Anticipating change

Change in our business is constant. From the impact of unprecedented global events such as the financial crisis, the global pandemic and major conflicts to long-term changes in trade, fleet, shipbuilding and finance. And with an accelerating green transition, change is increasingly being driven by new and complex emissions regulation and policies.

The entry into force of new IMO regulations in 2023 is a hugely significant milestone in shipping's decarbonisation pathway and in the way our industry will operate.

Our resilience, innovation and forward planning ensures we can navigate change successfully and sustainably.

Introduction of ECAs

The Baltic Sea becomes the first Emission Control Area ('ECA').

2006

Financial crisis

By 2008, global seaborne trade had surged to 8 billion tonnes following rapid growth in commodity flows as global population increased and the Chinese economy expanded. Following the financial crisis, trade contracted sharply before a gradual recovery in volumes. Post the financial crisis, the shipping industry focused on managing the structural surplus capacity that had developed.

2008

EEDI

The Energy Efficiency Design Index becomes mandatory for new ships. This technical measure promotes more energy efficient equipment and engines.

SEEMP

The Ship Energy Efficiency Management Plan becomes compulsory for all ships. This operational measure provides an approach for management of ship and fleet efficiency performance over time using indicators as monitoring tools.

2013

Paris Agreement

International treaty to limit the global average temperature increase in this century to below 2 degrees above pre-industrial levels through the reduction of global GHG emissions. The role of the IMO is recognised as crucial in mitigating the impact of GHG emissions from shipping. In October 2016, the IMO's roadmap for developing a strategy on emissions reduction is approved, with the strategy fully adopted in 2018.

2015

0.5%

Global Sulphur Limit

Known as IMO 2020, the global limit on the sulphur content in ships' fuel was reduced from 3.5% to 0.5%. This resulted in an estimated 77% drop in sulphur oxide emissions from ships. To meet this regulation, some ships switched to compliant fuels, including very low sulphur fuel oil, and some vessels were fitted with 'scrubbers' to clean exhaust gas.

COVID-19

As the global pandemic took hold, there was an immediate disruption to global trade. Divergent trends saw a sharp recovery in some sectors but a prolonged recovery in others as the world opened up at varying speeds. Despite managing widespread disruption and congestion, the green transition became central to shipping's post-COVID-19 planning.

2020

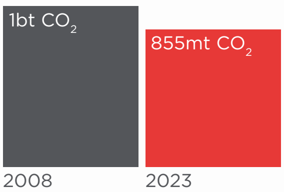
Russia-Ukraine conflict
The geo-political response to the conflict has driven a fundamental redistribution of trade flows, with Europe and Russia sourcing alternative import and export markets. This has driven demand for shipping by increasing the distance and complexity of trading patterns. And with increased geo-political uncertainty, shipping must now manage the world's focus on both energy security and energy transition.

2022

40%

EEXI and CII
Entry into force of short-term GHG measures from the IMO involving segment-specific minimum ship-by-ship technical energy efficiency standards ('EEXI') and an annual carbon intensity reduction ship rating programme ('CII') based on operational performance. These measures align with the IMO target for the industry to reduce CO_2 emissions intensity by 40% by 2030 (compared to 2008).

Estimated total world fleet CO_2 emissions



Source: Clarksons Research

2023

Fuel EU Maritime
Fuel EU Maritime proposal, part of the EU's 'Fit for 55' package of key climate policies, comes into effect. The proposed regulation introduces increasingly strict limits on the GHG intensity of the energy used by commercial vessels at EU ports and on voyages between EU ports, driving the increased use of alternative fuels. This follows the extension of the EU Emissions Trading System to shipping from the start of 2024.

ECA Extension
A new ECA to come into force in the Mediterranean Sea. This is the fifth ECA to come into effect alongside the Baltic Sea (2006), the North Sea (2008), North America (2017) and US Caribbean (2014).

2025

US$1.2tn

IMO target drives fleet renewal
As part of vital efforts to meet the IMO's GHG emissions targets, a significant fleet renewal programme will be required. The projected value of newbuild ship orders between 2023 and 2030 could be in the region of US$1.2 trillion.

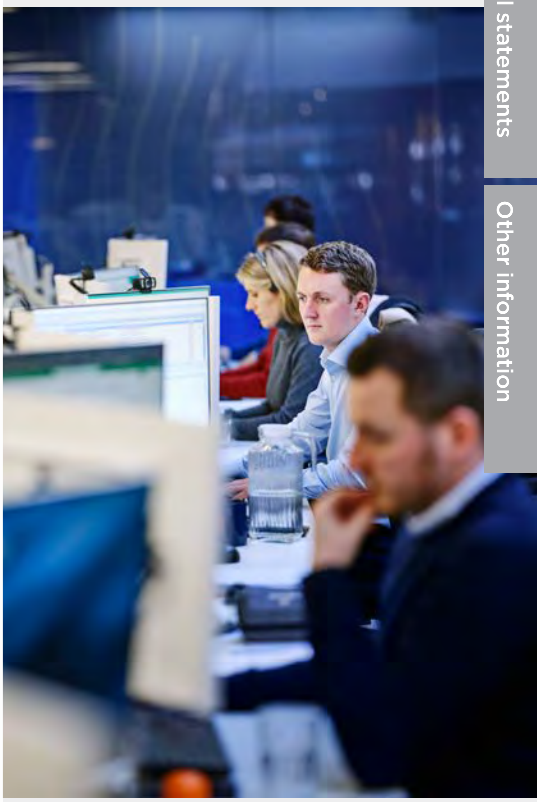
US Clean Shipping Act
The proposed new bill would be the first piece of legislation requiring zero GHG emissions standards from the shipping industry, with tightening targets for the GHG intensity of ships' fuel, including a 45% reduction by 2030 and 100% by 2040.

2030

50%

GHG reduction
Pressure continues to mount for the industry to move beyond the current IMO target of a 50% reduction in GHG emissions by 2050, and towards net zero. Discussions across industry stakeholders are ongoing, including the IMO's current review of its initial GHG strategy, and potential targets are becoming increasingly ambitious.

2050



Broking

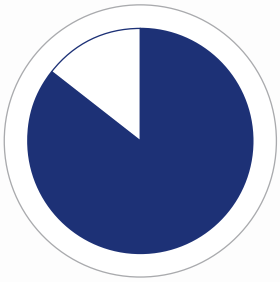
Our broking services are unrivalled – in terms of the number and calibre of our brokers, our breadth of market coverage, geographical spread and depth of intelligence resources.

Share of revenue

£495.5m
2021: £340.0m

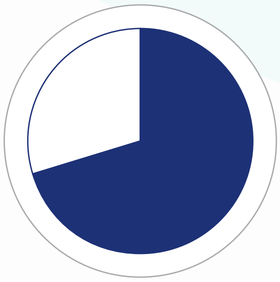
Segmental split of underlying profit before taxation

£117.6m
2021: £73.6m



Employees

1,301
2021: 1,197



Services

- Dry cargo
- Tankers
- Containers
- Gas
- LNG
- Specialised products
- Sale and purchase
- Offshore
- Renewables
- Futures

Forward order book for 2023

US$216m

2021: US$165m

Dry cargo

Supporting a range of important global industries including construction, energy and agriculture, the dry cargo sector moved more than five billion tonnes of cargo in 2022 across a range of dry bulk commodities, including metals and minerals, agricultural products and some semi-processed goods. The bulkcarrier shipping market experienced a mixed 2022. Earnings remained strong in the first half of the year, before easing back in the balance of the year as trade volumes began to soften with weaker economic trends globally and in China (where dry bulk imports fell 4% in 2022). The overall Clarksons bulkcarrier earnings index averaged US$20,478 per day across the year, 23% down year on year but remaining double the 10-year average. The market experienced a range of complexities and impacts from global events, including post-COVID-19 demand rebound, impacts from the Russia-Ukraine conflict, US monetary tightening and a weaker Chinese economy. The sub-Capesize sectors generally performed more strongly, with broadly supportive demand trends in the first half of the year and logistical disruption related to the Russia-Ukraine conflict and sanctions on Russia. Capesize earnings of owners (down 58% year on year to US$11,877 per day, below the long-term trend) were impacted by disruption from heavy rainfall in key iron ore and coal exporting countries while pressures from weaker Chinese steel demand due to the structural problems in the property sector also impacted. The easing of port congestion improved fleet availability and the easing of COVID-19 quarantine protocols in China also reduced disruption on the key West Australia-China route. The UN-led grain corridor facilitated the restart of Ukraine Black Sea grain exports, although at lower-than-normal levels.

