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AVIATION INDUSTRY

MARITIME NUMBERS
Operating ships for three generations
The Union of Greek Shipowners has dynamically started its next three-year term with a renewed composition. The large number of UGS members participating in the voting proceedings that ended on 9 February at the Athens Concert Hall pleasantly surprised the shipping community. In the last weeks before the elections, many shipowners and ship operators registered ships to support the UGS and gain greater influence on the final result (as is known, a member has more votes depending on the number and capacity of the vessels registered with UGS). At a time when there is international indifference towards representation, politics, and social issues, the active interest of so many influential names and dynamic young entrepreneurs proves the commitment of many shipowners to collective action in decision-making.

Although it was the first time after many years that two young and very dear personalities to the Greek shipping community had announced their interest in the presidency, the final result was undoubtedly a surprise for everyone. Although the reasons there were two candidates (Ms. Melina Travlos and Mr. George Angelopoulos) remain unclear, older members remarked that there had not been a similar dilemma for the electorate body in several decades, probably since 1974. It was the first time in the 21st century that the shipping community had shown such avid interest in the positions of the BoD. Many of the candidates in last month’s elections have successful careers in international representation bodies and very impressive business profiles. It is also encouraging that many female entrepreneurs - more than ever before- show an interest in collective representation, reflecting contemporary trends in society and politics.

In the elections held on 9 February, Ms. Melina Travlos garnered the most votes on the ballot list. The following members were elected to the board: Maria I. Angelicoussis, George C. Angelopoulos, Constantinos I. Carrousis, Michael D. Chandris, Constantinos V. Constantacopoulos, John G. Coumantaros, (Dr.) John D. Coustas, John P. Dragnis, George Ch. Economou, Dimitrios J. Fafalios, Filippos A. Efstatiiou, Maria A. Fragkista, Frangiskos Ch. Kanelakis, George K. Karageorgiou, Stephanos D. Lecanides, Antonios-Thomas N. Lemos, George S. Livanos, John C. Lyras, Evangelos M. Marinakis, Nikolaos C. Martinez, Markos A. Nomikos, Semiramis S. Paliou, Vasileios A. Papagiannopoulos, Alexandros P. Pappas, Johanna G. Procopiou, Dimitri Frank D. Saracakis, Nikolaos Th. Veniamis, John A. Xylas, George D. Yourtzakis.

Also, it was the first time in the institution’s history that five women had been elected, namely Melina Travlos, Maria Angelicoussis, Maria Fragkista, Johanna Procopiou and Semiramis Paliou. Unfortunately, due to many candidates for the 30 positions, some big names with excellent business profiles and many years of participation in EU or international bodies were not elected.

The newly elected Board of Directors convened on 10 February 2022 at the UGS offices and formed into a body as follows:

President, unanimously elected by the 30 members: Melina N. Travlos
Vice Presidents: Michael D. Chandris, Antonios-Thomas N. Lemos
Secretaries: Dimitrios J. Fafalios, Nikolaos Th. Veniamis
Treasurer: Ioannis A. Xylas
Deputy Treasurer: Constantinos I. Carrousis

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The new President of the Union of Greek Shipowners, Ms. Melina Travlos, immediately following her unanimous election, made the following statement:

"I would like to express my gratitude for the honor of being unanimously elected President of the Union of Greek Shipowners. Everyone’s trust fills me with pride, but above all, modesty, respect, and liability for my mission. I want to especially thank our outgoing President Theodoros Veniamis for his multiannual, consistent, multi-level, and internationally acknowledged contribution to Greek shipping and its social footprint through SYN-ENOSIS.

We have many significant challenges ahead of us. We keep moving forward united and focused on our goal. A national goal, a global goal: to defend the achievements of Greek shipping."

Melina Travlos, daughter of Nikolaos and artist Maritsa Travlos, is the first woman to assume the presidency of the Union of Greek Shipowners, having received a unanimous vote of confidence of the BoD to lead the body. Ms. Travlos, whose origin is from Kefalonia, is Neptune Lines Shipping & Managing Enterprises and Neptune Dry’s chairwoman, whose fleets number 18 Ro-Ros, and five Bulkers, respectively.

The new President and, until recently, Secretary of the UGS Board of Directors is considered by her colleagues to be a highly successful businesswoman. She has studied Business Administration in the USA and has been an experienced and active member of Greek and international representative bodies. As a member of the UGS Board of Directors and the Hellenic Chamber of Shipping for many years, Ms. Travlos is well acquainted with national shipping issues. She is also very familiar with European affairs, having served as President of Malta International Shipowners Association with a regular presence at ECSA and European Union institutions. She has been a close associate and a person of trust of the former President of the UGS Th. Veniamis and those colleagues supporting him during his terms in office. She is the first female President of the UGS in an era when many dynamic and worthy women are taking over important positions of responsibility in international legislative bodies.

A dynamic character and highly competent businesswoman, Ms. Travlos garnered an extremely high number of votes from her co-members. However, it appears the new era will be particularly challenging for the Union of Greek Shipowners since its newly-elected BoD will have to take several initiatives immediately. Due to the hazy situation nationally and in Europe, the term of office of the new board will undoubtedly be demanding. In Europe, environmental issues and Brussels’ insistence on monitoring all recent regulations concerning institutional frameworks for shipping, especially in the Mediterranean states, give rise to concern. As far as the BoD’s relations with the Greek state are concerned, the need to support the national registry, advance maritime education, and attract young people to the maritime profession can only be addressed through a visionary spirit and systematic handling. Many believe that the UGS committees will assume a pivotal role, and the well-staffed secretariat will support the new strategy set out by the 30-member board with its executives’ technical knowledge and experience.

The Greek shipping community congratulates the new board. It hopes it will continue the previous board’s vital work with the same vigilance and passion the outgoing President Theodoros Veniamis had shown regarding social issues and the level-headed resolution of any matters concerning Greek shipping.
Contships’ chairman presents his views on the liner freight market, the growth strategy of his company, and the concept of a shipping company’s diversification into other shipping markets or economic sectors. Mr. Pateras, owner of 41 container ships also discusses the growth prospects of the Greek shipyards and the contribution of the shipowning community to the needs of Greek society.

"CONTSHIPS" HAS MANAGED TO BUILD A FRANCHISE IN THE CONTAINER SECTOR

1. The liner freight market recorded record profits last year, while the outlook for 2022 is positive. From your experience in the shipping business, what are the best strategic moves a company can follow in times of euphoria like this?

   The container freight rates have increased dramatically due to the Covid-19 pandemic because of the severe disruptions it has caused to the supply chain. Obviously, this will change once this is resolved in the coming years and the freight rates will go through a correction phase. Right now, we are observing extremely high rates compared to the previous decade, which makes all the liner companies, which were suffering financial losses over the last decade, extremely happy. The global problems will continue, and it is no longer an issue of supply or building more ships; it’s an issue of fixings the supply chain, which has a lot to do with the distribution of the cargoes on land. We can see that the US and European governments are finding it hard to find solutions in that respect. As far as we are concerned, the container feeder market sector has seen an increase in the charter rates in the region of 400%, which is substantial. Therefore, shipowners, who have acquired vessels at reasonable prices over the last few years, can make a very healthy return. It makes sense to build new ships today because the cost of a newbuilding is the same as the acquisition cost of a ten-year-old ship, but no one can be certain where the market will be three years from now when the newbuildings will be delivered. Therefore, Contships has decided to continue to invest in second-hand vessels that are ready to trade immediately, rather than order new ships.

2. What are Contships’ next moves to stimulate growth?

   Has your strategic choice to invest in the feeder sector paid off, given the exceptional high freight rates?

   Our strategy to invest in the container feeder sector has certainly paid off! Our strategy for the next 24 months is to acquire more vessels that will be in good trading condition and which we will be able to fix to a minimum period of 36 months, thus covering 70% of the investment. We are not prepared to take any chances and make new acquisitions without having secured charters. At the same time, we are prepared to sell if we have interesting offers for any of our vessels. We currently have around $500 million in secured contracts for the next 24 months.

3. It is said that Greek shipping has been following the same strategy it did many years ago when it purchased Norwegian bulk carriers, only now it is buying German containerships. In your opinion, are the Greeks still adhering to this growth model that proved successful in the past, and is this annoying the shipping nations whose maritime sector is shrinking?

   I don’t think the German and the Norwegian markets are comparable. Their only similarity was the tax incentives that both these countries offered to shipowners. Other than that, I think the Norwegians are far more conservative, while the Germans took a considerable risk by building a huge number of ships between 2000 and 2010. As far as Contships is concerned, we acquired our first containerships from German interests in 2015, and since then, we have purchased 49 container ships in total, out of which 43 were of German interests. We acquired these vessels either from German banks or from administrators with zero financing from German banks. Most of them needed extensive refitting and upgrading because the shipowners were unable to tackle liquidity problems to maintain their vessels properly. I believe that the German tax model was a failure in the sense that the vessels were basically built because of the tax incentives offered and the investments were not based on the prevailing market conditions.

In general, I believe that the entire European shipping market is shrinking, as has the Greek market shrunk in the last decade. That is inevitable, considering that the costs of running a ship are much lower in Asia. Therefore, many shipowners will be moving their operations to the Far East in the next 20 years, mainly due to the costs involved. I do not believe that Greece will manage to avoid the same fate as the Northern European nations in the future.
What is your idea of market diversification? Do you think a shipping company can mitigate market risks by entering other shipping markets or different economic sectors? (e.g., real estate, construction, etc.)? First of all, I believe that not putting all your eggs in the same basket is healthy. When it comes to shipping, if you want to expand specifically into the container market, you need to proceed with great caution because this market is controlled by a few big charterers. Therefore, if you want to make an impact in this market and create a good name for yourself, you have to ensure you establish good relationships with charterers, based on the reliable services you will provide. If we wanted to go back and invest in the dry cargo sector or any other shipping sector, we would have to do it through a different entity and not through Contships because Contships has managed to build a franchise that should be kept separate from other types of shipping investments. Overall, I believe it is healthy for a shipowner to be involved in different sectors of the shipping market (tankers, bulkers, and so on). However, in my opinion, each entity should be kept separate if you want to create a proper franchise that will create value for you and your investors. As far as the other non-shipping investments are concerned, I think that people involved in shipping always want to diversify their investments and put some money in non-shipping activities which is the natural thing to do.

How do the shipyards in Syros and Piraeus compare to those of neighboring countries in terms of growth?

We are not using the Syros shipyard, but we have done more than 15 dry-dockings in the Piraeus PPA-Cosco installations over the last three years. We are pleased with the quality of the work. For our ships trading in the Far East, we use shipyards in China, Singapore, or the Philippines. For our ships in the Middle East, we use shipyards in Oman or Dubai and in the Caribbean, we go to Curacao or the Bahamas. But I would say that most of our vessels that trade in Europe and the Mediterranean come to PPA / Cosco for dry docking. We have also established a long-term relationship with workshops in Greece which are very reliable and do excellent work.

What are your thoughts about the presence of Cosco in Greece in general?

Cosco has done an excellent job with the container terminal in Piraeus. I think that its presence is very positive for the port of Piraeus overall, and I believe they will extend the terminal further. I would be pleasantly surprised if Cosco took over one of the major shipyards and used their technical knowledge and expertise to support such an investment in Greece. I know that this is very difficult, but overall, I think that for us as a nation, Cosco is a very strong partner and we are very pleased they have made this investment in Greece.

Your support towards the Oinoussian community, which has pressing needs, especially in matters of maritime education, has been steady and unwavering. In your opinion, how should the Greek shipping community contribute to the social needs of our remote islands amid the provocative actions by Turkey?

All Greek shipowners support their homeland. Oinousses, being one of the islands very close to Turkey, needs special attention considering that we have our Maritime Academy located there. Our intention is to support and serve the numerous social needs in education, culture and public benefit in general, in our country. Greek shipowners promote the synergy and contribution of individuals and institutions that share mutual objectives and are renowned for their sensitivity and solidarity.

Our strategy for the next 24 months is to acquire more vessels that will be in good trading condition and which we will employ for a minimum period of 36 months, thus covering 70% of the investment.
In his first interview to the Greek Press, the Deputy Chief Executive Officer of the Angelicoussis Group presents his views on the competitiveness of Greek-owned shipping companies in the current uncertain environment. He describes his first impressions from his presence in Greece and his aspirations for the Group’s further development. Mr. Støhle also comments on the prospects of the LNG carrier market and the possibility of the Group diversifying further into other segments.

**UNCERTAINTY IN SHIPPING ALSO BRINGS NEW OPPORTUNITIES**

1. **How does the international shipping community view the Greek ship-owning prevalence in today's competitive global market?**

   My view is that the international shipping community is very impressed with the position Greek shipowners have built in the market because, as you said, this is a very competitive market, and that goes for all segments, particularly the LNG segment, where if you go back 10-15 years Greek shipowners were hardly present. In contrast, today, Greek shipowners like Maran Gas and GasLog own large LNG carrier fleets.

2. **What are your first impressions about the Greek management style in shipping?**

   My impression of the Angelicoussis Group is that the company is very well managed by a highly professional and motivated staff and has a strong corporate culture dominated by teamwork and a positive spirit.

3. **What motivated you to move to Greece and join the Angelicoussis Group?**

   I have always been motivated by new opportunities and challenges throughout my career. Over the years, I have held CEO/senior management positions in France, Nigeria, the US, the UK, and Norway, so when the opportunity to join the Angelicoussis Group came up, as the saying goes, “it was an offer I could not refuse”. I had also had the great honor to meet the late John Angelicoussis over the years, for whom I have always had tremendous respect. Therefore, I consider it a real privilege to be working for Mrs. Angelicoussis and the ASGL Group.

4. **The Angelicoussis Group is considered a global shipping pioneer that has stayed true to the traditional values of Greek shipping. How important is it for a company to safeguard its traditional values?**

   I think that staying true to your traditional and corporate values is very important for a company’s DNA. In ASGL, our vision is to be the “leader in seaborne solutions.” Our core values are integrity, reliability, innovation, care, and endurance: this is what defines us as a group. In my view, it is core values that keep the corporate spirit intact and enable you to weather the ups and downs of fluctuating financial markets and shipping cycles.

5. **How would you best describe your leadership style and objectives? Is adaptability key to a CEO’s success in a new business environment?**

   Adaptability and the ability to embrace change are vital because the world is dynamic, and markets change quickly. If you do not think ahead and change along with the markets, you will be left behind. I have held senior CEO positions in different companies, countries, and cultures, and this is one of the most important things I noticed and always brought with me when I moved to a new position. As a leader, I am very open and transparent, very organized, and set clear goals and objectives for what I want us to achieve as a company. I am very demanding on myself and my team but very quick to delegate and praise my colleagues when I see we are making progress on our objectives - I always praise people when they try new solutions, even if they fail, because it is when we try new things and innovations that we make progress as a business.

6. **What do you hope to accomplish within the next few years? What do you see as the most exciting challenges ahead?**

   First of all, I am very pleased to say that the ASGL Group is in a very strong financial position because the strategy of being present in three different segments, namely tankers, dry bulk, and LNG, has proven to be very effective, it provides a strong hedge against the cycles of these three different markets. Still, having said this, I am fully convinced that one of my main challenges will be to support Mrs. Angelicoussis in leading the company through the energy transition and find-
ing the right decarbonization solutions for the existing fleet and newbuilds. We firmly believe that LNG as a maritime industry fuel is part of the solution because LNG and LNG infrastructure are readily available now. Running on LNG means an immediate reduction of CO₂ emissions by 25% compared to burning oil. We also think we can reduce the emissions further in the future by using bio-LNG and new carbon-capture and storage solutions on the vessel itself.

1. What urgent actions are you planning to take concerning vessel orders and possible fleet replacement in these uncertain times for international shipping?

I agree that these are uncertain times, but I believe that uncertain times also bring new opportunities. We have an extensive ongoing newbuilding program, especially in the LNG sector. Our current orderbook consists of ten LNG carriers, which brings our total fleet to 54, and in addition, we have four dual-fuel VLCCs on order, again confirming our strategy to invest in LNG as the maritime fuel of the future. I do not foresee us ordering conventionally fuelled vessels going forward.

2. As an accomplished executive with years of experience in the LNG industry, what are your comments about the wet markets’ current volatility?

First of all, I think the LNG market is a market of stable, long-term growth. We see demand growing by 3-4% per year in the long term, driven by the energy transition from burning coal to using natural gas, especially in the Asian markets, but also in Europe. That will be very good for the LNG shipping market, as this growth means that more LNG vessels will have to be built to ship the LNG to consumers. The LNG shipping market is split into two segments, the spot or short-term market and the long-term market, with the spot segment accounting for about 40% of the total. The spot market has been very volatile, while the long-term market has been relatively steady with reasonable charter rate levels, and I think this situation will continue. At ASGL, we have very little exposure to the spot market, which is a strategy that we will continue, and as mentioned above, we will focus on investing in the LNG shipping market.

3. Is the Group planning to diversify further in new markets and segments?

We are very pleased with the position we have attained by investing. However, we are also working hard to develop the new ship designs needed for the energy transition to be successful, namely vessels that can transport ammonia in large quantities, liquid CO₂ for CCS projects, and hydrogen in either gaseous or liquid form. Of course, these new markets are currently under development and will take some time. Nevertheless, at ASGL, we have the necessary expertise, operating experience, and know-how to design these vessels, so we definitely see many upsides in shipping’s energy transition since these will be new classes of ships specifically using non-carbon energy. At ASGL, we definitely see us playing an essential role as shipowners in these new market segments.

When the opportunity to join the Angelicoussis Group came up, as the saying goes, “it was an offer I could not refuse.”
We currently find ourselves going through a transitional period.

1. 2021 was a year that saw freight rates soar, although a correction has been observed recently. What is the forecast for 2022, and what fundamentals will drive the freight market?

   Indeed, 2021 was a surprisingly good year for our industry as rates reached notably high levels compared to the five-year average. With regard to 2022, we remain optimistic and expect very high growth levels, similar or close to 2021, as we notice the gradual recovery of the economies. For this reason, Central Banks have already begun raising interest rates to cool off the economies and minimize the inflation risk factor. Similarly, the fundamentals for 2022 will derive from the previous year. 2021 commenced with numerous headlines about world shortages. These were initially witnessed in the semiconductor sector, followed by shortages in the container sector. By the end of the year, the list of shortages had just kept growing, with shortages noted in the energy sector and the housing sector. Finally, we reached a point where almost every industry was affected by this domino effect. In my opinion, this phenomenon can only be explained by the fact that the world is expanding at a much faster pace than analysts had expected, and the dry bulk industry will prosper going forward in its attempt to address this ever-growing list of shortages.

2. Why is this happening now?

   We currently find ourselves going through a transitional period. We are moving away from the just-in inventory model, which most production and manufacturing lines had adopted in the past three decades, to the extreme opposite: higher inventory levels. In 2021, several factories were unable to deliver their products promptly due to issues in the supply lines and production had to be halted, even at the most efficient factories around the world. Going forward, these factories invested in more extensive storage facilities to accommodate larger volumes of stocks. As a result, this strategy will further enhance the trade volumes for our industry. The second major development is taking place within communities around the world that need to adapt to the new living standards by upgrading their infrastructures, networks, and gridlines. This transition to electrification will undoubtedly have a tremendously positive impact on the dry bulk industry, especially minor bulk trade.

3. How do the new modus operandi of the production processes and the logistics imbalances affect the average consumer?

   The risk factor for 2022 is the cost of energy and how this will affect production costs. The hardest questions posed in 2022 are mainly focused on how increased prices will affect consumer spending and whether inflation, rising at an alarming rate, will again discourage consumers and hamper economic growth. It remains to be seen whether and to what extent these ever-increasing risk factors will affect the utilization rates on the vessels.

4. Last year, Meadway Bulkers expanded its fleet significantly amid the growing uncertainty in the industry caused by environmental regulations. What degree of risk does such an expansionist strategy entail? What are the reasons behind the current stagnation in ship orders?

   During the first half of 2021, we witnessed the market recovering to very healthy and promising levels. After several years, we finally saw positive cash flows in our businesses and discounted vessel values compared to the market earnings. We knew this opportunity would not last long, and therefore during Q2-Q3, we seized the opportunity and purchased seven (7) vessels. In doing so, we actually doubled our company’s fleet from 6 to a total of 13 vessels within a quarter. In terms of the risks involved, what may have seemed like a rather bold move from the outside was, in reality, something for which internally, as a company, we had been ready and waiting for several years to happen. It was a conscious decision to sit on the sidelines, waiting for a “brighter day” and as soon as we were convinced that the market upturn was real, we acted fast.
Established in 1936 in Piraeus, Greece, the Katradis Group of Companies is one of the most prominent organizations in the shipping industry. Since its beginnings in the manufacture of high quality marine ropes, the company has grown over the years developing expertise in the design and development of high performance ropes, broadening its product range to include sacrificial anodes, steel wire ropes, anchors and anchor chains, port development and deck equipment and establishing its global network. The Katradis Group is committed to providing quality, service and innovative products to its customers for years to come.

The stagnation in dry bulk orders is mainly attributed to the phenomenal profits that container vessels are making, thus pushing shipowners to invest their excess cash flows in available technologies and their fleets’ expansion. We also saw tanker companies investing heavily in new orders being supported by their charters’ ESG requirements.

On the supply side, we notice that shipyards are not as keen to expand their production as in previous years. Instead, they prefer to focus on constructing very large vessels where the profit margins are higher. History has shown that whenever shipyards follow market demand by increasing production, they encounter many difficulties when the demand declines after a few years. So, it seems that shipyards have decided that the only way to survive in this volatile market is to have an efficient and consistent order workflow.

In this light, the positive factor for the dry bulk industry is that the very limited capacity available in shipyards until 2025, combined with increasing world growth rates, will increase utilization rates. At the same time, the dry bulk fleet is aging rapidly, so my view is that the market will experience a short squeeze of vessels coming closer to the end of the decade. Going over historical records, we discover it is typical for an industry underinvested in newbuildings for a prolonged period due to negative cashflows to realize that there are not enough vessels to cover the demand when the world experiences an economic upturn. That is one of the main reasons container vessels have recorded such high freight rates over the past year.

Three large shipping companies of Greek interests were recently listed on the Greek stock market, issuing debenture bonds. Would you consider the prospect of entering this particular market to raise funds?

I have always been in favor of going public. However, due to the soft market at the time, caused by the Olympic games in China, we postponed it until September. Soon after, the unexpected news about Lehman Brothers hit the market, followed by the market crash. By then, the whole idea had collapsed. In my opinion, going public nowadays has more disadvantages than advantages. The main issue with being listed is that you don’t have the flexibility to reduce the fleet in good times by booking profits or cut your losses in bad times. As a result, the listed entity is somehow forced to maintain a large fleet, especially at a time when so many environmental issues are affecting our industry. So, going forward, I believe it would be more prudent to have a relatively small and flexible fleet - one that is always ready to adapt and respond swiftly to any new regulations that will affect our industry.

The Greek stock market is opening new issues, offering attractive transactions for both the investors and the shipowners. It remains to be seen how the current wave of interest rates increases will affect this market. My personal opinion is that this window of opportunity will close, and several transactions will be postponed until we reach the point where interest rates stop increasing, and investors are able to give a price to the risk they are willing to take compared to government bonds. The positive aspect is that as soon as the first transaction went public, several more followed within a short period of time. What can be gleaned from this reaction is a definite appetite for such transactions, which will bring the Greek shipowner closer to the Greek investment community. I believe that this is the first and most vital step towards establishing a trend for more transactions where the Greek retail investor will be familiar with the shipping industry and will be able to compare his investments in Greek shipping companies. With regard to our company,
we don’t feel that the Greek investment public is open to accepting bond transactions for our size and scale. However, we have observed a significant interest in private equity from Greek investors who wish to diversify their investment portfolio and invest in hard assets.

High volatility seems to be replacing the cyclicality of the shipping market. Under these circumstances, do you think shipping is a business choice for new players? In what ways can new ventures affect the modus operandi of the industry?

No matter the sector, it is normal for the shipping industry to experience several years of depression during bad market conditions. However, history has proven the sea always rewards patient and proactive investors and efficient companies in the end. New players tend to be fascinated by the mesmerizing rewards of the good markets, but it needs to be pointed out that all shipowners have more bad than good stories to share about the market.

In the last two decades, shipping companies have matured in several ways. For starters, they have embraced board-of-director structures, and the majority of them are using audited financial statements and very transparent corporate governance. These measures have led to a business environment that is more investor-friendly. For the past two years, we have noticed a lot of interest from investors who prefer to acquire a controlling interest on a single ship run by an experienced shipowner in an arm’s length relationship rather than investing in multi-asset listed companies. The reason behind this trend is that investors favor being in control of the medium to long-term decisions of running a ship. Similarly, they still have the upper hand when deciding to exit from their investment.

Going forward, I truly believe that the game-changer in the near future will be the new fuel technologies - when they eventually become readily available. These fuels may not be ready at the moment, but perhaps in five to twenty years, we might be able to experience firsthand the effects of their accessibility. Of course, there is no way to tell what exactly the future holds for our industry. Still, if that is any indication, no one expected five years ago that car manufacturers would only sell electric cars and that they would move so fast with autonomous driving.

What are Meadway Bulkers’ next growth steps? What is your company’s ESG strategy in this period of extroversion in the shipping business?

