The 2022 Management Discussion and Analysis

> *Every gun that is made, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed, those who are cold and are not clothed. This world in arms is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children. The cost of one modern heavy bomber is this: a modern brick school in more than 30 cities. It is two electric power plants, each serving a town of 60,000 population. It is two fine, fully equipped hospitals. It is some fifty miles of concrete pavement. We pay for a single fighter plane with a half million bushels of wheat. We pay for a single destroyer with new homes that could have housed more than 8,000 people. In the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist*

Dwight D. Eisenhower,
POTUS, April 16, 1953.

4th Quarter 2022/Annual Financial Performance (US Dollar Terms)

The results, audited by EY Office Ltd., show you the latest financial position of Precious Shipping Public Company Limited and its subsidiaries ("the Company"). The earnings per day per ship during Q4 came in at USD 14,343, taking the annual figure to USD 19,924. Please look at the Market Segmentation report that shows you the relative performance of the PSL fleet's earnings per day per ship compared to the Index ships.

In the current quarter, daily operating costs for ships were lower than both the target for the year and the actual costs from the previous year. The costs were USD 4,815 per day per ship, which has brought the annual costs to USD 4,895 per day per ship, as compared to a target of USD 4,960 for the year and actual daily operating expenses of USD 5,090 for the previous year.

The EBITDA was USD 27.89 million during Q4 and USD 180.33 million for the year. In Q4 we made a net profit of USD 15.26 million, with earnings per share of Baht 0.35. This is the fourth quarterly profit for this year. In the year 2022, we made a net profit of USD 138.61 million, which is close to our all-time high net profit of USD 154.22 million in 2005. The Company's earnings per share for the year were Baht 3.11.

THE HARD FACTS	2022	2021	Q4 2022	Q4 2021
Highest earnings per day per ship in USD	52,816	50,336	36,948	50,336
Average earnings per day per ship in USD	19,924	20,338	14,343	26,429
Av. earnings per day per Handy size ship in USD	17,523	18,804	12,525	25,062
Av. earnings per day per Supramax ship in USD	20,371	19,378	16,162	22,823
Av. earnings per day per Ultramax ship in USD	25,422	25,062	17,066	33,734
Av. earnings per day per Supramax/Ultramax ship in USD	22,748	22,053	16,587	27,958
Operating cost per day per ship in USD	4,895	5,090	4,815	5,241
EBITDA in million USD	180.33	175.17	27.89	62.42
Net Profit (Loss) in million USD excluding exchange gain (loss) and non-recurring items	138.66	132.76	17.16	52.68
Net Profit (Loss) in million USD	138.61	136.96	15.26	53.01
Earnings (Loss) Per Share in Thai Baht excluding exchange gain (loss) and non-recurring items	3.11	2.79	0.40	1.13
Earnings (Loss) Per Share in Thai Baht	3.11	2.87	0.35	1.14

Financial Highlights (Thai Baht Terms) and Review of the Year:

The company reported a 14-year high net profit of Baht 4,850.79 million (2021: Baht 4,474.93 million), with total revenues of Baht 9,146.64 million (2021: Baht 8,814.29 million), in the year under review. The shareholders' equity increased to Baht 16,462.81 million (2021: Baht 14,365.02 million) and total assets increased to Baht 24,303.96 million (2021: Baht 23,530.50 million), primarily due to the purchase of 2 additional vessels, bringing the total number of vessels operated by the company to 38 in 2022 compared to 36 in 2021.

In the first half of 2022, the dry-bulk freight market saw an uptrend, but rates softened in the latter half of the year due to an increase in US interest rates, a worsening property sector in China, and lower cargo flows out of Ukraine due to the Russia-Ukraine war. The company's vessels achieved an average time charter equivalent rate of USD 19,924 per day per vessel in 2022, lower than the average rate of USD 20,338 per day per vessel in 2021. The net vessel operating income (net of voyage disbursements and bunker consumption) in Thai Baht terms was 9% higher than the previous year. The average vessel running cost per day per vessel decreased from USD 5,090 in 2021 to USD 4,895 in 2022, primarily due to lower dry-docking and special survey expenses. However, absolute vessel running expenses in Thai Baht terms, increased by about 12% due to the depreciation of the Thai Baht against the US Dollar. The average technical downtime was 11 days per vessel, as 14 vessels underwent dry-docking and special surveys during the year.

We conducted an "in-house" exercise again this year to determine total return to shareholders, which was calculated for the 29 years that we have been operating as a listed entity. Based on the closing share price of Baht 15.10 per share on 16 September 2022 (our first day of trading on the SET was 16 September 1993) and assuming you had subscribed at the IPO, at the end of 29 years you would have obtained a 16.31% IRR on your initial investment. This return does not assume any re-investment of the dividends into shares or any interest on the dividends received.

To keep things in perspective with regards to PSL, we would like to highlight the annual net profit/loss over the past few years.

