

Maritime Decarbonization Monthly

August 2022

Thought of the Month:

“Waste-based biofuels: Key factor for the energy transition”

The Big Picture

Waste-based **biofuels could be a key driver of the energy transition** by transforming the limited supply of low-carbon transport fuels and creating local circular economies, according to a new report from research and advisory group **Wood Mackenzie**. The report shows how within the world's transition to new, sustainable energy sources, the somewhat neglected biofuels sector could play a critical role. Currently, **biofuels account for only 3% of liquid fuel demand** of ~100 million barrels per day (b/d). However, the development of new technologies that drive biofuel production from municipal waste, agricultural residues, and recycled plastic waste could make a critical contribution to the energy transition. According to Wood Mackenzie, this **could provide an additional 20 million b/d** of liquid biofuels by 2050, meeting a quarter of total future liquid fuel demand (95 million b/d in 2050), or about three-quarters of middle distillate demand in 2050.

What's New

The **German government** has decided to provide millions of euros for the development of zero-emission ships and to **promote the digitalization in shipbuilding**. Claudia Mueller, the German government's coordinator for the maritime economy and tourism, handed over the funding decision in the amount of 1.3 million euros to the consortium for the digitalization of shipbuilding led by Ostseestahl GmbH in the past month. As explained, the aim is to **make shipbuilding smarter, more cost-efficient, and more sustainable**. This is to be achieved by creating digital product models in which the entire life cycle of a ship can be mapped.

Our View

Future propulsion technologies have been pushed into the spotlight with some recent developments by industry players over the summer. Lately, UK-based wind propulsion expert **GT Green Technologies** has teamed up with **PEI TECH LLC**, a marine industry company from Texas, to work on **advanced wind propulsion technology**. GT Green Technologies has developed a wingsail that incorporates novel air-flow technology, which provides an ‘unparalleled amount of thrust per unit size’ while maintaining a low stowage profile when not in use. **As we've stated in the past, practical, proven, and shovel-ready solutions are critical for the transition**, and we see wind-tech as a promising example that falls into those categories.

Industry Trends

Fuels

- Japanese shipping company **Mitsui O.S.K. Lines** (MOL) and the country's **National Institute for Environmental Studies** (NIES) have commissioned a joint study on marine fuels to contribute to the safe operation of machinery on ships over a period of three years. The study also aims to develop a database of such results, which would help predict the environmental impact of different fuel qualities and properties and reduce the risk of oil leaks.
- **Yara Clean Ammonia** (YCA) and **Pilbara Ports Authority** (PPA) have signed a collaboration agreement to jointly facilitate the uptake of clean ammonia as a marine fuel in the Pilbara region in Western Australia. The collaboration represents the commitment of both parties to ammonia as a zero-carbon fuel for decarbonizing the shipping industry.
- Dutch shipping **biofuels** provider **GoodFuels**, in partnership with Norwegian dry bulk provider **Spar Shipping** and Hong Kong-based ship management company **Fleet Management Limited**, has completed a ten-day trial of 100% sustainable biofuel on board the bulk carrier Spar Lynx. The trial was the first biobunkering operation conducted by Spar Shipping and its ship management partner Fleet Management Limited. Spar Lynx reportedly **reduced sulphur oxide (SOx) emissions by 85%** during the trial compared to conventional fossil-based marine fuels.

Technology

- The **U.S. Department of Energy** (DOE) has awarded a contract to the class society **ABS** to research barriers to the introduction of