Within a relatively short time and led by a strong vision and an extraordinary on-shore team, Meadway Bulkers has been fortunate enough to reach key milestones as a company. We are guided by the valuable experience gained from our 25-year-presence in the field and are constantly inspired by the legacy of the late Dennis Delaportas. Having said this, our goal for the next two years is to increase our vessels’ efficiency and offer our clients the best possible service. It has been proven that, even when sailing on the exact same route, no two ships will burn the same fuel or record the same journey time. At Meadway Bulkers, we aim to offer the vessel that will do the least time but will also burn less fuel. For this reason, we conduct daily meetings with our operations and technical teams to analyze the route weather conditions and the engine parameters so as to improve the efficiency for our charterers’ benefit.

Our fleet currently totals 13 vessels with an average age of eight (8) years. However, our most important characteristic, which we are very proud of, is that 63% of our fleet consists of C+ GHG-rated vessels when the industry average reaches a mere 16.4%. Our main objective is for our company to have only C or D GHG-rated vessels, and for this reason, we are planning to invest in several modifications this year to upgrade our fleet rating further. I firmly believe that these ratings form our competitive advantage and that this will soon become the vital metric that charterers will focus on in order to fix ships and move their cargoes.

The world is expanding at a much faster pace than analysts had expected, and the dry bulk industry will prosper going forward in its attempt to serve this ever-growing list of shortages.
Since 1979, FARAD SA has been designing and manufacturing high quality Tubular & Gasketed Plate Heat Exchangers.

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Seaborne trade rebounds to pre-pandemic levels

According to a recent report update by Clarksons Research, in 2021, seaborne trade recovered to pre-pandemic levels, increasing by 3.4% compared to 2019 to 12 billion tons. This recovery was mainly driven by a 9.3% increase in the volume of grain transported by sea, 6.9% and 6% rise in seaborne LNG and LPG trade, respectively, and 4.7% growth in containers trade compared to 2019 levels. Last year’s economic recovery and the resumption of industrial production resulted in seaborne iron ore trade growing by 4.3% and minor bulk commodities trade by 2.6%. In contrast, there was a downward trend in coal and oil trade due to the pressure on coal and the energy transition. Clarksons Research expects a 3-4% increase in tonne-miles, albeit with varying growth patterns for each commodity. The dry bulk trade does appear to be losing its impetus as it tries to factor in the looming challenges of the conflict in Ukraine. Although logistics imbalances persist, it does not seem that container trade will lose its momentum. As economic growth increases consumer spending, so will the demand for containers.

While tanker market players are awaiting the coveted trade recovery, it will be interesting to see how LNG trade will perform amid heightened geopolitical tensions.

IMF: growth slows as economies grapple with supply disruptions, higher inflation, record debt, and persistent uncertainty

The continuing global recovery faces multiple challenges as the pandemic enters its third year. The rapid spread of the Omicron variant has led to renewed mobility restrictions in many countries and increased labor shortages. Supply disruptions are still weighing on activity and contributing to higher inflation, adding to pressures from strong demand and high food and energy prices. Moreover, record debt and rising inflation constrain the ability of many countries to address renewed disruptions.

Some challenges, however, could be shorter-lived than others. The new variant appears to be associated with less severe illness than the Delta variant, and the record surge in infections is expected to decline relatively quickly. Therefore, the IMF’s latest World Economic Outlook anticipates that while Omicron will weigh on activity in the first quarter of 2022, this effect will fade starting in the second quarter. Other challenges, and policy pivots, are expected to have a more significant impact on the outlook. Global growth for this year is projected at 4.4 percent, 0.5% lower than previously forecast, mainly because of downgrades for the United States and China. In the case of the United States, this reflects lower prospects of legislating the Build Back Better fiscal package, an earlier withdrawal of extraordinary monetary accommodation, and continued supply disruptions. China’s downgrade reflects continued retrenchment of the property sector and a weaker-than-expected recovery in private consumption. Supply disruptions have also led to markdowns for other countries, such as Germany. Global growth is expected to slow to 3.8 percent in 2023. This is 0.2% higher than in the October 2021 WEO and largely reflects a pickup after current drags on growth dissipate.

IMF revised up its 2022 inflation forecasts for advanced and emerging markets and developing economies, with elevated price pressures expected to persist for longer. Supply-demand imbalances are assumed to decline over 2022 based on industry expectations of improved supply, as demand gradually rebalances from goods to services and extraordinary policy support is withdrawn. Moreover, according to futures markets, energy and food prices are expected to grow at more moderate rates in 2022. Therefore, assuming inflation expectations remain anchored, inflation is expected to subside in 2023.

Ship orders: Containerships at the top of the list

Ship orders are moving at a pace slower than in previous years, following a year of frenzied activity, mainly in container ships. In January 2022, 72 orders for bulk carriers, tankers, container ships, and gas carriers were placed against 97 in 2021 and 102 in 2020. Although ship order numbers decreased, there was an increase in allocated funds. About 5.8 billion was allocated for the construction of the 72 ships, recording an increase of 38% compared to January 2021. When the respective amount had been about $4.2 billion for 97 vessels. It is noteworthy that, among other things, the sluggish activity in the shipyards can be attributed to the limited slots due to the significant number of orders placed in 2021. Possible delivery delays due to the heavy workload in the shipyards and uncertainty regarding upcoming environmental regulations have made shipowners/investors reluctant to place new orders.

A positive outlook for the tanker sector

In a press release issued on 3 February, Euronav NV presented its non-audited financial results for the fourth quarter ended 31 December 2021, including its outlook for the tanker market. According to Euronav, the tanker freight rate and market activity recovery exhibited during the window from late August to November came to an abrupt and disappointing end as the Omicron variant of COVID-19 gained immediate traction starting mid-November. That resulted in a swift imposition of restrictions on economic activity and a consequent reduction in both the demand for crude and the supply of expert cargoes. However, Euronav believes that this is a temporary setback in terms of timing and deferring recovery. While an oversupply of tonnage – particularly in the VLCC segment – remained a headwind for shipowners during 2021, it has continued to ease and reduce further during Q4 via recycling. However, recy-
clinging rates would ordinarily be higher were it not for the establishment of the illicit trade originating from Iran that now occupies 50-60% almost exclusively older tankers (18-22 years old). The outlook for cargo volumes looks constructive for 2022, according to Euronav. The IEA believes that OPEC (2.9m bpd) and non-OPEC (3.3m bpd) will deliver a 6.2m bpd YoY increase. They are also forecasting a further rebound in consumption (4.6m bpd). This combination delivers a forecast of over 100m bpd for the first time since 2019. The agency also notes that global crude inventory is at a six-year low, requiring restocking (2.7bn bbls). This provides a foundation for tanker market recovery over the coming 12 months. Other data points during the quarter underpinned a positive set up for the sector. No new build contracts were signed for either VLCC or Suezmaxes – the first time since Q2 2009. Recycling for Q4 – historically a low quarter given seasonal demand – was at its highest since Q4 2001 with 8.5 VLCC equivalents leaving the global fleet. Recycling activity for 2021, while focused on the latter part of 2021, was the second-highest since 2003 (25 VLCC equivalents in total exited during 2021; 42 in 2018, 36 in 2003). Finally, the overall average age of the global fleet continued to rise to over 10.5 years – the highest since Q4 2001. The broader outlook for the tanker sector, therefore, remains constructive. Euronav notes that core fundamentals – orderbook/fleet ratio (25-year low), aged fleet (25% aged over 15 years), and incoming emissions regulations (e.g., EEXI in 2023) – provide a supportive base for recovery. The catalyst for recapturing higher and sustained freight rates will come from delivery in oil supply, consumption, and inventory restocking that key commentators such as the IEA are forecasting for fiscal 2022.

CHINA SURPASSES SOUTH KOREA AS THE WORLD’S NO. 1 SHIPBUILDER

China and South Korea are the two most popular shipbuilding destinations. In fact, throughout the previous year, the two countries had alternately ranked first in the world. However, China had prevailed in terms of total orders in 2021. 2022 started with an acquired momentum for Chinese shipyards, which have maintained the top place to date. According to a report by the South Korean news media Pulse, Chinese shipyards secured 48% of the total orders in compensated gross tons (CGTs) placed in January 2022. Their South Korean competitors secured 45% of new orders, while Japanese shipyards secured only 3%. As a result, Chinese shipyards will build ships of 1.47 million CGTs total tonnage, South Korean shipyards ships of 1.38 million CGTs, and Japanese shipyards ships of 90,000 CGTs.

Regarding the type of ships that came first in orders, LNGCs with a carrying capacity exceeding 140,000 sq.m. and containerships with a total carrying capacity of over 12,000 TEUs accounted for 67% of the total orders. It is worth noting that not a single order for VLCC was placed.

Finally, the order backlog increased by 110,000 CGTs in January, reaching 91.28 million CGTs.

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THE NEWLY - FORMED BOARD OF DIRECTORS OF THE HELLENIC CHAMBER OF SHIPPING

On 16 February 2022, the Board of Directors of the Hellenic Chamber of Shipping (HCS) convened and formed into a body as follows:

**MEMBERS**


**ALTERNATE MEMBERS**

Antonios Kaloudis

On Thursday, 17 February 2022, the newly-formed Board of Directors of the HCS voted for a President, Vice President, and Steering Committee, as follows:

**CHAIRMAN:** Dr. George D. Pateras

**VICE PRESIDENTS:** Messrs. George Sp. Alexandratos and Vassilios Loizopoulos

**MEMBERS of the Steering Committee:** Messrs. George-Nikolaos Gabriel, Spiridon Paschalis, John Platsidakis, Ioannis Triphyllis

ONE OCEAN SUMMIT: NEW STEPS STRENGTHEN EU LEADERSHIP IN PROTECTING THE OCEAN

As part of the EU’s contribution to the One Ocean Summit hosted by France in Brest and a demonstration of the EU’s leading role in bringing a comprehensive response to oceans challenges, the European Commission presented ambitious initiatives to promote a cleaner, healthier and safer ocean. Speaking at the Summit, President von der Leyen announced three key initiatives for cooperation to preserve and revive the oceans: a new international coalition to protect biodiversity on high seas, which constitute 95% of the ocean; a major computing project allowing researchers to simulate the world’s oceans digitally; and the EU’s research mission to restore our ocean and waters by 2030. These initiatives are in addition to the full EU contribution presented throughout the Summit by Commissioners Gabriel, Vălean, and Sinkevicius and address all four strands of the Summit.

Speaking at the One Ocean Summit, Ursula von der Leyen, President of the European Commission, said: “Our mission to protect the ocean needs to be as big as our shared responsibility. That is why we have come to Brest today to join forces and turn the tide. Europe can make a huge contribution as a maritime power. But only together can we step up protection and let our oceans teem with life again.”

WORLD’S FIRST AMMONIA READY VESSEL DELIVERED TO AVIN INTERNATIONAL

The first ammonia-fuel ready vessel in the world, the ABS-classed Suezmax tanker the KRITI FUTURE, has been delivered to owners Avin International LTD, flying the Greek Flag. The landmark 274-meter-long vessel was built by New Times Shipbuilding Co., Ltd (NTS) and has both the ABS Ammonia Ready Level 1 and the Avin ABS LNG Fuel Ready Level 1 notations indicating it is designed to be converted to run on ammonia in the future. The vessel is currently conventionally fueled.

“This vessel represents a milestone in the development of the maritime industry and a step forward in the readiness to utilize alternative marine fuels. ABS’ alternative fuel ready suite of guidance and qualification programs is designed to give owners the flexibility they need and help prepare for a future in which alternative fuels such as ammonia take a bigger role,” said Filippos Nikolatsopoulos, ABS Manager, Greece Business Development.

Ammonia Fuel Ready Level 1 indicates the vessel conforms to the requirements outlined in the ABS Guide for Gas and Other Low-Flashpoint Fuel Ready Vessels. This is part of a suite of industry guidance on alternative fuels developed by ABS, including support for the development of ammonia as a marine fuel. In October 2020, ABS published its Sustainability Whitepaper: Ammonia as Marine Fuel: evaluating the challenges in the design and operation of ammonia-fueled vessels.
ON THE SEAFRONT

COMMERCIAL TRANSACTIONS IN GREECE: THE LATEST DATA
According to the latest data from the Hellenic Statistical Authority, the total value of Greek imports-arrivals in the 12 months from January to December 2021 amounted to 64,190.2 million euros (75,520.6 million dollars) in comparison with 48,953.8 million euros (55,774.9 million dollars) in the corresponding period of the year 2020, recording an increase of 31.1% in euros. The same data show that the total value of Greek exports-dispatches for the 12 months from January to December 2021 amounted to 39,894.6 million euros (47,263.4 million dollars) in comparison with 30,800.2 million euros (35,317.9 million dollars) in the corresponding period of the year 2020, recording an increase of 29.5% in euros.

The deficit of the Greek trade balance for the 12 months from January to December 2021 amounted to 24,295.6 million euros (28,257.2 million dollars) in comparison with 18,153.6 million euros (20,457.0 million dollars) for the corresponding period of the year 2020, recording an increase of, in euros, of 33.8%.

The considerable benefits of activating the platform epilotage.hcg.gr, through which all navigation procedures in all ports of the country will be automated. "A new digital era begins in the provision of navigation services in Greek ports since, with the development of an integrated digital information system, the whole process from the departure/arrival of the ship to the collection of port charges will be fully automated," stressed Mr. Plakiotakis. The project’s purpose is direct communication and, by extent, the best and most effective cooperation between the administration and operator of each port - naval agent - ship - navigation services - port authority in terms of exchanging information and paying port charges.

Without doubt, the automatic creation of digital documents, the automatic sending of documents by e-mail to the recipient (customer), the digital storing of electronic documents, the possibility of proving the validity of the sender and the content of the electronic price; the guarantee of the authenticity of the documents; the automatic verification of documents; saving of time (indicatively it is mentioned that in 2021 approximately 17,000 navigations were carried out); the increase in the productivity, and the ability to provide reliable services with absolute transparency.

GREEK PORTS ENTERING THE DIGITAL ERA
Greek Minister of Maritime Affairs and Insular Policy Giannis Plakiotakis has mandated the immediate activation of the digital platform epilotage.hcg.gr, which through all navigation procedures in all ports of the country will be automated. "A new digital era begins in the provision of navigation services in Greek ports since, with the development of an integrated digital information system, the whole process from the departure/arrival of the ship to the collection of port charges will be fully automated," stressed Mr. Plakiotakis. The project’s purpose is direct communication and, by extent, the best and most effective cooperation between the administration and operator of each port - naval agent - ship - navigation services - port authority in terms of exchanging information and paying port charges.

The considerable benefits of activating the platform include the automatic creation of digital documents, the automatic sending of documents by e-mail to the recipient (customer), the digital storing of electronic documents, the possibility of proving the validity of the sender and the content of the electronic price; the guarantee of the authenticity of the documents; the automatic verification of documents; saving of time (indicatively it is mentioned that in 2021 approximately 17,000 navigations were carried out); the increase in the productivity, and the ability to provide reliable services with absolute transparency.
BELLOWS HELLAS has been manufacturing Expansion Joints and Fan Impellers for more than 20 years.

In order to streamline the requisition process and eliminate the need of samples, our design department has created template drawings outlining the required dimensions for all our products.

Fan Impellers

- I.G.S. Fan Impellers
  - Application: Inert Gas Supply
  - Materials: SUS-316L

- Centrifugal Blowers
  - Application: Supply of air & various gases
  - Materials: SUS-316L, SS 410 & Aluminium

- Sirocco Type Blowers
  - Application: Air Conditioning
  - Materials: SUS-316L & SS 400

- Axial Fans
  - Application: Air Supply
  - Blade Materials: Plastic & Aluminium

Expansion Joints

- Axial Expansion Joints
  - Application: Exhaust Gas
  - Design: Single Multiply Bellow
  - Size: DN50A – DN300A
  - Working Pressure: Up to 4 Bar
  - Materials: SUS321, SUS316L, 254SMO

- Universal Expansion Joints
  - Application: Exhaust Gas
  - Design: Double Multiply Bellow
  - Size Range: DN50A – DN300A
  - Working Pressure: Up to 4 Bar
  - Materials: SUS321, SUS316L, 254SMO

- Rectangular Expansion Joints
  - Application: Exhaust Gas, Air Duct
  - Design: Single Ply Bellow
  - Size: Upon Request
  - Working Pressure: Up to 6 Bar
  - Materials: SUS304, SUS316L, 254SMO

- Steam Expansion Joints
  - Application: Steam
  - Design: Single Multiply Bellow
  - Size: DN50A – DN600A
  - Working Pressure: Up to 20 Bar
  - Materials: SUS321, SUS316L

- Sleeve Type Expansion Joints
  - Application: Steam
  - Design: Double Multiply Bellow
  - Size: DN65A – DN300A
  - Working Pressure: Up to 16 Bar
  - Materials: Body & Flanges ST-37.2, Sleeves SUS304L

- Dresser Type Expansion Joints
  - Application: Cargos line
  - Design: Single Ply Bellow
  - Size: DN65A – DN150A
  - Working Pressure: Up to 10 Bar
  - Materials: Steel ST-37.2 with conical rubber packing

Contact Details
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On the 28th of February, the Greek shipping and intellectual communities, with great sadness, said goodbye to Costas J. Carras, an emblematic intellectual and modern shipping entrepreneur. During the twentieth century, he worked closely with his father, the legendary John C. Carras, throughout both the flourishing and challenging years of their shipping, banking, shipbuilding, and tourism enterprises.

Greek society should never forget that Costas J. Carras was a very influential supporter of the anti-dictatorship struggle in Greece (1967-1974). At the hearing of the “Greek Case” at the Council of Europe in 1968 and 1969, he aided witnesses to travel to Strasbourg to testify against the junta. As a result, the colonels, pressured by European countries, withdrew Greece from the Council of Europe.

The Greek shipping community should also never forget that Costas J. Carras’ decisive initiatives marked a new era in the industry’s public image, especially at the beginning of the political changeover in 1974. Carras was one of the closest collaborators of Anthony J. Chandris before and after his election as Chairman of the Union of Greek Shipowners in 1975. Together they launched the first systematic campaign to attract young people to the maritime profession and designed and organized the first roundtable discussions with representatives of the country’s political and broader economic communities to break free from the introversion of the past. Greek shipping’s extroversion and opening to the society during the difficult years of the political changeover in 1975 owe a lot to his tireless efforts and lively and progressive spirit. He was also a very important member of the Greek Shipping Cooperation Committee in London and its vice-president for several years. During the oppressive years of the dictatorship in Greece, Costas J. Carras and his wife Lydia Carras, nee Potamianos, had envisioned the establishment of the Hellenic Society for the Protection of the Environment and Cultural Heritage, which was finally founded in 1972. Costas and Lydia Carras, who then resided in London, decided to act and mobilize like-minded people to protect the environment and cultural heritage in one of the darkest periods in Greek environmental and cultural history.

We were blessed to have received an exclusive statement from Costas J. Carras recorded a few days before his passing on the 28th of February, which appears in the following feature about the 50th anniversary of the establishment of the Hellenic Society of this issue.

Costas J. Carras’ decisive initiatives marked a new era in the shipping industry’s public image.

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Greek Shipping Cooperation Committee in London and its vice-president for several years. During the oppressive years of the dictatorship in Greece, Costas J. Carras and his wife Lydia Carras, nee Potamianos, had envisioned the establishment of the Hellenic Society for the Protection of the Environment and Cultural Heritage, which was finally founded in 1972. Costas and Lydia Carras, who then resided in London, decided to act and mobilize like-minded people to protect the environment and cultural heritage in one of the darkest periods in Greek environmental and cultural history.

We were blessed to have received an exclusive statement from Costas J. Carras recorded a few days before his passing on the 28th of February, which appears in the following feature about the 50th anniversary of the establishment of the Hellenic Society of this issue.
The collective effort of civil society to protect the social acquis and defend supreme human values always raises hopes. This year, the Hellenic Society for the Protection of the Environment and Cultural Heritage, the visionary idea of Costas J. Carras and Lydia Carras shared by an enlightened generation of Greeks, celebrated 50 years since it came into being. During the difficult years of the dictatorship, the founders’ vision was to protect Greece’s cultural heritage and ensure the preservation of natural landscapes in areas of exceptional beauty, which the colonels and their collaborators intentionally or unintentionally desecrated. Among friends and associates, the President of ELLET, as it is widely known, Lydia Carras, and vice president Costas Stamatopoulos presented Fragile Earth, where the new excavation permits for the installation of wind turbines in the surrounding mountainous area will endanger a settlement of unique importance.

Referring to the anniversary publication’s title, both the Vice President of ELLET Costas Stamatopoulos and its President, Lydia Carras, expressed the belief that the country’s problems are not only “Greek” since “the whole planet is suffering.” The title of the rich publication, Fragile Earth, thus reflects the global status quo and the need for international collaboration to protect nature, culture, and heritage.

The publication’s sponsor Themistocles Vokos was one of the first and regular supporters of the Hellenic Society. In his brief speech, he referred to his almost 60-year friendship with Costas Carras, emphasizing the imagination, patience, and perseverance of the society’s associates, noting that “they are ready to clash with any interest.” He also stressed that ELLET’s members and associates “are not all words and no action; we have seen the tangible results of their efforts.”

Born from the idea of two worthy seafarers, Costas J. Carras and Lydia Carras of the Potamianos family, ELLET stirred up the Carras’ interest and won the unwavering support of the Greek shipping community from the very first day. Georgios P. Livanos, Ioannis Kouloukoudis, Georgios Patmanios and Anthony Chandris were among ELLET’s founding partners and generous supporters. Its major donors include the Eugenides, Leon & Aspasia Lemos, and Stavros Niarchos Foundations. Other important donors are Mmes. and Messrs. Fotini Livanos, Alexandros and Marilena Kedros, Loula Kertsikoff, Nikolaos Lemos, Ioanna K. Lyra, Ioannis Hadjipateras, Athanasios and Marina Martinos, George and Alexandra Prokopiou, and many more.

A few days before his passing away Costas J. Carras stated: “ELLINIKI ETAIRIA - Society for the Environment and Cultural Heritage (ELLET) sprang from the Greek Shipping community. And this, because Greek seamen, wherever they may be, do not forget their homeland. ELLET grew and was able to continue and expand its often difficult work with the continuous and generous support of many other members of the Greek Shipping family. We do hope that the younger generation will be with us in the fight for the protection of the environment and our cultural heritage and will want to support the work of the ELLINIKI ETAIRIA with the same generosity shown by their parents, so that we can all together succeed in preserving the beauty of our islands, our precious nature and cultural heritage”. The multi-page bilingual edition is already sold in major bookstores. It hosts the history of the Hellenic Society and its diverse actions and successes but also the thoughts of distinguished Greeks of arts and letters, and entrepreneurship, who express their views on current environmental and cultural issues.
Russia launched a large-scale invasion of Ukraine on 24 February 2022, immediately following its recognition of the breakaway Ukrainian territories and the military operations in the Luhansk and Donetsk areas in the Donbas region on the eastern borders with Russia, which has frozen the world in its tracks. Donetsk is an important industrial city and one of eastern Europe’s main steel-producing and mining centers. Luhansk is also an industrial city with vast coal reserves in the nearby counties. The two territories have been run for almost a decade by separatists of Russian origin within Ukraine who share Vladimir Putin’s vision for an all-mighty Russia. Ukraine continues to defend itself heroically at the time of writing, and Kyiv is hoping for a ceasefire with the start of negotiations. Countries across the globe are appealing to Russia to stop its invasion of Ukraine, and the West is escalating Moscow’s economic strangulation and international isolation while extending arms and humanitarian aid to Ukraine. In an expression of solidarity, Poland, Slovakia, Hungary, Romania, and Moldova have opened their border crossings to welcome Ukrainians — mostly women and children. According to the UN refugee agency UNHCR, roughly half a million people have crossed the Ukrainian borders. Whatever the future developments in Ukraine, the current situation has sent economies worldwide reeling, as it threatens to destabilize the global markets by impacting most commodities trade sectors as the country is a massive supplier of agricultural products, metals, and other commodities shipped in bulk to Europe and China, the Middle East, and Northern Africa. Ukraine has repeatedly stated that the EU is its largest trade partner, accounting for more than 40% of its trade in 2019 and 2020. According to EU official statistics, total trade between the EU and Ukraine reached €43.3 bn in 2019, and Ukrainian exports to the EU amounted to €191 bn in 2019. In the last decade, the main exports from Ukraine to Europe have been raw materials (iron, steel, mining products, agricultural products), chemical products, and machinery. Official reports from Brussels and Kyiv show that the last three years have seen a considerable increase in the range of 48% in Ukrainian commodities and products exported to Europe. On the other side, EU exports to Ukraine amounted to over €24.2 bn in 2019. The main EU exports to Ukraine include machinery and chemicals. Imports from the EU States have also increased by 48% in the last three years. Ukraine’s biggest trading partner is, as expected, Germany, and analysts predict that while the entire European Union will be affected by this ongoing crisis, it will be a severe blow on Germany will be severely hit as its oil and gas prices will be affected.

THE IMPLICATIONS OF THE UKRAINE CRISIS FOR THE WORLD FOOD CHAIN

In the grain trade sector, analysts expect disruptions in the grain and barley supply chains as the crisis takes a turn for the worse. The prices of other products will also be severely affected, as Ukraine is one of the world’s largest producers of potatoes, pumpkins, buckwheat, and tomatoes. It is also the largest producer of sunflower seeds globally, with 14.1 million tons per year. Ukraine is considered the granary and breadbasket of Western Europe, so the invasion will severely disrupt the food supply chain leading to a long-term shock for food and agricultural commodity traders across the EU. Furthermore, as so many other states, especially in the Near East and Northern Africa, also rely on Ukrainian agricultural products, it will cause international supplies and trade havoc.