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Av. BDI	2,758	1,549	920	1,206	1,105	719	673	1,145	1,353	1,353	1,066	2,943	1,934
Net Profit (loss) $m	35.5	23.6	4.5	17.5	(2.5)	(69.41)	(75.61)	(3.76)	14.1	(7.25)	(40.80)	136.96	138.61
Av. No. of Ships	21.39	21.91	30.44	38.93	41.66	45.46	40.29	36.02	36	36	36	36	36.99
Net Profit (loss) / Ship $m	1.66	1.08	0.15	0.45	(0.06)	(1.53)	(1.88)	(0.10)	0.39	(0.20)	(1.13)	3.80	3.75

During the abysmally low market period of 2015 and 2016, we managed to keep costs under tight control; raised about USD 65 million from our shareholders via a rights offering in early 2015; raised USD 100 million from a 5 year unsecured bond in January 2016; raised USD 55 million from a 3.5 year unsecured bond in December 2016; prepaid a lot of our secured loans coming due in 2018 and 2019; and sold our older and inefficient ships to raise further cash (15 ships recycled in 2015 - 2016 and 2 older ships sold in 2016 - 2017 for further trading). In 2018, we fully prepaid one loan facility, thereby releasing 3 vessels from their mortgages. In 2019, we fully prepaid another loan facility and released 2 more vessels from their mortgages. To mitigate the deleterious impact of Covid-19 in 2020, we extended USD 124 million of indebtedness on our two outstanding bonds by 1.5 years, received USD 40.5 million through a settlement agreement with Sainty Shipyard, and received ~USD 26.55 million of gross proceeds through a 12-month advance charter-hire agreement with a customer. In 2021, we redeemed our two outstanding bonds well before the amended maturity dates and raised USD 133.45 million through the signing of three new loan facilities. In 2022, we raised USD 17.10 million through the signing of one new loan facility and prepaid two loan facilities thereby releasing two vessels from their mortgages. Total loan repayments for the year were USD 69.44 million.

Our Fleet: At the end of 2022, our fleet comprised of 38 ships on the water (8 Ultramax, 9 Supramax and 21 Handysize) with an aggregate capacity of 1,657,579 DWT. This works out to an average of 43,621 DWT per ship, with an average age of about 11.0 years. In a highly capital-intensive business characterized by high leverage and unpredictable and volatile cycles, the timing of the purchase of ships is possibly the single most important decision that must be made.

Annual Benchmarking:

Marine Money's 2021 annual benchmarking issue showed that among 22 globally listed peers in the dry-bulk sector, we ranked second among peers and we had the third-highest operating profit margin of 70.7% compared to a sector average of 58.3%. Our overall performance compared to all 83 listed Shipping companies, was a very respectable 10th rank.

Awards and Honors:

- PSL has been included in the Stock Exchange of Thailand's Thailand Sustainability Investment (THSI) list for 2022.
- PSL has been classified as a company with "Excellent" Corporate Governance for 13 consecutive years from 2010 to 2022, by the IOD & National CG Committee.
- PSL earned a full 100 AGM assessment score for five consecutive years from 2018 to 2022, as adjudged by the Thai Investors Association (TIA)
- In 2022 and for the second year running, PSL has received the Outstanding Investor Relations award from SET, Thailand.
- PSL is the highest-ranked global dry-bulk shipping company in the S&P corporate sustainability assessment (CSA) rankings for 2021.
- PSL received the 2021 ASEAN Asset Class Award, for having attained a minimum CG score of 97.50 on the ASEAN CG Scorecard.

Market Segmentation for 2022:

During 2022 the Baltic Handy Size Index (BHSI) averaged 1,185 points, as derived from an average Time Charter (TC) rate of 21,337 per day. In comparison, our Handy size fleet earned USD 17,523 and underperformed the BHSI TC rate by 17.88%. During 2022 the Baltic Supramax Index (BSI) averaged 2,014 points, as derived from an average TC rate of USD 22,152 per day. In comparison, our Supra/Ultra fleet average earnings were USD 22,748 per day and outperformed the BSI TC rate by 2.69%. Our target has been to outperform both the indices.

Type of Vessel	2022 Avg Index Time Charter Rate in $ (A)	PSL average Time charter Rate in 2022 in $ (B)	PSL Ship difference from Index Ship in % (C)	PSL long Term Time Charter Ship Adj (D)	A*(C+D) = (E) in $	PSL True Time charter rate in $ (B+E)	PSL True performance VS Index ship in %
Handy	21,337	17,523	-17.88%	4.67%	6,331	23,854	+11.8%
Supra	22,152	22,748	2.69%	1.74%	2,601	25,349	+14.4%

The two reasons for our performance in 2022 are: Firstly, our ships are 'different' from the index ships. On an apples-to-apples comparison, our Handy ships are ranked 25% below and the Supras are 10% below the index ship TC rates. Secondly, the 9 handy ships, out of our fleet of 21, on long term charter were fixed at $18,474 per day and the 13 Supras, out of our fleet of 17, at $21,267 per day, both below the average TC rate for the index ships (BHSI $21,337 and BSI $22,152). If we had applied these two adjustment factors to our result, our 'true' performance would have beaten the handy index by 11.8%, and beaten the supra index by 14.4%, as shown in the above table.

Long Term versus short term Charters:

The long-term charters, of about 1 year, are shown in the chart below. As can be seen, our forward four-year rolling book is currently at the 20% level with a visible revenue stream of USD 148 million.

