

BUNKERSPOT

TAKING DECARBONISATION BY THE HORNS

SURVEYING BUNKERING OPTIONS
IN THE YEAR OF THE OX

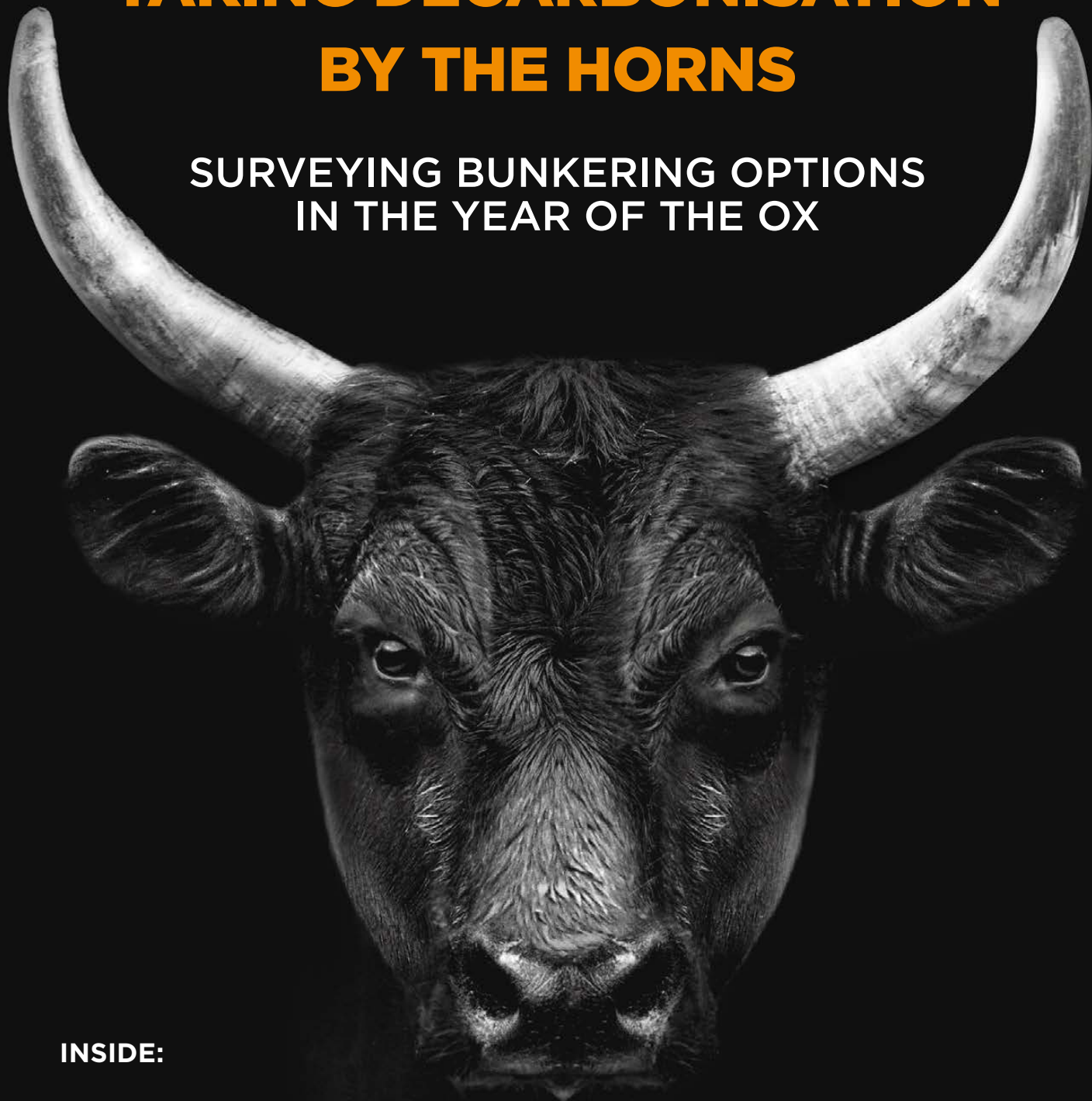
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20/21 vision

2020 was a year that many would prefer to forget – but *Bunkerspot* nevertheless invited a selection of industry players and commentators to reflect on some of the key lessons of the past 12 months and consider what 2021 may have in store for bunkering

In the run-up to 2020, it was generally assumed that, for the bunkering community, the big issue of the year would be the implementation of the International Maritime Organization's 0.50% global sulphur cap, with decarbonisation looming ever larger.

As it turned out, IMO 2020 and the energy transition did feature prominently – but they were overshadowed by a more immediate and pressing global concern which affected every aspect of our lives: the COVID-19 pandemic.

COVID-19 CONTINUES

For our New Year Survey opener, we asked our respondents if they believed that COVID-19 would continue to be a major factor for the bunker and shipping industries in 2021, and beyond.

As one would expect, almost everyone said Yes to this;

but Drewry's Rahul Sharan felt that 'the world has learnt to live with the COVID' and the impact of the pandemic will recede over the course of the year.

BLUE *Insight's* Adrian Tolson believed that we will see 'somewhat depressed levels of demand through the first half of the year with a likely strong recovery as the year finishes. Quite how strong that will be is anyone's guess, but I would not be surprised to see demand higher in 2021 than 2020 and perhaps even higher than 2019.' Looking further ahead, Tolson speculated: 'Deglobalisation impacting bunker demand might be seen by the end of this decade, but for the near term shipping activity and bunker demand will be on an upswing.' Focusing on the likely impacts for the bunker market, he considered: 'Europe and the Americas (having suffered badly as result of COVID) should lead the way back in terms of bunker demand. Least developed countries (LDCs) with less access to vaccines will see economic activity returning more slowly – but they have never been primary drivers of bunker demand so this will not change demand patterns.'

Marcus Eichstadt of Hamburg HPC argued: 'Considering the political discus-

sions about extended and even more stricter lockdowns, consumer demand will decrease, being restricted to online solutions (at least that is what we are seeing here in Germany) - with knock-on effects for trade and shipping.'

Gavin Allwright of the International Windship Association (IWSA) cautioned: 'We are still six months away from any real phased return to normal in Europe and the US, and with new strains possibly worldwide. There is a significant uptick in infections in Asia too. This will likely continue to hamper activity, and will also slow newbuild vessel orders, etc. In the medium term, I also expect that we will also see the re-evaluation of trading patterns and reshoring to reduce supply chain risk.'

Ludovic Gerard of Ayro also believed that 'it'll take time to exit fully from COVID issues, in particular in Europe and Americas', which will 'have an impact on the volumes and shipping during the year'.

Nigel Draffin drilled down to what the ongoing COVID situation will mean for the different shipping sectors. The cruise lines have, of course, been hit particularly hard as a result of the restrictions on recreational travel and Draffin thought it unlikely that this sector will recover before 2022, while 'bulk shipping (both liquid and dry) will remain at lower levels throughout the first half of 2021'.

Edward Liu of Hill Dickinson argued: 'As long as the vaccine cannot be widely taken, it is anticipated that the pandemic will continue in the new year (at least the first half year) and the restrictive measures on travelling will also remain.' He flagged up how this

2019

2020

2021



has placed huge pressure on ships' crew change programmes – and warned that the 'crew change crisis' may 'endanger the sustainability of the global supply chain'.

Nicholas Woo of Birketts also expressed deep concern over the plight of ships' crews and urged: 'All of us in shipping must focus our efforts and goodwill towards resolving this.' But Woo also saw grounds for optimism: 'The vaccines should provide the light at the end of the tunnel even if it will take up to the end of the year to be fully distributed. Any impact should be seen in that context.'