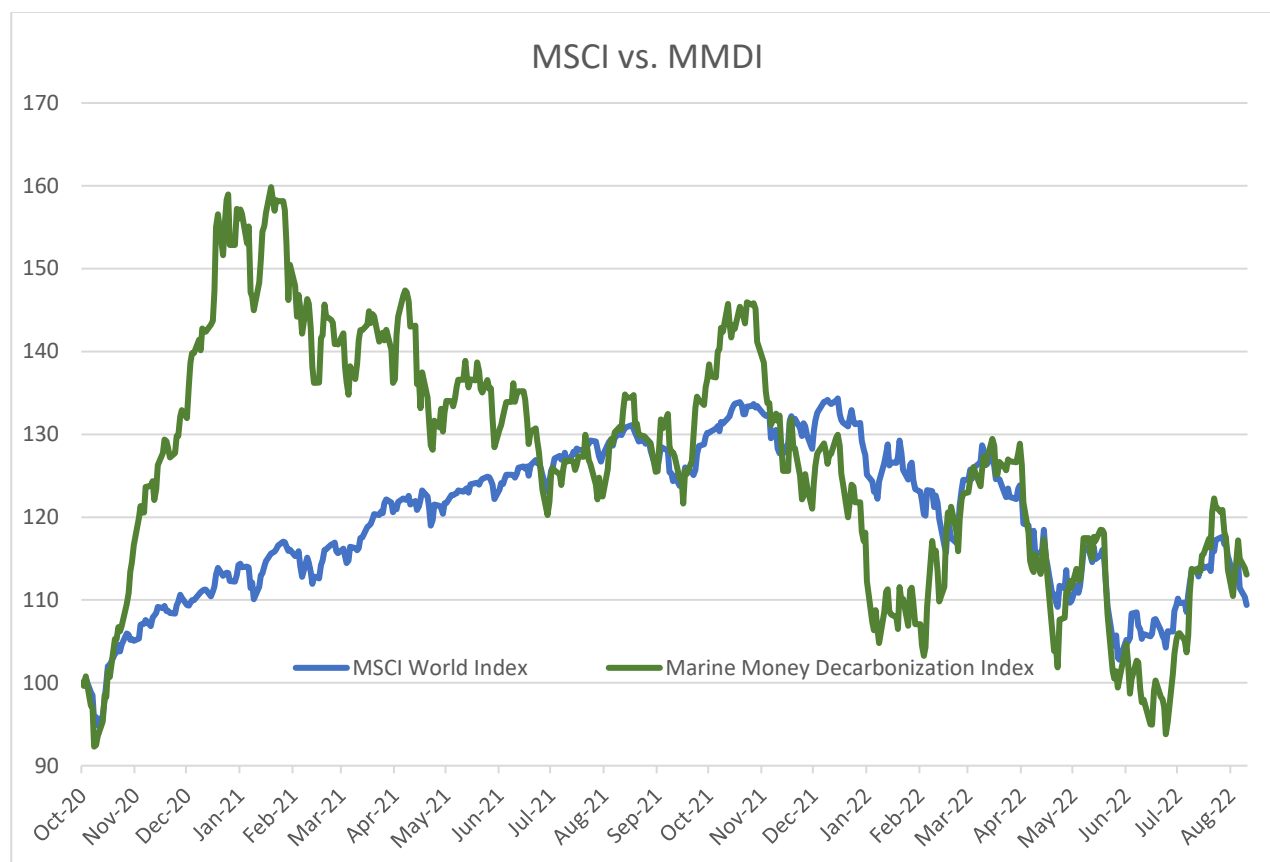
advanced nuclear propulsion on commercial ships. The \$800,000 research project will address challenges to the adoption of new reactor technologies in commercial maritime applications at a time when a variety of companies around the world are seeking to commercialize nuclear propulsion. ABS will develop models of various advanced reactor technologies for maritime applications and develop industry advice on the commercial use of advanced nuclear power.

New Designs

- Hong Kong-based owner **Wah Kwong Maritime** Transport has teamed up with French class society **Bureau Veritas** and **Shanghai Qiyao Environmental Technology Co.**, a subsidiary of Shanghai Marine Diesel Engine Research Institute, to study the **feasibility of installing carbon capture and storage (CCS)** units on existing ships to meet 2030 carbon intensity indicator (CII) targets. A cooperation agreement will see the three entities focus on two types of bulk carriers in operation in the Wah Kwong fleet.

Green Ships

- China's **Jiangnan Shipbuilding**, a subsidiary of CSSC, hosted a steel-cutting ceremony for the first 7,600 CEU LNG dual-fuel pure car and truck carrier (PCTC) being built for SAIC Anji Logistics, a subsidiary of China's automobile manufacturer SAIC Motor. The ship will feature WinGD's ICER technology to bolster fuel efficiency and cut the vessels' **methane slip.**



Relevant Prices

Fuel Prices

	Price	YOY
Crude Oil, Brent	96.00 \$/bbl	31.5%
Natural Gas, Henry Hub	9.00 \$/MMbtu	105.6%
LNG, Korea/Japan	58.75 \$/MMbtu	231.5%
Coal, Rotterdam	393 \$/mt	176.3%
VLSFO, Rotterdam	731 \$/mt	43.6%
Methanol, China	36.68 \$/mt	-5.5%
Palm Oil, Malaysia	35.77 \$/mt	-11.0%

Stock Indices

Marine Money Decarbonization Index	345	-13.9%
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Carbon Emission Allowances

EU Emission Allowances	80.33 \$/kt	32.3%
UK Emission Allowances	110.35 \$/kt	86.6%

Note: All prices as of last closing prior to the report; Sources: Bloomberg and Breakwave Advisors

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