Year	2023	2024	2025	2026
Total Available Days	13,870	13,908	13,870	13,870
Fixed T/C Days*	5,420	1,870	1,825	1,825
%age Fixed T/C Days	39%	13%	13%	13%
Av. T/C Rate/Day in**	11,752	15,222	15,316	15,316
Contract value in	63.69	28.47	27.95	27.95

**This comprises charters on 7 ships on fixed rate charter and 15 ships on variable rate charters*
***Average T/C Rate/Day for the variable rate charters is estimated based on rates prevailing in January 2023 for future earnings and actual earnings for past earnings.*

It is our intention to continue to charter out our ships on long term period contracts whenever practical and economically viable.

SET Opportunity Day:

Number of online participants attending PSL's live presentation of Q3/2022 results on 9th of November 2022 were 268 on the SET website/YouTube views and 18 on Facebook for a grand total of 286. We hope that many of you will join our next SET Opportunity Day on 15th February 2023 at 15:15 hrs. (Thailand time) via electronic means when we will be able to discuss our Q4 results in greater detail.

Update on the Chayanee Naree drug smuggling incident:

Since the last report, there has not been any significant development in the case. As mentioned in the last report, the trial against the Vessel and the 10 crew members commenced in the Federal High Court of Nigeria in July 2022. The next hearing is scheduled for March 2023. The Company continues to work closely with its insurance company and legal counsel to ensure that the case is fully resolved as early as possible.

What does the crystal ball predict for 2023?

2022 was a year when things went from bad to worse, starting with the 24 February Russian invasion of Ukraine. This was followed by sanctions on Russian coal, oil, gas, food grains, and fertilizer exports. The EU paid the price for these sanctions while the USA reaped the benefits by exporting coal, oil, gas, and food grains at ever increasing prices to the EU/ROW, all in the name of reducing the EUs dependence on energy supplies from Russia. The whole world, especially the poor, whether living in the developed or developing world, paid the price with food, fuel, and fertilizer inflation leading to an ever-tightening belt, not just around their stomachs but literally around their throats, choking the very life out of their humble existence.

In contrast, the coming year 2023 appears to be a tale of two opposite scenarios, one good and the other bad.

First, the bad news. Geopolitics could worsen; a bad turn in the Russia-Ukraine war like a nuclear strike, or worse still, Taiwan-China morphs into a hot war; a weakening global economy from bad policy decisions; a new pandemic soaking up tax dollars; spiking energy prices due to the sanctions on Russian energy; cyber-attacks disabling infrastructure pushing the world into recession; a possible collapse of the global financial infrastructure that is still struggling post the 2008 financial crisis; debt related risks, principal or interest payments, in developing or poorer countries creating non-containable economic waves exacerbated by high energy and food prices, hurling the world into recession; or developed democracies being undermined by financialized capitalism creating in the have-nots, anger, resentment, and eventually, violent overthrow of establishments.

But things need not wallow in gloom and doom, we could have better news in 2023. If you are involved in shipping, then by default you are an optimist, and hence would lean towards the better news scenario that follows. The world has survived three years of the existing pandemic; one year of the Russia-Ukraine war; China's three-year Covid-zero policy; QE taper; and higher interest rates, all in reasonably good shape. We could have a resolution of the Russia-Ukraine war; no hot war between Taiwan and China; a successful reversal of China's Covid-zero policy; China's stimulus to the property sector takes hold; the Dollar weakens; world trade improves; supply side of new ships remains tight with recycling increasing due to low markets at start of 2023 and new environmental regulations kicking in; the inflation fight is won; interest rates plateau and start to decline; no debt crisis in developing and poor countries; financial markets get back to growing strongly; and the have-nots share some part of the financialized capitalism in the developed economies.

In the FT edition dated 31 Dec 22, under the predictions for 2023, was this gem ‘Can China restore economic growth to more than 5 percent? Yes. China is facing a bleak ending to 2022; the opening from its “zero-Covid” policy will sadly claim many more lives yet and is overwhelming hospitals, as the pandemic did elsewhere in 2020-21. But a lot can and will change over the course of the year. Once China learns to “live with Covid”, economic activity should bounce back strongly. Consumer spending will be energized by a pandemic-fueled glut in savings and Beijing will launch a stimulus package focused on infrastructure. James Kynge’

According to a 10 Jan 23 article in the FT entitled ‘Xi Jinping’s plan to reset China’s economy and win back friends’, China wants to improve trade and diplomatic relations with the USA and the EU. The goals are to mitigate the costs of abandoning covid-zero; align with the ‘spirit’ of the 20th congress of the CCP held in Oct 22; achieve robust economic growth via economic pragmatism and an enabling environment for private sector growth; improve the lot of rural workers; stabilize the property market; stabilize the finances of local governments; substantially increase the middleclass; tap household savings of $4.8t to boost consumer spending; increase per capita income; set an economic target of GDP growth of 6%; improve relations with Japan, South Korea, and Vietnam; reevaluate ties with Russia; restrain Russia from using nuclear weapons; act as a peacemaker, and participate in rebuilding Ukraine.