Monjasa's Svend Stenberg Mølholt was positive about the prospects for a vaccine, and the bunker market: 'COVID-19 had a significant impact on overall bunkers demand, as global Gross Domestic Product (GDP) developed negatively in the context of the pandemic. That said, history has evidenced a clear link between GDP growth and traded volumes at sea, where declines and increases have impacted traded volumes at sea by a factor of 5-7. This means a vaccine and potential consumer confidence and demand going up, with impact GDP to grow again, which in turn will impact bunkers demand positively.'

Paul Millar of Bunker Credit Management Ltd also drew links between world trade, the vaccine roll-out and the bunker market, but his conclusion was not so upbeat: 'Shipping activity and bunker demand fell in 2020 as a direct consequence of lockdowns and a fall in global consumption. With the pandemic undefeated at this time, and actually worse than ever in the US and UK in particular, plus the global vaccine rollout will be much slower than most people wanted or expected, economic recovery in most markets will not become a reality for some time to come.'

Having quizzed our respondents about COVID-19's impact on global trade, shipping activity and bunker demand, we asked them to give their impressions of how the pandemic had impacted the practical operations of shipping and bunkering, and whether they felt these changes could remain a feature throughout 2021 and perhaps beyond. Not surprisingly, the crew change crisis was seen as the most pressing issue.

'Restrictions on operations will continue throughout 2021 but the impact will lessen as ports and operators adapt to the "new normal";' said Draffin. 'There will be temporary changes to the in-port restrictions in response to any local surge in infections and there may be new requirements on personnel having record of negative tests and proof of inoculation.'

Mark Williams of Shipping Strategy said that 'the crew change crisis rumbles on', and 'there can be no lasting operational

ease until the public health emergency is behind us and staff, surveyors, inspectors, charterers and owners can move freely around the fleet, shipyards and ports'.

Gerard pointed out that the COVID-19 restrictions place an extra burden not only on crew changes but also 'the attendance of persons external to the ship', which would include bunker surveying and testing personnel, and he expect this to remain the case 'at least during the first half' of 2021. On the positive side, he believed that some 'good habits' have been introduced to 'protect the crews onboard from "foreign" diseases such as flu' and he anticipated these could be retained even after the current crisis has receded.

Mølholt also felt that valuable lessons have been learned – for both now and the future: 'Crew change, physical inspections and onboard visitors will be met with more controls to ensure a safe working environment onboard. This is likely to continue and become best practice.'

Tolson also felt we could expect to see ships' crews demanding, and getting, 'a better deal in the future' as it has become increasingly clear that they are 'essential workers' and environmental, social and corporate governance (ESG) is 'a hot topic with investors and consumers'.

Millar summed up the general mood: 'Until sufficient people are vaccinated, precautions are needed to stop further infections.'

COUNTING THE COST OF COVID

While most news coverage around the world has focused on the efforts being made to contain, and recover from, the pandemic, we are all aware that this year of lockdowns, go-slows and furloughed workforces has led to huge increases in government spending and national debts. So we invited our respondents to consider how long it might take for the global economy to recover, and what implications this could have for shipping and bunkering.

Corvus Energy's Sean Puchalski made the reasonable point that it is difficult to come up with a timescale for an economic recovery until we know when the medical challenges will be overcome. 'In the scenario where the recently created vaccines are effective for all variants of COVID-19 that arise,' he said, 'then the recovery is possible within 2022. If new variants elude the vaccines' effectiveness, then add another year to this timescale.'

Woo argued that: 'If the vaccines prove effective, then we should experience the so called "K" shaped recovery. Our industry [shipping] is the vital lifeblood of the world economy. This downturn is not because of

financial weakness. My understanding is that the fundamentals are strong so there is every reason to be believe that if the vaccines work, then things will get better.'

Williams cautioned that the vaccine (or even vaccines) will not be a panacea: 'Immunisation isn't a cure. COVID-19 will become endemic – we will have to live with it forever. Public health restrictions of one sort or another will become universal and indefinite. Changes to commuting habits, international flying, the attraction of city dwelling, the hospitality and services sector may never be undone. The global economy won't go back to how it was before. Shipping however remains one of the least-affected sectors so far – but if global supply chains alter then shipping may too. For example: if "just in time" supply chains become "just in case" with in-built alternatives, then shipping's innate flexibility may work to its advantage.' He also suspected that 'some of the corporate failures have been more to do with governance and pre-pandemic

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Mark Williams,
Shipping Strategy

debt levels being exacerbated by COVID-19 – but added that ‘it’s hard to generalise’.

Liu commented: ‘The measures taken by governments in response to this emergency are unprecedented, with much economic activity subject to severe health restrictions resulting in a major contraction of global GDP and trade. However, when the pandemic is getting eased and even over, the demand for maritime trade should be expected to recover.’

Draffin considered that ‘there will be a negative impact on the global economy for at least two to three years’, but he believed ‘this will be more severe for the overall economy than it will be for shipping which will recover more quickly’. He added: ‘National economies will require economic stimulus from central governments but pressure on revenue will restrict their freedom to act, especially as the immediacy of the crisis recedes.’ Focusing on the maritime world, he foresaw ‘further consolidation within shipping and bunkering’ but believed ‘much of this will have its roots in problems which pre-date COVID-19’.

‘As much as I would like to be a contrarian and say that we will all get over it very quickly, I am not a true believer in that,’ sighed Tolson. However, he did not think that the economic consequences will be as dire, or deep-rooted, as some would have us believe: ‘Financial economics and trading patterns will revert fairly quickly – and I don’t think that for most of us living in the leading economies of the world, other than the loss of a favourite restaurant or a smaller business, we will see much pain beyond the medium term. For this reason, I think the bunkering industry we know will be more or less back to its old normal by late 2021 or early 2022 – but that is not to say there is no longer term impact.’

Indeed, Tolson felt that much of the long-term effects on bunkering could be for the better: ‘I think shipping and bunkering will likely see their biggest impact from the increased pressures generated, much less as a result of the financial impacts of COVID but much more so due to pandemic lockdown reflection of participants (suppliers, buyers and intermediaries), regulators, technology providers and financiers of the industry. That is not to say we will not see some weaker suppliers or buyers go out of business, but the real change is coming from those looking for a more transparent, more efficient, less corrupt, financially stronger, less GHG-emitting shipping and bunkering sector.’

As a befits the Chairman of an association that promotes wind propulsion, Allwright took a long-term view and deftly mused how the fight-back from COVID could impact the shipping industry’s propensity to adopt cleaner

energy solutions. ‘While there is a lot of pent up demand in the economy, there is also a significant amount of restructuring that will likely take place once the protective blanket of subsidies and support are removed by developed world governments,’ he argued. ‘So there will be significant disruption in trade flows and investment is likely to flow to less infrastructure constrained industry, possibly a tighter squeeze on traditional freight and passenger service companies. The cruise industry will likely bounce back once the vaccine

ent shipping sectors with a succinct – and rather upbeat – summary: ‘The dry bulk sector was heavily affected globally as the lockdowns slowed down manufacturing and construction activities. Everything is coming back to normal despite the fact that COVID is still very much prevalent. I think, by mid-2021, the business should be as usual.’

Eichstadt painted a less rosy picture for the cruise sector: ‘As long as there is no COVID control, there won’t be any stable cruise tourism as it can break at any time again. Blue cruises without any ports are not economical but just an investment to catch the trust of authorities and passengers. Only cruises with capacity of more than 40% with national or international port calls will build up financial reserves, but they are dependent on too many factors (COVID control, national strategies, lock downs) to foresee an improvement.’