THE EFFECTS ON THE GLOBAL ENERGY AND MINERALS MARKET

Apart from the anticipated rise in oil and gas prices, most other mineral trade sectors will also be affected. Rich iron ore reserves located in Ukraine’s central and eastern provinces form the basis of the country’s prosperous iron-and-steel industry. In addition, the country possesses large reserves of manganese-bearing ores, bituminous, anthracite, and brown coal.

*The article was written on February 27*
coal. However, the coal mines of Ukraine are among the deepest and most dangerous in Europe, as methane-related explosions have caused hundreds of deaths and injuries to miners in recent decades. Ukraine also has substantial titanium ore, bauxite, nepheline, alunite, and mercury ores deposits.

THE REACTION OF THE SHIPPING COMMUNITY

The shipping community is closely watching developments on the Russian-Ukrainian front as there is already a decline in cargo flows from the Black Sea. The invasion will drastically change the global seaborne trade status quo as its effects are already apparent also on crew changes. Before the invasion, the German Shipowners' Association has made the following announcement: ‘We are monitoring the developments in Ukraine with great concern and are advising our members to exercise great caution when entering the Black Sea. We are in close contact with all relevant authorities to make sure German shipping and the seafarers on board our ships stay safe in these uncertain times of crisis. Even if this area is not one of the main routes for German shipping, we fear that the conflict will have consequences beyond the region and thus also for shipping, for example, crew changes by Ukrainian seafarers or possible sanctions.' At the same time, P&I Clubs are constantly updating their members on the situation in the area in order to avoid incidents that would endanger the safety of ships, seafarers, and cargoes.
INTERNATIONAL NEWS FROM THE SEAS OF THE WORLD

LINER COMPANIES EXPAND IN LAST-MILE LOGISTICS
A.P. Moller - Maersk has announced the intended acquisition of Pilot Freight Services (Pilot), a leading U.S.-based first, middle and last mile as well as border crossing solutions provider, specializing in the big and bulky freight segment in North America for B2C and B2B distribution models, from ATL Partners, a sector-focused Private Equity firm in New York and British Columbia Investment Management Corporation (BCI), one of the largest institutional investors in Canada. With the intended acquisition of Pilot, Maersk will extend its integrated logistics offering deeper into the supply chain of its customers. It will complement the earlier acquisitions already made to provide integrated logistics solutions in North America, especially with Performance Team (PT) (B2B warehousing and distribution) and Visible SCM (e-commerce warehousing and parcel distribution). Pilot will be adding specific new services within the fast-growing big and bulky e-commerce segment, thus increasing cross-selling opportunities. It will also create significant cost synergies by leveraging capabilities across the different parts of service solutions. The combined Pilot and Maersk scale will offer customers app. 150 facilities in the U.S., including distribution centers, hubs, and stations. This landside logistics network depth combined with Maersk’s international presence will create tremendous new, end-to-end supply chain performance capabilities. Pilot’s acquisition of American Linehaul Corporation in July 2021 was instrumental in creating this leading market expertise in middle-mile, LTL expedited capabilities.

SHIPPING & ENTREPRENEURSHIP

SAFE BULKERS OPENS FOR THE GREEK CAPITAL MARKET
Safe Bulkers Inc. announced on 11 February that its wholly-owned subsidiary, Safe Bulkers Participations Plc, has successfully priced its previously announced offering of €100 million of unsecured bonds to be listed on the Athens Exchange (“ATHEX”). The Bonds have a coupon of 2.95% payable semi-annually. The Bonds are guaranteed by the company and will mature in 2027. The trading of the company’s bonds on the ATHEX commenced on 14 February 2022 under the ticker symbol “SBB1”.

The net proceeds of the offering are intended to be used for the acquisition of vessels, redemption of preferred shares, repayment of debt, and/or general corporate purposes.

Dr. Loukas Barmparis, President of the company, commented: “We are pleased to announce the closing of the first pure dry bulk company shipping bond on the Athens Exchange, which effectively diversifies further the company’s capital resources.”

MOL TO PARTICIPATE IN CARGO TRANSPORT OF ARCTIC LNG 2
Mitsui O.S.K. Lines Ltd. (MOL) announced it had agreed to participate in cargo transport for the Arctic LNG 2 Project on Russia’s Gydan Peninsula and had signed, through an MOL subsidiary, a charter contract for a newbuilding ice-breaking tanker with the project company, whose largest shareholder is Russia’s Novatek. The vessel will be constructed at Guangzhou Shipyard International Company Limited, a subsidiary of China State Shipbuilding Corporation Limited (CSSC), and is slated for delivery in 2024. This contract follows the October 2020 signing of charter contracts for three ice-breaking LNG vessels to serve the same project.

The vessel will transport condensate from the LNG/condensate plant inside the Arctic Circle on the Gydan Peninsula, mainly to Europe (westbound) via the Northern Sea Route. MOL has operated three ice-breaking LNG carriers on the Northern Sea Route for the Yamal LNG Project since March 2018. In addition, three ice-breaking LNG carriers for the Arctic LNG 2 Project are scheduled to go into service in 2023. MOL has earned high regard for the track record it has built on the Northern Sea Route, its technological capabilities and expertise, and accumulated resources, all of which contributed
to the conclusion of the contract. It will further enhance its experience and know-how on the Northern Sea Route through its involvement in transporting condensate as well as LNG, as it works to expand the maritime transport of these next-generation, environment-friendly energy resources from the Russian Arctic. It will also ensure stable access to energy produced in the Russian Arctic to supply Japan steadily and promote worldwide decarbonization efforts.

ZIM CHARTERS THIRTEEN CONTAINER SHIPS FROM NAVIOS MARITIME PARTNERS

ZIM Integrated Shipping Services has announced a new charter agreement with Navios Maritime Partners L.P. ZIM will charter five secondhand vessels for up to 4.5 years and eight newbuilt vessels for up to 5.3 years for a total charter hire consideration of approximately $870 million. The five secondhand vessels, which range from 3,500-4,360 TEUs and are expected to be delivered in the first and second quarters of 2022, will be deployed across ZIM’s global network. The eight 5,300 TEU wide beam newbuilds, scheduled to be delivered during the third quarter of 2022 through the fourth quarter of 2024, are expected to be deployed in trades between Asia and Africa. Eli Glickman, ZIM President & CEO, stated: “With this latest chartering transaction, we continue to act on our strategy of chartering-in highly versatile vessels to best serve our customers and meet significant and sustained demand across our global network. This transaction enhances our position as a global-niche operator, contributing immediately to the Group’s market share. The added capacity will enable ZIM to capture new business in the coming months.”

Signal Ocean has announced a partnership with MarineTraffic to showcase the company’s estimated vessel valuations on its platform. Additional data over the ship’s voyage or lifetime are critical to our millions of users. Our vision is to leave no waters uncharted and provide more information via our platform than ever before. We will be announcing further significant enhancements to MarineTraffic in the coming months.”

Signal Ocean Vice President of Business Development and Partnerships, David Watts, said: “The data we provide on the Signal Ocean Platform and by way of APIs is popular with professionals looking for independent and accurate insight into the current values of fleets or individual vessels. We’re excited to see our data available on such a popular site.”

BLUE ECONOMY

A FIRST-OF-ITS-KIND GREEN SHIPPING CORRIDOR ON THE WORLD’S BUSIEST CONTAINER SHIPPING ROUTES

Los Angeles and Shanghai have announced a partnership of cities, ports, shipping companies, and a network of cargo owners to create a first-of-its-kind green shipping corridor on one of the world’s busiest container shipping routes. Convened by C40 Cities and the ports of Shanghai and Los Angeles, and including key maritime stakeholders, this partnership has agreed to work on an initiative to establish a Green Shipping Corridor to decarbonise goods movement between the largest ports in the United States and China. The partnership intends to work together to achieve these goals by developing a “Green Shipping Corridor Implementation Plan” by the end of the 2022 calendar year, including deliverables, milestones, and roles for the partnership. Key decarbonization goals for the Green Shipping Corridor partnership include:

- The phasing in of low, ultra-low, and zero-carbon fueled ships through the 2020s, with the world’s first zero-carbon trans-Pacific container ship containers introduced by 2030 by qualified and willing shipping lines.
- The development of best management practices to help reduce emissions and improve efficiency for all ships using this international trade corridor.
- Reducing supply chain emissions from port operations, improving air quality in the ports of Shanghai and Los Angeles and adjacent communities.
- The City of Shanghai, the City of Los Angeles, the Port of Hong Kong (through the Shanghai Municipal Transportation Commission), the Port of Los Angeles, and C40 Cities initiated this Green Shipping Corridor partnership. Participating partners include A.P. Moeller – Maersk, CMA CGM, Shanghai International Ports Group (SIPG), COSCO Shipping Lines, the Aspen Institute’s Shipping Decarbonisation Initiative, facilitators and the Maritime Technology Cooperation Centre – Asia.

THE CMA CGM GROUP DECIDES IT WILL NO LONGER CARRY PLASTIC WASTE ON ITS SHIPS

During the One Ocean Summit organized by Emmanuel Macron, President of the French Republic, Rodolphe Saadé, Chairman and CEO of the CMA CGM Group, announced that the Group would no longer be transporting any plastic waste aboard its ships. With this landmark decision effective as of 1 June 2022, the CMA CGM Group continues to demonstrate its commitment to protecting the environment and conserving biodiversity.

In his address, Rodolphe Saadé also announced that the Group will host one of the two sites of the French Institute for Decarbonation at Tangan, the Group’s major innovation and training center due to open in Marseille in 2023.

Every year, around 10 million tons of plastic waste end up in the sea. Unless action is taken, that figure is set to triple over the next 20 years, reaching 30 million tons per year, which will cause irreversible damage to marine ecosystems, fauna, and flora.

The causes of this pollution include open-air storage and the absence of processing infrastructure for plastic waste that does not actively get recycled or reused.

To make the decision to halt the transport of plastic waste onboard its ships, CMA CGM will prevent this type of waste from being exported to destinations where sorting, recycling, or recovery cannot be assured. The Group has thus decided to take practical steps where it has the operational capability to do so, heeding the urgent calls made by certain NGOs.

With this decision, the CMA CGM Group is stepping up its efforts to make conserving biodiversity one of its CSR policy priorities and develop a more responsible and fair trade for everyone and the planet.

PORT OF HAMBURG INVESTS IN HYDROGEN

Air Products and the Saada Hamburg Port Authority (HPA) have announced that they will work together, under a Memorandum of Understanding, to identify possible ways of establishing a comprehensive hydrogen value chain across the port of Hamburg. Both Air Products and the HPA are aligned in their intention to accelerate the production, supply chain, and consumption of hydrogen in the North of Germany and the Free Hanseatic State of Hamburg. In collaboration, both parties are focused on identifying real opportunities to stimulate hydrogen demand and subsequent decarbonization of heavy-duty vehicles (including port logistics) and industry.

Jens Meier, CEO Hamburg Port Authority: “The HPA is committed to future-proof and innovative technologies and their use in the port, thus supporting decarbonization and the City of Hamburg’s Clean Air Plan. This MoU is a further step on our way to taking concrete action here. ‘Ports and their industrial clusters in Hamburg and around the world have a critical role to play in expanding hydrogen’s role in the energy transition,’” com-
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International waters

The International Chamber of Shipping (ICS) has warned of supply chain disruption should the free movement of Ukrainian and Russian seafarers be impeded.

The Seafarer Workforce Report, published in 2021 by BIMCO and ICS, reports that 1.89 million seafarers are currently operating over 74,000 vessels in the global merchant fleet. Of this total workforce, 198,123 (10.5%) of seafarers are Russian of which 71,652 are officers and 126,471 are ratings. Ukraine accounts for 76,442 (4%) of seafarers of which 47,058 are officers and 29,383 are ratings. Combined they represent 14.5% of the global workforce.

To maintain this unfettered trade, seafarers must be able to join and disembark ships crew change freely across the world. With flights cancelled in the region, this will become increasingly difficult. The ability to pay seafarers also needs to be maintained via international banking systems, notes the ICS.

Guy Platten, Secretary General of the International Chamber of Shipping said:

“The safety of our seafarers is our absolute priority. We call on all parties to ensure that seafarers do not become the collateral damage in any actions that governments or others may take.”
CHINA AND RUSSIA STRENGTHEN TIES

President of the Russian Federation Vladimir Putin visited China in early February at the invitation of President of the People’s Republic of China Xi Jinping. The Heads of State held talks in Beijing and took part in the opening ceremony of the XXIV Olympic Winter Games.

The talks focused on the bilateral agenda and trade and economic cooperation. The Chinese President declared his intention to increase bilateral trade to US$250 billion. The President of Russia spoke about promoting national currencies in mutual settlements, the mutual recognition of coronavirus vaccines, and the opening of borders depending on the epidemiological situation. A joint Russia-China statement and a package of documents were adopted within the framework of the visit.

They include an intergovernmental agreement on cooperation in anti-monopoly legislation and competitive policy and several other interdepartmental documents, such as the agreement on cooperation in ensuring compatibility and interoperability of GLONASS and BeiDou navigation satellite systems in terms of the system time scales; a joint statement on the completion of a roadmap for high-quality development of Russian-Chinese trade in goods and services; and a plan of consultations between the foreign ministries of Russia and China in 2022. In addition to that, the sides have signed a memorandum of understanding between the Russian Economic Development Ministry and the Chinese Ministry of Commerce to promote investment cooperation in sustainable (green) development, and a joint statement between the relevant ministries on holding the Russian and Chinese years of cooperation in physical education and sports in 2022–2023. The commercial contracts signed are related to the purchase and sale of natural gas via the Far Eastern route and the purchase and sale of crude oil for delivery to oil refineries in Western China. Other documents signed include a memorandum of understanding on cooperation in the field of low carbon development between Rosneft and China National Petroleum Corporation (CNPC) and an agreement on cooperation in the field of information development and digitalization between Rosneft and Huawei Technologies for the period to 2027.

IS THE BRI A DOUBLE-EDGED SWORD FOR PAKISTAN?

Pakistani Prime Minister Imran Khan has hailed China’s Belt and Road Initiative as a means to fight poverty in his country at a time when economic and geopolitical analysts, particularly in the West, have expressed skepticism about the grand plan. In a recent interview reproduced in many Chinese media, the Pakistani prime minister expressed the opinion that skepticism about the CPEC (China-Pakistan Economic Corridor) and the port of Gwadar was unreasonable, adding that Pakistan should follow China’s economic model if it wants to reduce poverty.

CPEC is the flagship of China’s projects in the Southern Asia county under the BRI, while the port of Gwadar is a promising undertaking to enhance connectivity in the region. “We view the CPEC and the Gwadar Port as an important opportunity for our geoeconomics and believe that it is not just a Chinese and Pakistani affair. We invite any other country to join and invest in CPEC projects,” commented the Pakistani prime minister. It should be mentioned that he was one of the few world leaders to attend the Winter Olympic opening ceremony in Beijing. He then met with his Chinese counterpart Li Keqiang, and the two signed an agreement to launch the second phase of the CPEC.

Pakistan is one of China’s closest partners on the diplomatic and investment fronts, at a time when Beijing is facing increasing pressure from Western countries. Of course, Pakistan has borrowed $62 billion from China for the CPEC while also seeking a bailout program from the IMF.

WHAT IS THE ROLE OF AFRICA IN THE ALREADY TENSE CHINA-TAIWAN RELATIONS?

During a visit to Taipei, the Foreign Minister of Somaliland extended an open invitation to Taiwan to invest in oil and other economic sectors in his country. For the record, that Somaliland has not been officially recognized by any other country as an independent state, while Taiwan has no ally in Southern Africa other than tiny land-
locked Eswatini. In an effort to develop ties in Africa, Taiwan managed to open a representative office in Somalia in 2020. The move provoked a strong reaction from China, which maintains a military base in Djibouti, which borders Somalia. During his recent meeting with Taiwanese President Tsai Ing-wen, Somali Foreign Minister Esse Kayd urged major Taiwanese companies to invest in Africa. “This is mutually beneficial, as Taiwan will increase its exports, while Somalia will increase employment opportunities for its young people,” said Minister Kayd. He added that “Somaliland has great potential for investment in the mining sector, as it has reserves of fossil fuels, i.e., oil, gas, and coal, which can be easily mined.”

For her part, President Tsai Ing-wen said, “Somaliland is an important location in East Africa for the implementation of Taiwan’s Africa project. Taiwan and Somaliland have developed extensive cooperation in the fields of agriculture, fisheries, education, and energy in recent years.”

Somaliland is desperately seeking recognition from countries such as the United States to curb China’s influence in the region. In cooperation with UK-based Genel Energy, Somaliland and recently signed an agreement with the state-owned oil company Taiwan CPC Corporation for oil exploration in the region. In cooperation with UK-based Genel Energy, Somaliland and recently signed an agreement with the state-owned oil company Taiwan CPC Corporation for oil exploration in the African country.

**PASSENGER SHIPPING**

**WORLD’S LARGEST CRUISE SHIP DELIVERED TO ROYAL CARIBBEAN**

Royal Caribbean International recently took delivery of Wonder of the Seas, the next highly anticipated and innovative ship in the cruise line’s award-winning lineup. A traditional flag-changing ceremony took place in Marseille, France, with shipyard partner Chantiers de l’Atlantique, marking the completion of three years of construction.

Welcoming the Wonder of the Seas to the Royal Caribbean family was Royal Caribbean Group Chairman Richard Fain, Royal Caribbean Group President and CEO Jason Liberty, Royal Caribbean International President and CEO Michael Bayley, and Laurent Castaing, General Manager, Chantiers de l’Atlantique in Saint-Nazaire, France.

“Wonder of the Seas will energize cruising in a bolder and bigger way. Adding this ship to our already best-in-class fleet elevates the company in continuing to lead the industry with new features and innovation. This is one more way that we’re delivering world-class and memorable vacations, responsibly, to guests around the world,” said President and CEO of the Royal Caribbean Group Jason Liberty.

“Taking delivery of Wonder of the Seas is the culmination of 30 months of ingenuity and partnership across more than 2,000 committed crew members and workers who are among the best at what they do,” said Michael Bayley, President and CEO, Royal Caribbean International. “Along with taking the revolutionary Oasis Class ships to a new level of wonder, innovation, and adventure, Wonder sets the stage for the spring and summer vacations families and all travelers alike are looking forward to in the new year. The combination of brand-new features and favorites that span thrills, entertainment, dining, and nightlife is unparalleled, and it’s what will make our latest and most innovative ship the world’s newest wonder and the ultimate vacation in the Caribbean and Europe.”

“Wonder of the Seas represents a new step forward in the Oasis Class ships. Our teams have worked under difficult conditions but in a very united way to finally make major changes that enhanced the ship performance,” said Laurent Castaing, General Manager, Chantiers de l’Atlantique. “Wonder is really an outstanding new ship.”

**THE CRUISE INDUSTRY OUTLOOK**

Cruise Lines International Association (CLIA), the leading voice of the global cruise community, recently released the 2022 State of the Cruise Industry Outlook report. The annual report shows how the industry has continued to resume responsibly with proven protocols that are leading the way, underscores the value of cruise tourism to local communities and national economies worldwide, and charts the industry’s continued progress towards achieving carbon neutrality.

“The 2022 State of the Cruise Industry Outlook report provides an opportunity to reflect on how far our industry has come as CLIA ocean-going cruise lines have welcomed more than six million guests onboard since resuming operations in July 2020. While our focus on health and safety remains absolute, our industry is also leading the way in environmental sustainability and destination stewardship,” said Kelly Craighead, President and CEO of CLIA.

The 2022 outlook report also features reflections from cruise industry partners and community members worldwide.

**Report highlights**

- **Fleet of the Future:** By 2027, the CLIA ocean-going cruise line member fleet will reflect significant advancements in the cruise industry’s pursuit of a cleaner, more efficient future, by then, the CLIA member fleet will include:
  - 26 LNG-powered cruise ships (6% of global capacity);
  - 231 cruise ships fitted with Advanced Waste-Water Treatment Systems (8% of global capacity);
  - 174 cruise ships with shoreside power connectivity (66% of global capacity);

- **2020 Global Economic Impact:** Compared to 2019, the 2020 economic data illustrates the pandemic’s far-reaching effects on the wider cruise community and underscores the importance of cruise tourism to economies worldwide. In 2020, there were 5.8M passenger embarkations (-81% from 2019); 576K cruise-supported jobs (-51% from 2019); $63.4B total economic contribution (-59% from 2019);

- **Resumption Progress:** Industry-leading protocols facilitate the resumption of cruise tourism around the world,
putting people back to work and reinigorating local and national economies. More than 75% of ocean-going member capacity has returned to service, and nearly 100% are projected to be in operation by August 2022.

• Value of Cruise Tourists: Cruise tourists, and the money they spend, create jobs and opportunities for local communities globally. Every 24 cruisers create one full-time equivalent job. Cruisers spend an average of USD 750 per passenger in port cities over the course of a typical seven-day cruise; 6 in 10 people who have taken a cruise say that they have returned to a destination that they first visited via cruise ship.

‘Viking Sky’ inaugurated this year’s cruise season on 5 February, earlier than ever before. Viking Cruises as well as Azamara Cruises, Celebrity Cruises, Celestyal Cruises, CroisEurope Cruises, Hapag Lloyd Cruises, Mino Cruises, Noble Caledonia, Norwegian Cruise Line, Oceania Cruises, SilverSea Cruises, have included Thessaloniki in their itineraries, recognizing the ongoing commitment of ThPA S.A. to the continuous upgrading of the range and quality of its services, and the ties of trust it has developed with leading companies in the cruise industry. ThPA S.A. already has 55 confirmed cruise arrivals from 11 companies and 15 different cruise ships for 2022. Moreover, 55% of the 2022 cruise arrivals will be homeporting arrivals, highlighting the Port of Thessaloniki as an international port of choice for beginning and/or finishing cruises, with the capability of embarkation and/or disembarkation for passengers.

On this occasion, Mr. Athanasios Liagkos, Executive Chairman of the BoD of ThPA S.A. noted: “We, at ThPA S.A., are constantly upgrading the spectrum and quality of our services, building further our relationships of mutual trust with cruise lines to promote and attract cruise vessels to the port in order to support the economy and society by increasing tourist traffic. Our goal is to promote the destinations, experiences (such as tradition, culture, gastronomy), and the wider region’s various opportunities. We say that they have returned to a destination that they first visited via cruise ship.”

DYNAMIC START TO THE NEW CRUISE SEASON IN THESSALONIKI

The arrival of the first cruise ship for 2022 at the Port of Thessaloniki marks the dynamic opening of the new cruise season for ThPA S.A. Specifically, Viking Cruises vessel...
Since the outbreak of Covid-19, global trade has been severely affected. How did your company react to the turmoil caused in the international trade flows? The truth is that we have all learned a lot from the pandemic lesson in the last two years. Fortunately, our company’s long history and experience have proved pivotal in creating a protection wall against unforeseen hindrances, such as this. In the midst of a global crisis, we managed to stay on top of the situation, thanks to our proactive planning and the dedication of our talented workforce, who have performed amazingly throughout this period. We adapted quickly to the changes in our day-to-day operations and secured worldwide availability of our products at the quantities and ports of the pre-pandemic era. On the downside, due to the increased costs in raw materials, transportation, and energy, we have been caught in the crossfire, trying to balance healthy business profitability with the most competitive product pricing for our customers. Our efforts have definitely paid off as, despite the inauspicious prospects, we have actually managed to grow our customer base and increase our sales volume.

How has Marichem Marigases sustained its competitive advantage in the marine chemicals industry? What are your future goals? To begin with, we have achieved economies of scale that led to reduced costs, increased production volume, and improved production systems and processes. As a customer-focused company, we have adopted a strategy that revolves around creating the ultimate customer experience. We are open to listening to feedback, understanding its underlying need, and incorporating it into our production process. This way, we build trust and loyalty with our customers and adapt faster to market changes, which gives us a significant competitive advantage and plenty of room for growth. Offering basic services is not an option for us; it takes continuous effort, dedication, technical expertise, and innovative thinking to reach the top and become a front-runner in the global marketplace.

How does your company approach the IMO policies on curtailing gas emissions? Chemicals and gases are essential for the vessel, shipyard, and offshore business operations. Consequently, in coordination with our Regulatory Affairs professionals, our Research and Development Department has already set detailed guidelines for our manufacturing plants regarding the adaptation of our production line as per IMO targets for greenhouse gas (GHG) emission cuts. We have already circulated breakthrough, highly-concentrated Fuel Additives that improve engine reliability and performance, reinforce fuel economy, reduce maintenance costs, and meet the current IMO requirements. Furthermore, we cooperate exclusively with partners that are themselves committed to adjusting their systems and practices in accordance with the latest IMO guidelines.

