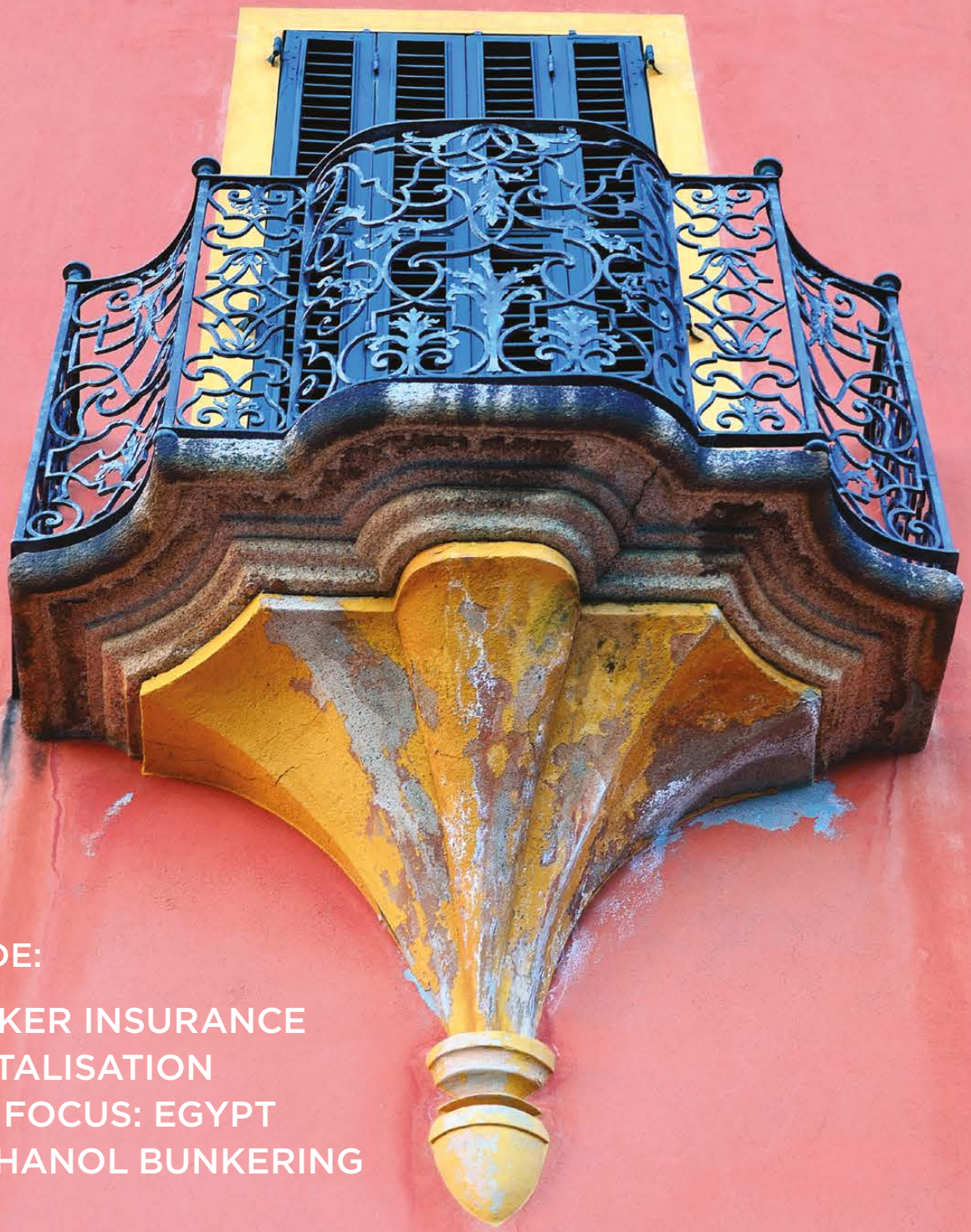
www.bunkerspot.com Volume 19 Number 4 August/September 2022

BUNKERSPOT

BUNKERING ITALIAN STYLE



INSIDE:

No turning back

Shipowners seeking options for decarbonisation can look to methanol as a powerful solution for the short and long term, writes **Chris Chatterton** of the Methanol Institute

The shipping industry's energy transition is picking up speed, but it has still to achieve the required momentum. This marathon process has a long way to run but among the future fuel contenders, methanol is emerging as a short-term choice with a long-term role to play.

The leadership shown by AP Møller-Maersk in ordering a series of methanol dual-fuelled ships indicates that large owners are prepared to take the decarbonisation challenge seriously. Since then, the trend line has continued upwards, recently taking a swing northward to the point that some 50 methanol dual-fuelled vessels could be ordered before the end of 2022.