Bulkcarrier markets are expected to experience some periods of lower rates in 2023, with impacts from slower world economic growth continuing. However, improvements are also expected through the year supported by a range of factors including increases in grain trade volumes and an anticipated post-COVID-19 rebound in China, including impacts from stimulus on steel demand. Easing inflation may also support improved dry bulk demand in Europe as the year progresses, on top of ongoing longer-haul coal imports into the region following embargos on Russian cargoes. Port congestion may increase again as demand improves. On the supply side, deliveries appear moderate; newbuild order books are close to record lows at 7% of the fleet; and new emissions regulations could lead to both limits to vessel speeds and early retirements. Tiering of freight and charter markets is expected with more efficient ships commanding a premium.

Our market-leading dry cargo team invested in further headcount across its global team in 2022, supporting our client base and achieving good growth in transactions.

Tankers
The tanker sector plays a crucial role in global energy supply chains, moving crude oil and refined oil products to facilitate their eventual use as transportation fuels, for heating and electricity generation, and as industrial feedstocks. Overall, the tanker shipping market saw a significant improvement in 2022 to historically strong conditions, supported by post-COVID-19 improvements in global oil demand and supply and the impacts from the Russia-Ukraine conflict, which included disruption of vessel availability and trading patterns. The Clarksons average tanker earnings index rose five-fold in 2022 to US$40,766 per day, the highest level since 2008. The VLCC segment took longer to recover than other sectors amid COVID-19-related disruption in China in the first half. However, improved Chinese demand later in the year, higher OPEC+ oil supply and increased long-haul US exports all supported gains in the second half. The Suezmax and Aframax segments were heavily impacted by the Russia-Ukraine conflict due to shifts in trade patterns, including the supportive impact of longer transport distances for European crude imports and Russian exports, with Suezmax earnings rising significantly above long-run averages and Aframax earnings reaching the highest levels on record. Product tanker earnings also strengthened considerably after the start of the conflict due to higher refinery margins and output, as well as shifts in trade patterns, which exacerbated longer-term structural changes in the global refining industry. These changes were already expected to support products' tonne-mile trade in 2022 (closures of older refineries in established demand centres, while newer capacity has opened up elsewhere, predominantly in the Middle East and Asia). LR2 and LR1 earnings rose to well above long-run averages, while MR earnings increased to record highs.

The tanker sector is expected to see generally strong market conditions in 2023 with continued volatility this year, although the VLCC sector may see some short-term headwinds from OPEC+ production cuts implemented in late 2022 and the ending of large-scale releases from the US Strategic Petroleum Reserve. There remain uncertainties around the exact impact of EU and G7 measures affecting Russian trade. A lengthening of average oil trade distances appears likely although a decline in Russian export volumes is also possible. Improved Chinese oil demand seems likely to support tanker demand in 2023. Meanwhile, the rapidly thinning tanker order book (now only 5% of fleet capacity) points to limited fleet growth ahead. Active fleet supply is expected to be further constrained by new emissions regulations which appear likely to restrain the ability of the fleet to speed up significantly, whilst the early retirement of some tonnage is possible as the decade progresses. Considerations around lower emission vessel designs may also lead to continued restraint in newbuild orders.

Our shipbroking team plays a vital role in the freight supply chain and has deep long-term relationships with all major oil companies, traders and shipowners. Supported by our scale, regional breadth, expert analysis and technology tools, our tanker team performed exceptionally in 2022 as we supported our clients through disrupted and volatile markets.

Containers

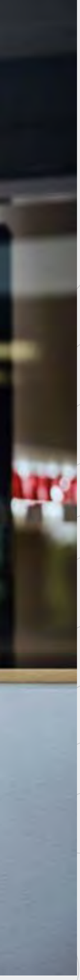
The container shipping sector facilitates transportation of a wide spectrum of manufactured goods, often high-value, and includes consumer and industrial goods, foodstuffs and chemicals. 2022 was a year with two distinctly different phases for the container shipping markets. The first half saw continued extraordinary market conditions amid severe port congestion following a robust trade rebound in 2021. However, a major market softening occurred throughout the second half as box trade came under increased pressure alongside easing of congestion, leaving spot box freight rates and containership time charter earnings back in 'normalised' territory by the end of 2022 after a sharp correction. Indices of spot box freight rates closed 2022 down approximately 80% from the start-year record and close to the start-2020 level, whilst average containership charter earnings reached around US$27,000 per day by the end of 2022, down 70% from the April 2022 peak but still almost double the start of the 2020 level.

Container trade fell by 3% in TEU terms in 2022, amid broad macro-economic headwinds and impacts on consumer activity from inflation and a cost of living crisis, as well as pressure from excess retail inventories. Port congestion remained severe in the first half, reflecting impacts from labour strikes, COVID-19 lockdowns in China, the Russia-Ukraine conflict and liner network recalibration to avoid prior disruption hotspots. The level of containership capacity at port rose to a peak of 38% of the fleet in July 2022 (2016-19 average: 32%), before falling to approximately 33% by the end of 2022 as faltering demand allowed logistical bottlenecks to ease. On the supply side, fleet capacity growth stood at 4% in 2022, whilst containership speeds began to trend lower in the second half. Newbuild contracting fell from the 2021 record but remained firm at 2.7m TEU, with a record 69% of capacity ordered accounted for by alternative fuel capable vessels. In 2023, container shipping markets look set to see continued softening from strong supply expansion, continuing pressure on box trade and reduced port congestion. New emissions regulations may have some supply side impacts (eg speed adjustments, retrofit time and support to demolition), although appear unlikely to transform soft markets alone.

In 2022, our containership broking teams executed major transactions with a wide range of operators and owners across chartering, newbuilding and secondhand. Our multi-national global broking resources have been in strong demand, backed by unprecedented requirements for analysis and research. We continue to support our clients in navigating the decarbonisation of our industry, with these efforts likely to become an increasingly important feature of our offering.

Gas

The LPG carrier fleet ships liquified petroleum and petrochemical gases, supporting a wide range of industries, from plastics and rubber production to industrial and domestic energy markets. The LPG carrier fleet transported circa 120m tonnes of LPG in 2022, as well as smaller quantities of ethane, ammonia and petrochemical gases. 2022 was generally a strong year for the larger-sized LPG carriers, with spot VLGC earnings on the benchmark AG-Japan route averaging US$1,649,000 per month across the year, the highest annual average since 2015. Market strength was due partly to growth in seaborne trade, which rose by an estimated 5% year on year globally. Increased market inefficiencies, notably Panama Canal delays, also supported rates, while a slight reduction in speed was also noted. Divergent trends emerged in other vessel sizes. In the Midsizes (25-45,000 cbm), TC earnings started 2023 at US$890,000 per month, up from US$830,000 per month at the start of 2022. Support was received from an influx of tonnage into ammonia trades as the market adjusted to the absence of volumes from the Baltic and Black Sea (amid the Russia-Ukraine conflict). Additionally, the Handysize (15-25,000 cbm) market continued to receive support from growth in ethylene exports out of the US, which breached the one million tonne mark in 2022. Consequently, 12-month timecharter rates rose from just over US$590,000 per month over 2021 to US$730,000 per month at the start of 2023. In the smaller segments, a limited order book and ageing fleet continue to support freight rates, which also rose across 2022.



