



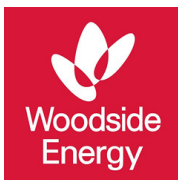
Argus Sustainable Marine Fuels Conference

September 11-13, 2024 | Houston, Texas, US

Pre-conference content: Argus marine fuels eBook

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■ Introduction

The Argus marine fuels eBook has been put together ahead of the Argus Sustainable Marine Fuels Conference to provide you with expert insights and key updates on some of the topics on marine fuel supply chains that will be discussed on September 11–13 in Houston, Texas, US.

The markets have seen significant changes, and this eBook offers you exclusive content on recent developments in the industry. It features Argus commentary and industry interviews from experts across the supply chain who will discuss the key challenges in developing green marine fuels, the commitment needed from shipowners to facilitate the transition, and overcoming the logistical and availability challenges to scaling up globally.

Hear more on the topics featured in this eBook this September at the key networking event for the industry in the US.





Stefka Wechsler

Marine Fuels Editor

Argus

Stefka Wechsler joined Argus in 2012 as an editor and marine fuel analyst contributing to the daily price and news report Argus Marine Fuels. Stefka has an extensive network of international marine fuel suppliers, traders, brokers and ship owners and ship charterers, and created and maintains a detailed marine exhaust scrubber database and low-carbon fuels vessels database.

Hear more from Stefka at the Argus Sustainable Marine Fuels Conference on September 11–13 in Houston, Texas, US, where she will provide an outlook on global marine fuels, predictions on global bunker trends in 2025, and a comparison between fossil fuels and sustainable marine fuels.

Is low-carbon methanol a price-competitive marine fuel solution?

Not at present. Shipowners are ordering new vessels equipped with methanol-burning capabilities, largely in response to tightening carbon emissions regulations in Europe. But despite the greenhouse gas (GHG) emissions savings that low-carbon methanol provides, it cannot currently compete on price with grey methanol or conventional marine fuels.

The fuel-switching capabilities of the dual-fuel vessels provide shipowners with a natural price hedge. When methanol prices are lower than conventional bunkers, the shipowner can burn methanol and vice versa.

Methanol, with its zero-sulphur emissions, is advantageous in emissions control areas (ECAs), such as the US and Canadian territorial waters. In ECAs, the marine fuel sulphur content is capped at 0.1pc, and shipowners can burn methanol instead of 0.1pc sulphur maximum marine gasoil (MGO). In the US Gulf coast, the grey methanol discount to MGO was an average of \$23/metric tonne (t) MGO-equivalent (MGOe) in the first half of May. The grey methanol discount averaged \$162/t MGOe in all of last year.

Starting this year, shipowners travelling within, in and out of European territorial waters are required to pay for 40pc of their CO₂ emissions through the EU emissions trading system. Next year, shipowners will be required to pay for 70pc of their CO₂ emissions. Separately, shipowners will have to reduce their ves-

sels' lifecycle GHG intensities, starting in 2025 with a 2pc reduction and gradually increasing to 80pc by 2050, from a 2020 baseline. The penalty for exceeding the GHG emissions intensity is set by the EU at €2,400/t (\$2,596/t) of very low-sulphur fuel oil equivalent. Even though these regulations apply to EU territorial waters, they affect shipowners travelling between the US and Europe.

“Some shipowners have been eyeing long-term agreements with suppliers to lock in product availabilities”

Despite the lack of sulphur emissions, grey methanol generates CO₂. With CO₂ marine fuel shipping regulations tightening, shipowners have turned their sights to low-carbon methanol.

But US Gulf coast low-carbon methanol was priced at \$2,317/t MGOe in the first half of May, nearly triple the outright price of MGO at \$785/t. Factoring in the cost of 70pc of CO₂ emissions and the GHG intensity penalty, the US Gulf coast MGO would rise to about \$857/t. At this MGO level, US Gulf coast low-carbon methanol would be 2.7 times the price of MGO. By comparison, grey methanol with the added CO₂ emissions cost would be about \$962/t, or 1.1 times the price of MGO.

Is there a way for shipowners interested in low-carbon methanol to mitigate its high cost?

To mitigate the high low-carbon methanol

Argus commentary |

costs, some shipowners have been eyeing long-term agreements with suppliers to lock in product availabilities and cheaper prices available on the spot market.