With liner shipping the ideal candidate for methanol – regularly serving large ports at which supplies can be found in volume – it is not surprising that operators including CMA CGM, MSC, Pacific International Lines, X-Press Feeders and the biggest shipping company in the world, COSCO, have either expressed interest or placed firm orders.

'Shipowners are recognising that methanol provides them with huge flexibility in introducing a low-pollution, lower carbon fuel which is the closest to a drop-in available in the market'

Companies including Waterfront Shipping, Stena/Proman, NYK and MOL have built a series of methanol carriers that use a segregated portion of the cargo as fuel. With more bulk shipowners exploring methanol as a fuel option, we are seeing methanol-ready designs for bulk carriers and tankers coming to market. Main engine makers report full order books for new units and increasing interest in retrofits and conversions of existing engines.

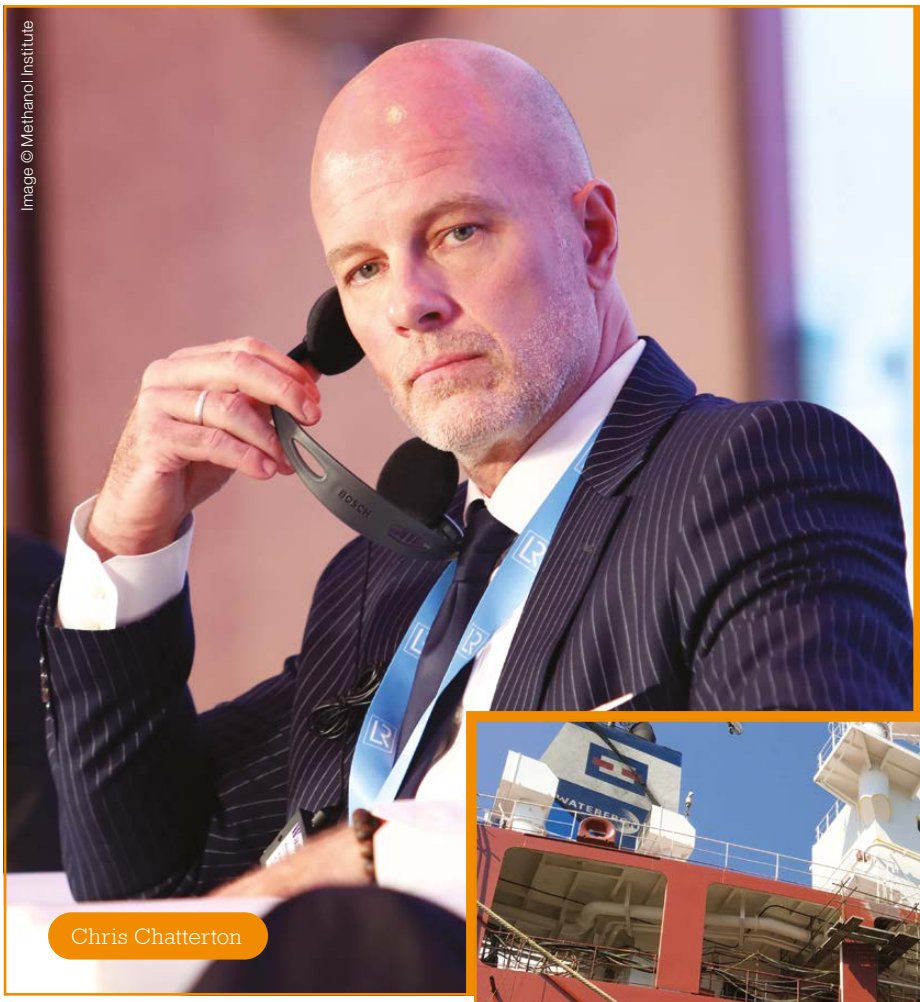
NEW ORDER PIPELINE

The newbuilding order pipeline has been boosted by Maersk's tender for 12 container ships of 16,000 TEU and it has since emerged that the company is seeking to expand on its previous order for one feeder ship and has enquiries in place with yards for up to 18 methanol-fuelled 2,600-TEU ships.

Further orders have been announced by Oslo-listed boxship owner MPC Container Ships which has contracted two dual-fuel methanol-powered 1,300

Image © Methanol Institute

Pilot Boat Demonstrator



'Production of green methanol sourced from biomass or from captured CO_2 and renewable electricity sources and green hydrogen is small but growing as producers recognise the demand signal being sent by the shipping industry'

TEU newbuilds at Chinese-based shipyard Taizhou Sanfu Ship Engineering.