After observing that the shipping and bunkering sectors had ‘proved to be remarkably resilient in 2020’, Millar then looked at the marine fuel business in more depth: ‘Despite the clear drop in bunker volumes (in most regions of the world), the bunker sector has carried on quite successfully. We have seen the departure of one major player (GP Global) and the exit of others (either as a result of withdrawing from the market or being absorbed into a competitor). But generally speaking, whilst margins probably deteriorated for most players as the year progressed, the bunker sector ended the year in reasonable condition.’

However, Millar added: ‘The shipping sector did not fare that badly overall – tankers had an amazing H1, followed by a less-than-amazing H2; the liner sector far exceeded the expectations of most analysts and dry bulk found its feet once again. These are the core shipping sectors so you can broadly conclude that the larger shipping sectors coped well. The sectors most affected come as no surprise to anyone: until people feel safe again to travel (i.e. post vaccination), the cruise ship market will have no customers. Until oil demand increases once again, the already weakened offshore sector will suffer even more. There are some positive signs in the car carrier sector, but I would assume a patchy recovery.’

IMO 2020

Although COVID-19 has been the principal focus of attention in 2020, the 0.50% global sulphur cap has nevertheless been a big challenge for the bunkering community. According to a statement that the International Maritime Organization (IMO) issued on 29 January, however, it was a challenge that the industry managed ‘remarkably smoothly’ as there



Svend S. Mølholt,
Monjasa

‘The transition to the 0.50% global sulphur cap has been an overall success’

is more widely available, but could experience significant over-capacity going forward with tighter margins as fewer passengers take cruises for the foreseeable future.’ And here’s why this could have consequences for the energy transition: ‘If shipowners and financiers have less money to spend or appetite for change,’ reasoned Allwright, ‘that is likely to impinge on other costly technology sectors. Decarbonisation technologies that don’t have significant reductions in fuel cost will likely see a slower uptake and this is being borne out through the uptick in interest in wind-assist and primary wind this year as it secures a significant percentage of fuel cost at zero for the lifetime of the ship, just as more costly low emissions fuels are being considered.’

Drewry’s Sharan focused on the differ-

were only 55 recorded cases of very low sulphur fuel oil (VLSFO) unavailability throughout the year. So we asked our respondents how they believed the switch-over to lower sulphur fuels had been managed. First, we asked them to hand in their report cards for the authorities – the various regulatory bodies and the IMO itself – before then rating the preparedness of the suppliers and buyers.

Mølholt offered a general answer which covered all three: ‘The transition to the 0.50% global sulphur cap has been an overall success.’ He added: ‘As a supplier we see close to zero demand for HSFO from vessels without scrubbers – inquiries which are dismissed by our Trading and Compliance departments as part of Monjasa’s internal IMO 2020 measures.’

‘No matter if it is authorities or regulators who are driving compliance to regulations or it is simply end customer demand for cleaner shipping, the transition has been successful by and large.’

‘All bunker communities have had access to sufficient data and material to enable a smooth transition for their customers. The customer experience therefore reflects the level of homework done by the supplier.’

Focusing on the regulatory side, Tolson said: ‘The transition went very well from an IMO point of view and was well managed.’ He continued: ‘I guess we can learn from this that regulation when it’s welcomed by a majority of the stakeholders works – for various reasons and various pressures no one has openly ignored it and apparently the vast majority are complying. Any problems have been dealt with (or so it appears) and all is a success.’ However, he also warned: ‘Perhaps the only concern is that we have been lulled into a false sense of security by what was, in reality, a relatively easy transition for a lower sulphur fuel (yes, I know it was not that simple!). Harder transitions are on the horizon.’

Draffin judged that: ‘Authorities had prepared as best as they could but whilst most had regulations and procedures in place, very few (outside of North Europe and North America) had the resources available to enforce. The appearance of the pandemic has given them a genuine excuse for lack of enforcement but the reality is that even without COVID, there would have been very little enforcement.’

Williams argued: ‘The rules were applied to the wrong industry, i.e. shipping, rather than the fuel producers. A government would not ban the consumption of cocaine – but still leave it on sale’. However, he added that the rules were ‘smoothly introduced by enforcement agencies’.

Joseph Malpas of HFW had concerns over the global implementation of the IMO

regulations at the state level: ‘The IMO produced detailed guidance in the lead up to the introduction of the new regulations, meaning that contracting states had a relatively good reference point for understanding their duties under IMO 2020 and best practices for monitoring and enforcement.’

‘However, as specific enforcement measures and policing are left to individual contracting states, it was somewhat inevitable that there would be variation between different states as to how the regulations were implemented and what sanctions were applied. While many con-

tracting states (including key shipping states such as Singapore) have clearly outlined their approach to enforcement of the regulations, there are other states (both contracting states and states who have not ratified MARPOL Annex VI into their national law) who did not release any information and so whose position in relation to the regulations is far from clear.’

‘An important area to focus on moving forward will be improvement of the reporting and information sharing regimes for IMO 2020 (and indeed any IMO decarbonisation efforts too)’

– Joseph Malpas, HFW

tracting states to exhaust gas cleaning systems (EGCS) or “scrubbers”, with several states changing their position over the year in relation to the discharge of wash water within their ports.’

‘There was also fluidity in the approach of different states to the regulations. ‘In light of this, I would say there has been a general lack of transparency in relation to IMO 2020 at the global level, with localised knowledge being crucial in order to successfully navigate individual states’ approach to the regulations.’

‘That being said, COVID-19 has undoubtedly disrupted the monitoring and enforcement steps that contracting states may otherwise have taken – for example, in March 2020 the UK Maritime and Coastguard Agency suspended all routine Port State Control inspections as part of its coronavirus containment measures, including inspections for monitoring compliance with IMO 2020. As COVID-19 is eventually brought under control around the world, we may therefore see renewed focus on compliance with the regulations by contracting states.’

‘An important area to focus on moving forward will be improvement of the reporting and

information sharing regimes for IMO 2020 (and indeed any IMO decarbonisation efforts too). While there is GISIS (the IMO’s Global Integrated Shipping Information System), this platform is not really viable if there is to be robust implementation and consistent enforcement from all contracting states.’

Liu said the remarkably low incidence of VLSFO unavailability was probably a disappointment to at least some shipping lawyers, who may have been looking forward to more legal disputes. He continued: ‘Quality claims relating to bunkers are not a new phe-

nomenon. From a practical point of view, the usual advice to owners to ensure that they have clean bunker tanks, avoid commingling of bunkers and to monitor sampling during the supply applies. Time charterers arranging the supply of bunkers (or owners if dealing direct with the suppliers) need to ensure that they understand the supply contract and have the time bar and sampling provisions firmly in mind in order to preserve their rights of recourse against the supplier, if available.’

The majority of our respondents voted the suppliers’ performance on IMO 2020 a success – and Woo argued said that the low incidence of reported disputes was a testament to their efforts.

‘I believe that apart from some initial hiccups supply availability of all fuel grades has been good,’ said Draffin. ‘The availability of HSFO has been better than expected although some of the credit must go to the ability of ship operators to adapt their bunker planning to the actual availability.’

Gerard told us: ‘After a bit of tension on bunker markets last winter, the situation smoothed.’ He added that ‘there are also enough scrubbers in operation nowadays’, which relieved the pressure on VLSFO demand to a degree.

Tolson said that the suppliers have done well – but pointed out that there are many different players on the supply side of the bunker industry. ‘Many suppliers that we call suppliers are not really suppliers,’ he explained, ‘but refiners, commodity traders

and blenders who responded to the economically profitable challenge of making VLSFO and suppliers didn't mess this up!