For example, Danish container shipowner Maersk has led the way, entering low-carbon methanol production agreements in the US with Proman, Orsted, Carbon Sink and SunGas Renewables. These are slated to come on line in 2025–27.

Container ship companies, which have been at the forefront of adopting methanol for bunkering, also pass the extra cost of low-carbon fuels to their customers whenever they can, in the form of higher freight rates. Their customers represent some of the largest retailers in the world, including Amazon, Ikea, Michelin, Patagonia and Unilever, among others.

What share of bunker demand can be displaced by green methanol?

Global upcoming low-carbon methanol projects are expected to produce 16mn t by 2027, according to industry trade association the Methanol Institute. This is up from two years ago when the institute was tracking projects with total capacity of 8mn t by 2027. One metric tonne of methanol contains less than half of the energy content of 1t of conventional marine fuel (fuel oil and MGO). Thus, 16mn t of low-carbon methanol would displace about 7.5mn t of conventional bunkers. Global conventional marine fuel demand is more than 201mn t/yr. At 2027 projected production levels, low-carbon methanol would displace less than 4pc of global conventional marine fuel demand.



Colin Fleming

Senior Manager, Green
& Sustainability Planning

Ocean Network Express
(ONE)

Colin has worked with NYK Line & Ocean Network Express (ONE) for 15 years and is currently working with Colleagues & business partners to grow ONE North America's decarbonization program. Colin's current role includes supporting ONE NA to set up its supply chain for green marine fuels in North America.

Hear more from Colin at the Argus Sustainable Marine Fuels Conference on September 11-13 in Houston, Texas, US, in a panel on sustainable fuels where he will be joined by Mitsui O.S.K Lines, NYK Energy Transport, Ultrnav, AET, and Orsted.

What is a key challenge of developing methanol as a future marine fuel?

A key challenge in developing methanol as a future marine fuel is connecting the supply chain to provide it to vessels at ports. Even in late 2023, there was uncertainty about which green marine fuel ocean carriers would focus on first. However, several discussions at Argus' and other events and various market developments have led to a general understanding that methanol will be one of the green marine fuels adopted by 2030 because of its safety considerations and technological readiness. The challenge is twofold – producing the methanol at scale at an affordable price and building up the supply chain to ports. In the US, much methanol production is planned for inland locations, away from ports. Conversely, ocean carriers have pre-existing procurement processes and operations for receiving conventional fuels delivered to their vessels at ports. The current focus is integrating the supply chain from inland production plants to coastal ports while building an affordable supply.

How is the industry going to ensure that the right fuels are at the right ports at the right time?

Proactive understanding, communication and collaboration are essential.

Interview with Ocean Network Express (ONE) |

“A key challenge in developing methanol as a future marine fuel is connecting the supply chain to provide it to vessels at ports.”

“Sustainability requires a great deal of learning since we are all working towards a lower-emissions economy for the first time.”

Ocean carriers and energy producers are currently discussing the provision of green fuels, such as methanol, to the market. These discussions will initiate the supply chain set-up, considering the timeframe of ocean carriers' demand and the feasibility of the methanol supply chain. One supportive measure could be for ports to review their role in the green fuel supply chain. Compared with conventional diesel fuels, methanol has a lower energy density, so more methanol is needed to travel the same distance, resulting in vessels bunkering for methanol more frequently than with conventional fuels. Ports that aim to lead the new

wave of bunkering operations should start proactively communicating with all stakeholders and confirming the safety requirements for bunkering methanol. Supporting collaboration on infrastructure and regulations is necessary to start closing the gap between green fuels and conventional bunkers.

If ONE could communicate one message to the marine fuel supply chain to accelerate the adoption of low-carbon fuels, what would it be?

Communication is the first step towards full collaboration — communicate actively with all potential customers and stakeholders. Sustainability requires a great deal of learning since we are all working towards a lower-emissions economy for the first time. Ensure your potential customers know about your green fuel and transport, storage or bunkering services, and that relevant stakeholders are informed of your offerings. If you are unable to reach all ocean carriers, notify your local port's sustainability team about it. While researching potential green products or services, people have often suggested new products and services that I should explore. As a result of these leads, I have reached out to new potential suppliers that I would not have found otherwise.