Looking ahead, 46 VLGCs newbuilds are expected to be delivered this year, alongside 20 MGCs, which may generate some market pressure in the larger sizes, although continued trade growth and an expected slowdown in vessel speeds (following the introduction of IMO carbon regulations in January 2023) should provide support. The outlook for the smaller segments appears more positive, with continued growth in US ethylene exports expected in conjunction with limited fleet growth.

With the continued drive towards decarbonisation, both on the shipping and production side, the gas team has been active in supporting initiatives towards the production and transportation of green ammonia and CO_2. This is expected to shape developments in the market over the next decade.

LNG

The LNG carrier sector shipped over 400m tonnes of liquified natural gas in 2022, a record high, on a fleet of highly specialised vessels. This sector is critical to both energy transition and energy security, particularly in the wake of the Russia-Ukraine conflict and subsequent diminishing Russia-Europe gas pipeline trade.

The LNG shipping market saw very strong rates in 2022 with our index of spot rates for a 160,000 cbm TFDE unit averaging a record US$131,500 per day, up 47% year on year. The market became exceptional as the year developed with spot rates surging through the third and fourth quarters, supported by tight spot tonnage availability as European demand for transportation, storage and regasification escalated. In the fourth quarter, short-term day rates averaged all-time highs of US$330,300 per day. Global LNG trade volumes rose by 4.8% to 407.7m tonnes in 2022, largely on the back of an increase in export volumes from the US. On the importer side, elevated European demand shaped the market, as the continent looked to rapidly substitute away from Russian pipeline gas. Imports into Europe surged by 62% to 130m tonnes in 2022, a record high. Meanwhile, imports into Asia dropped by 7% to 257m tonnes, on the back of elevated competition from Europe and a shift in trade flows. LNG carrier newbuild orders reached a record 182 vessels and overall fleet capacity grew at 4.3%.

Another generally strong rate environment is expected in 2023, with support from tight relet tonnage availability, robust trade growth and reduced average vessel speeds following the implementation of IMO carbon regulations from January 2023. Relatively strong newbuild investment is also expected, supported by project requirements and fleet renewal.

Clarksons has remained central to a number of newbuilding contracts whilst the chartering team has restructured to provide solutions on both short- and medium-term charters to their expanding client base.

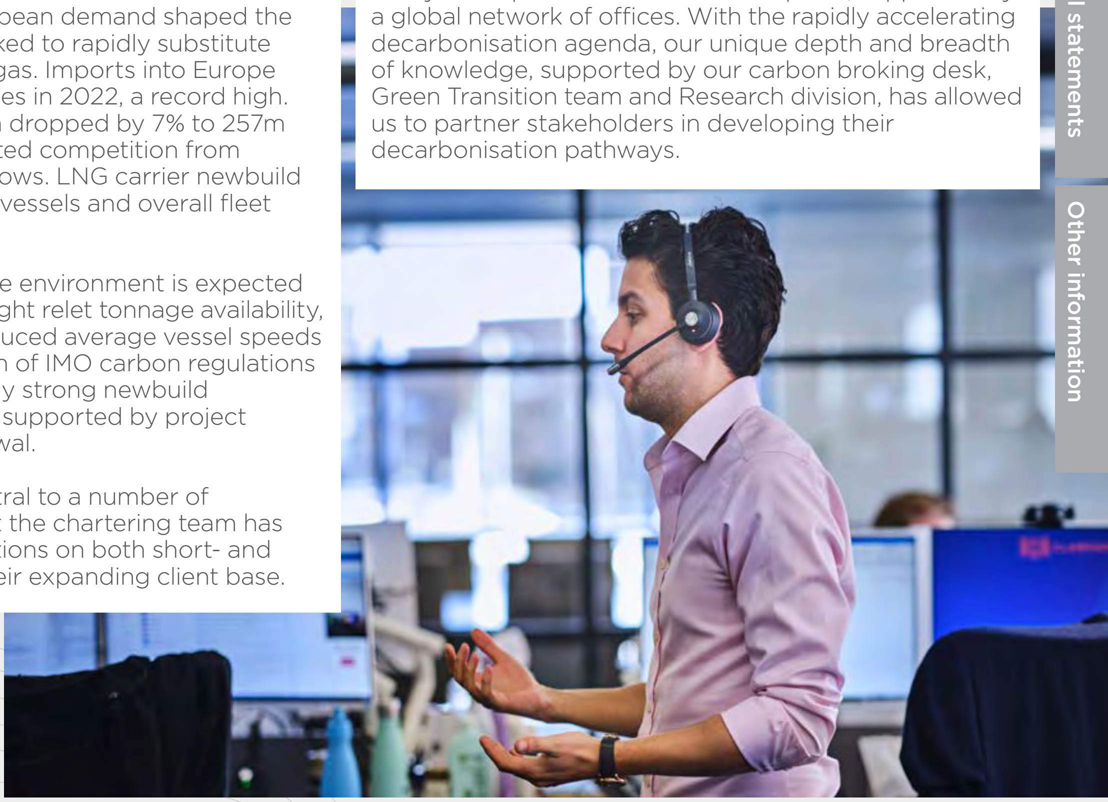
Specialised products

The chemical tanker fleet consists of vessels able to transport a wide range of specialised liquid chemicals, contributing to a diverse range of sectors, including manufacturing and agriculture. 2022 marked an extraordinary year for the chemical tanker sector, with the freight market breaking through previous records and posting consistently strong month-on-month highs. A combination of factors including an exceptional deep sea CPP market, elevated levels of port congestion in China and increased biofuels trade were key in supporting the freight environment.

Such was the strength of these drivers, the Clarksons Bulk Chemical Spot Rate Index recorded an average increase of 67% compared to 2021, whilst the Clarksons Edible Oils Spot Rate Index saw an equally impressive 81% average increase over the same period. Depending on trade lane and tonnage requirements, we have seen upward revisions to contract of affreightment rates of anything from 10% to 15% to in excess of 100%.

Looking ahead, limited growth in the chemical tanker fleet is expected to provide significant support to the freight market. Across 2022, annual fleet growth stood at around 2%, and there is potential for the fleet to contract in coming years. A lack of yard space, high newbuilding prices and softer earnings historically means that securing financing and support for new projects is scarce. That said, we do expect volume requirement growth to remain very modest considering macro-economic pressures in 2023, with overall seaborne trade expected to grow by 1.8% and by a further 3.3% in 2024.

The extensive capability of our specialised products broking business has helped our clients navigate through today's complex and volatile marketplace, supported by a global network of offices. With the rapidly accelerating decarbonisation agenda, our unique depth and breadth of knowledge, supported by our carbon broking desk, Green Transition team and Research division, has allowed us to partner stakeholders in developing their decarbonisation pathways.



Sale and purchase

Secondhand

The global secondhand vessel sale and purchase ('S&P') markets remained very active in 2022, with sales volumes standing at the second highest level on record after 2021 (over 134m dwt and US$57bn in 2022). Strong levels of activity were supported by positive underlying shipping and charter markets, whilst firm asset prices supported overall sales figures in value terms.

Transaction volumes notably increased in the tanker sector amid strong underlying markets and firming asset values, with a record US$18bn of sales (more than 700 ships) reported and over 10% of fleet capacity changing hands. Activity in the containership S&P market remained firm in the first half of 2022 following a very strong 2021. Although activity slowed through the second half of the year in line with a softening rate environment, total transaction volumes still reached more than 220 ships selling for an aggregate of US$8bn. The bulkcarrier S&P market generally saw continued strong activity, especially in the first half, though total volumes were down on the 2021 record at more than 740 ships (US$15bn).

