms and energy infrastructure and with a reliance on conventional propulsion systems powered by fossil fuels, construction vessel operators face a formidable challenge.

The wider shipping industry has embarked on a journey to decarbonise by 2050 through a combination of technological innovations, regulatory frameworks, and collaborative endeavours. This information note describes three industry collaborations and their respective value to IMCA members, summarised below.

Name	Description	Accessibility to members	Value to members
Mærsk McKinney Møller Centre for Zero Carbon Shipping www.zerocarbonshipping.com	A not-for-profit, independent R and D centre looking to accelerate the transition towards a Net Zero future for the maritime industry. It facilitates the development and implementation of new technologies; builds confidence in concepts and strategic ways to drive required systemic and regulatory change.	All publications and research are freely available. IMCA has mission partner status which will allow engagement with selected work groups and members to be represented.	Multiple areas of research and publications including: <ul style="list-style-type: none"> • Ship design and technology • Fuel concepts and biofuels • Regulation and implications • ESG strategy Option to initiate collaborative projects within the centre of value to IMCA members.
Global Centre for Maritime Decarbonisation www.gcformd.org	Located in Singapore, GCMD was set up (in 2021) as a non-profit organisation to support decarbonisation of the maritime industry to meet or exceed the International Maritime Organization’s (IMO) goals for 2030 and 2050.	Publications and research are freely available on the website.	Research on and insight to: <ul style="list-style-type: none"> • Ammonia as a fuel • Green (fuel) assurance • Carbon capture • Energy efficiency • Green financing Possibility of collaboration and to input members’ views to wider research.
Lloyd’s Register Maritime Decarbonisation Hub Marine decarbonisation hub	LR’s Maritime Decarbonisation Hub accelerates the sustainable decarbonisation of the maritime industry by enabling the delivery and operation of safe, technically feasible and commercially viable zero-emission vessels by 2030.	Publications and research are freely available on the website.	Multiple areas of activity: <ul style="list-style-type: none"> • Decarbonisation pathways research • Thought leadership • Policy and regulatory influence • Pilots and prototypes • Tools to support business decisions

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All initiatives are relatively young, are evolving and work together to leverage their respective strengths and focus areas. Each is covered in more detail in the following sections and some specific areas of interest to members are highlighted, these will be updated as IMCA engages with the centres over the coming months.

Mærsk McKinney Møller Centre for Zero Carbon Shipping

The centre is a not-for-profit, independent research and development hub looking to accelerate the transition towards a Net Zero future for the maritime industry. With its partners, it aims to drive and facilitate the development and implementation of new technologies; build confidence in new concepts and mature viable strategic ways to drive the required systemic and regulatory change.

To this end, the centre stresses that to enable the Centre Mission “the Sustainable decarbonisation of the maritime industry by 2050” all output from the Centre is public and it is not necessary to be a Partner to access all research.

The centre developed a [core document](#) in 2022 that describes its approach to marine decarbonisation, since then it has published a range of [white papers and articles](#), along with a [fuel pathways maturity map](#).

The Centre partnership management has drawn specific attention to the following documents for IMCA members:

- ◆ [ESG Playbook for Shipping](#)
- ◆ [The Role of Energy Efficiency Regulations](#)
- ◆ [Using bio-diesel onboard vessels.](#)

Members are encouraged to review the full suite of documents available on the website. IMCA will engage further with the centre over the coming months to identify opportunities to leverage its partnership status and extract further value for members.

Global Centre for Marine Decarbonisation

The Global Centre for Maritime Decarbonisation (GCMD) was formed in Singapore, August 2021 with funding from the Maritime and Port Authority of Singapore (MPA), and six founding partners, namely BHP, BW, DNV Foundation, Eastern Pacific Shipping, Ocean Network Express and Seatrrium.

It is a non-profit organisation to support decarbonisation of the maritime industry to meet or exceed the International Maritime Organization’s (IMO) goals for 2030 and 2050. It specifically aims to shape standards, deploy solutions, finance projects, and foster collaboration across sectors.

The five-year outlook for the centre focuses on the following themes:

- 1) ammonia as a marine fuel
- 2) assurance framework for drop-in green fuels
- 3) unlocking the carbon value chain
- 4) energy efficiency technologies to improve the fuel efficiency of ships.

The GCMD has categories of strategic, impact and knowledge partners. Several oil and gas companies are partners, along with the Global Maritime Forum and other industry bodies. IMCA is not a partner of the GCMD currently but is investigating options to provide input and gain insight for the IMCA membership.

It has several projects complete or in progress of varying relevance to IMCA members:

- ◆ Ammonia bunkering pilot safety study completed in April 2023 with the final report available [here](#).

- ◆ Drop in biofuels pilot (ongoing) which aims to establish an assurance framework for ensuring the supply chain integrity of current and future green marine fuels.
- ◆ Project REMARCCABLE (Realising Maritime Carbon Capture to demonstrate the Ability to Lower Emissions) is a project aimed to demonstrate end-to-end shipboard carbon capture at scale.
- ◆ Liquefied CO₂ (LCO₂) offloading concept study to address safety and operational considerations surrounding offloading of LCO₂ that has been captured on board (tankers, bulkers and containers liners).

Lloyd's Register Marine Decarbonisation Hub

LR's Maritime Decarbonisation Hub aims to accelerate the sustainable decarbonisation of the maritime industry by enabling the delivery and operation of safe, technically feasible and commercially viable zero-emission vessels by 2030. It works in collaboration with other progressive organisations to provide thought leadership to all industry stakeholders, including regulators, policymakers, investors, owners, operators, charterers and customers.

It also aims to showcase the costs, benefits, opportunities, and risks associated with various potential pathways towards decarbonisation. The hub is overseen by a Stakeholder Panel of representatives from the shipping industry, who shape the strategy of the hub, with a Governance Board of representatives from Lloyd's Register and Lloyd's Register Foundation. The hub's governance system produces reports about its work and outcomes, to maintain transparency and independence.

The hub has a range of publications across areas that will be of interest to members, these include:

- 1) [The Zero Carbon Fuel Monitor](#) – an insight-based assessment of fuels readiness that provides a basis for effective decision-making; fuels covered include ammonia, biodiesel, electrification (batteries), hydrogen and methanol
- 2) [The Future of Maritime Fuels](#) – presents a review of a wide range of fuel mix projections and has identified two alternative paths that will steer shipping's course: hydrogen-based fuels and biofuels
- 3) [Onboard carbon capture and storage](#)
- 4) [Recommendations for Design and Operation of Ammonia-Fuelled Vessels](#) (based on Multi-disciplinary Risk Analysis).

IMCA has established links with all three initiatives and if further information is required, please contact lee.billingham@imca-int.com.