Lucian Go

*Environmental
Program Manager*
Port of Seattle

Hear more from Lucian at the Argus Sustainable Marine Fuels Conference on September 11-13 in Houston, Texas, US, in a panel on Green corridors vs clean fuel hubs, where he will be joined by Overseas Shipholding Group, Rocky Mountain Institute (RMI), the United States Department of Energy, and the United States Maritime Administration (MARAD).

What level of commitment is needed from shipowners to facilitate the transition to alternative fuels infrastructure?

Given the roughly 30-year lifespan of newbuild oceangoing vessels, as well as uncertainty regarding which alternative fuel will “win out”, shipowners need to make significant commitments early on in choosing specific alternative fuels to demonstrate, as well as enter partnerships across the supply chain to develop fuel supply infrastructure. Partnering with cargo owners, fuel providers, policymakers and others allows each entity to co-ordinate timelines and investments to ensure the production of new maritime fuels can be met with demand from ships equipped to use these fuels and infrastructure to deliver these fuels to maritime customers.

The challenge is that many vessel operators are not able to make these kinds of commitments alone (save a few key players such as Maersk). What we are seeing is that there are investments being made in a multi-fuel future, with many dual-fuel engines on the orderbooks. When and how the switch to zero emissions fuels takes place will depend on a lot of factors, but prominent among them is the availability of the fuels.

Through the Pacific northwest to Alaska Green Corridor, the Port of Seattle is working in a collaborative partnership with major cruise lines, home ports and several ports of call in Alaska to facilitate low and zero-GHG-emissions cruising between Washington, British Columbia and Alaska. This effort is initially focused on the use of green methanol as a the

“future fuel” to help decarbonise the corridor. By creating a coalition of “first movers”, the Green Corridor seeks to address the technical, regulatory and financial barriers to facilitate the creation of a unified direction for policy, infrastructure and fuel availability of zero-emissions fuels in the Alaskan cruise market that will enable the accelerated adoption of green methanol.

How are tugs, barges and ferries thinking about the risk of investing capital in emergent technologies and fuels? What innovative solutions are they leaning towards?

Through outreach that we have done to our local harbor vessel industries, including tugs, barges, workboat operators and various industry associations, we know that harbor vessel operators are deploying lower- or zero-emissions pilot projects and new technologies first in jurisdictions that have regulatory frameworks that mandate the transition (such as California). These transitions are also supported by state policies that facilitate the availability of alternative fuel supply (low-carbon fuel standards).

Some of the risks they are considering are the high upfront costs of purchasing or retrofitting new vessels, impacts on competitiveness, supply chain issues with regards to procuring new vessels, the lack of available fuelling or charging infrastructure at ports and uncertainty regarding technology choice and associated regulatory approvals. These risks present barriers to deploying these vessels, particularly in jurisdictions that do not currently have regulations in place that mandate a transition, such as Washington. Some

of the ways that ports, regulators and other public entities can help de-risk this transition are providing greater certainty as to future requirements, grant funding for new vessels, building infrastructure to serve zero-emissions vessels, creating mechanisms by which zero-emissions vessels can remain competitive and stimulating supply chains for vessels and alternative fuels.

The specific technology solutions that operators are adopting are highly dependent on operational profiles that vary from port to port. In the Puget Sound, harbor vessels operate across a wide geographic area characterized by long transits, potentially limiting fully electric harbor vessel technology to specific-use cases, such as workboats, pilot boats and ferries. Washington State Ferries has been a first mover in this area and has started the process of hybridizing its vessel fleet. The Port of Seattle has recently adopted its first all-electric workboats and is exploring ways to provide the infrastructure and support necessary to allow local commercial harbor vessels to transition. Hybrid or alternative-fueled vessels are probably the most promising near-term solutions for the majority of the tug, barge and commercial fishing vessels, given the greater flexibility they can offer in terms of range. Renewable diesel, which has recently become more widely available in Washington due to the implementation of the Clean Fuel Standard in 2023, also presents a “low-hanging fruit” opportunity to decarbonise maritime industries, while electrification and zero-emissions fuel technologies continue to mature in the harbor vessel sector.