Asset values remained generally firm in 2022, with the cross-sector Clarksons Secondhand Price Index reaching 213 points in July, the highest level since 2008, although this has since eased back with containership and bulkcarrier pricing softening in the second half. Tanker values rose sharply through 2022 (our 10-year-old Aframax index increased from US$27m to US$50m) as tanker earnings rose, with ice class tonnage especially in demand. Recent S&P trends amongst the major shipowning countries continued, with Greek owners still the biggest buyers and sellers of tonnage in 2022, although Chinese entities were also active in acquiring vessels.

Across all offices we were able to benefit from the high volumes of secondhand vessel transactions with our teams experiencing another successful year overall.

Newbuilding

The newbuilding market remained active in 2022, with ordering volumes easing (down 20% from 2021 to 45m CGT) but remaining above 2015-20 levels. Total newbuild investment reached US$128bn, the highest level since 2013.

Contracting in 2022 was led by the LNG carrier sector amid record earnings and an increased focus on energy security, with 182 units (US$39.1bn) ordered during the year, more than any other shipping sector in terms of CGT and newbuild value. There was also strong activity in the containership sector, especially in the first half of the year, with 367 orders (US$35bn) placed. We also saw strong ordering in the car carrier sector amid an exceptional earnings environment and a focus on fleet renewal. Contracting in other sectors was limited by high newbuild prices, reduced slot availability at yards, and continued uncertainty over fuelling technologies. However, our continued breadth of service to our industrial client base enabled our participation in a healthy level of contracting activity and validation across the markets, in spite of such challenges.

Newbuild prices stood at firm levels in 2022, supported by global inflationary pressures, rising commodity prices and increasing forward cover at yards. Our Newbuilding Price Index ended 2022 at 162 points, up from 154 points at the start of the year and the highest level since 2008. Despite healthy ordering volumes, the global order book remains relatively low in historic terms at 10% of fleet capacity in dwt terms. Shipyard output remained relatively steady year on year, totalling 31m CGT, with Chinese yards (47% market share) and South Korean yards (25% market share) delivering the majority of tonnage.

Our global newbuilding team delivered market-leading performances across multiple asset sectors in 2022 and we remain well positioned as a service provider and partner to our client base in a continually evolving macro newbuilding environment. There were significant market-leading transactions, particularly for the car carriers team, arranged by our Oslo desk, as well as major industrial-backed projects in tankers and gas vessels. Our scale and depth of transactional activity continues to give us real-time information and insights as the industry evolves against regulatory pressure and environmental compliance. We remain well positioned going into 2023 to continue to leverage this knowledge.

Offshore
The offshore sector supports the development, production and support of offshore oil and gas fields and renewables, with over 13,000 mobile assets playing a vital role in supporting operations across the lifecycle of offshore energy projects. Overall, 2022 was a year of positive progress for the offshore markets, with the offshore oil and gas business recovering strongly amid a backdrop of generally high oil and gas prices, whilst the offshore renewables (wind) sector continued to expand rapidly. Although the increase in underlying E&P spending was relatively moderate, activity levels increased across all offshore sub-sectors and most geographical regions, and further improvements in activity, fleet utilisation and day rates are expected in 2023. Our offshore broking teams have continued to utilise their extensive industry relationships and technical expertise to support our client base through evolving markets.

Drilling market
Mobile drilling units (comprising jack-ups, semi-submersible units and drillships) drill wells in the sea floor to locate and facilitate extraction of oil and gas. Rig markets tightened materially in 2022, with an increasing number of rigs on contract, higher utilisation and rising day rates. The floater segment, particularly for ultra-deepwater/deepwater high-end units, is now generally tight, whilst the jack-up segment has continued to strengthen, particularly in the Middle East, resulting in global active utilisation closing in on 90%. Prospects for 2023 and beyond for the drilling market appear positive amid increasing offshore activity.

Subsea field development market
The subsea sector involves the usage of a range of assets, with capabilities in lifting, pipelay, cable lay, diving and ROV support, to install and maintain subsea production infrastructure. The subsea field development market continued to improve through 2022, with an increasing backlog for the major EPC contractors. The subsea vessel market also saw significant improvement with rates and contract durations generally increasing. This has been driven by both improved subsea oil and gas demand, as well as requirements for many of the same vessels from the offshore wind sector. Prospects for 2023 appear positive, with increased activity generating project opportunities, including for smaller contractors, and supporting vessel demand.

Offshore support vessels
The OSV sector provides towage and support duties to drilling rigs, mobile production units and fixed production platforms. The OSV market strengthened significantly in 2022 amid increasing drilling and field development activity. Demand increased across most regions, and with limited availability, vessels are increasingly likely to start migrating between regions. There has been virtually no ordering activity since 2014, and rates are expected to continue to increase with capacity availability limited and continued firm demand.

Offshore renewables
The offshore renewables industry is continuing its rapid growth phase, and going forward is expected to account for a growing share of the global energy mix supported by the increased focus on decarbonisation and energy security. The offshore wind market continued to grow in 2022. More projects reached the FID stage and investment flowed into the sector. Construction activity in key European markets is firm, and globalisation of the industry continues to develop, with new markets such as Poland, the US and South Korea emerging. Several countries strengthened renewables targets after the onset of the Russia-Ukraine conflict enhanced focus on energy security, whilst investor focus on ESG and infrastructure investments continues to increase.
The outlook remains positive with significant growth expected in the coming years. Although uncertainty remains around cost inflation, supply chain issues and delays, and FID activity was slower in 2022, projects will continue to develop through the phases in the coming years. Offshore wind remains competitive, secured offtake development is still strong and 2022 was a record year for European project awards. The pipeline of projects until 2025-26 is starting to firm up, providing good visibility on future offshore demand.

Our offshore and renewables team has been at the forefront of market developments, completing several initiatives during the year to help the sector support decarbonisation targets. We have been instrumental in adding wind support vessels to the market and have been involved in several large-scale wind projects.
We continue to look for ways to improve and innovate, with clients choosing to work with us for our reputation as a leading player, our commitment to decarbonisation and our ability to deliver high-quality solutions. 2022 was a busy year for our specialised renewables consultancy, AIR, led by experienced industry professionals, and delivering several projects across a range of clients.
It is well positioned for further growth in 2023.

Futures
Our Futures business is the leading provider of freight derivative products, helping shipping companies, banks, investment houses and other institutions seeking to manage freight exposure by increasing or reducing risk. It leverages the expertise and market understanding of the wider Group to offer best-in-class execution services to derivatives markets across freight, iron ore and carbon. Against the backdrop of increased regulatory requirements, Futures has, with support from the wider Group, positioned itself at the forefront of the sector.

2022 was a positive year for the Futures business. Tanker FFA revenue rose strongly. Efforts continue to bring new participants to the market as well as service existing clients to the highest standard. In the dry futures business, it was another busy year with new offices established in Dubai, focusing on Far East activity, and in Oslo, providing access to EU business. The swaps business, in a highly competitive space, saw revenue down from a particularly strong 2021 but still well above 2019/20 levels. The options business maintained its market-leading position and had another excellent year overall, remaining the lead broker for most of the major accounts. Work continues in developing wet FFA options.

The scale of the challenge

The necessity for change

'The scale of the challenge to decarbonise shipping is unprecedented. And the shipping industry must meet this challenge while continuing to facilitate essential global trade that is increasing in complexity and volume. Accelerating regulation, policy, technology and innovation will all be vital in driving the green transition for shipping.'