Tolson felt that the transition was 'simpler and better' in some supply locations than others. 'Clearly the bigger ports with greater infrastructure and supply sources did better,' he continued. 'I think some smaller locations were caught a little short and certainly had more challenges. Ultimately it takes some time (especially with the extra pandemic disruption) to develop the supply chain for each port and establish "normal" demand patterns and "normal" prices for each location. I think we have all been surprised that some of the pre-2020 regional predictions have not proven out: very few expected Amsterdam-Rotterdam-Antwerp (ARA) to be the cheapest major bunkering port after IMO 2020, yet it is – but then again perhaps it won't be after we end the COVID era?'

Alessio Sbraga – another legal expert from HFW who took part in our New Year survey – was generally positive about the suppliers' performance and pointed out that (while the end-of-year statistics were good) there were issues in the early part of the year.

'Even though the shipping market left it relatively late to confirm its preferred method of compliance (i.e. VLSFO), the supply market appears, on the face of it, to have reacted well to the demand for IMO 2020-compliant fuels in terms of fuels supplied and availability,' said Sbraga. 'However, given the varying characteristics and properties of VLSFO coming onto the market, it was inevitable that there would still be issues over the consistency and use of such fuels. Indeed, a sharp rise in disputes relating to fuel quality, stability and, importantly, sulphur content was observed during the first and second quarters of 2020.

Likewise, there were also

fuel availability issues in the first quarter of 2020 – most notably demonstrated by the significant number of FONARs filed in January and February recording instances in Brazil, India, South Africa, Bangladesh, and Egypt (to name but a few), although numbers dropped after that (probably due to a lack of reporting in the wake of COVID-19). Even then, FONARs will not always give a full picture of fuel availability (as they do not include those instances where ships have had to wait for fuel to become available or divert to source IMO-2020 compliant fuel).

'In any event, as the demand for fuel dropped significantly due to the impact of COVID-19 from April onwards and (cheaper) IMO 2020-compliant fuels became more widely available (than otherwise would have been the case in an active shipping market), it is probably difficult to accurately evaluate the full level of compliance of the suppliers with the requirements of IMO 2020-compliant fuels.'

Our respondents felt that shipowners had generally done rather well in terms of adjusting their buying strategies to meet the IMO 2020 requirements. However, some suggested that while most shipowners were comfortable buying the new fuel, they were not quite so at ease when it came to using it. Draffin, for example, told us: 'Ship operators have managed this transition much better than many expected. There have been some issues with a lack of understanding of the operational requirements of using VLSFO (segregation, treatment and long-term storage).'

Williams was of a similar opinion: 'The big corporates gamed it well in advance and set up supply chains to ensure availability. COVID-19 actually helped everyone else as it made the new recipe fuel easier to buy, though some owners I speak to say that they have found it easy to buy but not so easy to use, especially blends.'

Tolson agreed that the bunker buyers were 'well prepared' – and pointed out that this wasn't so surprising as 'fear of losing power, or falling

foul of a coast guard or an insurer, is a powerful motivation for even the least compliant'.

Malpas drew on his own experiences of working clients over the year. 'Shipowners we dealt with in general adopted a very cautious approach,' he recounted. 'Those that determined that their chosen method of compliance was VLSFO started preparing early for the fuel transition in anticipation of the sulphur cap, including running down vessels' reserves of HSFO and carrying out tank cleaning (including with chemical additives as necessary), contract permitting of course.

'However, despite taking these steps, it could not prevent fuel quality and stability issues arising from the use of new VLSFO blends, although the risk of these situations getting worse was minimised by taking precautions such as onboard vigilance and a cautious approach to sampling and testing new VLSFO.'

Malpas' comments segued into the next section of the survey, in which we invited respondents to give their perspectives on how the introduction of the new VLSFO blends has been handled – and whether the issue of fuel stability (which was reported to be a concern in the initial change-over phase) has been resolved.

VLSFO BLENDS

'These issues were discussed in depth in 2019, with guidance from CIMAC and the JIP Guidance,' said Draffin. 'There are still aspects of the behaviour of some VLSFO blends for which the current standard and tests do not give sufficient protection for the user. Whilst following best practice onboard will avoid most of the problems, there is a need for better test methods to predict actual stability reserve and predict realistic long term storage stability limits.'

Sbraga gave us a quick recap of the issues that arose at the start of 2020: 'The use and supply of VLSFO has led to disputes over the fuel quality and responsibility for ship engine



Nigel Draffin

'I believe that apart from some initial hiccups supply availability of all fuel grades has been good. The availability of HSFO has been better than expected although some of the credit must go to the ability of ship operators to adapt their bunker planning to the actual availability'

damage. Increased levels of aluminum and silicon particles (potentially indicative of catalytic fines) and increased total sediment potential properties (which could result in sludge or lead to stability issues) were observed consistently in the first half of 2020. Issues with aluminum and silicon particles tended to be picked up through commercial testing, whereas certain organic compounds (causing sediment) were not always picked up by ISO 8217 Table 2 parameter limits and more in-depth (GC-MS) testing would have been required.

‘Overall, however,’ continued Sbraga, ‘the nature of fuel problems observed could have been far more severe given the varying characteristics and properties of VLSFO coming onto the market, so there would appear to be a relatively positive outlook, although vigilance in terms of the supply, use, testing and sampling of fuel must be maintained.’

Tolson told us that the issues with stability were ‘relatively under control’, but warned that: ‘As we transition out of the COVID-19 VLSFO supply era into the post COVID-19 supply era we may see some of these issues come to the fore again.’ He explained why: ‘I don’t think each supply location has worked out the “normal” blend for VLSFO, and while experimentation continues in the coming months and years quality issues – stability or otherwise – will rear their heads again. This is bunkering after all!’

HSFO AND SCRUBBERS

While the sulphur cap precipitated a big demand shift from HSFO to VLSFO at the start of the year, HSFO sales – in some ports, at least – have since bounced back a bit, as more scrubber-fitted ships have made an appearance on the market. We therefore asked our respondents if they believed that HSFO will continue to be an important (albeit no longer dominant) part of the bunker market for the next few years at least?

Most agreed that there was life in HSFO yet because – to quote Gerard – ‘shipowners and operators want to get their expected payback on the scrubber investments’.

Eichstadt thought: ‘HFO will play its role for the next years to come, as long as scrubbers are not considered harmful for the marine environment.’ However, he considered that: ‘Open loop scrubbers without any storage capacities of the filtrated sludge need to be banned’. Eichstadt saw the continuing use of HFO and investments into scrubbers as ‘a bet on rising MGO prices and a cost-effective way to operate vessels’.

Draffin gave some more detail to the economic argument: ‘Even at modest price sav-

ings, using HSFO with EGCS will make sense for many operators in the short and medium term. The current EGCS equipped fleet is concentrated on the larger vessels and the HSFO availability is concentrated in “hub” ports. The environmental aim of sulphur regulations is to reduce sulphur dioxide in the atmosphere – EGCS accomplishes this. The concern over

‘Less predictable is the Hi5 spread. We are not likely to return to the spreads we saw in 2019 or anticipated for 2020. There is just not enough HSFO around as producers have cut production or have been sanctioned and VLSFO continues to be well supplied proving a positive return over the value of crude – for a refining industry still trying to replace

‘Nuclear is beset with issues around public awareness and associated political intransigence, I am a convert to the technology potential but the wider obstacles are challenging’

– Diane Gilpin, Smart Green Shipping Alliance

wash water is a different animal, it is something that needs a sensible cost / benefit analysis as the introduction of the sulphur into the oceans is not the catastrophe that some claim whilst eliminating any additional source of ocean acidification is a worthy aspiration and should be a consideration (note that wash water is a minute source of ocean acidification).’