We have the following from Bloomberg dated 16 Jan 23. ‘China’s sudden reopening after three years is set to offer a boost to a flagging world economy. The growth impulse will be felt through services sectors such as aviation, tourism and education as Chinese people pack their bags for international travel. Other beneficiaries include commodity producers like Chile and Brazil, while a gauge of Australian mining shares is homing in on an all-time high. The head of the IMF has described China’s pivot from covid Zero as likely the single most important factor for global growth in 2023, while the reopening has raised hopes that the world economy will emerge from the scariest inflation in decades without suffering a downturn.’

An article from Reuters dated 18 Jan 23 said this: ‘China's reopening from pandemic restrictions could drive global growth beyond expectations and help avoid a broader recession even as some of the world's largest economies struggle to overcome a downturn, top finance officials at the World Economic Forum said.’

And we have this from Reuters dated 19 Jan 23. ‘China could see a sharp recovery in economic growth from the second quarter onwards based on current infection trends after the dismantling of most covid restrictions, IMF Deputy Managing Director Gita Gopinath said.’

As the FT, and most western media, emphasize the negative, never the positive, when they have anything to say about China, we therefore, wonder why the western media are being so positive about China in the above pieces. Could it be that they realize that China is going to have a blowout 2023?

If we look at shipping during 2020 to 2022, when the world was hit by a three-year long global pandemic, the first major European war after more than 7 decades, and resultant disruptions galore, our industry still managed to do very well. Economic turmoil may have peaked in 2022, China exited covid-zero and started living with the virus, the pent-up stimulus from China should be a shot in the arm for their property sector and bring a sharp recovery back to the dry bulk shipping world. This will be aided by the very low, 7.16% ratio of ships-on-order compared to existing supply at the start of 2023, and the regulatory pressure from EEXI and CII to slow ships and to increase pressure to recycle ships starting this year. Turmoil and disruptions are, counterintuitively, good for shipping, as we have seen during the pandemic with declared results in 2022 being above or very close to the high reached in 2021. Yes, economic conditions may be weak in 2023, but this could be overcome if China's property and steel-intensive stimulus takes hold in a non-covid-zero environment. The dry bulk market has had a history of uninterrupted ton-mile growth for the past 3 decades at 2 to 3 times world GDP growth rates. That came to an end by 2010 and we are getting accustomed to a ton-mile growth rate that is between 1 to 2 times world GDP growth rates. Future dry bulk ship supply has been nicely constrained due to crowding-out by other sectors grabbing all available shipyard berth space; shipyards finding it more lucrative to build higher value ships, bulkers are the lowest margin ships to build; transitioning away from internal combustion fossil fuel burning ship engines to ammonia or other fuels of the future, have conspired to deliver a two+ decade low forward orderbook to existing ship ratio of just 7.16% at the start of 2023. Regulatory pressure should also help whittle down the existing fleet via recycling and/or slow steaming. Shipping has always proved more resilient than anyone has ever given it credit for, so, on balance, we think we have a lot more to be optimistic about!

Factors Affecting the BDI:

- Excavator sales in China have risen for the last 5 consecutive months till November 2022 when they were up 15.8% y-o-y. December data is not yet out. Research by Arrow Shipbrokers says that this is the leading indicator for construction and infrastructure activity in China. It is also the leading indicator that has accurately predicted the inflection points in the BDI since 2008.
- China exported 2.5m cars in 2022, three times the level in 2020, leaving it just 60K less than Germany.
- Air travel at the start of 2023 within China is back at January 2019 levels.
- 8 BMT is the amount of coal the world will consume in each year during 2023 and 2024.
- The IMF, according to Bloomberg (16 Jan 23), described China's move away from covid-zero as the single most important factor for global economic growth in 2023. China's reopening has also allayed fears of a recession in the ROW and of the world successfully negotiating out of an inflationary cycle.