Steve Gordon
Head of Clarksons Research

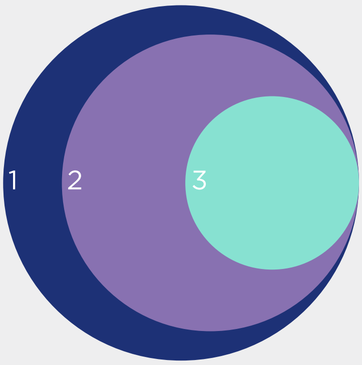
Decarbonisation by numbers

We estimate that in 2023 the shipping industry will produce 855 million tonnes of CO_2, some 2.3% of global output. While progress has been made since peak emissions in 2008, there are new and complex regulations and policies that will now accelerate change. The IMO is already targeting a 40% reduction in carbon intensity by 2030 and a 50% reduction in all GHG emissions by 2050. And there are pressures to go even faster.

We provide a constant flow of intelligence, data and analysis monitoring shipping's green transition, from the uptake of alternative fuels to the speed of vessels and the impact of regulation on market supply and demand. This ensures our clients are informed on the huge regulatory technological, economic and investment challenges facing them.

Understand the scale of challenge and the 2023 IMO regulation

Total world fleet CO_2 emissions (million tonnes)



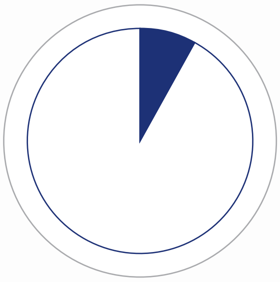
1. 2008 (baseline): 1,024mt
2. 2023 (estimate): 855mt
3. 2050 (current IMO target*): circa 500mt

* The current IMO target is a 50% CO_2 reduction on 2008 levels by 2050, but this target is likely to be reduced further at future IMO meetings.

Source: Clarksons Research

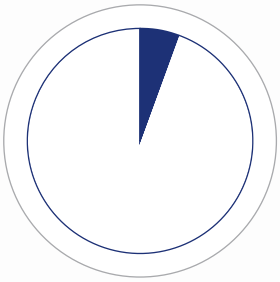
Share of revenue

£49.8m
2021: £56.0m



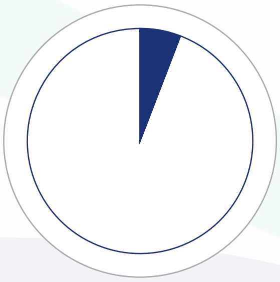
Segmental split of underlying profit before taxation

£7.8m
2021: £13.3m



Employees

112
2021: 103



Services

- Securities
- Shipping
- Energy
- Metals and minerals
- Renewables
- Debt capital markets
- Project finance
- Structured asset finance

Financial

From full investment banking services to project finance and the arrangement of dedicated finance solutions for the shipping, offshore and natural resources markets, we help our clients fund transactions and conclude deals that would often be impossible via other more traditional routes.

Securities

Clarksons Securities is a sector-focused investment bank for the shipping, offshore energy, renewables and minerals industries, with deep sector knowledge and global reach driven by research and relationships. In 2022, against a backdrop of a difficult year for capital markets with volatility resulting from global events and macro-economic headwinds and deal volume slowing, activity in Clarksons Securities' core sectors was positive in relative terms, with risk sentiment and capital markets activity appearing to improve moving into 2023. Despite volatile and uncertain markets, secondary trading activity was strong with equities especially active, private equity realising positions and creditors selling equity in restructured oil services companies.

Shipping

In 2022, strong cashflow and upward pressure on asset pricing drove shipping stock performance and trading liquidity in several equities increased significantly throughout the year. Capital markets activity remained in line with historical trends in the first half of 2022, but issuance activity in the second half of 2022 was muted due to equity market volatility. Clarksons Securities participated in several capital markets transactions, including initial public offerings of Cool Company and Gram Car Carriers and follow-on offerings in Hafnia, Cool Company and American Shipping Company. Although shipping bond issuance activity remained muted, Clarksons Securities acted as financial advisor in several bilateral loan and leasing transactions.

Energy

Oil services stocks saw positive trends in 2022 on the back of increased offshore E&P investments, and improved utilisation and day rates across most offshore segments. Capital markets activity within the energy services space picked up during the year as investors sought exposure to the sector. Clarksons Securities placed several equity raises, including a private placement for Borr Drilling.

Metals and minerals

2022 started strongly for metals and mining stocks but the challenging macro-economic backdrop led to significant pressure by the end of the year. Clarksons Securities participated in multiple transactions within the metals and minerals space in 2022, among them equity raisings in Nordic Mining, Canada Nickel Company and Piedmont Lithium and a bond issuance for Nordic Mining.

Continued firm activity is anticipated and Clarksons Securities remains well positioned to assist clients in meeting demand for commodities driven by the green transition.

Renewables

The renewable energy sector continues to see impressive expansion across the board with traditional technologies such as wind and solar continuing to grow while emerging technologies such as hydrogen and carbon capture and storage have developed significantly. Market sentiment in the offshore wind sector remains strong, driven by continued strong growth in installed capacity, despite some supply chain bottlenecks. The expansion of the dedicated offshore wind fleet requires substantial capital funding. Nonetheless, 2022 was a challenging year for stocks related to renewable energies, against a backdrop of inflationary pressures, increasing interest rates and geo-political instability. Capital markets activity slowed, with some companies turning towards private markets which have shown willingness to support energy transition-related companies. Clarksons Securities has been particularly active around hydrogen, carbon capture and various e-fuels, offering synergies across the Group, including acting as advisor in the raising of equity by Ocean Geoloop and Liquid Wind.

Debt capital markets

With markets broadly closed for significant periods of 2022, and investors demanding considerably higher returns to take on risk, primary issuance across the Nordics, Europe and the US fell by 70-80% compared to 2021. Despite this, Clarksons saw pockets of funds available for select public and private debt activity and completed several transactions.

Project finance

Our project finance business is a leading Nordic player within shipping and real estate project finance, which has in recent years offered investment opportunities in modern fuel (and carbon) efficient shipping and offshore assets, with an overall focus on assisting the shipping and offshore industry in transitioning to more sustainable and less carbon-intensive transportation. 2022 was an active year in the Norwegian project finance market with our team concluding new projects in the dry bulk, tanker and offshore sectors, and establishing a good pipeline of projects including zero emission shipping investments.

The first half of 2022 saw positive trends in the real estate market in Norway, but with increasing interest rates and general macro-economic headwinds the second half of 2022 proved turbulent. Although the decline in commercial property values has so far been limited, as interest rates increased banks became stricter on financing terms, contributing to fewer transactions. That said, the first half of 2022 was one of the busiest ever periods for our real estate team. Activity included the establishment of a new industrial real estate company focusing on properties near the centres of the largest cities in Norway and several exciting development projects in co-operation with reputable partners. Our business continues to expand its operational platform by strengthening the property management and project development teams.

Our real estate funds continued to expand with the launch of a new fund with a special focus on environmental improvements to existing buildings.

Structured asset finance

Our structured asset finance business maintains relationships with asset financiers globally including around their activities and headline terms, with a view to helping our broking clients understand the sources of finance available to them and providing introductions where relevant. It acts as an exclusive mandated financial advisor, structurer and arranger working closely with the newbuilding, strategy and structuring teams on large long-term strategic procurement projects for end-users and cargo interests.

The shipping asset finance landscape continues to evolve and by the close of 2022, there were few signs of any additional stress amongst lending portfolios, although many lenders exposed to the container shipping sector are seeing an increased risk profile. The 'Poseidon Principles' group of banks, aligning their portfolios to key emissions targets, has seen additional signatories, and appetite from these banks remains almost exclusively focused on new 'green' vessels and/or sustainability-focused projects. Outside of this group, other large banks together with the smaller regional shipping banks, especially those in Cyprus, Greece and Scandinavia, continue to grow in terms of capital deployed and to see opportunities to finance or re-finance tonnage, especially for slightly older vessels and/or for projects with less 'green' credentials. Chinese leasing remains an additional source of capital to the industry, though there appears to be a two-tier market developing. The leading providers are able to reduce margins for the right projects closer to those being offered by the shipping banks. The remainder is mostly either inactive internationally or trying to compete with the smaller shipping banks and alternative lenders with only limited degrees of success. Japanese leasing continued to offer an attractive alternative for those able to access this market, albeit with limited flexibility. The alternative lender landscape remains largely unchanged. There is plenty of capital available to be deployed, although there remains no real emergence of insurance companies and pension funds at an asset level, with participation generally limited to investments in alternative funds platforms.