Tolson agreed that HSFO will ‘still be important for as long as scrubbers continue to be installed on vessels and we see more ships operating with scrubbers each year’. He cited as evidence DNV-GL stats which ‘show 1,200+ more ships with scrubbers at the end of this year over 2019 despite a desperately low Hi5 spread’ (this is the price differential between HSFO and VLSFO, and the key factor in the economic case for scrubbers). It is unlikely that the number of ships with scrubbers will go down, reasoned Tolson, ‘so perhaps we are heading to 20%+ of total bunker demand from these vessels’. He continued: ‘I don’t expect the Hi5 spread to go as high as it was predicted (by me, yes!!) in 2019 and this will dampen scrubber uptake. In addition, the world is still having a hard time accepting the concept of scrubber discharge into our oceans.’ He concluded: ‘I think by the end of this decade there will be fewer ships with scrubbers (and very few being installed) than now.’

What will this mean for HSFO demand? According to Tolson: ‘HSFO may easily be 25% of some ports’ supply, but this is of course the ports with bigger scrubbed ships calling. Smaller ports will simply not have the product – but then they will not have much potential demand. Nothing changes much – this was all predictable.

demand lost in other transportation sectors.’

Williams did not expect scrubbers to have a very long shelf life and – like Tolson – he flagged up the role of the refiners. ‘Scrubbers ensure demand for HSFO for at least as long as all the scrubbers last – say five years,’ he said. ‘Thereafter, the refiners will produce enough HSFO only if they perceive a real market for it. HSFO often comes from less complex refineries that consume heavier crudes. These are the most fragile facilities in the decarbonising world – the first to go as they are the hardest to convert to renewables production and processing.’

Surveying bunker prices in 2020, Allwright believed: ‘The bounce back in HSFO was quite likely as the delayed stream of scrubber installations came on line as Chinese yards completed orders. The spread between the fuels makes new orders less attractive and if that continues for any length of time then the decarbonisation imperative may adjust investment priorities away from these options.’

Mølholt considered that: ‘In the longer run, it is likely that the quest for cleaner fuels will be an upstream issue rather than a downstream issue. Meaning, in the longer run, scrubbers are likely to be phased out as new fuels enter the market. At the moment it seems that scrubbers were a good investment for the first period, but as the price gap is closing in, scrubber investments are becoming less attractive, also in the context of the longer term views.’

Woo felt that ‘once the danger of the pandemic recedes’, the arguments about using scrubbers and HSFO ‘will probably go back to the forefront of everyone’s attention’. By contrast, Sharan judged that: ‘The

reliance on scrubbers has fizzled out now and there will be more reliance on LSFO.'

Sbraga gave scrubbers a little more time, but essentially felt that they – and the HSFO – are not here to stay. 'In the short term,' he conceded, 'HSFO is likely to play its part in servicing the scrubber-fitted vessel market, but there could well be a steady decline in demand for HSFO as VLSFO continues to dominate the market.'

'The position may have been different had there been a consistent and pronounced large bunker premium for VLSFO during 2020,' he continued. 'However, with COVID-19 depressing demand for a sustained period and the existence of a surplus of VLSFO, this led to a significant narrowing of the bunker price spread between VLSFO and HSFO and cancellations and deferrals of scrubber retrofit orders by prominent shipowners. So despite the fact that there is a not insignificant number of existing scrubber-fitted vessels in the market, there are probably considerably less than what was expected, thereby impacting any growth in demand for HSFO.'

'Further, whilst there may be recent signs of widening bunker price spreads as the world comes out of COVID-19's shadow, the likelihood is that it will be relatively short-lived in 2021. At best, it will only benefit the existing scrubber-fitted vessel market (or newbuilds with scrubbers already on order) and even then this market is already looking at a return on investment in a longer timeframe than initially anticipated.'

'Given the IMO's recent commitment to taking affirmative steps to reduce greenhouse gas emissions and the carbon footprint of the shipping market, it is also likely that existing scrubber-fitted vessels will come even more under the magnifying glass going forward which may, in turn, impact HSFO demand in the short to medium term.'

DECARBONISATION PROGRESS?

For the *Bunkerspot* team, the most startling feature of 2020 was the absence of live conferences, exhibitions and seminars. Given that Petrosport runs some of the biggest and best events in the bunkering calendar, this left a big hole in our lives (and we hoped that they were fondly missed by our regular attendees too). Of course, we were quick to fill the void with online 'virtual' versions of these events, which were all very well received by market. But we didn't get to meet each other face-to-face; and we didn't get to fly to Panama, Las Palmas, Antwerp, Dubai or any of the other exciting cities where Petrosport has held con-

ferences over the years. On the plus side, all that no-flying helped to reduce our collective global carbon footprint substantially – and it was interesting to note how decarbonisation was one of the dominant themes for so many of the conferences that we (and others) organised over the course of the year. It seemed that every week there would be at least one webinar devoted to the urgency of climate action.

'The shipping community has demonstrated its willingness to implement the necessary infrastructure and practices required to achieve the fuel transition'

– Alessio Sbraga, HFW

So we asked our respondents if the shipping industry made any progress in 2020 – either in terms of regulatory work at the IMO and EC, or in practical implementation on ships?

Puchalski could attest that Corvus Energy has certainly played its part in speeding the electrification of the shipping world: 'Despite COVID-19, we have seen 115 ships order energy storage systems this year. Although a small number in the larger scheme of things, this represents 12% year-on-year growth.'

Mølholt was equally positive: 'What has been a great success in 2020 is how the shipping community has come together and proved that collective efforts are possible to transition to a greener future in shipping. With IMO and regulators supporting this, the industry can make leaps.'

Liu pointed out that not even a pandemic could stymie shipping's collective will to act: 'Notwithstanding the disruption caused by COVID-19, including cancellation of the UN Climate Change Conference in 2020, the shipping industry remains committed to the complete decarbonisation of international maritime transport, and the delivery of the ambitious CO₂ reduction targets already agreed by IMO Member States. In November 2020, the IMO Marine Environment Protection Committee (MEPC) approved and confirmed a package of mandatory CO₂ reduction measures that will be enforced across the existing global fleet, which will take effect by 2023. This is to demonstrate that IMO and the global shipping industry are firmly on track to meet the 2030 CO₂ reduction target which was agreed in 2018 – a 40% efficiency improvement, as an average across the world fleet, compared to 2008.'

Sbraga believed there had 'been significant

progress in 2020 towards a "greener" shipping market and there are clear signs that tackling climate change will be an operational and commercial priority going forward'. He continued: 'IMO 2020 was the first step towards this and the shipping community has demonstrated its willingness to implement the necessary infrastructure and practices required to achieve the fuel transition. On the interna-

tional regulatory level, steps were taken at MEPC 75 to put in place the necessary framework and technical and operational standards required to achieve significant reductions in GHG emissions by 2030 (compared to the 2008 levels). The biggest challenge for the shipping market in the coming years will be how to implement this framework on a global scale and how this will fit in with regional initiatives like the EU Emissions Trading System (ETS) for which there is no easy answer.'

Tolson said that there has been 'progress for sure', but added: 'I think it's probably unrealistic to expect all members of the shipping industry to take the lead in its own regulation. The industry has certainly got used to regulations being imposed on it by port authorities, class, governments and the IMO – likely remaining fairly passive as decarbonisation progresses, reacting with each new stage. That is not to say some owners will not lead or should not lead (and experiment) as they are already doing but the vast majority will be reactive rather than engaged.'

Tolson then picked out some of the positives of 2020: 'The implementation of IMO 2020 and regulatory framework around this and for sure the increased understanding of the size of the decarb task – shifting focus from sulphur to carbon and to other GHGs as areas of problem and focus. One of the major successes of this year was the intellectual (and Zoom) time afforded by the pandemic for those operating daily in the industry and other experts surrounding the industry to share ideas. This has advanced the understanding of the problem and requirements of decarbonisation and it bodes well for future solutions.'