Tomoaki Ichida

*Managing Executive
Officer (Americas)*

Mitsui O.S.K. Lines

Tomoaki Ichida has been a Managing Executive Officer of Mitsui O.S.K. Lines, Ltd. (MOL) since April 2023, responsible for The Americas Area. He also holds the post of president of MOL (Americas) Holdings, Inc. In addition, he established a corporate venture capital called “MOL Switch” in May, 2023, and has been leading the company as CEO in order to invest to the climate tech area by collaboration with startups. In 2020, he took the role of General Manager of the Energy Business Strategy Division, and in 2022 he was appointed as Executive Officer of MOL.

Hear more from Tomoaki at the Argus Sustainable Marine Fuels Conference on September 11 -13 in Houston, Texas, US, in a panel with shipowners and operators, where he will be joined by Ocean Network Express (ONE), NYK Energy Transport, UltrNAV, AET, and Osted.

Interview with Mitsui O.S.K. Lines |

If you could communicate one message to the maritime industry to accelerate the adoption of low-carbon fuels, what would it be?

First, the maritime industry needs an early introduction on the comprehensive regulations and rules that set out the penalties and levies for using fossil fuels and/or the incentives to adopt low-carbon fuels. Such regulations and rules should be concise for the industry to understand and comply with. They should not be complicated.

The EU's carbon-intensity limit for shipping by FuelEU Maritime would definitely be a powerful force for decarbonization, with significant rewards for greener-fuel pioneers. Similar regulations should be enacted in other regions, as well to turbocharge the adoption of cleaner fuels. Also, a basket of measures consisting of a technical element and an economical element are under discussion in the International Maritime Organization (IMO) that will take force in 2027. These measures will also have a huge impact and drive changes in our industry.

Second, we strongly believe partnerships across the maritime industry will be important. Not only shipping companies, but fuel producers, suppliers, regulators and shippers need to work together towards the same goal of decarbonization. Partnerships will help aggregate demands and/or share risks so they can overcome the chicken-egg situation.

We joined several industrial frameworks and initiatives, such as GCDM and the

FMC shipping sector, so we can discuss the regulations and rules of new fuels and to exchange views and ideas with participants to find innovative ways to scale up availability.

These activities are clear signs that MOL believes collaboration with various partners is essential to achieving decarbonization.

How can alternative fuels overcome the logistical and availability challenges to scaling up globally?

MOL is exploring collaboration with several potential clean-fuel producers and logistics companies. On the producer side, they're not familiar with the industrial norm in the conventional bunkering business, as they have no experience in producing marine bunker fuel, or they're new players such as start-ups with green techs producing clean molecules. On the bunkering company side, they know the conventional bunkering business well, but don't know the demand or requirements of low-carbon fuels from shipping companies. We're in between and bridging them to establish an entire supply chain or eco-system.

What changes are being made with regard to fuel procurement? How can shipowners achieve more multi-fuel offtake agreements to provide certainty for fuel producers investing in new energy projects?

There are several challenges such as extremely high prices of low-carbon fuels compared with conventional fuels and the uncertainty surrounding the regula-

tions and rules of handling cleaner fuels for bunkering in each port. Among them, one of the greatest challenges and changes we're facing is long-term commitment to offtake. Producers of low-carbon fuels require shipping companies to commit ourselves to long-term offtake of their molecules, such as 15 or 20 years, which is totally different from conventional bunker fuel procurement. It's more like a procurement of LNG or crude oil in the power sector that we, the shipping companies, are not familiar with at all.

The reason behind their requirement is clear. Huge investments are required for new energy projects to produce, transport and store such low-carbon fuels, so tangible and long-term commitment is necessary for them to get funding and reach their FIDs.

We can acknowledge their situation and rationale. However, I feel it isn't fair to require shipping companies to undertake such a responsibility completely alone. Everyone should co-operate to share the risks and mitigate the impact on a single industry so that we can accelerate towards decarbonization. Thus, we believe partnership across the sectors – including financiers, producers, traders and shipowners – is an essential key to sharing such risks.

We believe it would be in everyone's interest, including that of the end-customers, that we continue to keep the cost of transport by ship at a low level while lowering GHG emissions. We hope we can collaborate together in innovative ways.