The business concluded further mandates in 2022 and continues to fulfil a specific highly value-adding role, particularly post-IFRS 16, with an excellent reputation and track record. A strong commitment to decarbonisation is a central part of our clients' strategies and their long-term investment in newbuilding projects is at the forefront of their efforts and respective commitments in this regard.

Short-term measures

A growing impact

'In 2023, both CII and EEXI will provide some of the clarity that ship owners have needed to help lower their emissions. CII will have a growing impact in terms of dictating vessel speeds to improve energy efficiency whilst other emission-reduction solutions are deployed.'

Kenneth Tveter
Head of Green Transition

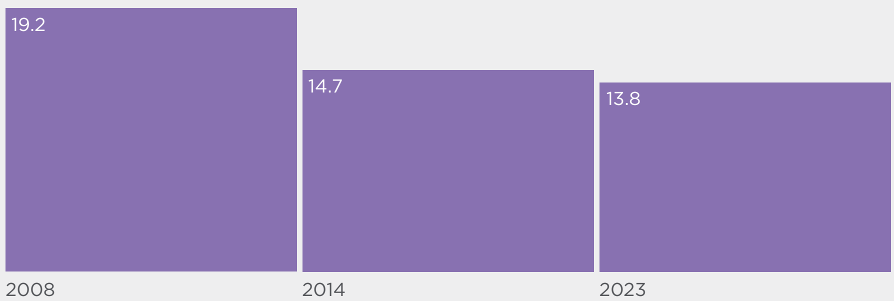
Short-term pain, long-term gain

To comply with CII regulations, we will continue to see the speed of the global fleet slow down. This may create short-term disruption with a tighter market and increased freight rates. But for vessel owners it will provide a clearer pathway to effectively lower emissions and inform their fleet renewal strategies to help reach 2030 goals.

We're working closely with clients to help them understand the impact of CII, not only from a risk mitigation perspective but also the opportunity it brings from chartering attractiveness, ship value and fleet renewal strategies.

How we're helping our clients to understand the impact of CII and inform shipping strategies

Average containership fleet speed (knots)



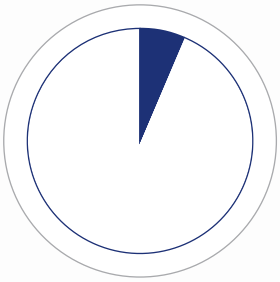
Source: Clarksons Research

Support

Our teams provide the highest levels of support with 24/7 attendance at a wide range of strategically located ports in the UK, mainland Europe and Egypt, offering port services support, agency, freight forwarding, supplies and tools for the marine and offshore industries.

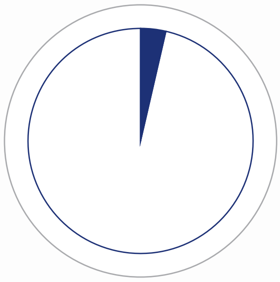
Share of revenue

£39.0m
2021: £29.6m



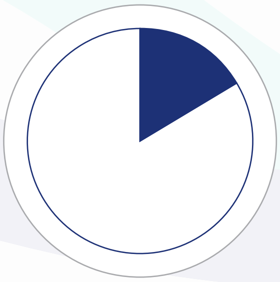
Segmental split of underlying profit before taxation

£5.0m
2021: £3.3m



Employees

306
2021: 270



Services

- Stevedoring
- Short sea broking
- Gibb Group
- Agency
- Egypt agency

Stevedoring

In 2022, our stevedoring business, highly experienced in loading and discharging bulk cargoes, performed strongly. Export volumes increased by 148,000 tonnes to 284,000 tonnes, and although total imports were down by 39,000 tonnes, half of this decrease was made up by low margin biomass imports. This increase in tonnage handled directly bolstered performance with higher ancillary income as rental income, handling charges and other revenues expanded in line with additional volumes. Our grain elevators in Portsmouth also made a notable contribution. The cost base remained controlled although fuel costs for machinery increased, caused by a change in government taxation policy; and property costs were lower than normal due to the timing of local government COVID-19 relief.

Short sea broking

2022 was a strong year for the short sea broking business which, with specialist skills, in-depth knowledge and strong relationships, is market-leading in brokerage services for short sea dry cargo shipping. The business continued to grow its chartering base and handle larger parcel sizes than previously. This performance was supported by exceptional freight rates for much of the year, in addition to exchange rate trends, although freight rates are generally expected to ease down going forward. The business plans to expand further, including leveraging agency activity to broaden the charterer client base.

Gibb Group

Gibb Group is the industry's leading provider of PPE, MRO products and services as well as one of the offshore renewable energy sector's most experienced, qualified suppliers. In 2022, the business achieved growth in the face of significant headwinds, including the cost of container freight, exchange rate trends and supply chain issues hampering the ability to get product in a timely manner. In recent years the business has been reshaped with the addition of the Safety and Survival business, first in Great Yarmouth and subsequently in Aberdeen and Middlesbrough. The growing hire and service centre business is continuing to meet evolving client demand patterns. The traditional core oil and gas business saw a boost in volumes following the onset of the Russia-Ukraine conflict, which saw countries increase their focus on security of energy supply and ramp up local oil and gas production. Supply chain issues have impacted Gibb Netherlands but a local service centre and new premises should provide the opportunity for growth from early 2023. Offshore wind activity through IJmuiden grew as the port began to support new offshore wind farms. Further overall expansion is planned for 2023.

Agency

Through exceptional port agency and first-class logistics services, our business provides a range of solutions for clients in the marine and energy sectors. Although the UK saw limited construction traffic in 2022 (expected to return in 2023), the building of large offshore wind farms is providing growing opportunities. Our customs clearance business supports clients globally with our comprehensive compliance capabilities, and performed strongly in 2022. The year also saw gains from bunker supply activity. Following a weaker 2021, our bulks business experienced improvement in 2022, with our Ipswich and Southampton locations in particular seeing a firm increase in activity, the latter also expanding its profile across offshore energy, coastline protection and scrap. Our North East England presence grew markedly with a new office in Middlesbrough servicing a rapidly expanding client base in bulk and offshore renewal energy.

In early February 2023, we were delighted to announce the acquisition of DHSS. DHSS has built an enviable reputation for world-leading service levels in the Netherlands and further afield with a particular focus on offshore wind energy. Combined with our port services business' existing 20-year history in this sector, we offer best-in-class service to our growing customer base in the UK, mainland Europe and further afield. 2023 will see strong growth in this area as there will be considerable investment in offshore wind in the UK, Dutch and German sectors. We expect to see this capability expand beyond the current geography.

Egypt agency

The Suez Canal provides a vital trade route between Europe and Asia, and our regional experts in Egypt deliver on-the-ground expertise around transit. Our Egypt agency business proved successful in 2022 in the face of challenges impacting local port activity from general macro-economic headwinds, disruption to regional imports from the Russia-Ukraine conflict (grain, fertilizer volumes), increased commodity prices and exchange rate trends. Transit agency business saw increased volumes in 2022 and continues to progress whilst liner business remained positive. The Egypt agency business continues to explore increasing opportunities in Egypt and around the Suez Canal region related to green energy and shipping's green transition.

Fuelling transition

Newbuild trends have started to shift

'At the heart of reducing shipping's 2.3% contribution to global CO_2 emissions will be a fuelling transition. We're already seeing this materialise through the profile of newbuilding orders.'