What does environmental consciousness actually mean for today’s entrepreneurial environment? We know that environmentally sound business makes us even more competitive in the global marketplace. Therefore, we insist on technical expertise, technological innovation, professional dedication, respect, and adherence to imposed environmental standards. We are constantly searching for ways to minimise our use of and impact on natural resources and encourage our customers to use our products in a more eco-friendly way.
Posidonia 2022 will be held this summer from June 6-10, with the 27th edition of the world’s most prestigious shipping event gearing up to welcome the international maritime community back to its Athens Metropolitan Expo venue, following the pandemic-induced disruption of the 2020 event. Already, nearly 90% of the exhibition floor is committed, and as new bookings continue, Posidonia 2022 is on course to match, if not overcome, its exhibitor record set in the pre-pandemic edition of 2018, which had registered 2,009 exhibitors and 32,000 visitors from 92 countries.

The biggest part of this year’s confirmed Posidonia exhibition space has again been reserved by international companies, and at least 85% of the total number of exhibitors will be making their Posidonia debuts.

Theodore Vokos, Managing Director, Posidonia Exhibitions, the event’s organiser, said: “We are delighted to see Posidonia coming back in such a strong way, with thousands of our loyal exhibitors returning once again and many others planning to make their debut at our event this June. The current lifting of COVID regulations in many parts of the world, combined with renewed optimism and a worldwide desire to travel again, as the latest tourism forecasts show, generates confidence that Posidonia 2022 will again deliver and provide fruitful results for all participants. One should add that the current boom market, especially in the dry and container segments, has created the need for new investments across the entire shipping spectrum, be it new ships or upgrading older ones. It is important to confirm that Posidonia 2022 will be as big as ever and business will be done on the exhibition floor. But of course, COVID will still be around, in one form or another, and this will affect how people engage with each other, so perhaps we might see fewer social events and more focused business meetings. But business will be business and it has to find a way. It is the right moment for the industry to come back together in person. I think we’ve reached the point where virtual events have come to a saturation point. You don’t get the same return anymore from virtual events, one can feel it in the market. And this is shipping – it is a people’s industry. It’s an industry where you need to see and evaluate the product. Shipping is an industry where you need to keep up with developments. And currently there are developments on all fronts: environmental, technological and geopolitical challenges affect the way we do business every day. Unfortunately, in this industry you need to keep up, or you’ll be left behind. And exhibitions are the platforms which can provide a
The booming dry bulk and container markets, the decarbonisation debate, new technological challenges and how they reshape the industry, the initial impact of Covid-19 and the subsequent rebound from it, as well as the uncertainty of what the future holds in a post-pandemic world, will be some of the topics to be addressed during the conference programme of Posidonia 2022. With Posidonia 2022 fast approaching, the recently elected President of the Union of Greek Shipowners (UGS) Mrs. Melina Travlos lends her support to the organization of the event: “The long-standing and globally well-established shipping exhibition, Posidonia, comes back this year after 4 years of absence due to the pandemic, with solid foundations to not only live up to the raised expectations of the international maritime community, but to also exceed them.” "Having been honoured to be at the helm of our historic Association, the institutional representative of Greek shipping which owns 20% of global tonnage and 59% of the EU-controlled fleet and on behalf of the Board of Directors too, we are certain of the successful conduct of this important for the international shipping industry event, the lynchpin of global trade and economic growth”, Mrs. Travlos concluded.

The conference agenda is still being shaped, but already some big seminars, conferences and summits are confirmed. The signature Posidonia Games will again be an essential part of the Posidonia experience, with hundreds of exhibitors expected to participate in the multidisciplinary sporting calendar comprising of the sailing Regatta Posidonia Cup, the Posidonia Running Event, the Posidonia Shipsoccer Tournament, the Posidonia Golf Tournament and the all new Posidonia 3on3 Basketball. Posidonia is organised under the auspices of the Ministry of Maritime Affairs & Insular Policy, the Union of Greek Shipowners and the Hellenic Chamber of Shipping and with the support of the Municipality of Piraeus and the Greek Shipping Co-operation Committee.
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THE IMPLICATIONS OF INDONESIA’S COAL EXPORT BAN FOR SHIPPING CLAIMS

The largest exporter of industrial coal globally, Indonesia, realizing that supply to domestic power plants had dropped to alarming levels, imposed a one-month export ban on coal exports to protect its energy supply and avoid widespread blackouts.

The country has gradually begun to allow mining companies that have fulfilled all their domestic market obligations to resume exports. Still, the aftereffects of the exports ban will plague the shipping industry and those involved in ship charters carrying coal from Indonesia for some time to come. More specifically, it is expected that there will be a rising number of laytime/demurrage and off-hire disputes between owners and charterers.

A possible argument that charterers might put forward to interrupt laytime and mitigate their liability for demurrage is force majeure. Force majeure is a principle of Civil Law, but in English law, where maritime claims are usually settled, the above term is construed in each case on its own terms. Because of that, the parties often implement it contractually by naming specific events that could constitute force majeure events. Many voyage charters include an exemption clause specifying the unforeseen situations that are likely to constitute force majeure, allowing for either party’s non-performance of a contractual obligation due to circumstances beyond their control. The same clause will set out the consequences of a force majeure event, which may vary, from suspending the performance of the charter to providing the parties with the right to terminate the contract.

But the question of whether Indonesia’s coal export ban can be characterized as a force majeure event remains. And, if it can, will this interruption to laytime exempt charterers from demurrage? Clearly, it is a matter of how each clause is worded in the charter agreement when the charterers try to incorporate the Indonesian Government’s decision into the definition of the relevant clauses.

On the other hand, owners will contend that a general exemption clause is neither specific nor clear enough to be further applied as an exemption to interruptions to laytime and demurrage. Considering that voyage charters do not include in their standard form exceptions or interruptions to laytime due to delays in loading cargo, the argument for extending force majeure to laytime and demurrage provisions seems weak.

In the unlikely event that the force majeure clause is applied to achieve an exemption or interruption to laytime on behalf of charterers, the maxim “once on demurrage, always on demurrage” must be applied to the ships that were on demurrage before the ban. That is, the length of the interruption to laytime will not exceed the demurrage. Therefore, the time the ban was in effect will be included in the demurrage time.

On chartered ships, the charterers may argue that the time of Indonesia’s coal export ban should be calculated as off-hire time. This argument can be easily dismissed because, in all standard time charter forms, the off-hire clauses do not include delays in loading/unloading caused by government decisions. In no case does the export ban fall under the wording “and other reasons” found in some lists of off-hire clauses. Based on the above, charterers will find it difficult to defend any exemptions arising from Indonesia’s suspension of coal exports in any litigation and arbitration. Of course, they should not forget that in any long-term cooperation with the charterers, especially in the case of time charters, and taking into account the bunker market volatility (BDI 7/10/21 5,680 – BDI 18/02/2022 1,964), it is a good idea for shipowners to exhaust the margins of amicable settlement before resorting to legal remedies to defend their position.

KEEPING ELECTRONIC LOGBOOKS AS PER MARPOL PROVISIONS

The most critical element of MARPOL regulations is the requirement to record discharges of shipboard substances and debris that could cause environmental pollution. Traditionally, these record books are kept in hard copy. With the maritime industry becoming more digital, as of 1 October 2020, MARPOL allows the use of electronic record books instead of hard copy record books. Electronic recording may benefit the records keeping by companies/ships and will reduce the administrative burden. The MARPOL and NOx Technical Code amendments allow the electronic recording of the following record books:

- Oil Record Book, part I (MARPOL Annex I)
- Oil Record Book, part II (MARPOL Annex I)
- Cargo Record Book (MARPOL Annex II)
- Garbage Record Book, part I and II (MARPOL Annex VI)
- Ozone-depleting Substances Record Book (MARPOL Annex VII)
- Recording of the tier and on/off status of marine diesel engines (MARPOL Annex VI)
- Record of Fuel Oil Changeover (MARPOL Annex VI)
- Record Book of Engine Parameters (NOx Technical Code).

Before replacing a hardcopy record book, the electronic record book (ERB) will be subject to approval by the Flag State. The IMO has developed a set of guidelines for using ERBs under MARPOL providing standardized information on approving ERBs. This is done to ensure that MARPOL obligations are met and a consistent approach to approving such systems.

There are relevant programs available by various classification societies that have received approval (type approval) based on the IMO instructions. Ship managers should ask the manufacturers for the relevant certification. Once the application and software are installed onboard, the ship’s Declaration of the MARPOL Electronic Book will be issued by the Flag Authority or on behalf of the Flag by a Recognized Organization (Register). This declaration will be provided as proof that the contract requirements are met and will be kept on board for demonstration during any inspections.

Despite the introduction of the MARPOL ERB and MARPOL’s provisions, there may still be port states that are reluctant to accept ERBs. Therefore, before implementing the digital file
The maximum sulphur emission of SOx and particulate matter, and those emission limits applicable inside Emission Control Areas (ECAs), which were established to limit the emission limits areas may be superseded by other regional or vessel-specific regulations. Therefore, ships that operate outside and inside ECAs will have to comply with the respective limits. Before entering into an ECA, it is required to have fully changed over by using the compliant fuel according to the regulation and the written procedures implemented onboard.

Under MARPOL Annex VI, a written change-over procedure must be on board vessels that use fuels of high and low sulphur content. The procedure should outline how the change-over is to be undertaken and show the time required for flushing the high sulphur fuel out of the system before refueling with low sulphur fuel. The change must be made at the time provided by the procedures before the ship enters the ECA.

The fuel change-over procedure starts by shutting down the consumption from the high sulphur service tank with the 3-way valve and supplying fuel running on low sulphur fuel. The change must be made at the time provided by the procedures before the ship enters the ECA.

It is required that all steps of the change-over procedure be recorded in the Engine Logbook and Marine Sulphur Record Book during the change-over. All entries must reflect tank quantities, the level of sulphur in the fuel. The duration of reaching the sulphur level of 0.10% can vary depending on the machinery's fuel oil consumption, the volume of the service system, the specific MARPOL ERB, and the level of sulphur in the fuel.

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Today the process of changing from high sulphur fuel to Marine Diesel Oil (MDO)/ Marine Gas Oil (MGO) of very low to zero sulphur content is clearly in line with the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex 6 and more specifically, in line with Regulation 14, which regulates the emissions of sulphur oxides (SOx) and particulate matter (PM) from ships. These requirements were approved in October 2008 and entered into force in July 2010.

S0x and particulate matter emission controls apply to all fuels and all relevant combustion systems onboard as defined in regulation 2.9. These controls show the difference between the emission limits applicable inside Emission Control Areas (ECAs), which were established to limit the emission of SOx and particulate matter, and those outside the ECAs. According to the above regulations, as of 1 January 2020, the maximum sulphur content within the ECAs is 0.1% (MARPOL Annex VI Reg. 14.4), whereas, outside the ECAs, it is 0.5% (MARPOL Annex VI reg.14.1).

ECAs are established for areas of the Baltic Sea, the North Sea, the North American Coast, the United States Caribbean Sea, the North American sea (within the exclusive 200 nm economic zone off the Atlantic coast and the US Pacific, Canada, and Hawaii), as well as in other regions such as Hong Kong, and China (Yangtze River Delta region) through national and local regulations. These sulphur limits areas may be superseded by other regional or vessel-specific regulations. Therefore, ships that operate outside and inside ECAs will have to comply with the respective limits. Before entering into an ECA, it is required to have fully changed over by using the compliant fuel according to the regulation and the written procedures implemented onboard.

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It is required that all steps of the change-over procedure be recorded in the Engine Logbook and Marine Sulphur Record Book during the change-over. All entries must reflect tank quantities, the change-over-time, and ship position. Additionally, the time of the ship’s entering and leaving the ECA/SECA and the vessel’s position must be recorded. It is the Chief Engineer’s responsibility to advise the Master on operational safety when running on low sulphur fuel, and ensure that all engine room staff are well informed on the operating conditions and necessary safety measures. Lastly, it is the responsibility of the Manager’s Technical department to provide the vessel with appropriate guidance on the ship’s operation while running on low sulphur fuel.
NEW QUEuing PROCESS FOR CONTAINERSHIPS OFF CALIFORNIA COAST

On 16 November 2021, the Ports of Los Angeles and Long Beach introduced a new queuing process for containerships. On 10 January 2022, this was extended to the port of Oakland in the San Francisco Bay Area - almost the entire coastline of California. The purpose of the new process was supposed to increase safety and improve air quality by reducing the number of vessels at anchor or loitering in the area by allowing ships to slow steam across the Pacific and optimize voyage transit time after departing from the previous port and heading towards Los Angeles, Long Beach, and the San Francisco Bay Area.

The process before the change had been to assign container vessels into the arrival queue based on actual arrival time when crossing a line 20 nautical miles from the San Pedro Bay Port Complex or if heading to Oakland, then crossing a line 80 nautical miles from the coast.

Under the new process, vessels will be added to the queuing list based on when they depart from their last port of call before Los Angeles, Long Beach, or Oakland. Vessels will then be prioritized on the list based on their calculated arrival time. The intended benefit of the new system is that vessels can slow steam and spread out across the Pacific rather than crowd into congested waters while they wait a berth.

The new mapping of the limits beyond which ships cannot approach the Safety and Air Quality Area (SAQA) is shown in the map below.

Figure 1: California Coastline Map with Ship Approach Limits

This area is approximately 50 miles west of the coast of Central California and 150 miles west of Southern California. Container vessels are to remain outside the Safety and Air Quality Area (SAQA) until 72 hours before a reasonably expected berthing time. This procedure is intended to address current port congestion and may change as congestion decreases.

However, with the obligation of ships to drift mid-sea for long periods, several problems arise, especially in matters of safety such as:

- Damage due to severe weather conditions on the high seas, such as hull damage, strain on the ship’s engine and machinery, increased danger of container stack collapses due to the strain on the twist-lock systems. The consequences of heavy weather can be more severe if the mariners are not aware of the approaching conditions or underestimate them.
- Increased risk to maritime safety. The heavy traffic of ships that temporarily do not have control of the ship’s movement and the reduced vigilance of the bridge team due to increased fatigue or after a prolonged period when the ship remains out of port significantly increases the probability of a collision.
- Ships may experience a fuel shortage if the period during which the ship is out of port extends beyond what was calculated when planning the voyage calculation.

To mitigate the above risks to acceptable levels, masters should implement the following measures:

- Weather forecasts should be closely monitored so that the ship may take adequate precautions well in advance, including the decision to move away from the area. Ships can enter a SAQA for safety reasons during a storm or emergency.
- A distance of three nautical miles should be maintained from other vessels.
- The propulsion plant should be ready for immediate use.
- Vessels are reminded not to unjustifiably display Not Under Command (NUC) lights and shapes or change the status of the Automatic Identification System (AIS) to NUC while drifting unless they are unable to maneuver as required by the collision regulations.
- Vessels may need to calculate their fuel adequacy, factoring in the fuel that may be needed during a prolonged waiting period. Entry into the SAQA is permitted for refueling and other routine ship operating needs, such as crew changes and supplies.

The decision to extend the boundaries below which ships cannot approach the Safety and Air Quality Area (SAQA) is approximately 50 miles west of the coast of Central California and 150 miles west of Southern California. Container vessels are to remain outside the Safety and Air Quality Area (SAQA) until 72 hours before a reasonably expected berthing time. This procedure is intended to address current port congestion and may change as congestion decreases.
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The bulk carriers and container ships freight market made headlines in the international shipping press and other media in 2021. On the other hand, liquid cargoes as a whole failed to arouse interest as freight rates in the crude oil and oil product tankers market remained sluggish due, among other things, the reduced demand caused by the international restrictions imposed to prevent the spread of the Covid-19 pandemic.

THE ROLE OF GEOPOLITICS IN THE ENERGY CRISIS

The energy crisis faced by European markets contributed significantly to the volatility of the natural gas prices and the LNG freight market. Additionally, the Russian natural gas supply dropped below traditional levels, demonstrating Europe’s dependence on Russia for its energy needs. At the same time, gas stocks in Asia were also low due to variable weather conditions in 2021.

THE RALLY IN NATURAL GAS PRICES

At the beginning of 2021, the signs of an energy crisis appeared in the form of a new trend, namely a gradual increase in energy commodity prices. More specifically, from February 2021, there was a gas price increase in the spot market every month, starting at $61 per MMBtu, reaching $2138 per MMBtu in September of the same year. The dramatic changes began in the fourth quarter of the year. In October 2021, natural gas prices in Europe and LNG prices in Asia in the spot market averaged $32.37 per MMBtu and $36.66 per MMBtu, respectively, representing a 527% and 536% increase compared to October 2020.

WHAT DOES THE FUTURE HOLD FOR THE NATURAL GAS MARKET?

The future of the natural gas market remains obscure. Limited investment in increasing global fossil fuel liquefaction capacity raises questions about how this will affect the price of this commodity. In addition, interest in natural gas was exceptionally high outside Europe in 2021, so we will probably see a repeat of last year’s demand as the global economy examines immediate ways to reduce its carbon footprint. At the same time, the volatility of natural gas prices and the LNGCs freight market in the pandemic years raises concerns about whether this is a sign of the times or a new trend that has come to stay. The global debate about the role of natural gas in the future energy mix in the global economy is not over yet. Still, the world’s economies seem determined to make the most of all the short-term benefits this commodity has to offer in the energy transition road race. In any event, the global energy market is in a transition stage, with natural gas at the heart of developments. It remains to be seen whether the recorded volatility was an extraordinary occurrence due to the above reasons or not something that will recur. Moreover, as volatility in the natural gas market is an issue that will continue to concern the international community, it is interesting to see what measures governments will take to prevent similar phenomena in the future.

THE IMPACT ON THE LNG CARRIER FREIGHT MARKET

In the first nine months of 2021, the emerging problems of the European and Asian reserves were not reflected in the LNGC freight market. Except for a sharp drop in the freight market between January and February 2021, rates remained more or less at the same levels. More specifically, according to Clarkson, between 1 April – 1 September last year, the spot market rates for a TFDE LNG carrier with a carrying capacity of 160,000 CBM averaged about $58,000 per day, ranging from $50,000 to $63,000. The significant increase in freight rates started in the last quarter of 2021, when natural gas prices spiked to record highs. In particular, freight rates averaged $128,000 per day in October compared to $53,000 in September. This freight rate explosion was only the beginning. November was a game-changer for the freight market, with rates reaching breathtaking levels, exceeding $300,000 per day on some routes. The euphoria continued into December 2021 against the backdrop of escalating geopolitical tensions between the EU and Russia, which brought uncertainty as to whether the former would cover its short-term energy needs. Therefore, as Asia’s needs had to a large extent been met by November 2021, dozens of ships initially bound for Asia changed course mid-voyage and headed for Europe, where the spot market offered greater profitability. According to a Drewry report, this resulted in the European Union’s LNG imports skyrocketing at the end of the year, with 7 million tonnes imported in December alone. The shipments mainly came from the USA, although Qatar, Oman, Peru, Nigeria, Russia, but also Indonesia and Australia also participated in meeting the demand in the European markets. The LNGCs freight market remained at healthy levels as the freight rates for a TFDE LNG carrier with a carrying capacity of 160,000 CBM stood at about $137,000 per day. At the end of the year, the crescendo of European imports offered the market a sense of temporary security. The changing balance in the supply and demand directly impacted the freight market, once again demonstrating this market’s extreme volatility. Indicatively, according to a recent report by Clarkson, in the last week of January 2022, spot rates reached $24,250 per day.

THE LNG CARriers: IN THE AFTERMATH OF EXTREME VOLATILITY

Although the natural gas market was also affected by the Covid-19 pandemic, the restart of the global economy and cold temperatures in the first months of 2021 gave it a boost. In addition, the low temperatures in the first months of last year were followed by extremely high summer temperatures, increasing natural gas consumption and consequently reducing the already limited European and Asian reserves. It should be noted that the EU did not replenish its stocks during the winter of 2021 because gas prices were higher than average. Instead, it chose to wait for a drop in prices, which never materialized.

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WHAT DOES THE FUTURE HOLD FOR THE NATURAL GAS MARKET?

The future of the natural gas market remains obscure. Limited investment in increasing global fossil fuel liquefaction capacity raises questions about how this will affect the price of this commodity. In addition, interest in natural gas was exceptionally high outside Europe in 2021, so we will probably see a repeat of last year’s demand as the global economy examines immediate ways to reduce its carbon footprint. At the same time, the volatility of natural gas prices and the LNGCs freight market in the pandemic years raises concerns about whether this is a sign of the times or a new trend that has come to stay. The global debate about the role of natural gas in the future energy mix in the global economy is not over yet. Still, the world’s economies seem determined to make the most of all the short-term benefits this commodity has to offer in the energy transition road race. In any event, the global energy market is in a transition stage, with natural gas at the heart of developments. It remains to be seen whether the recorded volatility was an extraordinary occurrence due to the above reasons or not something that will recur. Moreover, as volatility in the natural gas market is an issue that will continue to concern the international community, it is interesting to see what measures governments will take to prevent similar phenomena in the future.
Over the last 24 months the COVID-19 pandemic has brought on a myriad of knock-on effects, which have led to a period of extreme volatility across markets and commodities.

Within the shipping industry, several sectors recorded their highest and, in some cases, their lowest ever freight rates. At present, against a backdrop comprised of heightened geopolitical tensions, a global run on deficient commodities and a constricted worldwide logistics system, seasoned industry figures throughout the ecosystem proclaim a market harder than ever to predict and anticipate. The present situation in the LNG Shipping industry is no different.

Following the shale gas revolution and the massive capital investment in LNG liquefaction facilities, the US turned from a net importer of LNG to a net exporter of great momentum. More specifically, in 2021 for the month of December, US LNG exports surpassed those of Qatar making the US the top exporter of LNG in the world. The US will likely retain this position until scheduled production increases in Qatar and Australia come on stream in the mid 2020s. Unlike Sale and Purchase Agreements (SPAs) of the past, US LNG volumes are lifted under contracts which do not have geographical destination restrictions clauses and therefore the off-takers can sell their cargoes wherever spot prices dictate. Reflective of the flexible nature of US volumes is the swift way that the percentage of US cargoes which were delivered to Europe increased against market conditions in Q4-21’ and Q1-22’ up to this point. At the beginning of this winter, the Far East saw muted demand for LNG due to healthy stockpiles, mild weather and lower than usual industrial power demand. As a consequence, Far Eastern buyers were not eager to compete against European buyers who were faced with critically low storage levels, a cold winter and reduced pipeline deliveries from Russia. Owing to its stronger pricing relative to the Far East (accounting for the cost of shipping to either destination), Europe pulled 33% of US cargoes in October, 40% in November, 61% in December and an all time high of 74% in January, based on cargo data from Kpler.

The pillars shaping the short-term outlook

Short-term LNG freight rates are mostly dictated by two interconnected factors: a) the difference in the prices of LNG and natural gas between Europe and the Far East and b) the availability of prompt vessels available for charter. If the price in the Far East minus the cost of shipping from the US, then market players will sell their Atlantic sourced cargoes to the Far East, a minimum 95 day round trip voyage from the US Gulf. This inevitably increases average utilisation and creates shipping short positions which then need to be covered with vessels from the spot market. The higher the price difference among the Far East and Europe and the lower the availability of prompt vessels open for charter, the higher the freight rates will spike. In contrast, when this pricing dynamic dictates that cargoes should be sold to Europe is 25-day round trip from the US Gulf, as was the case in November, December and January, this shortens the rotation of vessels and creates releq length which then floods the market. Availability increases and freight rates crash. With 61% of US volumes heading to Europe in December and 74% in January, availability of prompt vessels in the Atlantic increased significantly and it was this increased shipping supply which led to a crash in freight rates. The Atlantic spot rate assessment for a 160,000cbm TFDE vessel in November 2021 was $200,000 per day and in January the average was roughly $38,000 per day. Exploring the above dynamic is important when formulating a view on freight rates for the next few months.

Russia: What will be the decision for countries participating directly or in indirectly in these sanctions? Will they refuse or even try to. Therefore, the projection for Q2-Q3 2022 is that the Europe-FE pricing differential will likely not support cross basin trades. Another element to consider in the short term is the severity of sanctions against Russia. What will be the decision for countries participating directly or in indirectly in these sanctions? Will they refuse or even...
be prohibited to buy Russian nat-
ural gas (can they afford not to?)
and LNG, or in fact be prohibited
from accepting LNG delivered by
Russian flagged, owned or con-
trolled vessels? If that is the case,
Russian LNG may instead flow to
China which is unlikely to partici-
pate in such sanctions. Especially
in the summer months, Russian LNG
could cover a large part of Chinese
demand. This would mean weak pric-
ing in the East coupled with strong
pricing in Europe; a scenario mostly
bearish for shipping.
There remain however a couple more
bullish takes on the same narrative.
The first is that if European pricing
is high enough versus FE prices,
this might support a healthy East-
West arbitrage with cargo flows
from the East (Australia, Malaysia,
Indonesia) to Europe. East to West
cargo flow is not unprecedented but
is extremely rare. Such a scenario
could help sustain a floor on ship-
ing rates over the summer since
voyages to Europe from the East are
also long and would absorb a sig-
nificant amount of excess tonnage.
The second bullish take is that per-
haps the Russian LNG producers do
not control enough LNG carriers in
order to deliver their entire LNG
production all the way to China.
As a consequence, Chinese import-
ers might utilise their own vessels
to receive Russian LNG volumes
through transhipments. This devel-
opment would increase their fleet
utilisation and perhaps force them
to charter-in additional vessels to
cover their cargo lifting obligations
from other sources.

What the future holds
In the mid and long term, there
are several elements which point to
a very bullish market for LNG
shipping.