- Iron ore imports into China from Australia increased by +3.4% y-o-y to 739.5 MMT. Imports from Brazil declined by -7.1% y-o-y to 223.4 MMT. Shorter ton-mile increased over longer ton-mile negatively impacting the capesize sector.
- The BDI started 2022 at 2,285 and finished 34% lower at 1,515 points. It peaked at 3,369 on 23 May and troughed at 965 on 31 August, a 70% spread between high and low.
- Capes started 2022 at $19,940 on 4 Jan, hit a peak of $38,169 on 23 May, a trough of $2,505 on 31 Aug and closed the year at $18,749 on 23 Dec with an average of $16,177 down 51% y-o-y. Capes spend 74% of their time on iron ore and 21% of their time on coal. When you have that much of concentration risk of the type of cargoes carried and with a single dominant customer, China, accounting for over 60% of all iron ore imports, you are setting yourself up for volatility.
- Panamaxes started 2022 at $25,865 on 4 Jan, hit a peak of $30,746 on 28 Mar, a trough of $10,956 on 31 Aug and closed the year at $13,813 on 23 Dec with an average of $20,736 down 23% y-o-y.
- Supras started 2022 at $24,303 on 4 Jan, hit a peak of $33,366 on 24 Mar, and closed the year at a trough of $11,685 on 23 Dec with an average of $22,152 down 17% y-o-y.
- Handies started 2022 at $25,322 on 4 Jan, hit a peak of $32,166 on 28 Mar, and closed the year at a trough of $11,941 on 23 Dec with an average of $21,337 down 17% y-o-y. The smaller sizes with real diversification in terms of cargoes carried and ports visited have had a less spectacular though, more stable ride, on the roller coaster of the current dry bulk freight market.
- Ton-mile demand growth, estimated by Clarksons at -1.25%, during 2022 was lower than net supply growth of +2.86%. Yet PSL's results for 2022 was like that achieved in 2021.
- 2022 was a story of a gradual slowdown of the demand side colliding with a marginal increase in supply with decreased fleet inefficiencies releasing more ships into the market, despite a reduction in the world fleet's speed by 0.2 knots (source: Clarksons as on 31 Dec 2022). Though all this failed to spoil the dry bulk party in the first 3 quarters of the year, Q4 was impacted by this confluence of events. Rates continued to slowdown during the start of Q1 2023 aided by the early start of Chinese New Year on 22/23 Jan 2023. This reaffirms that demand-supply is in balance and freight markets will be characterized by extreme volatility and sharp rate movements in both directions as we have seen in 2021 and 2022 with the slightest change in demand and/or supply. We expect more of the same in 2023.
- The dry bulk market dropped sharply in Q4 due to congestion abating; the negative development in the steel complex globally; and the real estate industry in China failing to perform. But the order book to fleet ratio at just 7.16% holds out hope for a better 2023.
- In 2023, according to Clarksons (as on 31 Dec 2022 and Clarksons Jan 2023 DBTO), ton-mile demand is expected to grow by 1.59% (major bulks by 2.35%, and minor bulks by 0.47%) while net increase in supply is expected to grow by 2.4% (gearless ships by +3.0%, and geared ships by +1.3%). We hope that with the opening of the Chinese economy, as China abandoned their covid-zero policy in Dec 22, ton-mile demand growth will spike in 2023. Regulatory changes

implemented by IMO in 2023 via EEXI and CII should help slow down the world fleet, induce more scrapping, and thereby reduce net effective supply. Between these two factors (growing demand and shrinking supply), the gap between demand and supply will narrow in favor of the ship owners and we could possibly see, 2023 as a similar, though marginally weaker, year as in 2021 and 2022.

- The World Economic Forum at Davos warned a global recession is likely in 2023.
- The World Bank has lowered its forecast for world GDP to grow by 1.7% in 2023.
- According to the IMF, a third of the world would be in recession in 2023.
- According to Edward Yardeni, founder of Yardeni research, 12 Oct 2022 was the bottom for stock markets, and we are in a bull market since then.
- In 2023, the car market may collapse. Morgan Stanley warns “we may be witnessing the sharpest pivot from undersupply to oversupply of light vehicles in a generation.”
- In a recent report from the World Bank, China contributed 38.6% to global economic growth from 2013 to 2021.
- 16 MMT of grain was shipped from the Black Sea between Aug and end Dec 2022.
- Chancellor Olaf Scholz speaking at a security conference in Berlin pushed for a pre-war relationship, but not a return to the strong partnership, with Russia, indicating peace was preferential to the war and current sanctions.
- Reconstruction needed in Ukraine, once the war ends, will be great news for dry bulk, with Olaf Scholz indicating a spend equal to the Marshall Plan.
- The incentives to build new ships will remain low with greater value in the secondhand market.
- Coal fired power plants in Southeast Asia at the start of 2023 stood at 98 Giga Watts (GW) with capacity expected to grow by 55% to 152 GW by 2030 (according to Dry Bulk Outlook, Q4 2022, Maersk Broker). Coal imports in Southeast Asia are therefore expected to almost double over the next 7 years, once again giving credence to the famous quip by Mark Twain, duly paraphrased, that the rumors of the demise of King Coal have, therefore, been greatly exaggerated.
- India’s rice exports fell by 6% from a year ago to 20.2 MMT in 2022 according to Drewry.
- India’s thermal coal import increased by 15% to 161.18 MMT in 2022.
- China imported 91 MMT of Soybean down 5.6% in 2022 compared to 2021.
- China imported 20.6 MMT of corn down 27.3% in 2022 compared to 2021.
- China imported 9.96 MMT of wheat up 1.9% in 2022 compared to 2021.
- China imported 1,107.8 MMT of iron ore down 1.6% in 2022 compared to 2021.
- China imported 293.3 MMT of coal down 9.4% in 2022 compared to 2021.
- China produced 1,013.0 MMT of Steel down 1.8% in 2022 compared to 2021.
- China exported 67.4 MMT of Steel up 0.9% in 2022 compared to 2021.
- China imported 10.5 MMT of Steel down 26.3% in 2022 compared to 2021.
- China’s average PMI index was 49.1 during 2022.
- China’s 2022 GDP growth was 2.7% during 2022.
- In Jan 2023, IMF calculated world GDP grew by 3.4% in 2022. IMF revised upwards 2023 world GDP growth to +2.9% and +3.1% for 2024.