Rob McKinlay
Director, S&P Projects

Investing in alternatives

Although shipping's huge fleet renewal programme is in its infancy, we are already seeing tiered markets develop. By the end of 2023, we project that 30% of the fleet tonnage will be modern eco, 24% will be scrubber fitted, 6% will be alternative fuelled and 25% will have an Energy Saving Technology.

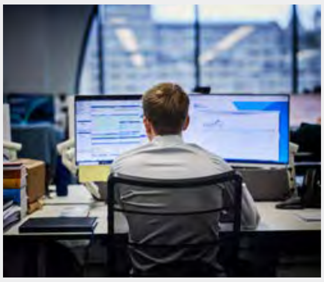
We've always worked closely with our clients to understand more about their fleet renewal strategies to ensure they can maximise their investments. LNG dual fuel has dominated ordering but we have also seen focus on methanol and a trend towards optionality.

Get closer to fleet renewal

Fuelling transition: 2022 fleet renewal orders will significantly drive decarbonisation progress

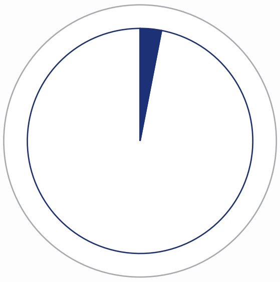
408	41	21	142
LNG dual fuel	Methanol	LPG	Alternative fuel 'ready'

Source: Clarksons Research



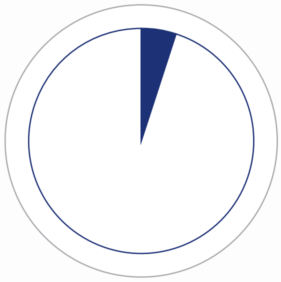
Share of revenue

£19.5m
2021: £17.7m



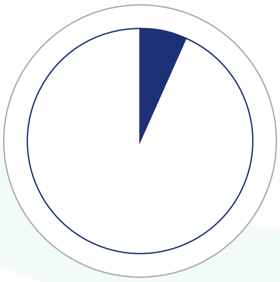
Segmental split of underlying profit before taxation

£7.0m
2021: £6.1m



Employees

122
2021: 123



Services
- Digital
- Services

Research

Clarksons Research is the market leader in the provision of data, intelligence and analysis around shipping, trade, offshore and maritime energy transition. Millions of data points are processed and analysed each day to provide trusted and insightful intelligence to thousands of stakeholders across maritime.

Research provides a unique flow of powerful, highly relevant and wide-ranging research and data to clients, as well as to the Broking, Financial, Support and technology businesses in the Group. Our market-leading content was again extremely well received by clients across 2022 and achieved excellent profile for the Group. Furthermore, data provision and synergies were enhanced, including support to the end-to-end freight **Sea/** platform developed by Maritech, the Clarksons technology business. Continuing its long-term growth, our Research division performed robustly during the year.

Clarksons Research, the Group's data and analytics arm, remains market leader in the provision of independent data, intelligence and analysis around shipping, trade, offshore and energy. Millions of data points are processed and analysed each day to provide trusted and insightful intelligence to a global client base, typically via recurring revenue agreements. This uniquely powerful data and intelligence underpins the workflows and decision-making of thousands of organisations across the complex and dynamic global maritime industry, including shipowners, financiers, shipyards, suppliers, charterers, class societies, insurers, universities and governments. The use of innovative technology and algorithms has continued to expand the depth and quality of our proprietary database, supporting a strong pipeline of product development and a firm flow of sales enquiries. Targeted headcount growth and internationalisation continues, with the successful start-up of a data team in New Delhi during 2022, leveraging local maritime expertise and helping take our Asian share of headcount to 30%.

Our long-term strategy to focus and invest in data, intelligence and insights around the vital maritime energy transition continues. Firstly, we are focused on the fuelling transition that will be fundamental to reducing shipping's 2.3% contribution to global CO_2 emissions. Our offering provides detailed tracking of emissions policies, alternative fuel adoption, fleet renewal, the speed of ships and the uptake of Energy Saving Technologies. Across 2022 we also released a series of market impact assessments around the IMO's new 2030 policy measures to reduce emissions, a hugely significant milestone in shipping's

decarbonisation pathway (as will be the EU's Emissions Trading Scheme from 2024). New modules on green investments at ports and vessel activity analytics dashboards are under development for release in the first half of 2023. Secondly, we continue to analyse the impacts of energy transition on the cargo base for maritime, and during 2022 we released a further update of our maritime energy transition model, providing decarbonisation scenarios with specific maritime relevant segmentation. Thirdly, we have invested in research around the offshore transition, including the development of new data and analysis around the offshore wind industry through our Renewables Intelligence Network. Much of our energy transition work has also supported the Group-wide Green Transition initiatives to partner clients through their decarbonisation pathways, contributed to internal awareness initiatives and provided emissions benchmarking data and vessel intelligence used within the carbon module of the **Sea/** suite.

Digital

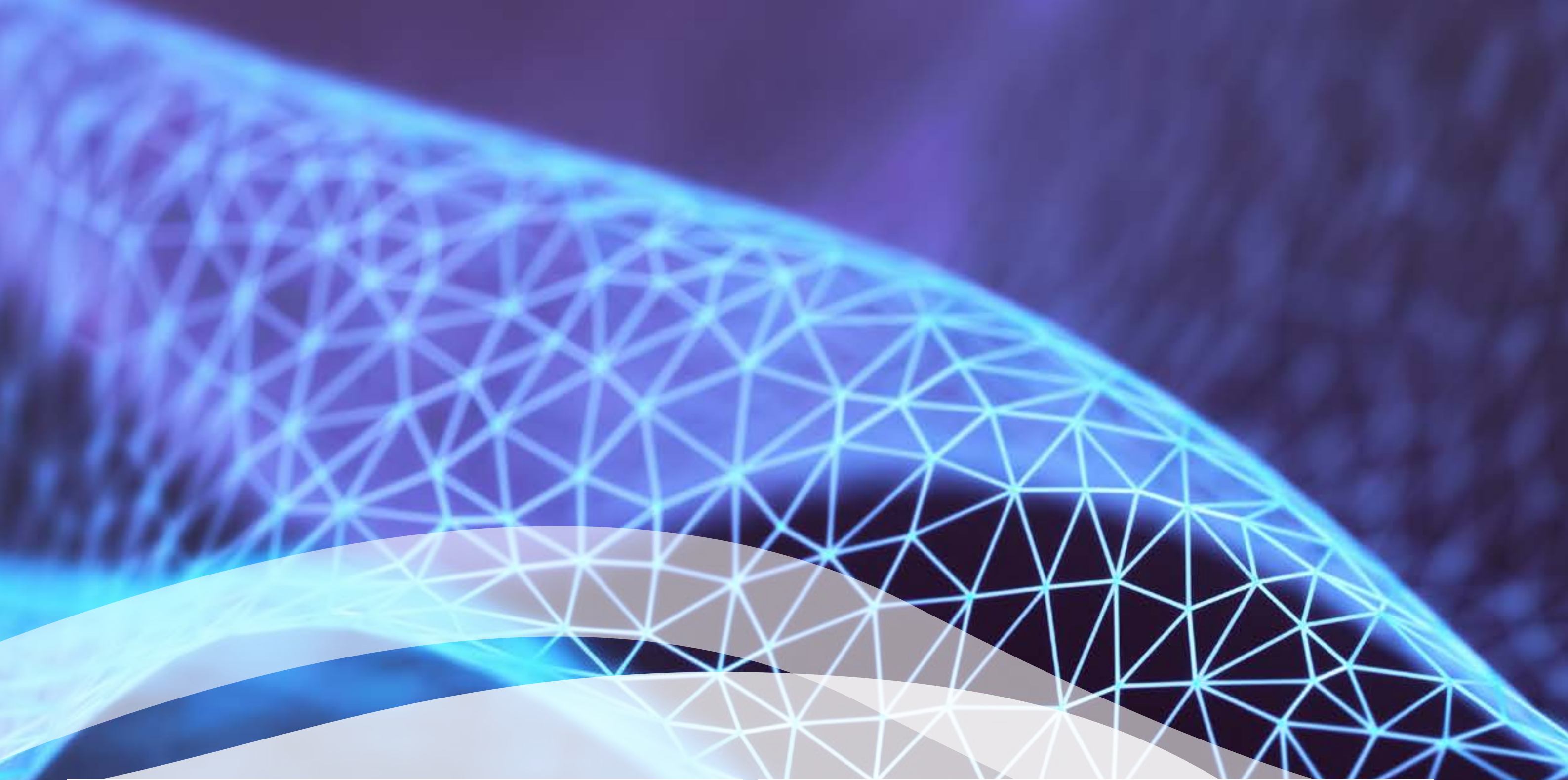
Our single-access integrated digital platform provides immediate access to our powerful data, analysis, forecasts and insights to over 4,000 maritime companies and over 12,000 individual users. During 2022, we released a successful rebrand and executed several major product releases aligned with individual product development investment plans for each of our systems. Our major digital products include:

- **Shipping Intelligence Network ('SIN').** Our market-leading commercial shipping database, SIN, provides wide-ranging data and analysis tracking and projects shipping market supply and demand, freight, vessel earnings, indices, asset values and macro-economic data around trade flows and global economic developments. During the third quarter of 2022, SIN benefited from a major upgrade in content and visualisation tools that has been very positively received by clients. Through the year, the platform tracked an all-time annual high for the cross-segment ClarkSea Index (up 30% to US$37,253 per day), the disruption impacts of COVID-19 and the Russia-Ukraine conflict, positive trends in energy shipping including record LNG charter rates, the correction in the container markets and slowing growth in China, the global economy and world trade (seaborne trade was flat year on year at 12 billion tonnes). Our continued investments in near-term data were particularly well received by our clients, as were our Russia-Ukraine conflict market impact assessment insights and reporting.
- **World Fleet Register ('WFR').** The WFR provides data and intelligence around the world fleet, vessel equipment and technology, companies, shipbuilding, emissions regulation, fuelling transition and alternative fuels. The focus on emissions regulation and fuelling transition has helped support encouraging sales growth of 20%. After a record share of newbuild order volumes in 2022, a total of 44% of the global newbuild orderbook backlog by tonnage is now alternative fuelled.
- **Renewables Intelligence Network ('RIN').** Offshore wind contributes 0.4% of global energy supply but our long-term projections profile huge growth potential, suggesting that this could reach between 7% and 9% by 2050. RIN provides comprehensive data, intelligence and analysis around every offshore wind farm in the world and the fleet of vessels that support development and maintenance. Since its launch in 2021, RIN has grown very strongly, gained good traction with market participants and is widely used across the Group.
- **Offshore Intelligence Network ('OIN').** Offshore oil and gas markets improved markedly over 2022, with our index of day rates across the offshore fleet up 32% to reach its highest level since 2014. OIN provides data and analysis of utilisation, day rates and market supply and demand of the offshore fleet including rigs, OSVs, subsea and floating production. A major upgrade to OIN was released in late 2022 and good sales growth is expected in 2023.
- **World Offshore Register ('WOR').** The WOR system provides detailed data and intelligence on all offshore oil and gas fields, investment projects, production platforms, offshore support vessels and rigs. Offshore oil and gas accounts for 16% of total global energy supply with a renewed focus on energy security supporting investment. Clarksons Research is the market leader in data provision to the insurance industry, where our data is used as the core reference in identifying rigs and platforms.
- **Sea/net.** Developed in conjunction with the Clarksons technology business Maritech, the vessel movement system **Sea/net** blends satellite and land-based AIS data with the Clarksons Research leading database of vessels, ports and berths. Working with Maritech, Research continues to improve the depth of our underlying movement and deployment data.

Services

Our dedicated services and consultancy activities, including the development and management of long-term and recurring revenue relationships with key corporates across maritime, has performed well with several major data API contracts concluded. Interest in tailored data, that often becomes embedded into client systems and typically includes API delivery via our platform, remained high while our provision of specialist insights, forecasting and scenario modelling to key partners also expanded. During September 2022 we hosted our industry-leading Shipping and Shipbuilding Forecast Forum and Offshore Energy Forecast Forum on an in-person basis. Our dedicated business development team is performing well, arranged a successful offsite in December 2022 and has a strong sales pipeline.

Clarksons Valuations is the market-leading provider of authoritative, consistent and independent valuation services to shipowners and financiers. It is investing in analysis and technology to support financial institutions, including to meet new European Banking Authority guidelines on valuations and to understand the emissions profile of their debt portfolios and the impact of technology and emissions policies on value. The valuations team is also active in supporting the Group's S&P broking teams.



The technology arm of Clarksons, Maritech, has developed the **Sea/** platform to bring transformative digital solutions to the freight transaction process, enabling the industry to meet the demands created by growth in complexity, regulation and innovation. Building on the considerable success enjoyed by **Sea/** tools in 2021, scaling of the business through 2022 has been both dynamic and significant, with the enhancement of products, growth in clients and further development of Maritech. A new leadership team with a wealth of experience was established in 2022. During the year, important work was undertaken involving the whole business to define a clear, cogent strategy and ensure that the products being built and enhanced reflect what the market truly wants and values. Critically, the description of the business has been more clearly defined as "The Intelligent Marketplace for Fixing Freight", and this will be more clearly articulated in a new website and other materials.

Following success in 2021, particularly in the iron ore sector, the **SeaFix/** solution grew further in 2022 to the point that the client base now represents over 80% of the world's seaborne iron ore trade. **Sea/** is now looking to replicate this success in other markets and has been working to enhance the tools to be able to cope with the greater complexity of other commodities. In 2023, **Sea/** will be targeting coal, grains and other dry bulk commodities as well as initial steps into the wet market.

Sea/contracts and Recap Manager continue to attract adoption amongst some of the largest chartering groups in the world with substantial additional signings in 2022. This was further augmented by the acquisition of Chinsay in October 2022, such that the annualised volume has now risen to 37,000 fixtures and is anticipated to grow further in 2023.

The **Sea/intelligence** solution, which includes **Sea/net** and **Sea/analytics**, has similarly experienced strong sales growth, with new features and a significant volume of new clients resulting in over 120% year-on-year growth. The Russia-Ukraine conflict resulted in an urgent need from news reporting agencies for factual information on shipping in the region, with a range of leading publications regularly using and referencing **Sea/net** as their source. The intelligence products have been adopted by a range of companies and institutions, which has triggered further recognition of the value that **Sea/** is providing with this solution.

Clients have increasingly looked to **Sea/** to support them in their efforts to reduce GHG emissions and achieve decarbonisation targets. In the crowded digital space of voyage optimisation and vessel categorisation, the **Sea/carbon** offering plays a vital role and has grown incrementally with a number of new clients now using the carbon accounting tools. In 2022, **Sea/** captured 8.5m tonnes of carbon emissions from 470m tonnes of cargo transported. The service gathers the essential data at the end of each voyage undertaken to enable customers to record the carbon emitted, continuously monitors emissions in a dashboard and generates the necessary reports for internal and external audiences. The same data can be used to provide essential insights on optimal vessel selection at the point of fixture. This tool helps to reduce fuel consumption, improve energy efficiency and support the adoption of alternative and clean technologies.

In November 2022, Maritech acquired Setapp in Poznan, Poland – a technology provider to the maritime sector. Through the acquisition of Setapp, **Sea/** will enable technology experts with a strong foundation in maritime software to focus on the issues faced by the industry and further grow their knowledge through the experience of building high-quality, sustainable teams and solutions. **Sea/** is excited by the prospect of growing this centre of maritime technology excellence.