In the mid and
long-term, there are
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are already a handful of US projects awaiting
Final Investment Decision (FID) and the cur-
cent narrative could not be more facilitating.
Should these projects receive the green light,
demand for newbuildings will far outpace
the available supply even leading into the late
2020s. In the last 18 months the price for a
newbuild 174,000cbm LNG carrier has risen
roughly $40 million going from the low $180s
for a unit delivering in 2023 to the low $220s
for earliest delivery in 2025. Owners who have
placed orders in time will be in a position to
command significant premiums for long term
charters as Charterers have run out of options
for modern carriers. Korean and Chinese yards
are operating at full capacity and demand for
modern LNG carriers is only expected to grow
with more production facilities receiving FID
in the near future.

Additionally, Asia is expected to be driving 70%
of energy demand growth over the next 20
years with the US being a major source of the
supply which will come to meet these increased
needs. This will lead to longer tonne-miles and
higher fleet utilization in the long term.
What remains unclear at present is the impact
that upcoming environmental regulations will
have on LNG shipping. A big question mark
is the treatment of boil-off gas (the small amount
of LNG which warms up and converts to gas-
eous form) as fuel under the IMO’s upcoming
regulatory framework. Although many ele-
ments are yet to be finalised, Steam Turbine
first and TFDE vessels later are likely to be
adversely affected. There is a high likelihood
that Steam Turbine vessels will need to reduce
their speeds from 2023 onward in order to
comply with the applicable emissions regula-
tions. Steam Turbine vessels represent roughly
40% of the existing LNG conventional carrier
fleet (as January 2022). If regulations affect
TFDE vessels as well, then roughly 65% of the
global fleet will be affected.
Therefore, there is a well-founded expectation
that utilisation will increase significantly for this
considerable segment of the existing fleet and
thus create a net shortage of available tonnage
in the mid-term. Considering the elements of
strong mid-term LNG pricing, new LNG produc-
tion coming on stream, the fact that Korean and
Chinese yard shipbuilding capacity is almost
sold out until at least 2025, newbuilding prices
being above $220 million per unit and upcom-
ing environmental regulations which might force
a considerable segment of the fleet to slow
down, we are led to expect a sustained bullish
LNG shipping market in the next 5 years.
In the past few years, the words “green”, “sustainable” and -more recently- “ESG” (Environmental, Social and Governance) have been very frequently used in the context of shipping, with shipping companies being expected to follow policies and actions which not only preserve the present status of the environment but improve it and significantly contribute to society's aim to reduce carbon emissions and halt climate change.

**Thoughts on the Interplay Between ESG Targets and Shipping Finance**

Shipping companies and ESG

Companies are undoubtedly facing increasing pressure to comply with environmental requirements. From a financing perspective, they are also being presented with certain incentives to go over and above what is strictly required and adopt a very conscious green policy. The pressure comes from a range of sources, including:

- Primarily, the specific criteria and deadlines that need to be met in relation to their gas emissions under the relevant IMO regulations, which provide a “hard” target for companies. These are widely known and summarised as a 0.50 cap on sulphur content in shipping fuel (marking a significant decrease from the previous limit of 3.5%) and a target to reduce the carbon intensity of all ships by 40% by 2030 and 70% by 2050. The EU has set even package more ambitious targets and summarised as a 0.50 cap on sulphur content in shipping fuel which in turn allows an evaluation of the bank’s own portfolio from an environmental perspective. These are increasingly being reflected in financing documentation when one of the lenders is a signatory to such principles (particularly but not exclusively from EU banks). These are documented by way of an information undertaking in the facility agreement allowing the financier to request information on and monitor their clients' carbon emissions. So, while they do not impose additional requirements on the company, they do put the issue of shipping at the very top of the agenda.

- Their existing or potential investors/lenders.

Investors are also increasingly interested in a company's ESG policy and, therefore, a shipping company wishing access to public markets should expect to be in a position to spell this out and support it by its actions.

**Shipping banks and ESG**

Financiers are themselves the recipient of pressure from the public at large and their direct stakeholders to play an active role in “greening” shipping. As a result, they appear to be both (a) a driver of encouraging -and possibly in the future requiring- companies to meet higher ESG targets and (b) the solution to the increasing demands of ESG related regulation and market requirements by beginning to provide (albeit only to a limited pool of companies and transactions) incentives and capital in support of “green” projects and policies. We will consider these two points in turn. The “Poseidon Principles” represent a bank-led initiative. The goal is to quantify their clients’ carbon intensity, which in turn allows an evaluation of the bank’s own portfolio from an environmental perspective. These are increasingly being reflected in financing documentation when one of the lenders is a signatory to such principles (particularly but not exclusively from EU banks). These are documented by way of an information undertaking in the facility agreement allowing the financier to request information on and monitor their clients' carbon emissions. So, while they do not impose additional requirements on the company, they do put the issue of carbon emissions at the centre of financier/borrower discussions, often from the term sheet stage. In our experience, such provisions have not been a source of controversy or pushback from borrowers.

In respect of the ship recycling mentioned above, the fact that the HKC has not been ratified yet leaves room for non-EU ships to be recycled in yards that do not comply with equivalent environmental, health, and safety standards. Lenders are increasingly taking a view in this regard. They are imposing an obligation on their customers to comply with either the HKC or the EU Regulation. This is expressed either as an absolute obligation or set on a best/ reasonable endeavors basis. Investors are also increasingly interested in a company's ESG policy and, therefore, a shipping company wishing access to public markets should expect to be in a position to spell this out and support it by its actions.

The cost of ESG

Greening the shipping industry comes at a cost. A study by Shell puts the total cost of decarbonisation of shipping at $1.65 trillion. For shipping companies, this translates into increased financing needs. Financiers have addressed these needs in the...
past years by providing scrubber loans, and we have seen a number of these loans across the board since 2019. In the Greek market, we have primarily seen such financing provided as an advance under existing financing by the same bank(s) and secured by the ship mortgage(s) and other security provided for the original loan. In the event that the ship is already subject to a mortgage (in favor of the ship’s financier), documenting such scrubber debt will require a number of issues to be ironed out. This is because scrubbers are likely to form part of the ship and therefore be subject to the first ship mortgage. This will naturally be an issue for the scrubber finance provider, who will also expect some recourse, security and enforcement rights. Therefore, obtaining scrubber finance from a separate lender will be a more complicated affair.

Firstly, the relevant lender will need to accept a subordinated / second priority position, and secondly, the borrower should expect more lengthy discussions and specific documentation clearly setting out each lender’s rights. Similar issues are expected to arise in the context of retrofitting scrubbers. Accessing “green” capital from an independent source may also be appealing to certain companies. However, this may not suffice or be accessible to all. This is expected to lead companies – particularly smaller players- to consider joint ventures or other sources of capital (e.g., venture capital). Such a gap will need to be filled; otherwise, considerable market adjustments are to be expected.

At the same time, investing in ESG policies and ESG compliant vessels may mean:

- Improved access to finance for certain projects: we see an appetite for both green loans to finance “green” assets and sustainability-linked loans which are not linked to a specific asset but rather to a company’s ESG score or performance against specific KPIs with a view of providing incentives to meet certain objectives. From a lender’s perspective, amongst other things, particular care will need to be given to ensure that the financing documentation clearly:

  • describes the relevant green aspects and targets and provides suitable recourse to the lender for any breaches;
  • provides the lender with appropriate mechanisms to track the proceeds advanced, and
  • imposes adequate reporting obligations on the borrower.

- Improved terms – we have seen this in the form of margin ratchets where the applicable margin will vary by reference to the company’s sustainability performance. We initially saw such provisions in offshore oil and gas transactions, but they can also be seen trickling into mainstream finance. In the past few years, our offices across Europe and Asia have seen a plethora of sustainability-linked loans and green loans, e.g., financing cutting-edge technology vessels (such as an LNG-propelled passenger vessel), marking the willingness of certain banks to support such transactions.

Shipping finance in the new environmental landscape

In terms of the financial landscape going forward, it remains to be seen whether ESG requirements will lead to a more limited pool of funds being available for shipping transactions, which will be the case if the banks’ shipping portfolios do not support their wider ESG aspirations and policies, or whether the “greening” of shipping will attract banks that have not been active in the industry or have withdrawn in the past few years.

The above seem to form an interesting cycle: shipping companies and banks are both subject to pressure from their stakeholders to demonstrate a commitment to green policies. This causes banks to apply increased pressure on their clients to meet ESG related targets which in turn (combined with the regulatory framework) increases the financing needs of shipping companies who turn to their lenders for liquidity. To date, the banks’ response has been somewhat low-key, but going forward environmental concerns may have a more formative role to play as to how much and what kind of loans are available for their shipping clients.
WHY IS REPORTING STILL SUCH A HEADACHE?

The maritime sector is no stranger to advanced technology, and its digital transformation is well under way. Significant investment has been going into the navigation, safety, communications, and other core systems aboard vessels and their monitoring ashore. Land operations such as chartering, purchasing, planned maintenance, MGA, and accounting have also followed suit in the digital era.

But what about financial reporting? Why has this area, which is facing ever-expanding new requirements so crucial to decision-making, been left so far behind in the inevitable journey towards digitalization?

One obvious answer would be the necessity for vessel-owning companies prioritizing other investments to keep abreast with new safety and environmental requirements and be ahead of the competition. Ballast water treatment systems, scrubbers, cybersecurity are only a few of the significant investments that maritime companies needed to prioritize in the recent past.

Another reason would seem to be that most private maritime companies’ accounting and financial reporting functions employ a small number of professionals who need to address the informational needs of a large number of stakeholders, primarily management, investors, and lenders. Usually, these professionals combine information from the company’s accounting books and records with other information that they keep externally to produce management reports, budgets, cash flow analyses, KPIs, and financial statements. Usually, this compilation exercise is manual to a large extent, involves judgment, and includes a large amount of information retrieved from a range of different sources. Many attempts to streamline reporting through specialized software have generally failed simply because, first of all, a significant investment is needed so that the software providers can build a sufficient understanding of maritime operations and reporting needs. Secondly, the flow of operations differs significantly among private companies, so the tailoring costs render the investment economically unsustainable.

Hence, the lack of digitalized financial reporting creates the following inevitable problems that are common across the private shipping sector:

Information is simply not available on time:
A significant amount of time may need to be spent to compile information. Sometimes, the request for information is urgent because the financial information is intended to help support a crucial business decision. Inevitably, the unavailability of sufficient reliable information may actually result in an inability to make an informed, timely decision.

Inability to catch up with new requirements:
As the reporting requirements are increasing, with the obvious example being the introduction of ESG reporting, it is essential to start thinking about streamlining the reporting processes to make reports robust and efficient while ensuring that adequate, reliable sources are identified to provide data for the new reporting requirements. Sourcing ever-increasing information through purely manual processes will undoubtedly result in a collapse of the financial reporting function.

Heavy reliance on specific staff members:
The credibility of information is mainly dependent on the knowledge and experience of the preparer as well as the diligence and attention of the reviewer. Needless to say, the unplanned absence of key staff within accounting may delay the delivery or hinder the quality of financial reporting.

Susceptibility to human errors:
The financial and non-financial information included in reporting is susceptible to human errors, which can be very difficult to detect. Mistakes are generally expected in largely-manual processes; however, the more significant or frequent the mistakes, the more likely it is for the information users to mistrust the preparers.

Inconsistencies in reporting over time:
There is a high likelihood that the information is inconsistently prepared in-between reporting periods, which may affect the comparability of information over time. Consistent preparation is ensured by using the same sources of information and making similar assumptions each time. That also means that the models used to derive the information are also mathematically consistent.

Multiplication of effort:
Even if the model calculations are already prepared in spreadsheets, the compilation and verification of the information take time. Usually, financial information is extracted from accounting software. It is then adjusted using information from other sources and then introduced in the end report to be shared with stakeholders. This takes place every time such a report is needed. Essentially, it is a repetitive process.

Inability to directly drill down to granular detail:
The breakdown of the compiled information is not usually readily available. Therefore, it requires extra effort on the part of the accounting or financial reporting department should follow-up questions need to be addressed, especially regarding the transactions summarized in the report they have compiled. Such questions may also pose a challenge in preparing reports, thus causing stress to the people in charge of financial reporting.

Lack of internal control:
Relying on manual processes to produce information crucial to decision-making may pose significant risks to the company. Hidden errors or inconsistencies that are impossible to detect may result in a breakdown of the reporting process. Such huge gaps in internal control may even create opportunities for fraudulent activities. Even if such incidents do not occur, significant
gaps in the internal controls relevant to financial reporting will definitely be picked up by auditors, making the audit process difficult to conclude positively for the company.

All of the above tend to repeat themselves in a vicious cycle that only results in both the frustration of overloaded accountants and the discontent of management and stakeholders.

How could we possibly put an end to this vicious circle?

We believe there are three pillars to building a robust financial reporting function:

A proactive take on the needs of key stakeholders: It is crucial that management recognize (a) the need for and (b) the risks arising from the lack of effective financial reporting. To successfully set up this function requires a mindset that anticipates the stakeholders’ informational needs by designing and implementing processes relevant to reporting. Pro-activeness in embedding new requirements in existing reporting processes is also key in making those processes withstand the test of time.

Choosing the right software solutions: Most companies include various software solutions in their information technology environment. Reporting is usually done on spreadsheets, and companies can draw information directly from the underlying systems and databases and auto-feed it into their preset customized reports in real time. However, not all accounting software offers this option, and many ERP solutions are not tailored for maritime use.

Continuous people development and support: As reporting requirements increase, finance function professionals need training and support to produce quality financial reporting in new areas such as ESG. The better the people are equipped with knowledge and experience, the more meaningfully they can utilize the available tools and technology to prepare financial information that is most relevant to its purposes.

With the growing need for faster and more reliable sourcing of information, financial reporting will inevitably follow the example of other maritime business processes, which have become more streamlined and more automated over a short period of time. The technology exists, and specialized maritime accounting software solutions with embedded financial reporting functionality offer highly customizable reports to meet the reporting needs of all stakeholder groups on time. The era when management reports were prepared weeks after the period-end, is thankfully long gone!
From production to seaborne transport and consumption

COMMODITIES

DRY BULK CARGOES

COAL
The industry receives $1.5 trillion in funding
Despite international pressure to reduce carbon emissions to curb climate change, new research shows that banks and investors have poured large sums of money into supporting the industry. According to an analysis by the environmental NGOs Urgewald and Reclaim Finance, commercial banks have channeled $1.5 trillion to the coal industry from January 2019 to November last year. The analysis shows that just a small number of financial institutions in six countries, namely the USA, China, Japan, India, Canada, and the United Kingdom, account for more than 80% of the coal industry’s financing. The three top lenders are Japanese Mizuho Financial, Mitsubishi UFJ Financial, and the SMBC Group, followed by Barclays from the UK and Citigroup from the US. Ironically, in January 2019, Barclays had announced that it would not refinance the construction or expansion of coal-fired power plants, while Mitsubishi UFJ Financial has announced its goals to achieve zero emissions in its activities by 2030.

Eastern Pacific Shipping bans coal cargoes
Eastern Pacific Shipping’s (EPS) 2022 Environmental, Social, and Governance Policy report details its collaborative approach to decarbonisation, its social work within the maritime community, and its Life at Sea Programme. The 2021 United Nations Climate Change Conference, also known as COP26, saw 197 nations come together to work towards reducing greenhouse gas (GHG) emissions in an effort to combat global climate change. COP26 resulted in the Glasgow Climate Pact, which calls on the world to act now to limit the rise in global temperature in accordance with the 2015 Paris Agreement. Vessels commercially managed by EPS will follow a No Coal Cargo Policy to support this transition. This policy states EPS will not carry coal as cargo on any of its commercially managed dry bulk fleet since April 2020. By officially implementing a No Coal Cargo Policy, EPS hopes to play a small role in making the commodity no longer economically viable, therefore increasing the demand for greener options.

IRON ORE–STEEL
Beijing’s steel sector growth strategy
China’s steel industry aims to achieve high-quality growth featuring more advanced technology and equipment, stable resources supply, a higher level of intelligence, enhanced global competitiveness, and reduced emissions by 2025. These were the major goals set in a development guideline jointly released by the Ministry of Industry and Information Technology, the National Development and Reform Commission, and the Ministry of Ecology and Environment. The sector’s innovation capacity will be significantly enhanced with the R&D investment intensity, the numerical control rate of key processes, and the digitalization rate of manufacturing equipment reaching 1.5 percent, 80 percent, and 55 percent, respectively. The guideline also stated that electric furnace steel production would increase to over 15 percent of China’s total crude steel output by then amid efforts to optimize the industrial structure further.
To reach the 2030 carbon emissions target, China will upgrade over 80 percent of steel production capacity to achieve ultra-low emissions, cut overall energy consumption per tonne of steel by more than 2 percent, and reduce water consumption intensity by more than 10 percent, the guideline noted.

U.S. and Japan agree to cut steel tariffs
On Monday, 7 February, United States Secretary of Commerce Gina M. Raimondo and United States Trade Representative Katherine C. Tai announced a new 232 tariff agreement with Japan to allow historically-based sustainable volumes of Japanese steel products to enter the U.S. market without the application of Section 232 tariffs. According to a press release by the U.S Department of Commerce, this deal will help ensure the long-term viability of the U.S. steel industry and protect American jobs. Commerce Secretary Gina M. Raimondo stated: ‘As part of our work to reinvigorate America’s manufacturing economy and bring down costs for consumers and businesses, President Biden directed us to renegotiate the 232 steel measures with Japan to allow duty-free imports into the United States. I’m pleased to announce that the deal we reached will strengthen America’s steel industry and ensure its workforce stays competitive. ‘Today’s announcement builds on the deal we struck with the E.U. and will further help us rebuild relationships with our allies around the world as we work to fight against China’s unfair trade practices’.

GRAINS
How does the Russia-China agreement affect trade?
As part of the agreements signed during President Vladimir Putin’s visit to Beijing, China will now allow wheat and barley to be imported from all regions of Russia. This development will undoubtedly favor ships loading grain from the Black Sea ports. In any case, Moscow has been seeking to expand its grain trade to China for years, but China had banned imports from Russia due to phytosanitary concerns. On the other hand, the agreement does not seem to favor the European Union, Australia, and Canada, which are major exporters to China. China has been a top destination for French wheat for the past two years, especially since the European Union’s leading wheat supplier lost part of its market share in Algeria. At the same time, the new “alliance” puts a brake on the U.S. efforts to export more agricultural products to China.

Marginal price increases
The U.N. Food and Agriculture Organization’s (FAO) Food Price Index (FFPI) averaged 135.7 points in January 2022, 15 points above the same period last year. The FAO notes that the FFPI’s increase was driven by wheat and soybean price increases, which reached all-time highs. The FAO estimates that the global food price increase is likely to continue for the rest of 2022 and 2023, as Russia’s invasion of Ukraine and the U.S. sanctions against Russia have disrupted the global food supply chain. The FAO’s Food Price Index is a weighted average of prices of a basket of food commodities. The index includes prices of wheat, rice, soybeans, corn, sugar, and vegetable oils. The index is calculated by taking the average of prices of a sample of representative types of each commodity, and then weighting it by the amount of each commodity traded in global markets.
Projected 2021/22 global trade is raised 2.3 million tons to corn, and wheat auctions have not been as active this year. The FAO Cereal Price Index averaged 140.6 points in January, up marginally (0.1 percent) from December and 15.6 points (12.5 percent) above its level one year ago. World wheat prices eased in January, down 31 percent, with increased seasonal supplies from large harvests in Australia and Argentina. However, support from continued strong demand amidst tight global availability of higher-quality wheat along with uncertainty over exportable supplies prevented prices from declining further. By contrast, maize export prices were firmer in January, gaining 3.8 percent since December, mostly on concerns of persistent drought conditions in the southern hemisphere, namely Argentina and Brazil, spillover effects from the wheat market added upward pressure on maize prices. Among other coarse grains, international sorghum prices also rose in January, in line with maize price trends; while barley quotations were slightly lower. The completion of main-crop harvests in major suppliers and purchases by Asian buyers also raised international rice prices in January by 31 percent.

The latest forecasts on global production, consumption, and trade The U.S. Department of Agriculture (USDA) recently published the monthly “World Agricultural Supply and Demand Estimates” report for February. The outlook for 2021/22 U.S. wheat this month is for stable supplies, lower domestic use, reduced exports, and higher ending stocks. Exports are lowered 15 million bushels to 810 million on slowing export sales and shipments with reductions for Hard Red Winter and White. Projected 2021/22 ending stocks are raised 20 million bushels to 648 million but are still 23 percent lower than last year. The global wheat outlook for 2021/22 is for stable supplies, higher consumption, increased trade, and reduced ending stocks. Supplies are projected to fall by 11 million tons to 1066.3 million as reduced production more than offsets higher beginning stocks. The majority of production decreases are in the Philippines, Argentina, and Paraguay due to the prolonged dry conditions. Projected 2021/22 world consumption is raised 0.6 million tons to 788.1 million on higher feed and residual use more than offsetting lower food, seed, and industrial use. The largest feed and residual use changes are for Canada and China. Canada is raised 17 million to 4.5 million as the Statistics Canada 31 December stocks report indicated greater August-December disappearance than previously expected. China is lowered 10 million tons to 350.5 million as domestic wheat prices are no longer at a discount to corn, and wheat auctions have not been as active as last year. Projected 2022/22 global trade is raised 2.3 million tons to 206.7 million, primarily on higher exports by India and Argentina. India’s exports are increased to 70 million tons, which would be a record - exceeding 2012/13 exports. India’s export pace continues to be robust, and its prices are competitive in Asian markets. Argentina’s exports are raised 0.5 million tons to a record 14.0 million on an early strong pace. Projected 2021/22 world ending stocks are lowered 1.7 million tons to 278.2 million with reductions for Canada and India partially offset by increases by the United States and Ukraine. Global stocks are now projected at a 5-year low.

SOYBEAN Conab downgrades Brazil’s 2022 production estimate In the 2021/22 harvest, Brazilian grain production is estimated at 268.2 million tons. If confirmed, the volume represents a growth of 5% compared to last season. This is what the 5th Grain Harvest Survey 2021/22 shows, released recently by the National Supply Company (Conab) of Brazil. With 16.8% of crops already harvested, soybeans should reach a production of 125.47 million tons, a drop of about 9% when compared to the previous harvest. “The influence of the La Niña phenomenon strongly interfered with the rainfall recorded. Practically the entire Southern Region and part of Mato Grosso do Sul suffered severe water restrictions in November and December, in addition to high temperatures, which caused a drastic drop in productivity in the area,” said the director of Agricultural Policy and Information of Conab, Sergio De Zen.

Shrinking South America production constricts trade Dry weather in South America over the past 2 months has significantly depressed forecast soybean yields and slashed production. In the first USDA forecast released in May 2021, the combined total 2021/22 soybean crop in Brazil, Argentina, and Paraguay was a record but is now forecast to be the smallest crop since 2018/19. Since the December 2021 WASDE, soybean production in these three countries has been lowered by more than 18 million tons: down 7 percent in Brazil, down 9 percent in Argentina, and down 37 percent in Paraguay. If realized, this massive decrease in the South American soybean crop is likely to significantly constrict global trade, says the USDA. In total, South America soybean exports are cut nearly 6 million tons this month and crush is down over 2 million tons. In Brazil, smaller production is expected to impact the export market more than domestic crush. In Paraguay, both exports and crush are forecast down around 1 million tons. Argentina supplies are squeezed from both lower production and smaller imports from Paraguay, resulting in both lower exports and crush. Likewise, 2021/22 global soybean imports are no longer expected to be a record and global soybean meal consumption growth is forecast below 2 percent for the first time this forecasting cycle. With tighter supplies supporting higher prices, consumers are likely to import fewer soybeans and offset smaller supplies by drawing down stocks, decreasing soybean meal consumption, or substituting with other protein meals.

COMMODITIES

WHEAT

The global wheat outlook for 2021/22 is for lower supplies, lower production and smaller imports from Paraguay, both exports and crush are forecast down around 12 million tons to a record - exceeding 2012/13 exports. India’s export pace continues to be robust, and its prices are competitive in Asian markets. Argentina’s exports are raised 0.5 million tons to a record 14.0 million on an early strong pace. Projected 2021/22 world ending stocks are lowered 1.7 million tons to 278.2 million with reductions for Canada and India partially offset by increases by the United States and Ukraine. Global stocks are now projected at a 5-year low.

SOYBEAN

Conab downgrades Brazil’s 2022 production estimate In the 2021/22 harvest, Brazilian grain production is estimated at 268.2 million tons. If confirmed, the volume represents a growth of 5% compared to last season. This is what the 5th Grain Harvest Survey 2021/22 shows, released recently by the National Supply Company (Conab) of Brazil. With 16.8% of crops already harvested, soybeans should reach a production of 125.47 million tons, a drop of about 9% when compared to the previous harvest. “The influence of the La Niña phenomenon strongly interfered with the rainfall recorded. Practically the entire Southern Region and part of Mato Grosso do Sul suffered severe water restrictions in November and December, in addition to high temperatures, which caused a drastic drop in productivity in the area,” said the director of Agricultural Policy and Information of Conab, Sergio De Zen.

