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BREAKWAVE ADVISORS

Maritime Decarbonization Monthly

June 2023

Thought of the Month:

"Unleashing the Power of Biofuels: Accelerating the Journey to Decarbonization in Shipping"

The Big Picture

Representatives from the International Maritime Organization (IMO), the United Nations agency responsible for shipping, recently **gathered in London for preliminary discussions leading up to a crucial session of the IMO's marine environment committee** (MEPC) on 3-7 July 2023. In 2018 the IMO made a commitment to reduce greenhouse gas (GHG) emissions from ships by 50% by 2050, based on 2008 levels. However, the **existing commitment falls behind the more ambitious plans of the European Union and the United States**, which aim for zero net emissions in the shipping industry over the same period. During the upcoming MEPC session, **participants will finalize** the draft **2023 strategy** for reducing shipping's GHG emissions. In addition, the Committee will consider various proposals for a carbon levy, among other measures, in their efforts to address the environmental impact of the shipping industry.

What's New

The European Union Delegation to the UN expressed concern over the current trajectory of GHG emissions in the shipping sector, which continues to rise and is on the verge of accounting for 3% of all human-generated GHG emissions. **The Delegation believes that the IMO Initial Strategy on GHG Emissions Reduction from Ships, implemented in 2018, falls short** of the broader climate objectives outlined in the Paris Agreement. To address this, the EU is calling for a more ambitious approach. By aligning the shipping sector's GHG reduction target with the goals of the Paris Agreement, cuts would need to go beyond the IMO's current target of a 50% absolute GHG reduction by 2050. The EU seeks to achieve net-zero emissions through an **acceleration of sustainable practices in the industry.**

Our View

Biofuels have emerged as a promising solution for accelerating decarbonization in the shipping industry. Their potential to reduce GHG emissions has garnered significant attention and support from environmental advocates and policymakers alike. However, while biofuels offer an attractive pathway toward sustainability, there are practical implications that need to be addressed for their widespread adoption in today's commercial landscape. **One of the main challenges is the availability and scalability of biofuels.** Producing biofuels on a large scale to meet the demands of the shipping industry poses logistical and infrastructural hurdles. Moreover, the compatibility and adaptability of biofuels with existing ship engines and infrastructure is another practical consideration. However, partnerships between biofuel producers, shipping companies, and technology providers can facilitate knowledge sharing and innovation, leading to advancements in biofuel production and utilization technologies. **This collaborative approach can help overcome the practical challenges and unlock the full potential of biofuels** in accelerating decarbonization.

Industry Trends

Fuels

Classification Society **American Bureau of Shipping (ABS)** has developed and released an expansive set of requirements to guide the industry in the use of hydrogen-fueled vessels. ABS is also leading a study for the **European Maritime Safety Agency** (EMSA) on key aspects of the decarbonization of shipping. According to ABS, this project is focused not only on hydrogen but also on sustainability technologies such as wind-assisted propulsion, air lubrication, and other alternative fuels such as ammonia and biofuels.

Biofuels

In its latest white paper "Biofuels in shipping," classification society **DNV** has reported that the flexibility of biofuels can enable the shipping industry to accelerate its journey towards decarbonization while maintaining operational efficiency. However, the current limitations in production capacity may impact short-term supply and create stiff competition with other sectors.

DNV noted that the current global production capacity of sustainable biofuels is around 11 million tons of oil equivalent (Mtoe) per year, predicting that a sustainable and economically viable supply of biofuels, ranging from 500 to 1300 Mtoe annually, can be achieved by 2050.