Williams judged that: 'Countries with

joined-up maritime/industrial clusters, like South Korea and Japan, have done better than others with a more services orientation (e.g. the UK) on decarbonisation. Lots of testbeds and prototypes are now operational. The regulators grasp that most of the innovation and investment has to come in the fuels not the ships. Shipping will decarbonise as the world economy does, using the same electrons or electron carriers (like hydrogen or its derivatives) just at different scale.'

Allwright believed that, while there has been 'some progress', it has 'not been at the pace we need to meet even the lower ambition targets'. He continued: 'The IMO has adopted proposals this year that will continue that progress, which is welcome, but that will unlikely lift that level significantly. If this is perceived to be too slow and not deep enough then we will see regional actors stepping in, and the EU has done just that with the EU ETS vote to include shipping.'

'Regarding movement in the practical sense, we have seen a lot of R&D initiatives and announcements of projects and a few installations of alternative fuel systems. This is to be welcomed, but there is still much work to be done in embracing a hybrid "propulsion" model rather than simply a "fuel only" approach. If the latter is the industry approach going forward, then we are missing a huge opportunity to decarbonise quickly and deeply by linking wind-assist with operational and vessel optimisation, thus reducing the size and infrastructure requirement for the new alternative, low emissions fuel roll out.'

Some of our correspondents felt that we will have to up the pace considerably, and perhaps even change our focus, if we are to make a genuine impact on climate change. Gerard said simply: 'Not enough was done during the year.'

Eichstadt believed we have to concentrate more on the shift away from fossil fuels. 'Even though LNG is a more and more

favoured option, the International Council on Clean Transportation (ICCT) figured out that LNG does not contribute to a reduction of global warming as its methane slip (which is a major reason for air pollution in the US shale gas industry) has a higher greenhouse gas warming potential. Scrubbers cannot be considered as progress, because the use of fossil fuel does not solve the problem of global warming and rising CO₂ levels.'

Draffin argued that we need a big push on investment – and governments must step up. 'There have been small changes in requirements and a small shift in emphasis,' he said, 'but the shipping sector has not and will not make any radical change until it makes financial sense. This requires government action. As most carbon reduction strategies will require technology to make the transition, we need to be spending money on this now.'

Marie Cabbia Hubatova of Environmental Defense Fund felt that more could have been done in 2020 on a practical level, but she was encouraged by the change in attitudes across the industry: 'In the first half of 2020, the sector was paralysed by the pandemic. That was true both for actual ships as well as for regulators. At the IMO level, all climate talks were cancelled or postponed until late autumn. When these meetings finally happened, they were rather disappointing. Delegates were unable to agree on anything meaningful that would put the sector on the pathway to decarbonisation. The outcome of the meeting lacked so much ambition that it didn't even deliver on the target agreed in the Initial Strategy in 2018: to at least halve the sector's emissions by 2050. On the EU level, things look much more positive. The sector's emissions from eligible voyages are likely to be included in the bloc's Emission Trading System.'

'Meanwhile, during 2020, the sense of urgency of climate action has become widespread across the industry. Stakeholders

know they will have to change their practices and ultimately move away from fossil fuels to alternative fuels and propulsion. We have seen a lot of action from the more progressive part of the industry, for example within the Getting to Zero Coalition. New projects and initiatives pop up more and more often and I am confident that many players will be way ahead of regulators and benefit hugely from the first mover advantage.'

Diane Gilpin of the Smart Green Shipping Alliance was forthright: 'In light of the climate emergency that humanity faces, the shipping industry must accelerate progress towards rapid, short term emissions reduction.'

'We've seen the terrible economic, social and political impacts of an emergency with the COVID-19 crisis. We can learn from this. Catastrophic global pandemics had been anticipated for decades, are exacerbated by biodiversity breakdown but, as a global society, we failed to heed the warnings.'

'Once we were in the catastrophic situation unlimited funds were allocated to finding a vaccine and in under a year several were produced. Typically, a vaccine takes 10 years or more to reach market. When questioned about the safety of this rushed vaccine a scientist involved said most of the 10 years is spent trying to fund the research.'

'The biggest challenge for technologies that can drive down shipping's emissions, commensurate to the climate emergency, arises from the fragmented structure of the industry – who owns the responsibility? Everyone I know in shipping wants to do something but their particular business isn't structured to manage the innovation, R&D funding necessary to make all the highly promising technologies suitable for rapid

'During 2020, the sense of urgency of climate action has become widespread across the industry. Stakeholders know they will have to change their practices and ultimately move away from fossil fuels to alternative fuels and propulsion'

Marie Cabbia Hubatova,
Environmental Defense Fund



Image © EDF

roll-out. Funding R&D commensurate with the Climate Emergency is 2021's big task.'

Gilpin was encouraged (as no doubt was Allwright) by the shipping industry's burgeoning interest in wind propulsion and the impressive growth in IWSA membership. '2020 saw a surge in installations from wind technologies and a leap in membership at the International Windship Association including major ship owners and class societies,' said Gilpin. 'From the 12 founding members to IWSA in 2014 membership now stands at 130. The last 12 months has seen a 25% increase against 2019.'

'There are now 11 oceangoing vessels installed with wind-assist, 2 more pending in Q1 – delayed due to COVID. IWSA expects the number of large oceangoing vessels will likely double in 2021/22.'

LNG BUNKERING

While wind and solar power, batteries, fuel cells and alternative fuels like methanol, ammonia and hydrogen will become part of the energy mix over the coming decades, many in the industry see LNG as a 'bridging' solution that shipping can use to lower its emissions while the new technologies develop and mature.

Our respondents were divided on both LNG's commercial prospects and its credentials as cleaner fuel. Among the most enthusiastic, Gerard said it is 'very good and the unique transition and available solution today', while Puchalski described LNG as 'an important transition fuel on the path to zero-emission'.

Williams argued that: 'Infrastructure spend, tax and fee incentives by governments, and ESG commitments almost guarantee [more LNG bunkering], regardless of whether it is actually only a stop-gap until full decarbonisation is possible.'

Tolson characterised LNG as 'the anti-scrubber solution with better GHG outcomes' which will be 'installed on many of the same types of vessels particu-

larly in ports (which will soon be many) with relatively cheap access to LNG'.

Flagging up that LNG is 'supported by major oil companies, producers and port authorities', Tolson believed it 'remains the shorter term stop gap with perhaps limited GHG benefits but with strong particulate matter (PM) benefits'. He added: 'BioLNG and SynLNG may play a longer term role but the jury is still out on these as a viable decarb solution.' On the whole, he saw the uptick in LNG bunkering as a 'positive development – anyone who has inhaled the emissions of fuel oil will agree with that'.

For Malpas: 'LNG is a proven marine fuel which can bring immediate reductions in a vessel's carbon dioxide, sulphur dioxide and nitrogen oxide emissions. Coupled with the fact that LNG bunkering facilities are becoming available in more ports, it is a clear immediate choice as a low-carbon fuel, and I think we can expect broader adoption of LNG as marine fuel across the industry, especially in newbuild vessels, over the next decade.'

'However, my view is that LNG as a marine fuel is an interim solution, rather than a long-term reality for the industry. Firstly, while LNG brings significant emissions reduction at the point of consumption, when looking at emissions across the entire LNG supply chain (from 'well to wake') the picture is less attractive, with potential significant leakage of methane, which has a warming power about 28 times greater than the equivalent amount of carbon dioxide. The overall benefit of LNG fuel for decarbonisation is therefore an arguable point.'

'It is also not clear that all industry actors will be willing to make the significant financial investment required to install the infrastructure needed to receive LNG fuel, especially as there is no significant financial or commercial incentive to do so currently (Norway is notable for introducing a financial support scheme to grow LNG bunkering infrastructure, but this has not been replicated elsewhere).'