Shrinking South America production constricts trade Dry weather in South America over the past 2 months has significantly depressed forecast soybean yields and slashed production. In the first USDA forecast released in May 2021, the combined total 2021/22 soybean crop in Brazil, Argentina, and Paraguay was a record but is now forecast to be the smallest crop since 2018/19. Since the December 2021 WASDE, soybean production in these three countries has been lowered by more than 18 million tons: down 7 percent in Brazil, down 9 percent in Argentina, and down 37 percent in Paraguay. If realized, this massive decrease in the South American soybean crop is likely to significantly constrict global trade, says the USDA. In total, South America soybean exports are cut nearly 6 million tons this month and crush is down over 2 million tons. In Brazil, smaller production is expected to impact the export market more than domestic crush. In Paraguay, both exports and crush are forecast down around 1 million tons. Argentina supplies are squeezed from both lower production and smaller imports from Paraguay, resulting in both lower exports and crush. Likewise, 2021/22 global soybean imports are no longer expected to be a record and global soybean meal consumption growth is forecast below 2 percent for the first time this forecasting cycle. With tighter supplies supporting higher prices, consumers are likely to import fewer soybeans and offset smaller supplies by drawing down stocks, decreasing soybean meal consumption, or substituting with other protein meals.
The latest estimates for demand and supply

According to the OPEC’s February report and supply, in 2022, oil demand growth is expected at 4.2 mb/d, unchanged from its forecast last month. In most European countries, lockdowns and other restrictions are easing. Similarly, in the U.S., the COVID-19 pandemic has been well contained through vaccinations and other containment measures. As most world economies are expected to grow stronger, the near-term prospects for world oil demand are certainly on the bright side.

The main contributors in 2022 world oil demand are gasoline and diesel, which are anticipated to account for around half of the forecasted world oil demand growth. Similarly, as global airline travel continues to be reinvigorated, particularly in the U.S., Europe, China, and the Middle East, demand for jet kerosene will grow further and continue to recover. Petrochemical demand in the Asia Pacific, notably in Japan and South Korea, will boost demand for light distillates, notably naphtha. Finally, LPG demand will also rise in 2022 as the household and industrial sectors continue to pick up, particularly in non-OECD Asia, India, and China.

Non-OPEC supply growth for 2022 remained broadly unchanged at 3.02 mb/d y-o-y and is forecast to average 64.6 mb/d, according to OPEC. Upward revisions to the supply forecast were mainly in OECD Europe. The main drivers of liquids supply growth are expected to be the U.S. (+0.3 mb/d) and Russia (+0.98 mb/d), followed by Brazil, Canada, Norway, Kazakhstan, and Guyana.

OPEC NGLs and non-conventional liquids production in 2021 is unchanged from the previous assessment to show growth of 1.1 mb/d y-o-y for an average of 5.5 mb/d. Growth of 1.1 mb/d is expected in 2022 for an average of 5.6 mb/d. OPEC-13 crude oil production in January increased by 0.06 mb/d m-o-m to average 27.98 mb/d, according to available secondary sources. Preliminary non-OPEC liquids production in January, including OPEC NGLs, is estimated to have grown by 0.65 mb/d m-o-m to average 70.71 mb/d, up by 2.3 mb/d y-o-y. As a result, preliminary data indicates that the global oil supply in January grew by 0.71 mb/d m-o-m to average 98.69 mb/d, up by 4.75 mb/d y-o-y.

A look at the prices and supply

In its February Short-Term Outlook (STEO) report, the U.S. Energy Information Administration (EIA) forecasts that downward price pressures will emerge in the middle of the year as growth in oil production from OPEC+, the United States, and other non-OPEC countries outpaces slowing growth in global oil consumption. This dynamic leads to rising global oil inventories from 2Q22 through the end of 2023, and the EIA forecasts the Brent spot price will fall to an average of $87/b in 2022 and $75/b in 2Q22. Brent’s price will average $86/b for all of 2023. However, low inventory levels create an environment for potentially heightened crude oil price volatility and the potential risk for prices to rise significantly if supply growth does not keep pace with demand growth. In recent months, global supply chain disruptions have also likely exacerbated inflationary price effects across all sectors. According to the EIA, how central banks respond to inflation may affect economic growth and oil prices during the forecast period.

Consumption of petroleum and liquid fuels is estimated to average 100.6 million b/d for all of 2022, up 3.5 million b/d. As far as the U.S. oil production is concerned, it will rise to an average of 12.0 million b/d in 2022 and 12.6 million b/d in 2023, which would be record-high production on an annual average basis. The previous yearly average record of 12.3 million b/d was set in 2019.

IEA forecasts sharp growth in world supply this year

The International Energy Agency recently published its Oil Market Report. While the number of Omicron cases is surging worldwide, oil demand defied expectations in 4Q21, rising by 11 mb/d to 99 mb/d. In 1Q22, demand is set for a seasonal decline, exacerbated by more teleworking and less air travel. The IEA has raised its global demand estimates by 200 kb/d for 2021 and 2022 – resulting in a growth of 5.5 mb/d and 3.3 mb/d, respectively – due to softer Covid restrictions. As for supply, disruptions and production shortfalls by some OPEC+ members are tempering growth expectations for 2022. In December, world oil supply rose by a modest 130 kb/d to 98.6 mb/d, as outages in Libya and Ecuador and a smaller than scheduled increase from OPEC+ wiped out much of the expected growth. Producers taking part in the output deal delivered gains of 250 kb/d, well below the allocated amount, and were 790 kb/d lower than the group’s target. This shortfall was mostly due to under-production in Nigeria, Angola, and Malaysia, all faced with technical and operational issues. Russia pumped below its quota for the first time since record cuts were enforced.

Even so, world oil supply is forecast to grow sharply this year, with the United States, Canada, and Brazil set to pump at their highest ever annual levels. U.S. oil output is forecast to rise by one mb/d on average, to 177 mb/d, as operators respond to higher prices by putting more rigs to work. Additionally, Ecuador, Libya, and Nigeria are already ramping back up. Finally, Saudi Arabia and Russia could set records if the remaining OPEC+ cuts are fully unwound. In this case, global supply would soar by 6.2 mb/d on average in 2022 compared with a 15 mb/d rise in 2021.

Russia strengthens its cooperation with China

During the visit of the delegation headed by the President of the Russian Federation Vladimir Putin to Beijing (PRC), PJSC Rosneft Oil Company and China National Petroleum Corporation (CNPC) held negotiations and signed an Agreement for the supply of 100 million tons of oil to China through Kazakhstan for 10 years. The crude oil will be processed at factories in northwest China to meet the country’s needs for petroleum products. Rosneft’s total supplies to China since 2005 amounted to 442 million tons of oil. Rosneft is the leading oil exporter to the PRC, providing 7% of the country’s total demand in raw annually. Rosneft is also one of the leading suppliers of petroleum products to China. Since 2009, the Company has exported about 41 million tons of petroleum products. The energy cooperation of Rosneft with its Chinese partners is integral, covering all business segments. In Udmurtia, there is a joint mining enterprise by Rosneft and Sinopec – Udmurtneft. Over the 15 years of joint work, the enterprise’s production amounted to over 100 million tons, more than 12 thousand new wells were drilled, and the volume of development drilling increased 6.3 times. During this period, Udmurtneft began developing ten new fields; and the total increase in recoverable reserves amounted to about 110 million tons of oil.
Beijing Gas Company owns a 20% share of Verkhnechonskneftegaz, a subsidiary of the Company engaged in exploring and developing the Verkhnechonskoye field located in the Irkutsk Oblast, which is one of the largest in Eastern Siberia. The cumulative production of the enterprise is more than 87 million tons of oil. In addition, Rosneft and Beijing Gas are planning to implement a project to develop a network of gas service stations in Russia. Rosneft and CNPC also cooperate within the Joint Coordinating Committee (JCC), which the companies established to develop cooperation in a number of strategic areas: interaction in the exploration and development of oil and gas fields, oil refining and petrochemicals, trade in oil and oil products, scientific and technical research, training of personnel, as well as the implementation of promising projects in the field of supply and oil services. In November 2021, the fourth meeting of the JCC took place.

**LIQUEFIED NATURAL GAS (LNG)**

*How the Russian invasion could affect the market*

Russia’s invasion of Ukraine may put up to 155 billion cubic meters per year of natural gas imports to Europe at risk if the conflict causes Russia to halt deliveries, Rystad Energy research estimates. The figure corresponds to 30% of Western Europe’s annual gas demand. Although a total shutdown of Russian piped gas is unlikely, European gas markets are entering the final stretch of winter in a precarious position. Gas stocks are at five-year lows, international LNG prices are highly volatile, and the Nord Stream 2 pipeline from Russia to Germany is not expected to be operational until the second half of this year. If Russian exports were shut off entirely, Europe would struggle to meet its gas needs. Eastern Europe would be the most severely hit as the region is the most reliant on Russian imports, whereas Western Europe could, in theory, fill the void with increased LNG imports, primarily from the U.S. Western European countries have nearly enough LNG import capacity – with most additional volumes coming from the U.S. and Russia’s Yamal LNG could offer additional spot LNG. Europe could also buy volumes from aggregators and traders looking to resell into the market.

*Australian exports dropped in January*

EnergyQuest recently released its Australian LNG Monthly for January 2022. Australia shipped fewer LNG cargoes in January (96) than in December (105), with short-term outcomes at the North West Shelf and Wheatstone and repair work at Gorgon.

The cargoes delivered in January went to all the usual countries in Asia. There was no sign of any Australian cargoes heading to Europe. Although European prices were occasionally higher than Asian prices, the difference was not enough to make the longer trip worthwhile, the consultancy noted.

*The Shell outlook on global demand*

Last year can undoubtedly be described as “brilliant” for both the LNG and the LNGCs freight markets. According to the annual report of oil giant Shell, in 2021, LNG world trade amounted to 380 million tons, up by 21 million tons or 6% compared to 2020. The LNG market drivers were China as the leading importer of this energy commodity (79 million tonnes) and the US as the top exporter (64 million tonnes). China signed long-term contracts involving shipments exceeding 20 million tons per year. These figures indicate that natural gas will play an essential role in China’s energy mix and, by extension, in reducing the Chinese economy’s carbon footprint. At the same time, the role of LNG will be upgraded in a more general context in the coming years as, according to Shell, global demand for LNG is expected to exceed 700 million tons per year by 2040. This change in correlations is being felt in shipping as well. 30% of new large vessels orders in terms of tonnage in 2021 were for vessels that can run on LNG.
India’s Finance Minister Nirmala Sitharaman recently unveiled Union Budget 2022, reflecting the Monti government’s vision to promote regional development by boosting trade and transport on the peninsula. Amid high inflation, unemployment, international geopolitical tensions and controversies, and problems due to the pandemic, this budget, the fourth in a row for this government, is considered the most radical. The Union Budget, the fourth in a row for this period, aims to set a strategic focus on transport and international trade from and to the country. Many economic sectors are optimistic about the international trade from and to the country, which is expected to boost domestic production and productivity.

India’s Finance Minister, in his budget speech, emphasized the importance of transport infrastructure in stimulating economic growth and job creation. The government is targeting a five-year timeframe within which India’s transport sector will be transformed into a major contributor to the country’s economic growth. The government is focusing on developing a world-class rail network, expanding the road network, and improving port facilities to enhance trade and transport.

In the budget, the government has announced several initiatives to promote transport infrastructure. It has allocated funds for the development of the railway network, the expansion of the road network, and the development of new ports. The government has also announced plans to improve road connectivity through the construction of new highways and the expansion of existing ones.

The government has also announced plans to promote the development of transport infrastructure through public-private partnerships. It has announced plans to attract private investments in the transport sector by providing incentives and guarantees for investors. The government has also announced plans to increase the availability of funding for transport infrastructure through the creation of special funds.

In conclusion, the government’s strategic focus on transport is expected to lead to a significant increase in terms of value from $60 billion to $100 billion. The government’s initiatives are expected to boost domestic production and productivity, and create jobs, which will help to stimulate economic growth. The government’s focus on transport infrastructure is expected to enhance trade and transport, and promote regional development.
Due to the impact of the Covid-19 pandemic, 2021 was a year of unprecedented developments in the global economy. Also, it highlighted the crucial importance of supply chains to the smooth conduct of international trade, which became more evident than ever. The growing logistics crisis preoccupied the general public and many analysts, as delays in the delivery of goods and the shortage of workers were reflected in the empty shelves of stores and rising prices of goods. In this context, according to a recent report by Sea Intelligence, a leading provider of Research & Analysis, in December 2021, a negative record was set regarding schedule reliability. Specifically, only 32% of arrivals in December were classified as timely; the rest were delayed by more than a week on average.

The above implications have put considerable pressure on retailers, who have made unprecedented strategic moves to ensure the smooth running of their supply chains. In particular, many of them chartered ships to meet their transport needs, as the lack of available space on container ships and the unprecedented port congestion hung like a sword of Damocles over their businesses. The pressure on the supply chains intensified towards the end of the year when the demand has traditionally been higher because of the holidays. Indicatively, Walmart chartered bulk carriers from Genco Shipping to transport containers.

Earlier in 2021, Home Depot in the United States had chartered a containership to transport its products, and many other companies had followed suit. Swedish IKEA chartered ships and purchased containers. However, the latter is not revolutionary, as Amazon has been investing in constructing its own containers since 2018. Costco also chartered container vessels that will be deployed to transport products between Asia and the US and Canada in 2022. In early October, Coca-Cola decided to charter bulk carriers to transport more than 60,000 tonnes of materials to ensure the smooth running of its production processes. Later that month, Amazon chartered a general cargo ship to transport its containers. Towards the end of the year, Asda, one of the world’s largest supermarket chains, chartered a ship to meet its transportation needs and thus ensure its shelves would be full for the holidays. The strategic moves of these companies continued into 2022. Earlier this year, Lynas Rare Earths, Ltd., an Australian rare-earths mining company, bypassed the traditional shipping service providers and chartered its own vessels to ensure a steady flow of minerals from its Australian mine to a processing plant in Malaysia amid rising prices for these goods. Amanda Lacaze, Managing Director of Lynas Corporation, said that taking control of the company’s supply chain was the “only logical solution” as delivery times to the Malaysian plant more than doubled.

The logistics crisis has put considerable pressure on retailers, who have made unprecedented strategic moves to ensure the smooth running of their supply chains. The chaotic situation in the supply chains and the critical role of shipping in its normalization prompted the American Congress to set up a National Shipper Advisory Committee. The announcement came in early September; the Shipper Committee comprises 24 members, evenly divided between those who export cargo and those who import cargo to the United States. Amazon, IKEA, and Walmart are three of the 24 members whose term will last until December 31, 2024. Strategies such as those employed by giant retailers have enabled them to carry on with their business. Still, their contribution to the overall decongestion of supply chains has been much smaller. Moreover, according to forecasts, the bottlenecks and delays in the supply chains are not likely to abate in 2022; therefore, the most probable scenario is that such strategies will be intensified to normalize the situation.

resulting in reduced productivity. According to Ms. Lacaze, the company does not see this as a temporary solution but as a permanent part of its logistics solution moving forward, given that the significant challenges in the supply chains are not likely to be mitigated soon.

Finally, another typical example is Chinese furniture maker and retailer Loctek. According to international media, Loctek is setting up its own shipping and ship management company and has placed an order for a containership with a carrying capacity of 1800 TEUs, valued at $32.6 million.

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In recent years, the plethora of environmental regulations governing shipping has highlighted the need for shipping companies to leverage new technologies to reduce the industry’s environmental footprint. At the same time, there is a tendency for shipping companies to focus on cost-effectiveness rather than cost reduction.

In this new order of things, data analysis and telemetry are expected to play a decisive role in vessel energy efficiency by increasing investment in the industry. Undoubtedly, maritime training will need to focus on digital and green skills to ensure seafarers and shore personnel are equipped to meet future requirements.

In the following pages, Naftika Chronika presents the views of shipping industry representatives on how smart solutions will contribute to the industry’s energy transformation.
An important aspect would be optimising the efficiency of vessels, which is essential in reducing costs and emissions. Digital tools like RINA’s Optimum software optimise fleet performance and create smarter operations. By monitoring ships’ real-time performance and efficiency, smart AI-based algorithms can show areas that can be improved, including thermodynamic, hydrodynamic, and routing efficiency. Supported by geofencing and configurable alerts, ship managers can help drive efficiency through operations and help the crew in their daily operations. These tools have been proven to make a real impact on reducing costs and lowering carbon emissions through more efficient operations. Now, RINA also offers the SERTICA fleet management solution, which further incorporates smart fleet management, procurement management, and HSQE modules, providing even deeper insights into a fleet’s operation and costs and emissions control. Data gives maximum value and greater enablement to reduce costs and emissions in real-time. While historical data feed machine-learning algorithms, greater efficiency comes from being able to adapt operations based on current data. By collecting real-time data using secure telemetry systems from automation and other systems (such as scrubbers and BWSI) of ships, machine learning and prediction tools can be used to contextualise, enrich and analyse them and provide clients with advanced analytics, a real-time dashboard, and actionable intelligence about their fleet. From RINA’s Fleet Operating Centre in Piraeus, remote communication with vessels using RINA’s narrow-band live streaming service also enables remote surveys and inspections. The global pandemic has increased the uptake of this service, but it is also another way for shipowners to reduce their carbon footprint and increase operational efficiency. The strength and tradition of the Greek shipping sector mean it is a leader in understanding the challenges facing the industry today. In Greece, RINA’s fleet now includes over 500 ships. Therefore, there is a constant need to support the expansion of our local resources in terms of digitalisation, decarbonisation, training, and other value-added services for shipowners. That is a clear indication of the importance of this country in global shipping and one of the reasons RINA set up the Hellenic Decarbonisation Committee, the first decarbonisation committee in Greece, to facilitate the industry’s discussion and exchange of ideas on meeting IMO 2050 targets. Ultimately, the Greek shipping industry has an important role to play in helping to define strategies that are practical and sustainable to lead the global industry towards a carbon-neutral future. Digitalisation solutions are growing in popularity. As more fleets adopt advanced performance monitoring technology, the volume of data feeding the machine learning algorithms means increased opportunities for greater optimisation. The enhanced communication achieved through increasing digitalisation further offers the ability to respond more swiftly to piracy incidents. The new era of digitalisation is changing the environment around the ship, necessitating new competencies onboard. The argument for autonomous ships with enhanced connectivity may mean a shift to more people onshore rather than onboard in the future, but we are not at that point yet. Alongside smart shipping, consideration must also be given to cybersecurity. That is an area in which RINA is heavily investing, not only by boosting our competencies but also through acquisitions. Last December, RINA acquired Cyber Partners, a highly specialised cyber security company, and is now in an excellent position to assist shipping companies in protecting themselves from the risks posed by cybersecurity.

Digitalisation solutions are growing in popularity. As more fleets adopt advanced performance monitoring technology, the volume of data feeding the machine learning algorithms means increased opportunities for greater optimisation.

Smart shipping is here to stay, and digitalisation is undoubtedly changing the roles of onboard personnel, but its purpose is to support human operations and increase safety. The challenges related to smarter ship and port operations, new propulsion, and other ship systems designed and built to meet their decarbonisation goals, digitalisation opportunities, and cyber threats will demand new competencies by shoreside and onboard personnel. RINA and other classification societies have the expertise and knowledge to support the industry in the sustainable management of these profound changes that are happening already.
THE INDUSTRY NEEDS TO IDENTIFY NEW TECHNOLOGIES

In recent years, we have noticed that past initiatives to reduce costs have evolved into initiatives to optimize the efficiency of vessels. How has smart shipping helped the management of shipping companies in this direction?

Smart shipping involves using assistive onboard technologies to automate and optimize data collection, transmission, and analysis in many operational aspects. In this respect, the utilization of such systems has significantly helped management companies optimize vessels efficiency, resulting in more efficient operations with a lower environmental footprint.

How are shipping companies utilizing telemetry and similar technologies to increase the efficiency of their ship operations?

The technological advances in ship data communication and the installation of digital sensor technologies have enabled ships to transmit large amounts of operational data, allowing telemetry functions to be utilized for data monitoring and analysis. Telemetry platforms provide the basis for data analysis in many operations such as energy management and fuel efficiency, emissions control, monitoring of vessel equipment, and overall voyage optimization.

Which new technologies are attracting the investment interest of the international shipping industry? What smart shipping solutions does the shipping market need today?

The shipping industry is currently focused on new or existing technologies to reduce its environmental footprint, mainly related to a vessel’s liquid and air effluents.

At the top of the existing technologies are ballast water treatment systems for managing invasive species transported by ship ballast water and scrubbers aimed at minimizing the sulfur levels of fuel oil used for combustion purposes, both of which also cover the relevant regulatory requirements.

In the context of smart shipping, there are currently many technologies that enable the optimization of vessel operations. An area of improvement might be enhancing communication and logistics systems between ships, ports, and cargo operators, especially in the tanker sector.

However, the industry needs to identify new technologies that will enable it to achieve zero-carbon emissions from ships. The industry is undergoing an energy transition period, driven by regulatory requirements and society’s expectations for effectively managing the effects of climate change. In this respect, new technologies to facilitate net-zero carbon output through alternative fuels, such as ammonia or hydrogen, are currently in their initial production steps. The debate on their implementation and any associated challenges is expected to continue for some time.

Has international legislation on green technologies led to the evolution of smart shipping?

Yes, it has. The IMO, the maritime industry’s institutional regulatory body, and other regional bodies like the EU have adopted regulations to reduce GHG emissions. In this regard, smart technologies allow shipping to monitor, optimize, and eventually reduce ship emissions. Research and the promotion of new innovative technologies are necessary, so international funds should be allocated to the development of such technologies.

The new generation of seafarers born post-2000 that is already studying at the country’s Merchant Marine Academies is familiar with the latest technologies. However, the easy access to a deluge of information leads to a short attention span and a lack of a holistic approach to contemporary issues. What culture is required today in light of AI’s new demands and capabilities?

The industry’s current and future professional expectations regarding digital abilities and skills require constant familiarization and training on existing technologies. The use of new technologies should complement the skills of our seafarers and the principles of good seamanship.
In recent years, we have noticed that past initiatives to reduce costs have evolved into initiatives to optimize the efficiency of vessels. How has smart shipping helped the management of shipping companies in this direction? Our industry is transitioning from the old traditional model to a more digitally advanced version where unlimited connectivity, the Internet of Things, and Big Data bring us closer to the concept of smart ships, even though we still have a long way to go.

The steps leading to optimization include having mature monitoring and management systems in place. Based on a recent InterTankos survey, about 60% of respondents said they had automated logging systems onboard. Yet, at the same time, more than 90% said they used manual reports, which are prone to human error whose quality depends heavily on the degree of appropriateness of the reporting tools. Over 30% were still using manual performance tracking with email and Excel reports.

Considering that establishing performance baselines - a prerequisite to decision-making and identifying deviating trends - is a lengthy and painful process, most shipping companies in our industry will need more time to take advantage of these initiatives. For the time being, the immediate benefits are the low-hanging fruits of having real-time performance data and reduced uncertainty in fuel measurements.

Long-term costs reduction might reach up to 15% depending on the starting point of each company.

How are shipping companies utilizing telemetry and similar technologies to increase the efficiency of their ship operations?

Every company is different. At Minerva, we have initiated a project involving the gradual retrofitting of all our existing vessels with the appropriate equipment (torque meters, flowmeters, electric power meters, etc.), the modification of their systems as appropriate, the development of infrastructure for the collection, storage, management of signals and their ship-to-shore transmission, as well as the integration of data from external information sources. As far as energy management is concerned, the areas we are already focusing on, with immediate results, are hull and propulsion performance, cargo handling, and electric load management.

Interestingly enough, crewmembers onboard our vessels utilizing telemetry technology tend to adapt faster to the energy measures adopted than crewmembers using the conventional technologies onboard.

Looking to the future and the growing regulatory reporting requirements it will bring, we have opted to reduce GHG, crew workload, and potential human errors, enhancing transparency, which has become an industry norm. Which countries are the global leaders in smart shipping today? What is the role of Greece?

Traditionally, the countries of Northern Europe have been the prime movers in equipping their vessels with systems that allow the collection of high-frequency data, which is considered the first step towards smart sailing. The ultimate smart ship is the autonomous ship, and there are already more than 1,000 Maritime Autonomous Surface Ships (MASS) that work alongside manned vessels. IMO has already carried out a regulatory scoping exercise analyzing relevant treaties to assess how Maritime Autonomous Surface Ships (MASS) could be regulated to ensure safe, secure, and environmentally sound MASS operations.

The shipping industry nowadays focuses on decarbonization and smart technologies. Technologies that combine both, such as digitization, the Internet of Things, Big Data analytics, and blockchain technologies, attract the strongest interest as they allow for more sustainable operations. Further to the above, there is also a significant focus on augmented reality, 3D printing, integrated control systems onboard, etc.

From the operators’ perspective, there is an urgent need for smart digital solutions that will improve our energy efficiency and optimize our fleets’ operation, routing, navigation, cargo management, and maintenance. These smart solutions must have strong integration capabilities and a high level of flexibility and reliability.

Has international legislation on green technologies led to the evolution of smart shipping?

Without a doubt, Norway, with the recently delivered zero-emissions, fully electric Yara Birkeland 120 TEU container ship and its other initiatives in this field, can be considered as the current leader in smart sailing. Greece is also playing a vital role in the smart ship rally. Greek shipping companies actively contribute to developing and testing smart technologies through partnerships and joint industry projects with shipyards and makers. As expected, the LNG sector is more extroverted and adaptive.

Which new technologies are attracting the investment interest of the international shipping industry? What smart shipping solutions does the shipping market need today?