Jon Scharingson

*Executive Director,
Strategic Initiatives*
Chevron

Jon Scharingson is the Executive Director of Strategic Initiatives for Chevron Renewable Energy Group. As Executive Director, Strategic Initiatives Scharingson oversees the company's sales business development activities and is responsible for collaborations and strategic alliances in new market segments.

Hear more from Jon at the Argus Sustainable Marine Fuels Conference on September 11-13 in Houston, Texas, US, in a panel on biofuels and feedstock availability, where he will be joined by Maersk, United Soybean Board, National Renewable Energy Laboratory (NREL), and Argus expert, Jacqueline Reigle.

What are the benefits and challenges of developing biofuels/methanol/ammonia/hydrogen/bio-LNG as a future marine fuel? And how does it compare with other alternatives?

The challenges are different for each of the fuels described. One of the big challenges the industry has in general is that vessels can last a very long time – in some cases, 40-50 years before they are retired. This makes it challenging to rapidly change a fleet to a new engine platform. Most vessels today can operate on high blends of biodiesel and renewable diesel, typically without any modifications, which is a tremendous advantage over other options.

What do you see as the current timeline for the wider adoption of lower-carbon fuels?

It's starting to happen. Chevron has been actively selling B24 FAME in Singapore for more than a year now. The EU is implementing legislation that is going to make traditional fossil fuels increasingly more expensive. The carbon intensity indices

“Most vessels today can operate on high blends of biodiesel and renewable diesel, typically without any modifications, which is a tremendous advantage over other options.”

“The EU is implementing legislation that is going to make traditional fossil fuels increasingly more expensive.”

“Biofuels, and more specifically biodiesel and renewable diesel, are a great technical fit with marine vessels in blue-water and brown-water market segments.”

Interview with Chevron |

being assigned by the IMO to vessels are starting to have an impact as well. In addition, several cruise lines and container vessel companies have established their own internal requirements to reduce GHGs to meet corporate sustainability targets. These all contribute to increasing momentum in this space.

If you could communicate one message to the maritime industry to accelerate the adoption of lower-carbon fuels, what would it be?

Do not let the perfect be the enemy of the good. There are things the marine industry can implement today that will immediately help reduce its carbon intensity. Biofuels, and more specifically biodiesel and renewable diesel, are a great technical fit with marine vessels in blue-water and brown-water market segments. They often do not require any engine modifications or capex investments in new ships, and the fuels are readily available in many markets if people just ask for them.



Dario Formenti

System Manager
Sustainable Fuels

International Sustainability & Carbon Certification

Dario works in ISCC as System Manager with emphasis on sustainable fuels certification in the regulated market, focusing on the aviation and maritime sector, as well as hydrogen and its derivatives (RFNBOs).

Hear more from Dario at the Argus Sustainable Marine Fuels Conference on September 11-13 in Houston, Texas, US, where he will discuss the role of sustainability certification, lifecycle analysis and implications for marine fuels.

Interview with the International Sustainability & Carbon Certification

How can the supply chain ensure compliance across all layers of regulations?

In the maritime sector, both the IMO and the EU envision the use of certification schemes to ensure the sustainability of sustainable marine fuels.

Through certification, an element of a supply chain (eg, a trader, processing unit, blender, point of origin of waste/residue/byproduct – these are sometimes called economic operators) can show compliance with the relevant legislative framework.

As an example in the EU context, the FuelEU Maritime regulation makes use of the EU Renewable Energy Directive (EU RED) sustainability framework, in which criteria is verified by means of recognized voluntary schemes, such as the ISCC EU. Each supply chain element will be certified in order to ensure a step-by-step and gap-free forwarding of sustainability material and related information.

A sustainability certification provider is responsible for translating rules and provision in the laws into practical requirements that the elements must meet to seek certification. The verification is performed by so-called third-party certification bodies, whose auditors conduct the audit on site. A positive audit outcome

“In the maritime sector, both the IMO and the EU envision the use of certification schemes to ensure the sustainability of sustainable marine fuels.”

“A positive audit outcome will lead to the issuance of a certificate, thus ensuring that an economic operator is in the position to handle sustainable material (produce fuel, trade material, blend fuel) that is compliant under the respective certification scheme.”

will lead to the issuance of a certificate, thus ensuring that an economic operator is in the position to handle sustainable material (produce fuel, trade material, blend fuel) that is compliant under the respective certification scheme.