- The USA's 2022 average inflation number was 8.0% compared to 4.7% in 2021. Similar average numbers for UK and EU for 2022 were 9.1% and 8.4%, and 2.6% and 2.6% for 2021, respectively.
- Containerships ordered in 2022 at 2.6 M-TEU took the total orderbook to 7.3 M-TEU. The orderbook to fleet ratio for Containerships at the start of 2023 is 28% compared to start of 2022 figure at 23%. (Clarksons Jan 2023 CIM).
- The SCFI for Asia-Europe crashed during 2022, falling 86% from $7,777 to $1,078 per FEU on China-North Europe and down 75% from $7,529 to $1,850 per FEU on China-Med. The SCFI for Transpacific was down 82% from $7,994 to $1,423 per FEU on China-USWC and was 74% lower from $11,833 to $3,067 per FEU on China-USEC.
- The current orderbook to fleet ratio, at the start of 2023, for the dry-bulk sector is 7.16% (for the geared sector 7.56% and for the gearless sector 6.94%).
- Recycling of dry-bulk vessels has gone down from 5.47 MDWT in 2021 to 4.76 MDWT (-13%) in 2022.
- PSL's exposure to the smaller geared segments means that it will be exposed to growth in net supply of 1.3% in 2023, according to Clarksons.
- Ships 20 years or older, comprising about 77.97 MDWT or 8.07% of the existing fleet (41.41 MDWT of the geared fleet or 12.15% and 36.56 MDWT of the gearless fleet or 5.85%) at the start of 2023 would be ideal candidates for recycling due to the pressure from the new EEXI/CII rules starting in 2023.
- Clarksons expectations for 2023 and 2024 is that ton-mile demand will be 1.59% and 2.02% while net supply growth will be 2.4% and 0.3% in each of these two years.
- Market prospects at the start of 2023 can be inferred by comparing the forward orderbook of 69.14 MDWT with the existing 20+ year fleet of 77.97 MDWT, and as a percentage of (7.16%) the existing fleet.
- PSL's estimate of growth in supply by end of 2023 and 2024 of 2.75% and 1.72% (966.03 MDWT to 992.63 MDWT by end 2023 and then to 1,009.69 MDWT by end 2024), conservatively assumes recycling of just 8 MDWT/year and slippage of just 5% per year in 2023 and 2024.

Key Supply Side Developments:

We started 2022 with 939.15 MDWT and have increased to 966.03 MDWT (+2.86%) at the start of 2023. If we were to apply slippage of 5% (it was -8.15% for 2022) to the scheduled deliveries in 2023 and 2024 and assume scrapping reaches 8 MDWT (it was actually 4.76 MDWT during 2022) we would be left with a net fleet growth of 2.75% (966.03 MDWT to 992.63 MDWT of which 340.73 MDWT to 348.87 MDWT for the geared sector, 625.30 MDWT to 643.76 MDWT for the gearless sector) by end of 2023 and 1.72% by end of 2024 (992.63 MDWT to 1,009.69 MDWT of which 348.87 MDWT to 357.19 MDWT for the geared sector, 643.76 MDWT to 652.50 MDWT for the gearless sector.) Ballasting ships, slowing speeds in 2023 especially due to EEXI/CII regulations, will further assist in supply side tightening.

Differences in 2003-2009, 2010-2020, 2021, 2022 and the future:

Differences in 2003-2009, 2010-2020, 2021, 2022 and the future

Daily average Time Charter rate	2003 – 2009	2010 – 2020	2021	2022
Capesize	67,101*	14,924***	33,333**	16,177**
Panamax	32,793*	10,965***	26,898**	20,736**
Supramax	28,013^^	10,765***	26,768**	22,152**
Handysize	18,753^^	8,789***	25,702**	21,337**
Demand Billion Ton-miles per year	+5.4%	+4.2%	+3.63%	-1.25%
Average Speed (knots)	13.5^^^	11.5^^^	11.4	11.2
Chinese Stimulus	China enters WTO 2001	USD 578 bn (2009)	$667 bn (mid year 2020) (ROW $20 trillion+)	$2.3 trillion^
Orderbook/Fleet ratio per year (start of each year)	+36.02%	+26.23%	+7.03%	+6.88%
Annual average % of 20-year-old (start of each year)	+18.38%	+11.27%	+6.25%	+7.26%
Annual average net supply growth	+6.8%	+6.4%	+3.55%	+2.86%

2022 & The Future

At the start of 2022, for the first time this century, the 20+ year old fleet was larger than the forward order book, and at the start of 2023 it was still 8.07% versus 7.16%, respectively.