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In recent years, we have noticed that past initiatives to reduce costs have evolved into initiatives to optimize the efficiency of vessels. How has smart shipping helped the management of shipping companies in this direction? Undoubtedly, due to the complexity of environmental regulations and the costly assets involved, ship operators have redirected their efforts from trying to reduce ship operating costs to focusing on the needs of reducing their ecological footprint and increasing their competitiveness and sustainability. Over the last decade, we have been experiencing dramatic progress in this direction as shipping companies incorporated new communication technologies, advanced software-controlled systems, real-time monitoring processes, and artificial intelligence - what is widely known as “smart shipping.”

Modern ships are becoming highly automated and increasingly dependent on software. Nowadays, better, faster, and cheaper data transfer is possible. Shipping companies recognize that the accelerating technological advances are a powerful tool for excellence in vessel performance, operation, and design. Early followers of innovative technologies will have an obvious strategic advantage over their counterparts. The upcoming environmental regulations and high competition will gradually compel shipping companies to adopt the proper attitude towards the new challenges of the digitalization era. That is, not to simply increase their competitiveness but, more importantly, their viability.

By Maria Tsovafragou, Energy Performance Manager, Pantheon Tankers, Alpha Bulkers, Alpha Gas

How are shipping companies utilizing telemetry and similar technologies to increase the efficiency of their ship operations?

It is interesting to analyze a ship’s telemetry applications and their direct and long-term benefits. It would not be an exaggeration to say that nowadays, all ship systems and operations can be monitored by telemetry, which, in many cases, is easy to apply and quickly prove its financial benefits.

The list of smart technologies in shipping is quite long. Nonetheless, the starting point for most shipowners is monitoring fuel utilization across vessel equipment since fuel consumption is critical to reducing operational costs. In conjunction with other navigational data monitoring, real-time monitoring of fuel consumption and vessel speed is warmly embraced by an ever-increasing number of ship operators, who have acknowledged telemetry’s importance to voyage execution. In periods of low freight prices and forthcoming strict environmental regulations that must be implemented, speed and thus fuel consumption optimization of every voyage is more crucial than ever. Apart from speed optimization, speed claims in the frame of a charter party performance clause, or speed claims under a paint contract guarantee, can be addressed and resolved using high-frequency data. Monitoring the equipment condition is another area where telemetry has been gaining ground. The technologies offered for remote monitoring and surveying a vessel’s machinery and systems are evolving rapidly, paving the way for a more sophisticated equipment inspection model, the seafarer’s physical presence is to be replaced by online sensors and recorders. Monitoring the equipment condition offers ship operators a fine tool for avoiding or reducing costly breakdowns machinery failures and scheduling equipment maintenance more efficiently. It is worth noting that a substantial percentage of damage to a ship’s equipment is attributed to the human factor due to improper professional mentality, lack of education, and inadequate training. Telemetry reduces the possibility of human error, an issue that afflicts shipping companies in many ways, increasing safety indices and allowing crew members to stay focused on more critical tasks. The crew’s bunkering operations and fuel handling are other crucial areas where monitoring and analysis of high-frequency data can bring about significant improvements. Potential bunkering disputes can be dealt with more appropriately, and telemetry can easily identify and eliminate poor bunkering procedures or fuel mishandling practices.

Another aspect of smart shipping technology that has recently appeared in the market that deserves our attention is the application of robotics in vessel hull grooming. It will be interesting to watch how this trend develops in the future.

Which countries play a leading role internationally in smart shipping today? What is the role of Greece?

The Far Eastern and Northern European countries seem to be the leaders in smart shipping today, creating consortiums and funding research projects with universities, technology institutes, manufacturers, and shipbuilders related to the operation of crewless merchant ships. Although the primary objective of their research is the autonomous operation of vessels from a technical, economic, and legal point of view, new technologies will emerge from such projects with wide applications in conventional ships. The Greek shipping community is fiercely supportive of research concerning carbon neutrality, and Greek shipping companies are making gradual and careful steps towards digitalization and new green fuel technologies. It is noteworthy that Greek shipping companies, which have some of the most modern fleets currently, have made significant investments in green technology in recent years, recognizing the high return on investment in a short time.

TGE Marine

The Gas Experts since 1980

Liquefied Gas Systems for the Marine Industry
Transport and Fuel

TGE Marine is the leading solution provider, specializing in cargo handling systems and tanks for LNG, LPG, Ethylene, CO2, and LNG carriers. TGE Marine is a pioneer in LNG fuel gas systems, LPG tankers, and LNG-To-Power solutions. The company has contracted gas handling and storage systems to more than 220 gas tankers, built at shipyards across Asia, Europe, and America.

www.tge-marine.com
Which new technologies are attracting the investment interest of the international shipping industry? What smart shipping solutions does the shipping market need today?

Ship operators mostly favor smart technologies that support voyage optimization, especially nowadays, given the upcoming demanding environmental regulations. Monitoring fuel handling and onboard consumption is a complicated task, not fully addressed by smart technologies yet. Digitalization alone is not sufficient; although artificial intelligence is undoubtedly helping, the poor quality of the data used makes the outcome questionable.

There are several obstacles and pitfalls to overcome in fuel monitoring. It allows the operator to know the vessel's fuel consumption and speed performance in almost real-time. Still, there are reasonable doubts about the accuracy of acquired data. Furthermore, before reaching a firm conclusion about the "fuel versus speed" performance, certain multi-variables must be taken into consideration, i.e., the maintenance and repair schedule of each fuel consumer, the maintenance of fuel-related equipment, the sensors’ integrity, software adequacy, crew intervention, hull condition, weather factors, vessel route, etc. Each operational parameter can already be monitored separately, but it is necessary to oversee all the parameters automatically.

Has international legislation on green technologies led to the evolution of smart shipping?

It certainly has. Highly demanding environmental regulations require ships to minimize their ecological footprint. Traditional information management models are not enough to optimize ship operations and thus meet new regulations. The technology systems used on ships so far have proven to be inadequate in serving optimization.

Inevitably, the market had to offer solutions to help shipping companies meet their environmental goals. The optimization of ship operations requires highly accurate monitoring, measuring, and recording, which are feasible only through advanced technology and high levels of automation.

In addition, the pressing need to switch to green fuels cannot be addressed without the support of smart fuel management and ship safety technologies.

The new generation of seafarers born post-2000 already studying at the country’s Merchant Marine Academies is familiar with the latest technologies. However, the easy access to a deluge of information leads to a shorter attention span and the absence of a holistic approach to contemporary issues. What culture is required today in light of AI's new demands and capabilities?

It is a fact that advanced technologies that will undertake typical repetitive tasks will be gradually introduced on the ship. We are close to making this happen, as technology is evolving at a breakneck pace. Under such a fundamental change, the role of seafarers will naturally change, focusing on critical decision-making and other high-level tasks. The key to making this new management model viable and effective is to develop a culture of human-machine interaction. For this to happen, the seafarer must be actively involved in the process of selecting the new technologies to be applied on the ship so that they are accepted as an aid to carrying out their daily tasks.

Seafarers are comfortable with changes. The nature of their profession makes them flexible and receptive to innovation, including different ship management models. The transition to a new ship management model will require timely preparation, proper planning, and training but will essentially be a procedural issue.
AI DEVELOPMENTS IN AUTOMATED DATA COLLECTION

ENABLE PROACTIVE AND EFFICIENT SHIP MANAGEMENT

In recent years, we have noticed that past initiatives to reduce costs have evolved into initiatives to optimize the efficiency of vessels. How has smart shipping helped the management of shipping companies in this direction?

The shipping industry has indubitably entered the era of digitalization. The vast growth of the Internet of Things (IoT) has made it possible to collect automated data by installing onboard sensors on the main/auxiliary machinery and navigational equipment interfaces. At the same time, smart, novel, and robust applications are being developed constantly, using Artificial Intelligence (AI) techniques that input this bulk of data and provide critical insights to vessel managers. A few examples are software that can optimize the vessel’s route using weather data, accurately predict hull fouling, and efficiently maintain the major machinery onboard.

Bad decision-making can translate into a loss of property, increased expenses, harm to the environment, and even casualties. Many companies are reluctant to take the first step into smart shipping, so they stick to vessels’ traditional daily noon reporting. However, companies that carefully select intelligent products that fit their needs do have a clear benefit on the operational profile of their fleets.

How are shipping companies utilizing telemetry and similar technologies to increase the efficiency of their ship operations?

Through the collection of automated data and the AI evolution, ship managers can be proactive and efficient. Monitoring the hull performance of a vessel and programming optimal hull and propeller cleanings can lead to considerable fuel savings. Main engine and auxiliary machinery data acquisition ensure proper maintenance, condition-based scheduling, and optimum operation. Equipping a vessel’s engines with flowmeters facilitates and improves the quality of fuel consumption reporting, leading to the accurate emissions reporting required by the latest decarbonization-related regulations.

Monitoring all the parameters related to cargo operations, especially discharging, through automated data and AI applications, results in fuel savings and proper machinery operation. Route optimization and voyage planning coupled with a weather provider is certainly the most important application of AI in shipping. Vessel operators can run voyage scenarios by varying speed, RPM, consumption, and other parameters or choose to sail in slow steaming conditions. This yields substantial fuel savings and guarantees a safe voyage by avoiding harsh weather conditions. Limiting the vessel’s consumption whenever possible is the only way to comply with the upcoming regulatory requirements whose aim is to maximize energy efficiency, decarbonize the maritime sector, and turn it green.

Which countries are the global leaders in smart shipping today?

The major European and Asian shipping companies are the leading way. Greek shipowners have always been more traditional and reluctant to take risky steps. However, interest has definitely increased compared to the past years. The fastest way forward is through the cooperation of all stakeholders in order to multiply the effect and increase the benefit. Greece has to work towards becoming a shipping technology hub, and for this to happen, investments, initiatives, and a supportive regulatory framework will be necessary.

Which new technologies are attracting the investment interest of the international shipping industry? What smart shipping solutions does the shipping market need today?

Everyone has turned their attention towards eliminating GHG emissions. The solutions for decarbonizing the shipping industry discussed the most are alternative fuels and wind propulsion systems. However, these technologies have not matured yet in the shipping industry. Technologies such as energy-saving devices (ducts) and advanced antifouling painting schemes are more realistic and offer a good investment return. Studies in hull optimization show very promising results since they aim to minimize a vessel’s resistance through the water. A novel approach to reduce hull friction is installing air lubrication systems. Automated data acquisition systems are already established in the shipping industry. Although data have proven to be very useful in some cases, often, they go to waste. In the age of AI, we need applications that help us make crucial decisions. A figure is worth more than a huge collection of bulk data. Furthermore, there is a huge room for improvement in the automated data transmission from ship to shore. Due to equipment malfunction, there is frequent human interference in this process, which should be minimized.

Has international legislation on green technologies led to the evolution of smart shipping?

The IMO goal is to reduce carbon emissions in shipping by 70% by 2050. For the time being, two short-term measures have been adopted, namely the EEXI and CII. The latter must be calculated on an annual basis and depends on a vessel’s trade and operational profile. Most AI applications in shipping are related to fuel consumption reduction and, therefore, the CII.

In addition, the shipping industry is now also included in the EU’s emission trading scheme. Carbon taxes on Greenhouse Gas (GHG) emissions set by the EU government are a much-discussed topic. Data acquisition is the optimal way to monitor the daily consumption of the vessels and reduce the fleet’s carbon footprint.

The new generation of seafarers born post-2000 already studying at the country’s Merchant Marine Academies is familiar with the latest technologies. However, the easy access to a deluge of information leads to a shorter attention span and a lack of a holistic approach to contemporary issues. What culture is required today in light of AI’s new demands and capabilities?

Next-generation maritime simulators include dynamic troubleshooting through photorealistic twins of vessels. This technology has significant benefits for crew training, such as acting under pressure in real-time conditions and drastically reducing a training session’s duration. Seafarers need to understand the importance of high-quality data reporting. Sensor malfunction is a serious issue that must be dealt with immediately. However, there is no need for the crew to have a solid understanding of AI. There are essential tasks that must be done on a daily basis on board, and these should always be the crew’s first priority.
TEN Ltd. enhances its fleet with the addition of the newbuilt LNG carrier "TENERGY"

Tsakos Energy Navigation Ltd. announced that the christening and delivery of its new 174,000 cbm LNG carrier "TENERGY" took place at 14:30 hours Korean time on 12 January 2022. The vessel was built by Hyundai Heavy Industries Co. Ltd in South Korea and was immediately chartered to a major end-user. The delivery ceremony was attended by Captain Panagiotis Tsakos – Founder of Tsakos Group. Tsakos Energy Navigation extended its warmest congratulations and wholehearted wishes for smooth, prosperous journeys and calm seas to the vessel’s Master Capt. Antonios Manos, Chief Engineer Efstratios Roussouvelos, Officer’s & Crew.

VESSEL PARTICULARS

- Name: TENERGY
- Type: LNG Carrier
- IMO No.: 9892456
- Date of delivery: 12 January 2022
- Shipyard: Hyundai Heavy Industries Co. Ltd.
- Cargo Capacity: 174,000 m³
- DWT: 93,649.6 mt
- Flag: Greek
NEREUS SHIPPING S.A.
"ATLANTIC” | “PACIFIC”

Two oil tanker newbuilds for Nereus Shipping S.A.

Nereus Shipping has enhanced its fleet of oil tankers with the addition of two newbuildings. The company took delivery of the “Atlantic” last January and the “Pacific” in February. Both vessels were built by Hyundai Heavy Industries, South Korea and are equipped with the latest available technologies to reduce their environmental footprint.

VESSELS’ PARTICULARS

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COMPLETION OF CONCEPT STUDY ON FLOATING STORAGE AND REGASIFICATION UNIT FOR AMMONIA

Mitsui O.S.K. Lines, Ltd. recently announced the completion of a concept study on a floating storage and regasification unit (FSRU) for ammonia fuel, in collaboration with Mitsubishi Shipbuilding Co., Ltd.

In addition, MOL, Mitsubishi Shipbuilding, and Kansai Electric Power Co., Inc. have signed a Memorandum of Understanding (MOU) to jointly conduct a study to introduce the ammonia FSRU as a major step in adopting ammonia as a decarbonized energy.

Currently, the maritime transport volume of ammonia is limited as it is mainly used as a raw material for fertilizer. However, it is drawing global attention as a next-generation clean energy source that emits no carbon dioxide (CO2) during combustion.

Strategic moves to adopt ammonia as an alternative fuel are underway around the world.

In this concept study, the team examined specifications of several cases with different conditions such as tank size and regasification method to meet a broad range of needs. In addition, the team developed a design concept of a lower environmental impact FSRU that would be powered by electricity generated with ammonia fuel.

SHELL AND GTT JOIN FORCES TO ACCELERATE THE DEVELOPMENT AND INNOVATION OF LIQUID HYDROGEN

Technologies

Shell International Trading & Shipping Company and technology firm GTT have announced their cooperation in developing breakthrough, cutting-edge technologies to enable the transport and storage of liquid hydrogen (LH2).

This cooperation agreement is part of Shell’s strategy to develop a hydrogen energy supply chain by creating scalable, safe, liquefied hydrogen shipping technologies. This includes the development by GTT of a preliminary LH2 carrier design as well as an LH2 cargo containment system for mid-size LH2 carriers.

The demand for hydrogen across multiple sectors is expected to increase to meet the need for net zero-carbon energy sources in the energy transition. The ability to transport huge volumes of hydrogen in liquid form at -250°C is one of the technological challenges that must be met in order to establish a reliable, efficient, and competitive hydrogen supply chain.

With this goal in mind, GTT brings its more than 50-year track record and recognized expertise in membrane containment systems and cryogenic technologies developed for the shipping and storage of LNG.

ROKS IS ASSIGNED WITH THE ADDITIONAL CLASS NOTATION “REMOTE” BY RINA

ROKS has been successfully assigned the additional voluntary class notation “REMOTE” by RINA for the M/V Revenger. This class notation is assigned to ships deemed capable of being surveyed remotely for the largest scope of class and periodical surveys.

In particular, the M/V Revenger is equipped with devices for livestreaming – a portable device with wide-angle functionality and high-quality optical lenses are available onboard. The vessel is also fitted out with a Connectivity Kit, enabling Internet access in enclosed spaces. After completing the relevant training, a Certificate of Competency is issued to the crew members who take an active part in the remote surveys and manage the connectivity kit and livestreaming (even offline). The class and statutory certificates are issued electronically to M/V Revenger by RINA.

“The remote surveys notation offers ship managers the flexibility to defer inspections when conditions in a port are non-visible or unsafe and conduct them at a proper time at sea, with the same effectiveness and less distraction for our crew. Remote notation is a steady step towards the zero-incident industry we are all aiming at,” commented Panagiotis Koutris, Managing Director of ROKS Maritime Inc.

Spyros Zolotas, RINAs Marine Southern Europe & Africa Area Senior Director, added, “New remote technologies can provide shipping with a safer outcome, especially following the outbreak of COVID-19. Technology and digitalization are no longer the future but are making the difference right now.”

BHP WELCOMES THE WORLD’S FIRST LNG-FUELED NEWCASTLEMAX BULK CARRIER

The BHP Group has welcomed M/V Mt. Tourmaline, the world’s first LNG-fuelled Newcastlemax bulk carrier transporting iron ore between Western Australia and Asia from this year. BHP has chartered five LNG-fuelled Newcastlemax bulk carriers from Eastern Pacific Shipping (EPS) for five years and has awarded the LNG fuel contract to Shell.

The vessel’s maiden voyage was to the port of Jurong in Singapore, where it will carry out its first LNG bunkering operation (the process of fueling ships with LNG) through FuelLNG Belina, Singapore’s first LNG bunker vessel. The bunker vessel is operated by FuelLNG, a joint venture between Shell Eastern Petroleum and Keppel Offshore & Marine.

After LNG bunkering, the 209,000-deadweight tonne vessel will depart for Port Hedland in Western Australia for iron ore loading operations.

BHP Chief Commercial Officer, Vandita Pant, said: “BHP works with our suppliers to embed innovative and sustainable solutions in our supply chain. This vessel delivers significant improvements to energy efficiency and emissions intensity as well as reduced overall GHG emissions in our value chain.”
These achievements demonstrate BHP, EPS, and Shell’s shared commitment to social value through innovative emissions reduction initiatives.”

BHP’s Chief Commercial Officer added: “These LNG-fueled vessels are expected to reduce GHG emissions intensity by more than 30 per cent per voyage compared to conventionally-fueled ships and will contribute towards our 2030 goal to support 40 per cent emissions intensity reduction of BHP-chartered shipping of our products.”

A TANKER THAT EMITS NO GREENHOUSE GASES OR CARBON PARTICULATES DURING PORT OPERATIONS

Swedish tanker operator Terntank and the Port of Gothenburg made maritime and environmental history on Thursday, 10 February, when they welcomed ‘TERN ISLAND,’ a tanker that emits no greenhouse gases or carbon particulates during port operations.

TERN ISLAND, a pioneering new vessel designed with Terntank’s Hybrid Solution®, arrived at Gothenburg Port, successfully performing zero-emissions port operations. TERN ISLAND is equipped with a new electric power supply hybrid system, including a battery pack, on-shore power supply, and a DC-Link system, which is reported to reduce its auxiliary energy consumption during port operations by -99%. The shore power connection has been developed with the Port of Gothenburg, which is said to be the first port globally that can connect tankers to electricity. Furthermore, TERN ISLAND is 100% biofuel compatible. The main engine, boiler, and auxiliary engine are designed to reduce the environmental impact and perform safe operations running on biofuels.

By combining the optimized hull and rudder design with dual-fuel capability, when utilizing 30% biogas, TERN ISLAND reduces CO₂ emission by -70%, while it almost eliminates the emissions of sulfur oxide (-99%), particles (-99%), and nitrogen oxide (-97%) in comparison to a same-sized conventional vessel. Designed by Terntank and Kongsberg Maritime CM AS and delivered on 15 December 2021 at China Merchants Jinling Shipyard, Yangzhou, by Dingheng Co. Ltd., the vessel is the first of two 15,000 DWT chemical and product tankers in the Terntank Hybrid Solution® series. The vessel combines a dual-fuel-powered engine that uses LBG (liquefied biogas) or LNG (liquefied natural gas), which means that it is able to operate on completely fossil-free fuel. The vessel is part of Terntank’s most significant expansion order throughout the company’s history for the delivery of a next-generation fleet aimed at sustainable performance.

NYK INVESTS IN ALTERNATIVE MARINE FUELS

The methanol-fueled chemical tanker Seymour Sun, owned by NYK Bulkship (Asia) Pte. Ltd., an NYK Group company based in Singapore, was delivered on 27 January. The vessel was built at Hyundai Mipo Dockyard in Korea.

Seymour Sun has been equipped with a dual-fuel engine that can use not only heavy fuel oil but also methanol. Furthermore, when navigating using methanol as fuel, the vessel has a new technology that suppresses the production of NOx (nitrogen oxides) by adding water to methanol to lower its temperature during combustion. As a result, the vessel can comply with the IMO’s stringent Tier III NOx emission standard and contribute to environment-friendly transportation without the need for an exhaust gas recirculation (EGR) system and a selective catalytic reduction (SCR) device.

Under the management of NYK Shhipmanagement Pte. Ltd., an NYK Group company, the vessel will be engaged in a long-term charter contract with Waterfront Shipping Limited, a subsidiary company of Methanex Corporation, the world’s largest methanol producer.
A NEW JOINT INDUSTRY PROJECT TO ENSURE RELIABLE, SAFE AND COST-EFFICIENT HYDROGEN PRODUCTION SYSTEMS USING ELECTROLYSERS

Together with 18 industry partners, DNV is launching a new Joint Industry Project (JIP) to enhance the standardization for reliable, safe and cost-efficient hydrogen production systems that use renewable energy-powered electrolysis to produce green hydrogen. Partners currently joining the JIP are: BP, Clean Power Hydrogen, EDP, Elogen, Equinor, Fraunhofer-Gesellschaft, Green Hydrogen Systems, Industrie De Nora, ITM Linde Electrolysis, McPhy, NextChem, Nordex, Schaeffler Technologies, Shell, Siemens Gamesa, Siemens Energy, Sunfire, thyssenkrupp nucera.

Electrolysers are hydrogen producing devices, splitting water into hydrogen and oxygen using electricity in a chemical process known as electrolysis. Hydrogen can play a significant role in decarbonizing the world’s energy supply, unlocking more potential of renewable energy and is receiving increasing focus as the energy transition moves at pace.

Kim Sandgaard-Mørk, Executive Vice President for Renewables Certification at DNV said: “DNV predicts that hydrogen will move from approximately 1% of the mix of energy carriers in 2040 to 5% in 2050, a trend that DNV anticipates will continue into the second half of the century. Especially decarbonizing hard-to-abate sectors like aviation, maritime or long-haul trucking requires far greater scaling of green hydrogen.”

The newly developed radial compressor and axial turbine are key components of the series. Both have been developed with new design features, backed by the latest simulation technologies, resulting in a very compact and lightweight turbocharger design.

INDUSTRY ASSOCIATIONS COLLABORATE TO FACILITATE THE USE OF ELECTRONIC BILLS OF LADING

Digital Container Shipping Association (DCSA), a neutral, non-profit group established to further digitalisation of container shipping technology standards, in conjunction with its nine member carriers, recently announced the formation of the Future International Trade (FIT) Alliance with the signing of a memorandum of understanding (MOU) between DCSA, BIMCO, FIATA, the International Chamber of Commerce (ICC) and SWIFT in which the organisations commit to collaborating to standardise the digitalisation of international trade.

Through this initiative, the FIT Alliance will work together to generate awareness about the importance of common and interoperable data standards and common legislative conditions across international jurisdictions and platforms. The aim is to facilitate acceptance and adoption of an eBL by regulators, banks and insurers and to unify communication between these organisations and customers, physical and contractual carriers, and all other stakeholders involved in an international trade transaction.
The European Commission has recently presented a Taxonomy Complementary Climate Delegated Act on climate change mitigation and adaptation covering certain gas and nuclear activities. The College of Commissioners reached a political agreement on the text, which will be formally adopted once translations are available in all EU languages.

A great deal of private investment is needed for the EU to become climate neutral by 2050. The EU Taxonomy aims to guide private investment to the activities required to achieve climate neutrality. The Taxonomy classification does not determine whether a certain technology will or will not be part of Member State energy mixes. The objective is to step up the transition by drawing on all possible solutions to help us reach our climate goals. Taking account of scientific advice and current technological progress, the Commission considers that there is a role for private investment in gas and nuclear activities in the transition. The gas and nuclear activities selected are in line with the EU’s climate and environmental objectives and will allow the EU to accelerate the shift from more polluting activities, such as coal generation, towards a climate-neutral future, mostly based on renewable energy sources.

Valdis Dombrovskis, Executive Vice-President for an Economy that Works for People, said: “Our mission and obligation is climate neutrality. We need to act now if we are to meet our 2030 and 2050 targets. Today’s Delegated Act is about accompanying the EU economy in the energy transition, a just transition, as a bridge towards a green energy system based on renewable energy sources. It will accelerate the private investment we need, especially in this decade. With today’s new rules, we are also strengthening transparency and disclosures of information so that investors make informed decisions, thereby avoiding any greenwashing.”