Malpas continued: 'While I think we are heading towards a "multi-fuel" future (depending on the requirements of the particular industry seg-

ment and/or vessel type), and LNG may have a role within that, in the longer term I think other fuels will come to the fore, for example hydrogen which both supermajors and blue chip shipping companies have recently backed.'

Eichstadt's view was: 'LNG demand will rise, as LNG meets different criteria such as SOx, NOx and PM requirements and will meet future NECA regulations. But overall, it will not solve the problem of global warming.'

Draffin cut to the chase: 'The LNG sector is unlikely to exceed 15% of total marine fuel demand and is, at best, just a transition fuel towards genuine low carbon fuels.'

Allwright considered the growth in LNG bunkers 'is likely as it is the only currently available alternative fuel that has been embraced by the industry to date'. Biofuel and LPG are also options, he added, but 'uptake seems to have been very limited to date.'

Focusing on what has become a central theme in the LNG debate, Allwright judged that: 'The bridging question is a difficult issue. If all of the upstream emissions and risks are incorporated into the assessment and a full lifecycle analysis is done to assess the impacts of the fuel then if that is a positive environmental impact, using a short term methane impact criteria (say 20 or 25 years) then it should take its place as a key fuel going forward. The use of LNG infrastructure to carry zero-emissions fuel in the future is a very important area that needs to be confirmed in the way of cost and efficiency.'

Cabbia Hubatova felt there will be more LNG bunkering – but did not welcome the prospect: 'We could see more and more LNG-powered ships in the next couple of years, but for the sake of the climate, that trend will not continue for the whole decade.'

'LNG is not a solution that would help us decarbonise the sector,' she warned. 'In some cases, LNG can be even more climate polluting than MGO due to upstream methane leaks as well as methane slip onboard. The transition to zero-carbon shipping will not come without a cost. Therefore, promoting LNG as a transi-



Adrian Tolson, BLUE Insight

'Very few expected ARA to be the cheapest major bunkering port after IMO 2020, yet it is – but then again perhaps it won't be after we end the COVID era?'

tion fuel makes no sense. The sector needs to move away from fossil fuels as soon as possible during this decade. Investing in LNG means ending up with stranded assets. It is important that regulators make this clear and adopt full lifecycle accounting guidelines which would help ship owners make an informed decision about their future investments.'

Gilpin shared Cabbia Hubatova's reservations: 'I am very concerned about the uptake of LNG. Methane is 84 more times potent than CO₂. We know that methane slips occur and that the climate impact is catastrophic. I don't buy the "bridge fuel" argument. We need to drive down emissions within 10 years to keep the climate stable enough to support life – that includes all business and all shipping. Investing in long life assets in the context of that time frame is bonkers! We'll be overrun by stranded assets.'

FUTURE FUELS

Whether or not LNG is a suitable transition fuel (and it has had mixed reviews in this survey), the long term goal is for shipping to move towards fuels which promise significantly-reduced – or, even better, zero – emissions in both their production and consumption. So we asked our respondents if, and when, they expected to see a significant increase in the take-up of 'clean' energy sources and technologies.

Offering us a supplier's perspective, Møhlolt said: 'We think this is surely going to increase, however, from a very low absolute starting point. Alternative fuels are going to increase significantly in relative growth numbers, but fossil fuels will continue to dominate shipping for years ahead.'

Williams believed that: 'The momentum will take years to be build.' Sharan also advised patience: 'I think a switch over to alternative fuels will still take some time, may be more than a decade.' Gerard pointed out that while 'there is a lot of interest', we are still 'far from having a ready solution for long range vessels'.

Liu reminded us of the scale of the challenge ahead: 'The long term GHG reduction target agreed by IMO requires an absolute cut in the sector's total GHG emissions of at least 50% by 2050, regardless of maritime trade growth, with full decarbonisation to follow shortly after. The IMO 2050 target is very ambitious indeed and may therefore require a carbon efficiency improvement of up to 90%, which is simply incompatible with the continuing long term use of fossil fuels by commercial shipping.'

'The primary focus of the global shipping industry, which is led by the International Chamber of Shipping, is to find the best means of accelerating the introduction of

zero-carbon technologies to achieve 100% decarbonisation as soon as possible after 2050, if not before. The industry-wide move to accelerate R&D is absolutely vital to ensure that the ambitious CO₂ reduction targets agreed to by IMO Member States in 2018 are met. Meeting the IMO GHG reduction goals will require the deployment of new zero-carbon technologies and propulsion systems, such as green hydrogen and ammonia, fuel cells, batteries and synthetic fuels produced from renewable energy sources. These do not yet exist in a form or scale that can be applied to large commercial ships, especially those engaged in transoceanic voyages and which are currently dependent on fossil fuels.'

Draffin pointed out that the journey starts now: 'There will be a considerable take up over decades – what we need to think about is the next 5 to 10 years as that is the trigger for future change.' He then considered the contenders' relative merits: 'Ammonia and hydrogen will need to be manufactured at scale and that will take a lot of energy – where will that energy come from? I see methanol and ammonia as the leaders for the medium term, followed by hydrogen. There are two other interesting possibilities, firstly carbon capture – which will allow us to recombine sequestered carbon with hydrogen and make synthetic carbon-neutral hydrocarbon fuels which are a drop-in replacement for what we have now. Then there is nuclear. From an engineering perspective it is the logical solution for all powers above 10 MW but it is seen as politically and environmentally unacceptable.'

on its full lifecycle performance. 'We have seen many new projects focusing on alternative fuels and types of propulsion and I think this trend will continue,' she said. 'The specific fuel will depend on the type of vessel and its use. For deep-sea shipping, the most likely options at the moment seem to be ammonia and hydrogen. However, production of both is very energy intensive and most production pathways, for example using gas (with or without carbon capture), do not deliver the emission savings we need. On a lifecycle basis, some fuels can emit even more than MGO. It is therefore important to assess the climate impact of all fuels on full lifecycle basis, that means from the point of extraction or manufacture to combustion. As a result, the fuels we need to focus on are green hydrogen and green ammonia which are made with untapped renewable energy and do not cause any upstream emissions.'

Eichstadt was also positive about hydrogen, which he felt will 'remain too expensive for sea going vessels' but will become more popular with coastal traffic. However, he added: 'Environmentally-friendly green hydrogen is still in its development phase as governments are too slow to support the industry, build up the required infrastructure and to create the required administrative frameworks.'

Sbraga told us: 'In the medium to long term, given the commitment to tackling climate change and the prospect of carbon-neutral fuel, I do envisage that there will be a take-up of alternative fuels and energy sources. They will undoubtedly have an impor-

'At present there are already more large vessels in operation as wind-assist than all the non-tanker vessels using new alternative fuels (excluding LNG) combined'

– Gavin Allwright, International Windship Association

For Tolson: 'It's really about what, when and how?' His answers were: 'Short term: LNG and bio. Longer term: no one really knows – but who would argue against electrofuels with as much hydrogen density as possible? Nuclear: I am not a big fan – just as the millennials were getting comfy with the idea along came Fukushima and the Chernobyl TV show!'

Cabbia Hubatova expected the energy transition to gather pace, but emphasised the importance of judging a fuel's greenness

tant role to play as well as operational and technical improvements designed to improve the energy efficiency of ships. It may well be that bio-fuel, hydrogen and wind-energy harnessing ships are the main front-runners in the years to come. However, the basic problem likely to be faced for carbon-neutral fuels in general, is that there is still a lot of work to be done – due to their higher cost, supply issues and lack of appropriate infrastructure – to make them a realistic global

option for the market. Significant investment is required on a global scale and until there is a market commitment to a particular alternative fuel, it may be difficult to realise this.'