How can we ensure sustainability in feedstock production and the traceability of sustainable products through the supply chain?

The three pillars of sustainability certification are (1) sustainability in feedstock production, (2) traceability of the sus-

tainable material throughout the supply chain and (3) GHG emissions savings. Whether the final fuel belongs to the category of biofuels, waste-based fuels or e-fuels, ISCC certification verifies sustainability in feedstock production, genuine waste generation or renewable electricity sourcing.

The legislative framework provides rules and provisions on sustainability criteria. ISCC translates them into practical requirements that supply chain elements must meet to seek ISCC certification.

ISCC offers a robust framework in which to verify these items during the audit by recognized third-party certification bodies.

Under ISCC certification, traceability is ensured in a way that no gaps are present throughout the supply chain. Each certified element is responsible for forwarding the relevant information (via Sustainability Declaration or Proof of Sustainability) to the next one. These documents must be issued by the supplier for each delivery or batch of sustainable material. Overall, the identification and tracking of the origin, processing history distribution and location of materials can be done step by step through the entire supply chain.



Jhander Marval

Senior General Manager –
Head of CPP Operations
Ultrनाव

Jhander Marval, born in Venezuela graduated from maritime university of the Caribbean as maritime engineer and 3rd deck officer on 2009. He Joined to Ultrनाव CPTA in October 2019, and was promoted to Head of CPP Operations in December 2022.

Hear more from Jhander at the Argus Sustainable Marine Fuels Conference on September 11-13 in Houston, Texas, US, on a panel with shipowners and operators, where he will be joined by Ocean Network Express (ONE), Mitsui O.S.K Lines, NYK Energy Transport, AET, and Orsted.

What are the benefits and challenges of developing biofuels/methanol/ammonia/hydrogen/bio-LNG as a future marine fuel? And how does it compare with other alternatives?

The challenges are higher cost, unforeseen engine drawbacks, additional GHGs (some more toxic), limited bunkering options, as well as crew training and educating people.

Compared with other alternatives, the higher cost will be a key challenge to infrastructure, safety, storage and distribution requirements.

The benefits are their overall compatibility with existing engines, lower carbon emissions, the fact that they're renewable and that their compliance with environmental regulations.

If you could communicate one message to the maritime industry to accelerate the adoption of low-carbon fuels, what would it be?

Embrace technology. Despite the challenges, there are many promising

“Embrace technology. Despite the challenges, there are many promising low-carbon pathways for the maritime industry.”

“It is our responsibility to embrace environmentally friendly practices and technologies on these ships.”

“low-carbon pathways for the maritime industry. Co-ordinated action from stakeholders and governments can help accelerate the adoption of these pathways. The role of first movers and entities that can influence the entire value chain is crucial, as they can catalyze investments and potentially determine the success of specific fuel scenarios.

What level of commitment is needed from shipowners to facilitate the transition to alternative fuel infrastructure?

Of the highest order, this must be accomplished on all types of vessels of all ages, particularly now that the vessels' effective lifespan has lengthened significantly.

We are part of the getting-to-zero coalition, aiming for 40-45pc zero emission vessels by 2050. It is our responsibility to embrace environmentally friendly practices and technologies on these ships. It will, however, be only one shackle in the entire logistics chain. We need policymakers, manufacturers, cargo owners and even consumers to support this transition.



Galen Hon

Office of Environment
& Innovation

US Maritime
Administration (MARAD)

Hear more from Galen at the Argus Sustainable Marine Fuels Conference on September 11–13 in Houston, Texas, US, in two panels discussing clean fuel policy, incentives and regulation in North America; and green corridors vs clean fuel hubs.

Interview with the US Maritime Administration (MARAD)

What level of commitment is needed from shipowners to facilitate the transition to alternative fuel infrastructure?

I think the appropriate commitment from most shipowners is already there. Owners are committed to competing in turbulent economic conditions, to ensuring the safety of mariners and assets, and to participating in technical and policy discussions that affect their industries. If we in government – as policymakers, regulators and facilitators – are doing our jobs correctly, we will create an environment in which shipowners can make the same rational decisions that they do now, but these decisions will be to adopt new fuels and technologies. Creating this environment will require a very clear and long-term price on carbon (such as that being negotiated at the IMO), concerted efforts to help de-risk and demonstrate new fuels and technologies (as MARAD's META program is doing) and creating the relationships among vessels and ports that we're seeing with the proliferation of green corridors around the world.