*Note: *BCI 172K (4TC), BPI 74K (4TC), BSI 52K (6TC), BHSI 28K (6TC).*
***BCI 180K (5TC), BPI 82K (5TC), BSI 58K (10TC), BHSI 38K (7TC)*
****Combine of above two classification*
^Bloomberg calculates Chinese stimulus at $ 5.3 trillion!
^^1 Yr. TC 32K, 1 Yr. TC 52K used for years where there was no BHSI (2003-2006) or no BSI (2003-2005).
^^^Average speed in 2008-2009 and average speed in 2012-2020

Source: Clarksons Index Timeseries, Clarksons World Seaborne Trade Timeseries, Clarksons Speed Timeseries and Clarksons World Fleet Register as on 31 Dec 2022

Precious Shipping PCL 14

If you look at the time charter rates for the period 2003-2009 it was the highest for the Capes compared to the other three periods. For the Panamax and Supras, during 2003-2009, rates were almost 3X higher than in the 2010-2020 period, almost equal to rates in 2021, and around 1.5X higher than in 2022. For the Handy size, 2021/2022 were almost 3X/2.5X higher than in 2010-2020 and almost 1.5X/1.2X higher than in 2003-2009. However, demand growth rate in ton-miles in the four periods declined from the 2003-2009 period of 5.4% to 4.2% (2010-2020), to 3.63% (2021), and to -1.25% in 2022, and yet PSL produced better results in 2022 than in 2021! What was different, of course, was the average orderbook to fleet ratio being highest in 2003-2009 dropping by 27% in 2010-2020, by 80% in 2021, and 81% in 2022. The other significant difference was that orderbook to fleet ratio was 2X the 20-year-old fleet in 2003-2009, 2.3X in 2010-2020 and just 1.1X in 2021, and 0.9X in 2022, with a similar figure at the start of 2023 of 0.9X. Average speed dropped from 13.5K in 2003-2009 by 17% to 11.2K in 2022, further helping to tighten the net effective supply of ships. All this indicates weak supply growth in the future and indicates markets could be stronger for longer.

BDI started out in 2022 at 2,285 reached a peak of 3,369 on 23 May, and since then, has fallen. Why did rates accelerate in this fashion and then fall so quickly? Demand-supply for dry bulk at the start of 2021 was in perfect balance, and as ton-mile estimated demand by Clarksons during 2021 grew at 3.63% compared to net fleet growth at 3.55%, rates skyrocketed during 2021 due to inefficiencies reducing the effective net fleet! But during 2022 China decided to reign in their out-of-control real estate sector by letting Evergrande and its brethren collapse, imposed strict anti-pollution controls on coal fired power plants post COP26, curtailed steel production, and insisted on blue skies during the winter Olympics, ton-mile demand of necessity, took a hit and dropped to -1.25% according to Clarksons (World Seaborne Trade Timeseries as on 31 Dec 2022), colliding with a net supply increase of +2.86% as per Clarksons (World Fleet Register as on 31 Dec 2022), with decreased fleet inefficiencies releasing even more ships into the market, despite a reduction in the world fleet's speed by 0.2 knots (source: Clarksons Speed Timeseries as on 31 Dec 2022). Consequently, rates in 2022 dropped in Q4 2022 for the opposite reasons that they skyrocketed to a peak in Q4 2021. The central bankers of the ROW tapering QE and hiking interest rates from March 2022 to combat inflation, did not help the demand side during 2022. With demand-supply coming into balance in 2021 rates skyrocketed. But the time charter rates fell during 2022 due to slowing down of demand in China (for the reasons already mentioned) and demand in the ROW slowing down due to central banks raising interest rates sharply to fight inflation. Consequently, a lot of the fleet inefficiencies that was present in 2021, and had helped rates skyrocket, started to unwind during 2022 releasing more ships into a demand challenged market growing at -1.25% making rates fall in Q4 2022 and into Q1 2023. This extreme volatility, within each year, due to minor changes in demand-supply, will be the name of the game for the dry bulk freight markets in 2023 and beyond!

The geared sector, Supras and Handy sizes, had lower volatility in rates compared to the gearless sector, Capes and Panamaxes, due to the reasons expressed here but also because they had a slower net growth rate in DWT in supply of ships in 2021-2022 combined at 18.88 MDWT (geared ships), versus 40.16 MDWT (gearless ships).

China still needs affordable housing in a big way but not the type of luxury houses being built by Evergrande and their compatriots in which everyone invests, makes paper profits, but no one lives in. By letting the big real estate developers suffer, China tried to control this sector and push them to focus on affordable housing that the common man needs, would love to own, and live in, via policy means like the lowered reserve requirement ratio for banks, the interest rate cuts, and lowered mortgage lending benchmark interest rates. It may take some more time, but if the real estate developers start building affordable housing in a big way, it will likely push up steel requirements to the levels prior the Evergrande debacle. That would be a big win for the dry bulk sector.

As can be seen, all the reasons for the slowdown in Q4 2022 and into Q1 2023 are due to decisions made by governments, be it in China moving from covid-zero to living with covid (dry bulk is very dependent on China), or in the ROW (Fed Reserve raising interest rates very sharply during 2022 to combat inflation and promising to hold it higher for longer). These decisions have curtailed demand, but when reversed, they will allow demand to flourish once again, and we could be back at the same point we were at the start of 2021!

The Industry Outlook:

A truncated supply of new ships is expected for the next few years. The fleet stood at 939.15 MDWT at the start of 2022 and by the end of the year had grown to 966.03 MDWT. During the year, 4.76 MDWT was recycled, and 31.64 MDWT was delivered, thus making net fleet growth of 2.86%. The existing orderbook stood at 69.14 MDWT (deliveries up to end of 2025), or 7.16% of the world fleet at the start of 2023. Specifically, in the geared segment, net fleet growth was 3.22% in 2022 in the Handy/Supra/Ultra segment and the existing orderbook for the geared fleet stood at 25.77 MDWT (deliveries up to end of 2025), or 7.56% of the geared world fleet at the start of 2023. This will help reduce the pressure from the Supply side of the equation.