New Vessel Design

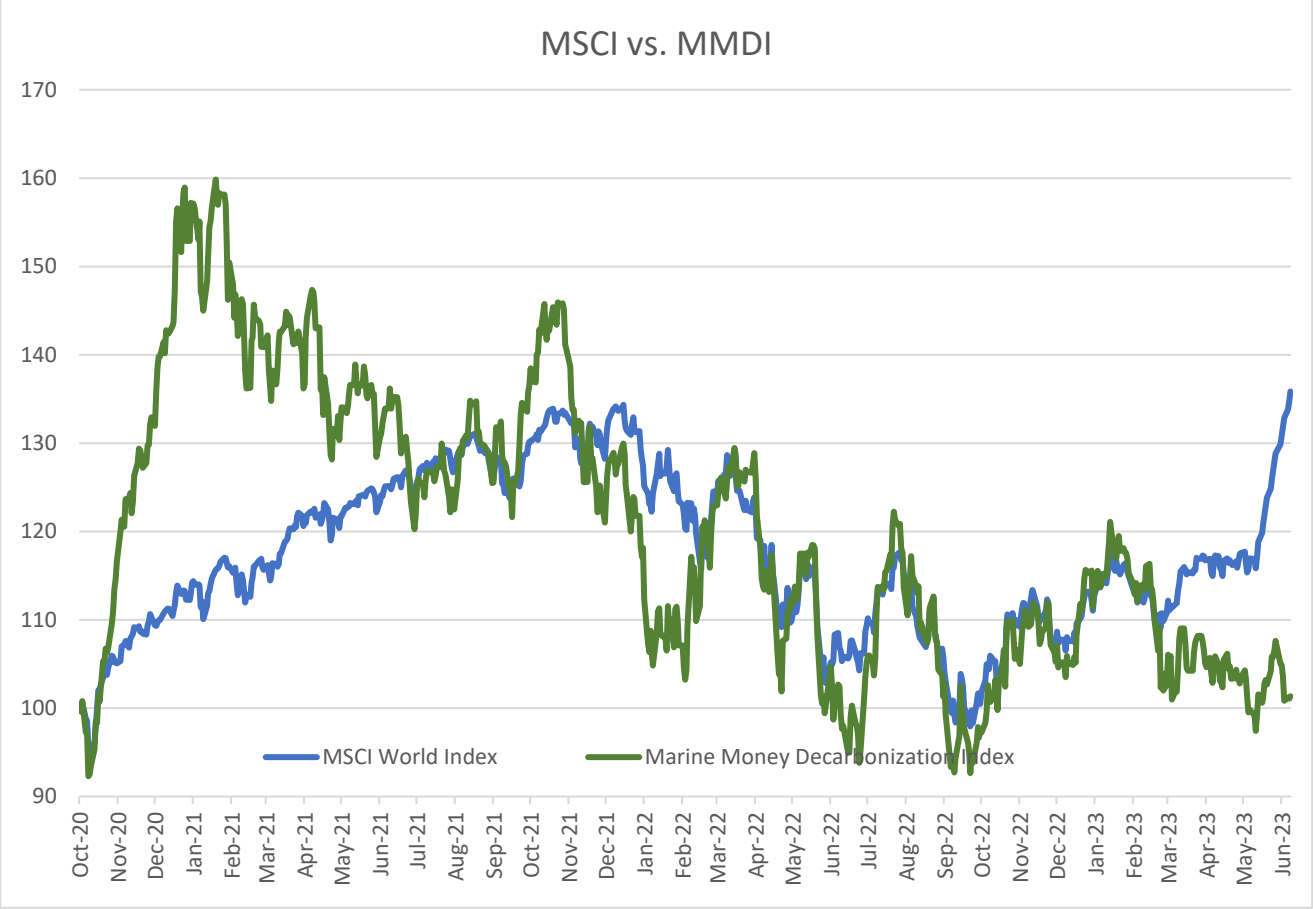
Classification society **Bureau Veritas** has awarded approval in principle to Hyundai Heavy Industries Co. – **Hyundai Global Service, TotalEnergies Gas & Power, and Mitsui O.S.K. Lines**, for **wind-assisted ship propulsion** on a very large crude carrier (VLCC) and a liquefied natural gas (LNG) carrier. According to the partners, the principal conclusion of the project and the subsequent issuance of the AiP demonstrate that all these systems are compatible with existing classification rules and regulations for VLCCs and LNG carriers. This paves the way for more detailed work to address specific risks that would enable detailed design and arrangement work to proceed.

Technology

Mitsubishi Shipbuilding Co, a part of Mitsubishi Heavy Industries Group, has agreed to undertake technical studies on an ammonia fuel supply system for large, low-speed two-stroke marine engines under development by **Winterthur Gas & Diesel AG (WinGD)**, a Swiss designer of large marine engines. The signing ceremony of the memorandum of understanding was held at WinGD Headquarters in Switzerland on June 2.

Green Ships

Singapore-based shipping company **Ocean Network Express (ONE)** has welcomed its first eco-friendly 24,000-TEU containership, ONE Innovation. The ship is equipped with a bow windshield, an energy-saving device, and an exhaust gas cleaning system to meet the emission regulations of the IMO.



Relevant Prices

Fuel Prices	Price	YOY
Crude Oil, Brent	74.17 $/bbl	-36.2%
Natural Gas, Henry Hub	2.72 $/MMbtu	-58.2%
LNG, Korea/Japan	12.12 $/MMbtu	-67.4%
Coal, Rotterdam	115 $/mt	-68.9%
VLSFO, Rotterdam	524 $/mt	-41.2%
Methanol, China	29.88 $/mt	-16.1%
Palm Oil, Malaysia	32.11 $/mt	-27.3%

Stock Indices		
Marine Money Decarbonization Index	315	3.4%

Carbon Emission Allowances		
EU Emission Allowances	94.47 $/kt	-1.3%
UK Emission Allowances	68.19 $/kt	-35.3%

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

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