GREEK WIND ENERGY POWER UP 8.2% IN 2021

Wind energy power in Greece totaled 4,451 MW in 2021 with 128 new wind turbines connected to the system, an investment totaling 340 million euros, adding 338.3 MW of power, the Hellenic Wind Energy Association (HWEA) said in a report.

The HWEA said total power in 2021 was up 8.2% compared with the previous year but noted that the pandemic crisis and administrative hurdles significantly slowed the growth rate from 43% in 2020.

TERNA Energy with 703 MW (a market share of 15.8%), Ellaktor with 492 MW (10.8%), ENEL Green Power with 368 MW (8.3%), Iberdrola Rokas with 271 MW (6.1%), and EREN with 250 MW (5.6%) were the top players in the market, followed by EDF, Motor Oil, Mytilineos Group, PPC Renewables, Jasper Energy, etc.

THE EFFECTS OF HIGHER GAS PRICES ON THE GLOBAL ECONOMY

Global natural gas consumption rebounded by 4.6% in 2021, more than double the decline it had seen in 2020, according to the Gas Market Report by the International Energy Agency (IEA). The strong demand growth in 2021 was driven by the economic recovery that followed the previous year’s lockdowns and by a succession of extreme weather events. Supply did not keep pace, which, combined with unexpected outages, led to tight markets and steep price increases, putting the brakes on demand growth in the second half of 2021, says the IEA.

The year closed with record high spot prices in Europe and Asia, as the natural gas supply remained very tight. The direction of short-term demand will depend on the weather during the rest of the northern hemisphere’s heating season. Assuming normal temperatures, the growth of the natural gas market is expected to be slowed by higher gas prices and softer economic expansion. At the same time, supply tensions may ease as offline capacity gradually returns. The exceptionally high gas (and by extension electricity) prices are likely to have an impact beyond just northern markets and the current season, with some ripple effects in both mature and emerging gas importing markets already visible, notes the IEA.

Uncertainty over prices and supply remained high as of early January, with most of the heating season still to come. Weather patterns are likely to remain the principal driver of both prices and volatility in the coming weeks, although other physical, commercial, and geopolitical factors are also at play.

Natural gas prices have followed temperature variations over recent weeks, as the heating needs of residential and commercial customers in the main northern hemisphere markets drives gas demand. Meanwhile, the impact of weather con-
ditions is being exacerbated by the extremely tight market situation in Europe, leading to extreme levels of price volatility. Mild temperatures, together with higher LNG inflow, moderated European prices at the start of 2022, but every new sign of colder weather or tighter supply quickly prompts price increases. Exceptionally high gas – and by extension electricity – prices have hurt consumers, utilities, and wholesalers and are likely to have a lasting negative impact beyond the current seasonal tension. The effects are not limited to Europe, as markets worldwide experience the painful consequences of high gas prices. Emerging economies are particularly vulnerable and are already experiencing power cuts, industrial demand destruction, and potential fuel supply issues in the absence of affordable gas-based fertilisers.

The current market situation is a stark reminder for gas-consuming countries of the importance of implementing and updating their security of supply toolboxes, including policies to protect consumers and optimise the use of gas infrastructure, especially storage.

**INVESTMENTS IN THE HYDROPOWER MARKET SET TO SOAR**

The hydropower market will continue its upward trajectory in 2022 as global capacity exceeds 1,200 gigawatts (GW) for the first time and investments climb to $36.3 billion, Rystad Energy research shows. As the energy transition gathers pace and countries search for reliable, large-scale infrastructure projects to meet future demand, hydropower is solidifying its position as the most popular renewable energy source.

Hydropower accounts for almost one-sixth of the world’s power generation, trailing only coal and natural gas. The industry’s contribution to power generation is nearly 60% higher than nuclear energy and greater than all other renewables combined, including wind, solar PV, bioenergy, and geothermal. Power generated through hydropower rose slightly in 2021 to 4,414 terawatt-hours (TWh), up from 4,360 TWh in 2020, while a capacity of nearly 17 GW was added in 2020, followed by another 14 GW in 2021. Investments in the sector slowed somewhat before 2020 as other renewable sources such as wind and solar PV gained momentum, a situation exacerbated by delays to several major hydropower projects and some regions’ lack of policy changes, which also stunted growth. However, the industry is experiencing a renaissance as countries are increasingly motivated to find suitable renewable options to decarbonise their energy supply.

China remains the world leader in total installed hydropower capacity with over 340 GW, more than triple the capacity of runner-up Brazil with 112 GW. The US (81 GW), and Russia (50 GW) round out the top-five list for hydropower generation globally, followed by India (47 GW), Norway (33 GW), Turkey (30 GW), and Japan (23 GW).

In recent years, Asian and South American countries, led by China and Brazil, have driven global capacity additions while other continents have stayed relatively flat. Combined installed capacity in Asia has risen from 462 GW in 2017 to an expected 514 GW in 2022, whereas total capacity in South America has climbed from 175 GW to an expected 192 GW over the same period.

Looking at 2022, China’s Baihetan hydropower project, which began operations from two of its 16 units in June 2021, will be able to produce up to 16 GW of energy annually once fully operational later this year. This will make it the second-biggest hydroelectric project globally, eclipsed only by another Chinese mega-development, the Three Gorges Dam project in Hubei province. The Wudongde hydropower plant, another ambitious Chinese development, began full operations in June last year with an installed capacity of 10.2 GW, making the project the seventh-largest hydropower project worldwide.
LEGENDS
& MILESTONES

When shipping giants come together: Commemorative photo from the launching of the ‘Evgenia Chandris’ at the Odense Steel Shipyard in Denmark, in 1969. From left to right: Anthony J. Chandris, Dimitrios Chandris, Evgenia Chandris, Arnold Mærsk Mc-Kinney Møller, Ourania Chandris and Iver Hoppe, Managing Director of the Odense Shipyard.

With a deadweight tonnage of 206,000, the VLCC “Evgenia Chandris” was the largest tanker under Greek management at the time.

Anthony J. Chandris with his mother Evgenia Chandris during the launching of the ship that was named after her.
"Waiting to get back into action": Decommissioned ships under repair in the port of Piraeus, Xaveriou Coast, 1958 (phot: G. Diamantidis & S. Vatakis).

The launching of the SD-14 type cargo ship "Despina" in June 1971. The "Despina" was built by the Hellenic Shipyards of Skaramagas for shipping magnate Dr. Achilles Frangistas (phot: K. Megalokonomou).
On 31 January, 2022, the legendary Athens Hilton Hotel closed its doors, having completed a period that marked the renaissance of tourism in Athens that had begun in the 1960s. The hotel, one of the most emblematic and famous buildings in the Athens city center, is currently under reconstruction and renovation and will be renamed as soon as it is transformed into a grand complex that will include a luxury hotel, residences, a wellness center, and luxurious dining and entertainment areas.

The hotel's transformation closes a historical period during which the Hilton Athens has been directly connected with the Greek shipping and business community from the conception of the idea until its final implementation. The initial idea of creating a luxury hotel complex that will include a luxury hotel, residences, a wellness center, and luxurious dining and entertainment areas was vice-president of the Greek Union of Greek Shipowners, followed the same path, placing the investment of Stavros Niarchos in the Skaramanga Shipyards. Stratis Andreadis, who at the time of the completion of the Hilton Hotel, had taken over the reins of the Union of Greek Shipowners, followed the same path, placing the investment of the Pezas company's shares and completing the project. Professor Stratis Andreadis had hosted a reception for more than 200 Greek and foreign journalists on 15 March 1963 to present the Athens Hilton and announce its upcoming opening. Professor Stratis Andreadis had referred to these plans as "a true frenzy of productive activity, which will be achieved through his banking Group." In its April 1963 issue, the magazine had published a multi-page article on the occasion of the forthcoming opening of the hotel.

The Naftika Chronika editor wrote that the imposing hotel building occupied an area of 16,000 sq.m. and reached a height of 50 meters. He was particularly impressed with the quantity of Greek marble used (a total area of 30,000 sq.m.) and the building's lines, which he described as modern and austere. Although Naftika Chronika had never been a publication whose articles deal with art, the columnist had not failed to mention the marble relief compositions of painter Giannis Moralis, which adorn the sides of the building, making the building one of the most important examples of architecture in post-war Greece.

The hotel's transformation closes a historical period during which the Hilton Athens has been directly connected with the Greek shipping and business community from the conception of the idea until its final implementation. The initial idea of creating a luxury hotel complex that will include a luxury hotel, residences, a wellness center, and luxurious dining and entertainment areas was vice-president of the Greek Union of Greek Shipowners, followed the same path, placing the investment of the Pezas company's shares and completing the project. Professor Stratis Andreadis had hosted a reception for more than 200 Greek and foreign journalists on 15 March 1963 to present the Athens Hilton and announce its upcoming opening. Professor Stratis Andreadis had referred to these plans as "a true frenzy of productive activity, which will be achieved through his banking Group." In its April 1963 issue, the magazine had published a multi-page article on the occasion of the forthcoming opening of the hotel.

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The contemporary visitor would be amazed by the Byzantino restaurant's mosaics, which enchanted visitors and created an extraordinary ambiance. Finally, another point of interest of the new Hilton was the huge size of the outdoor pool, gathering around it the Athenian elite, which was indicative of the hotel's luxury compared to similar tourist infrastructures in the Greek capital. The article reported that Ioniki Bank had spent $14 million to complete the project. The Hilton Hotels Corporation would hold a 30% share of the net profits and ensure a constant flow of visitors.

Andreadis's direct investment saved a project that was bold and unprecedented, given the country's economic situation back then. The Athens Hilton, has undoubtedly put the Greek capital on the map of global luxury tourism. At the same time, the hotel maintains another connection with the Greek shipping community, representatives of seafarers' syndicates, and the state authorities took part in an unprecedented public debate that brought all parties closer together.

Another important instance associated with the Greek shipping community was the 1979 Shipping Day conference the proceedings of which took place with the participation of the Minister of Merchant Marine and an important number of Greek shipowners. It was the first time since 1964 where an event like this was organized and it's considered a pivotal moment in the relations between the Ministry of Shipping and the UGS, in the years after the dictatorship in Greece.

It is worth mentioning that despite the voices that claimed that the flow of visitors would hold a 30% share of the net profits and ensure a constant flow of visitors. Andreadis’s direct investment saved a project that was bold and unprecedented, given the country's economic situation back then.
the size of the building and its aesthetics would alter the urban landscape of Athens, the hotel is now rightly considered an Athenian landmark. That is also evidenced by the fact that the area around the hotel has informally taken its name. The point of view of the Naftika Chronika was, undeniably, that of a shipping magazine presenting the achievements of a great shipowner who, through perseverance, had developed an impressive set of business activities on land. However, the day the Athens Hilton opened its doors was a critical turning point in the history of tourism development in Greece as the first building of this size in the urban landscape of Athens, which acted as a catalyst for the inclusion of Athens in international luxury itineraries.

The following phrase by the Naftika Chronika columnist, who did not fail to mention the other "on land" activities of the shipping community, characterizes that era: He referred to the shipyards, refineries, the Olympic Airways, and the Eugenides Foundation as magnificent works and acts of benevolence that "try to liberate the economy of our country."

An Emporiki Bank advertisement of the period showcasing all business activities of the Andreadis-led business group, Naftika Chronika January 1st 1964.

The proceedings of the First Maritime Conference as reported by Naftika Chronika in its 1st September issue, 1964.

You can read more about the Hilton Athens, as presented in Naftika Chronika’s archive, by scanning the QR Code.
Yet while shipping’s electrification is clearly under way, not everyone is on board. In response, Berg Propulsion has collaborated with green technology expert The Switch to develop an alternative solution that offers superior electric propulsion efficiency compared with conventional systems.

**Efficiency gains through consolidation**

Named ‘Direct Drive Electric,’ Berg’s new solution minimises conversion losses by consolidating several of the systems that comprise a conventional electric propulsion power train.

**Consolidation Opportunity 1**

The revised configuration uses proven permanent magnet motor technology for higher efficiency, reduced electrical losses, and optimised flexibility at varying rpm, torque, and pitch. In this set-up, the electric motor is part of the propeller shaft and drives the propeller directly, with no reduction gear installed, to achieve 2–3% greater fuel efficiency.

**Consolidation Opportunity 2**

The power distribution and the frequency controller – respectively responsible for 1–2% and 3–5% conversion losses in the conventional electric propulsion set-up – offer a second opportunity for consolidation. Direct Drive Electric features a DC hub, or ‘superdrive,’ that draws on the main power generation source as well as any sources of stored energy such as batteries and fuel cells. The superdrive outputs interface separately with main propulsion and hotel/other electrical systems, establishing an integrated power source that can be distributed for optimised fuel efficiency at all times.

**Design advantages of Direct Drive Electric**

Direct Drive Electric also offers advantages in propulsion system design, with the removal of gears allowing a shorter shaft line, fewer bearings, and a smaller engine room footprint.

**Direct Drive Electric use cases**

Already fully operational, Direct Drive Electric has been included in orders featuring Berg’s patented Twin Fin system, where it is installed within compact, hydrodynamically shaped fins custom-designed to optimise flow through the propellers and thereby minimise fuel consumption and noise.

For example, Berg Propulsion has supplied Direct Drive Electric to a 26,000-deadweight ton self-unloading bulk carrier designed by Deltamarin and built at CSSC Chengxi Shipyard, China. The vessel, named Nukumi, has now successfully passed sea trials and been officially delivered to Canadian shipowner CSL Group, she is currently en route to Canada, where she will commence operations.

**Vessel electrification made easy**

Driven by cost and sustainability imperatives, the maritime industry is increasingly attracted by electric propulsion technology, whose benefits include compatibility with a wider range of fuels, higher levels of integration, and more flexible power management.

Vessel electrification now under way. Direct Drive Electric represents an ideal solution for integrating gas or dual-fuel engines, other fuel alternatives, fuel cells, and batteries. Owners seeking to optimise efficiency, flexibility, and sustainability should therefore see Direct Drive Electric as a direct response to a market need for a smoother transition to vessel electrification.
Ships are becoming smarter and more connected, but the new and exciting opportunities for operational efficiency also bring the increased risk of cyberattack. There is actually no way for a ship’s network to ‘know’ its level of cyber resilience, even though a 2020 BIMCO/Safety at Sea survey saw respondents highlight this as significant: 77% said they would cancel a contract if they had concerns over cyber security measures in place.

THE NEW AND EXCITING OPPORTUNITIES FOR OPERATIONAL EFFICIENCY

However, effective segregation of systems and access based on need and authorisation can provide a strong basis for successful cyber risk strategies. The multi-layered approach can significantly impede an attacker’s access to a ship’s systems, while also preventing the spread of malware.

The multi-layered approach
For example, connected OT systems onboard should have more than one technical and/or procedural protection measure. Perimeter defences such as firewalls can prevent unwelcomed entry into systems, but this may not be sufficient to cope with insider threats. In this case safe zones should be considered as a second layer of protection which can be created using firewalls to partition onboard networks and protect confidential data and safety critical systems.

How others are accessing a ship’s network is also a key consideration. Virtual Private Networks (VPNs) can offer a further layer of protection by separating crew or third-party traffic from the ship’s network. However, resilience depends on VPNs being configured properly and well managed: in some cases, where multiple VPNs are in use, they can actually increase the ship’s attack surface and ‘punch holes’ in its cyber security.

Securing ship networks
These are the considerations which have driven the development of FastNet, GTMaritime’s intelligent data transfer platform, which removes the need for multiple VPNs and is used to deliver the company’s suite of secure data communications solutions. FastNet significantly reduces the attack surface using layered security which allows vessel operators to control access to data without opening vessel networks. By managing data transfers in this way, FastNet protects confidentiality and integrity by ensuring that data passing between ship and shore is available only to those who need it.

Providing cyber security training to employees is also a key factor in preventing or containing a cyber-event. Seafarers whose contact with the outside world is reliant on the IoT must be especially vigilant regarding phishing emails, clicking malicious links from unknown sources and understand the systems which maintain the vessel’s cyber integrity. To support crew training, GTMaritime offers a phishing penetration test which allows customers to test staff responses to phishing attacks.

An autonomous future
As autonomous ships evolve, they will be more connected and operate within a more extensive cyber-physical infrastructure than even the smartest ships of today. As automation increases, greater efficiencies will be required to support a smaller crew and protect systems as data traffic moving between ship and shore increases. With machinery, sensors, systems, and networks interlinked and connected to the internet, any vulnerability in cybersecurity therefore has the potential to become a serious chink in an autonomous ship’s armour if not managed properly. As a provider of secure data communications software, GTMaritime will continue to develop products which meet the increasingly sophisticated requirements of increased automation.
One would venture to say that space rightly continues to elicit increasing investment interest as it is vast and has an unlimited wealth of resources. However, even though Elon Musk has been making statements about the need to colonize Mars for years, such an endeavor seems extremely difficult as it is beyond the investment interest of those who have the funds to enter the space travel market. For the time being, the developments in the commercial space tourism industry point to an increasing interest in short leisure space travel in the future.

It is reminded that on Tuesday, 20 July 2021, Jeff Bezos and three other people participated in an 11-minute sub-orbital flight to the Karman line. The Karman Line is located 100 km above the planet’s surface and is recognized by many scientists as the conventional boundary between Earth’s atmosphere and outer space. That was the first crewless flight in space, in the sense that it did not involve astronauts but ordinary civilians, with the control of the aircraft being carried out remotely. A few months later, in September 2021, Elon Musk’s SpaceX sent four citizens into space on a three-day flight, offering an extra taste of “space” tourism. Moreover, a new competitor, World View, appeared in the space tourism scene only a few weeks later. World View announced that from 2024 onwards, it would offer stratospheric balloon rides carrying up to eight passengers to 100,000 feet above the Earth’s surface. The company will even offer world view voyages taking off from spaceports located at the Seven Wonders of the World, including Giza, the Grand Canyon, the Great Wall of China, etc.

However, in addition to all the investments in space tourism, significant steps have been taken with a focus on crewed missions. Elon Musk confidently stated recently that SpaceX’s ambitious creation, Starship, will be launched in 2022. The Starship is a nearly 120-meter-high rocket which, besides being designed to be reusable, will have a carrying capacity exceeding 100 tonnes. The destinations of Starship’s voyages will be none other than Mars and the Moon. The promised Starship megarocket capacity may drastically change the economics of transporting people and cargo in space. The missile could push many competitors out of the market, as it has the enormous advantage of being reusable. The ability to reuse rockets turns them into long-range lifts to space. Concerned about SpaceX, European companies are also planning similar ventures. France-based rocket firm Ariane Group has announced it is designing a new small-lift rocket to be launched by 2026.

For the record, the SpaceX project has prompted NASA to offer a $2.9 billion contract to SpaceX to send its astronauts into space. However, many of those monitoring the growth of the fledgling space tourism industry are extremely alarmed about the ecological footprint of space travel. A spacecraft’s fuel consumption produces soot and other harmful pollutants, while a space tourism flight lasting about an hour and a half is estimated to emit emissions similar to those of a 10-hour transatlantic flight. Until now, the environmental impact of rocket launches has been considered negligible, but as their number is expected to increase significantly in the coming years, scientists are worried about the potential impact that the space tourism industry will have on the planet’s atmosphere. As our aspirations for the future of humanity lead us to travel above 100,000 feet, the international press will continue to follow with interest any developments regarding technological progress in the space travel industry.
Airlines are Optimistic About the Year Ahead, But Challenges Remain

IATA’s survey of airlines CFOs and Heads of Cargo, conducted in December 2021-January 2022, shows that pressure on airline profitability diminished in Q4. The improvement is expected to continue in the year ahead. However, the respondents were more cautious than in the previous survey due to the Omicron impact, soaring jet fuel prices, and rising market competition that puts pressure on yields.

The majority of survey participants reported improving passenger and cargo volumes in Q4 2021 versus Q4 2020. They also expect this trend to continue in the future – notably on the passenger side of the business. The survey results suggest no significant change in employment levels in Q4 2021 versus the same period a year ago. On a positive note, 59% of respondents expect increased hiring in the next twelve months thanks to recovering passenger operations. 55% of the survey participants recorded higher input costs in Q4 year-on-year, largely due to soaring jet fuel prices and staff shortages. The same share of respondents expects further input cost increase in the future. Two thirds of airlines in the survey predict passenger yields will stabilize at current levels or fall due to increased competition in the market. On the cargo side, 54% of respondents expect the yields to remain elevated or rise further – down from 68% in the previous survey.

A significant majority of participants in IATA’s survey reported improved airline profitability over the past three months. 83% of respondents stated that their income increased (or losses diminished) compared with the same period a year ago – broadly unchanged from the October survey (85%). The improvement remained driven by the gradual recovery in passenger traffic as travel restrictions were eased and by strong cargo demand combined with elevated cargo yields. Those who reported a deterioration mentioned the increase in the jet fuel price and COVID outbreaks in key markets. Looking ahead, the survey suggests that the bottom-line ‘change answers grew from 24% to 34%. Carriers mentioned concerns over Omicron’s impact on travel demand; higher jet fuel prices, and the pressure on yields due to increased competition.

Qatar Airways Orders up to 50 777-8 Freighters, reaffirming its commitment to the Boeing 777X Family

Boeing launched the new 777X Freighter and expanded its market-leading 777X and freighter families of jetliners with an order for up to 50 aircraft from Qatar Airways. Qatar Airways will be the 777-8 Freighter launch customer with a firm order for 34 jets and options for 16 more. This total purchase would be worth more than $20 billion at current list prices and the largest freighter commitment in Boeing history by value. The order also supports hundreds of U.S. suppliers from across 38 states, will sustain more than 350 U.S. jobs, and will provide the American economy with an annual estimated economic impact of $2.6 billion during the contract’s delivery period.

Featuring advanced technology from the new 777X family and the proven performance of the market-leading 777 Freighter, the 777-8 Freighter will be the largest, longest-range, and most capable twin-engine freighter in the industry. With payload capacity nearly identical to the 747-400 Freighter and a 25% improvement in fuel efficiency, emissions, and operating costs, the 777-8 Freighter will enable operators to have a more sustainable and profitable business. At the White House, Commerce Secretary Gina Raimondo, His Excellency Ambassador Sheikh Mishaal bin Hamad Al Thani, Director of the White House National Economic Council Brian Deese, and Boeing President and CEO Dave Calhoun joined the formal signing by Boeing Commercial Airplanes President and CEO Stan Deal and Qatar Airways Group Chief Executive, His Excellency Mr. Akbar Al Baker, who reaffirmed the airline’s commitment to the 777X family with the record-breaking 777-8 Freighter deal. The first delivery of the new freighter is anticipated in 2027.

Frontier Airlines and Spirit Airlines to Combine, Creating America’s Most Competitive Ultra-Low-Fare Airline

Spirit Airlines, Inc. and Frontier Group Holdings, Inc. parent company of Frontier Airlines, Inc., announced a definitive merger agreement under which the companies will combine, creating America’s most competitive ultra-low-fare airline. Together, Frontier and Spirit expect to change the industry for the benefit of consumers, bringing more ultra-low fares to more travelers in more destinations across the United States, Latin America, and the Caribbean, including major cities as well as underserved communities. The stronger financial profile of the combined company will empower it to accelerate investment in innovation and growth and compete even more aggressively, especially against the dominant “Big Four” airlines, among others.

The combined airline is expected to:
• Deliver $1 billion in annual consumer savings.
• Offer more than 1000 daily flights to over 145 destinations in 19 countries across complimentary networks.
• Expand with more than 350 aircraft in order to deliver more ultra-low fares.
• Increase access to ultra-low fares by adding new routes to underserved communities across the United States, Latin America, and the Caribbean.
• Deliver even more reliable service through a variety of operational efficiencies.
• Expand frequent flyer and membership offerings.

AEGEAN TO ENHANCE PASSENGER EXPERIENCE WITH HIGH-SPEED INFLIGHT BROADBAND

AEGEAN announced that its onboard experience would accelerate further with the introduction of high-speed inflight broadband, powered by the European Aviation Network (EAN). The award-winning connectivity solution, provided by Inmarsat and Deutsche Telekom, will be installed on all existing and new AEGEAN Airbus A320 and A321 aircraft by 2025. AEGEAN passengers will have access to three different Wi-Fi packages, including a free 10-minute “try before you buy” service to browse the internet, send and receive emails, and access messaging and social media applications. This can be extended by selecting either the “text and surf” package or upgrading to the “streaming” option, which allows watching videos or listening to audio online. As Europe’s fastest inflight broadband solution, EAN offers incomparable speeds, uninterrupted coverage across Europe, and significantly lower latency than any other aviation connectivity service on the market.

Under this agreement, AEGEAN has also partnered with Disney Interactive to create a customized digital portal, allowing passengers to access Wi-Fi packages and a rich entertainment platform using their personal devices.
MARITIME NUMBERS

39.89 BILLION EUROS
the value of Greek exports in 2021

100,800,000 B/D
the expected oil demand in 2022, according to OPEC

72
the number of ship orders in January 2022

3.4% the growth rate of global seaborne trade predicted for 2022 by Clarksons Research

5.3 YEARS
the average age of the Greek-owned LNG carrier fleet

132
the incidents of piracy and armed robbery against ships recorded in 2021

25%
the number of VLCC demolitions in 2021

236,857 GRT
the total internal volume of "Wonder of the Seas", the world’s largest cruise ship

1.95 B. TONNES
the global crude steel production in 2021

Safe and efficient energy transportation to support the sustainable development of our society