Gilpin expected that 'the different alternative liquid fuels will continue to jostle for supremacy because managing the transition to the bunker infrastructure is so onerous', and she 'can't see that being complete for another decade'.

Assessing the different options, Gilpin judged: 'Nuclear is beset with issues around public awareness and associated political intransigence, I am a convert to the technology potential, but the wider obstacles are challenging.'

As one would expect (given her role in the Smart Green Shipping Alliance), Gilpin believed that: 'The best short-term option is wind.' But she backed up the statement with some detailed arguments: 'Wind-assist as retrofit is a smart, immediate way forward for bulkers – both wet and dry. Wingsails retrofitted onto existing assets could reduce fuel/emissions by up to 30%, they can be quickly and easily fitted, can be retracted, are automatic and intelligent – they "know" when to move to get out of the way for bridges or to feather to harness maximum wind power.'

'Deploying wind de-risks the uncertainties about what flavour of the possible alternative net zero fuels will win the race. Whichever one wins out the consensus is that it will be about three times the cost, less energy dense requiring bigger tanks and therefore reducing payload. Reducing overall net fuel demand now partially mitigates those risks.'

'Environmentally, wind allows short-term significant and rapid reductions across the fleet. Considering that once GHG emissions are in the atmosphere they continue to accelerate warming for decades, we must start GHG reductions now wherever we can. This effectively buys time for the trillion-dollar decade long transition necessary for zero-emission fuels.'

Unsurprisingly, IWSA's Allwright also predicted a 'very significant upswing' in direct wind propulsion – but he also offered up this observation which may surprise many: 'At present there are already more large vessels in operation as wind-assist than all the non-tanker vessels using new alternative fuels (excluding LNG) combined and that number is likely to double each year up to 2023, at which stage we will have a fairly broad swathe of demonstrators covering most of the shipping segments.' Allwright argued that if the gathering momentum could be 'coupled with a large enough carbon levy, then we could see these system installations grow exponentially'. He also made the point that wind, solar and wave 'are direct, primary renewable energy [sources] which are abundant

worldwide, and delivered to the point of use on the vessel without the need for storage'.

BUILDING BACK GREENER

In answering some of our earlier questions, some of our respondents alluded to the need for more investment to bolster the energy transition, and also flagged up how shipping is coming under more pressure from its customers – and its customers' customers – to 'clean up its act'. So we next asked if it is likely that we will see more finance and investment in shipping and bunkering being linked to, or made conditional upon, efforts to increase sustainability and reduce emissions.

Williams kept it short: 'Consumers and investors will insist.' Pulchaski was clear: 'The financial community must be concerned with sustainability – this affects shipping and bunkering financings as well as most other sectors.'

Cabbia Hubatova reminded us: 'In 2019, we saw the launch of Poseidon Principles, a framework for assessing and disclosing the climate alignment of ship finance portfolios, with an involvement of some of the world's largest finance institutions. The group has been growing ever since – a great reflection of the increasing pressure on global decarbonisation, even on sectors like shipping, which was for so long sailing under the radar. I believe this trend will carry on, hopefully with even larger ambition that would drive investment in climate-friendly technologies.'

Allwright also believed that the Poseidon Principles, and the Sea Cargo Charter initiative, show that the winds of change are blowing through the shipping industry. 'The demand from cargo owners is growing and the risk of stranded fossil fuel assets is growing, especially with increased national goals for decarbonisation and likely strides being made in carbon pricing,' he argued. 'The Trafigura proposal to the IMO for a \$250-300/ton CO₂ (\$750-900 ton/fuel) levy is a clear indicator from a major player in the sector that they see a severely carbon constrained future and wish to ring fence and use the proceeds from any levy for decarbonisation efforts.'

Tolson felt there will be varying levels of engagement: 'I am not sure how much attention the small and medium bunker suppliers will pay to this; but the big boys (refiners, oil companies and commodity players) have no choice. The same goes for the big buyers as well. Small buyers will be less engaged – but that might put them out of business when they have no charterers left!'

Sharan agreed that shipowners will feel the need to adopt greener fuels, but he considered that 'the actual output will still take some time'.

DIGITALISATION AND TECHNOLOGY

If you've been logging in to a lot of shipping-related webinars over the past year (and most of us have), you'll have been told repeatedly that shipping faces two key challenges: decarbonisation (which we have already attempted to cover); and digitalisation – which we made the topic of our final question.

COVID-19 has, of course, obliged companies across all industries to find new ways of working that reduce the need for physical human contact. In the office, this has placed a greater emphasis on electronic communications, virtual meetings and the use of digital technologies. At the bunkering interface, the crews of the bunker barges and receiving vessels – and the bunker surveyors – have adopted new health and safety procedures, and here too digitalisation is playing a key role. We asked our respondents if they saw the new ways of working continuing in the future – perhaps even when COVID-19 is under control.

'The industry has surely had an eye opener for the virtual opportunities already existing,' said Møhlolt. 'Even though Monjasa prioritises personal business above all and many offshore assignments will continue to demand a physical presence, we believe that digitalisation has experienced an important push forward during this pandemic. These are new opportunities which will partly become daily business once restrictions are finally lifted more broadly across the societies.'

William argued that: 'As COVID-19 becomes endemic many public health practices will become entrenched.'

Pulchaski told us that COVID-19 has obliged Corvus Energy to 'rely mostly on remote assistance' in their business of commissioning new battery systems. 'A by-product of this,' he added, 'is that we have become more efficient with respect to travel costs. Also, we have been forced to invest in our digital tools. We will continue to do as much as possible remotely, once the pandemic is over.'

Draffin looked at how bunkering practices have changed: 'When we started the early efforts with mass flow metering of bunkers, this was triggered by a desire to reduce risk to personnel as much as it was to improve confidence in quantity measurement. We need to use digital technology to make things safer and better but we should be careful to ensure that these new working practices do not introduce risks which we do not control. We also need to understand that whilst humans are involved in any process, they need to interact with other humans – otherwise we expose ourselves to the world of the Daleks.'

Tolson believed that: 'After a post-COVID boom and rush to visit people and attend conferences we will revert to a more balanced (and cheaper) approach with a lot more Zoom calls than in the past. I think this will ultimately raise the quality and value of face-to-face transaction. Trips to exotic locations as a reward for the loyal employee will go, by the way. Instead, meetings will be higher level, higher value and more productive!'

He also saw electronic communications making more inroads into bunkering operations: 'I am hoping for the electronic bunker delivery note (BDN) and bill of lading (B/L) – time to get rid of those messy carbon copies – though I will miss the oil-stained fingerprints on an original BDN!! This is progress and should lead to suppliers and buyers with integrated systems and perhaps the holy grail or the devil's work itself – the blockchain!'

Eichstradt raised the curtain on a dystopian future: 'Wherever human beings as an employee can be replaced or reduced to save money, it will happen. Shipping is just another part of the industry which will adapt to digitalisation.' However, we – like Draffin – believe that bunkering will always be a 'people industry': people who will have to be very good with technology, but people nonetheless – not Daleks!

As usual, our pool of contributors for the *Bunkerspot* New Year, New Outlook survey represented a cross-section of bunker suppliers, consultants, analysts and service providers as well as legal and environmental experts.

Some participants answered the survey questions but chose not to make their comments public and we have, of course, respected their wishes.

We thank everyone for their contributions – and we are especially grateful to the following:

- Gavin Allwright, Secretary, International Windship Association
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- Rahul Sharan, Lead Research Analyst, Dry Bulk, Drewry
- Adrian Tolson, Lead, BLUE *Insight*
- Mark Williams, Managing Director, Shipping Strategy
- Nicholas Woo, Partner, Shipping and International Trade Team, Birketts LLP



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