This is not to diminish how greatly the energy transition challenge benefits from shipowners that are willing to introduce some risk into their operations by pioneering new fuels and technologies. This is absolutely vital to the transition, and we must continue to nurture and reward

"I think the appropriate commitment from most shipowners is already there. Owners are committed to competing in turbulent economic conditions, to ensuring the safety of mariners and assets, and to participating in technical and policy discussions that affect their industries."

these efforts. But these efforts will always be limited to the fraction of operating budgets that can be earmarked for higher-risk, longer-term investments.

How can alternative fuels overcome the logistical and availability challenges needed to scale up globally?

I have on my desk a puck-like rock – reluctantly beautiful, speckled brown with some crystalline bits and other texture. It's good for setting my coffee on. This particular puck came from an oil-rig drilling core that was extracted from nearly a mile below the sea floor in the Gulf of Mexico. I like things like this that remind me to be amazed at the world and our ability to accomplish mind-muddling things. It's like looking out of a plane window and realizing you're somehow in an aluminum can moving 600mph, tens of thousands of feet above earth. As an engineer, I understand the principles of

how I'm in this can, but I can only wonder at the details of a century of innovation, collaboration and investment that actually got me here.

Oil extraction has similarly required some of the most marvelous feats of engineering and ingenuity the world has ever seen. The same companies that quietly reimagined themselves in the past decade from oil companies to energy companies are now poised to scale alternative fuels and bring them to market, just as they brought the puck from the middle of the earth to my desk. I have not yet heard of any logistic and availability challenges that couldn't be solved by the application of the same massive technical and organizational capabilities that so far have extracted more than 1.5 trillion barrels of oil and emitted more than 650bn t of CO₂ since 1900.

The question, then, is really how and how soon we can muster the collective political will to create economic conditions that produce demand signals for alternative fuels at the same level that we've seen with conventional fuels. Once we have that, our collective musings about supply and logistics will be moot. Top minds with near-unlimited resources will be solving these problems for us – and we can just enjoy the view from miles above.

Argus Sustainable Marine Fuels Conference

September 11-13, 2024 | Houston, Texas, US

Join North America's sustainable marine fuels market for insight on the future of fueling the shipping industry

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Jan League
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Ana Ferraz
Renewable Fuels Analyst
Maersk



Tomoaki Ichida
Managing Executive
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Guid Cardullo
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Fratelli Cosulich



Jhander Marval
Senior General Manager -
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A promotional banner for the Argus Methanol Forum. The background features a city skyline at dusk with illuminated buildings. In the top left, the Argus logo 'illuminating the markets®' is displayed. A red circular badge in the top right corner contains the text 'Early bird and group rates available'. The main title 'Argus Methanol Forum' is prominently displayed in white. Below it, the dates and location 'September 9-11, 2024 | Houston, TX, US' are listed. A paragraph describes the forum as a co-located event for key insights into renewable methanol and its growth in sectors like marine fuel and sustainable aviation fuel. Another paragraph states that the event will bring together buyers and sellers for three days of knowledge exchange and networking. At the bottom, the website 'www.argusmedia.com/methanol-forum' is provided.

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Argus Methanol Forum

September 9-11, 2024 | Houston, TX, US

Join the co-located Argus Methanol Forum taking place on September 9-11 2024, for key insights into the latest developments in renewable methanol, and its growth in new sectors such as marine fuel and sustainable aviation fuel.

This event will bring together the biggest buyers and sellers of methanol for three days of knowledge exchange and networking ahead of contracting season.

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Argus products and services



Argus Marine Fuels is the most comprehensive source of trusted daily prices, spot deals and latest market news for conventional and alternative marine fuels, covering the world's most important bunker locations. The service is a must-have for anyone involved in shipping, refining or trading marine fuels.



Argus Marine Fuels Outlook is a monthly service, newly refreshed to expand on green market coverage. Providing independent price forecasts, regulatory change updates, insight into investments in vessels and port infrastructure, and much more. **Register** your interest to receive a sample report and more information once the new service is released.

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