Shipowners are recognising that methanol provides them with huge flexibility in introducing a low-pollution, lower carbon fuel which is the closest to a drop-in available in the market. This means a lower upfront capex cost, whereas choosing LNG as fuel attracts a considerable premium, largely due to the expensive cryogenic fuel tanks and gas handling systems.

Methanol is a product with a highly diversified consumer base, widely available and transparently traded. Choosing methanol enables owners to hedge their bets on future fuels and gain short term experience on using it as bunkers with minimal adaptation.

TECHNICAL ADVANTAGES

Methanol also has technical advantages compared to other fuels. The recent interest in methanol for newbuildings reflects the fact that ammonia is viewed by many observers as far more difficult to implement safely and sustainably – and regulatory approval may still be many years away.

Methanol is a liquid fuel, able to be stored and transported without the need to cool or keep it under pressure. Easier to handle and more widely available than ammonia, methanol is simpler to bunker, with a variety of supply options and established best practices and guidelines for bunkering.

On an energy equivalent basis, methanol has been competitive with marine gasoil for the past five years. However, there is a need for stronger policy to encourage vessel owners and operators to adopt cleaner fuel in greater numbers.

Most of the currently available methanol sourced from natural gas has a similar 'in service' carbon reduction to LNG as well as having no SOx emissions, very low PM and NOx emissions that can be abated with water treatment.

Blue methanol, produced in combination with carbon capture and storage, offers a lower emissions profile. Production of green methanol sourced from biomass or from captured CO_2 and renewable electricity sources and green hydrogen is small but growing as producers recognise the demand signal being sent by the shipping industry.

In fact, the aggregated installed capacity of blue and green methanol in the EU alone is projected to reach over 3 million tonnes per annum (mtpa) by 2023 – this is up from just over 1 mtpa in 2020. This is much further ahead of IMO's 'targeted' emissions reduction percentages to 2030 if based on a combination of conventional and lower/zero carbon methanol. Remember too, that even small volumes of green methanol blended with grey would deliver significant short term greenhouse gas savings.

The distinction matters because of the way regulators measure emissions and how this is changing. On a tank-to-wake basis (the IMO's current measurement) methanol's CO_2 con-

tent is 5%-7% less than MGO, about 10% less than LSFO and up to 15% less than HFO.

The IMO is moving towards measuring emissions from well-to-wake (lifecycle) basis, encouraging the development and take up of green, renewable fuels and this is partially true for the European Union too, but not the case across all its initiatives.

In the future there will be more emphasis on clean fuel characteristics, not just because of the lifecycle assessment model, but because for shipowners and their clients there will be carbon levies to pay for.

WELL-TO-WAKE

Renewable fuels may never be as cheap as the fossil fuels they will replace and once the EU's Emissions Trading System (ETS) begins to price shipping's carbon contribution, top line costs will rise. But for owners with a clear focus on a decarbonisation, the opportunity is there to embrace carbon economics, using highly efficient vessels with much lower carbon emissions.

The first three to four years of the EU ETS will see owners make flat payments rather than trading carbon, but after this, inclusion in the carbon market might even provide an opportunity for assets that operate below the emissions cap to generate income beyond primary cargo carrying.

The integration of low carbon and net carbon neutral fuels at an accelerated rate is fundamental to attain the long- and short-term reduction targets laid out by the IMO. To effectively stimulate the uptake of fuels that will drive the maritime industry's energy transition, policymakers will need to move quickly to implement mechanisms that account for the GHG emissions of the fuel's entire lifecycle.

This is as true for the IMO's decarbonisation goals as it is for the EU ETS, especially since shipowners will have to comply with the first of the IMO's short term measures from the start of 2023. The comparatively low cost of methanol main engine conversions is continuing to drive interest among tonnage owners in the container and car/truck carrier sectors as the deadline looms.

Operators in these segments say that compliance with the IMO's Carbon Intensity Indicator (CII) underpins their decisions, though interest is rising across the board according to MAN Energy Solutions.

The engine-maker expects to see a rapid rise in the number of dual-fuel engine conversions concluded in the near future, with enquiries for conversions particularly intense in consumer facing segments, such as containers and pure car and truck carriers.

While MAN ES is in conversation with owners, charterers and beneficial cargo owners in all the major segments, enquiries from the container segment are particularly active.

With IMO's 40% CO_2 reduction target in 2030 fast approaching, shipping does not have the luxury of waiting for as yet unavailable fuel technologies to reach technical readiness, regulatory approval and availability. Cleaner methanol is available now – for existing vessels as well as newbuilds – and as shipowners are demonstrating, the increasing trend towards low carbon and renewable formats will only accelerate its adoption.

Chris Chatterton
Chief Operating Officer
The Methanol Institute

Web: www.methanol.org