While the supply side looks appealing on the surface, it does not factor in regulatory impacts or the current age profile of the fleet. At the start of 2023, 8.07% (77.97 MDWT) of the world dry bulk fleet (12.15% or 41.41 MDWT of the geared dry bulk fleet) was over the age of 20, and 13.80% (133.33 MDWT) of the world dry bulk fleet (17.52% or 59.70 MDWT of the geared dry bulk fleet) will be over 20 by the end of 2025 if none of these ships have been recycled by then. The first conclusion to draw from this is that the current orderbook is, at best, replacement capacity and will not increase capacity. Secondly, vessels over the age of 20 were designed, built, and delivered at a time when the average price of oil was $19.7/barrel with a low of $10/barrel during the peak of the Asian Crisis during 1998/2000, hence were designed for power and not for fuel economy. Ships that are 20 years old or older will find it difficult to compete against younger more fuel-efficient vessels. It is our opinion that going into 2023, recycling should pick up, and new orders should slow as new regulations like EEXI, and CII come into force on 1st January 2023. Ships 20 years or older, comprising 77.97 MDWT or 8.07% of the existing fleet (41.41 MDWT of geared ships or 12.15% and 36.56 MDWT of the gearless fleet or 5.85%) at the start of 2023 would be ideal candidates for recycling as they would have to invest in ballast water treatment systems, IMO 2020, expensive special surveys, and face regulatory-led recycling in 2023 due to EEXI, and CII.

The Cape sector (90,000+ DWT: 2,270 ships of 414.44 MDWT at the start of 2023): 118 ships of 22.69 MDWT or 5.47% of the existing DWT are scheduled for delivery up to end of 2025. In this sector, 181 ships of 30.46 MDWT or 7.35% will be over 20 years of age by end of 2025 and some or all of them are likely to be recycled during 2023 to 2025.

The Panamax sector (70,000 – 90,000 DWT: 2,648 ships of 210.86 MDWT at the start of 2023): 252 ships of 20.68 MDWT or 9.81% of the existing DWT are scheduled for delivery up to end of 2025. In this sector, 572 ships of 43.18 MDWT or 20.48% will be over 20 years of age by end of 2025 and some or all of them are likely to be recycled during 2023 to 2025.

The Supra/Ultramax sector (40,000 – 70,000 DWT: 4,009 ships of 225.59 MDWT at the start of 2023): 382 ships of 21.57 MDWT or 9.56% of the existing DWT are scheduled for delivery up to end of 2025. In this sector, 736 ships of 37.33 MDWT or 16.55% will be over 20 years of age by end of 2025 and some or all of them are likely to be recycled during 2023 to 2025.

The Handysize sector (10 – 40,000 DWT: 4,292 ships of 115.14 MDWT at the start of 2023): 156 ships of 4.19 MDWT or 3.64% of the existing DWT are scheduled for delivery up to end of 2025. In this sector, 910 ships of 22.37 MDWT or 19.42% will be over 20 years of age by end of 2025 and some or all of them are likely to be recycled during 2023 to 2025.

When reading the above numbers please keep in mind that Slippage was -8.15% and recycling accounted for 4.76 MDWT in 2022. Slippage has averaged 6% over the last 5 years (2018 to 2022) and recycling accounted for 7.53 MDWT annually over the last 5 years (2018 to 2022). Both slippage and recycling fluctuate inversely with the BDI and availability of finance.

On a net basis, the global fleet increased by 2.86% in 2022. According to Clarksons, the fleet is forecast to grow at 2.4% while ton-mile demand (for dry bulk seaborne trade) will grow at 1.59% in 2023. This gap between expected demand growth and expected supply growth in 2023 should make for an increasingly volatile market. As supply and demand came into perfect balance during 2021, the market would be characterized by extreme volatility, when any small change in demand or small change in supply, would have a disproportionate impact on the BDI.

Recycling of ships: The freight market is the prime mover that drives ships to the recycling yards. The lower the freight market the greater the number of ships at the recycling yards. Regulations impacting supply like EEXI, and CII will also influence DWT of ships sent for recycling. Deliveries in 2022 at 31.64 MDWT were muted when compared to average annual deliveries for the decade of 43.41 MDWT per year (2013 to 2022) of new capacity delivered.

Regulatory impacts should see many more ships heading for the recycling yard in 2023 and beyond. IMO 2020 has resulted in more expensive but 'cleaner' LSFO being burnt by ships from 1st January 2020. EEXI and CII will result in lower emissions from shipping globally. As a result, the level of pollutants reaching the air that we breathe, as well as the 'acid' rain that results from such emissions, will continue to reduce annually.

Climate Change:

- 2022 was the first year ever when investment in green energy at $1.1t (+33% over 2021) equaled investment in fossil fuels.
- A city in northern China had the coldest day ever.
- In the decade 2001-2011, the north-central region of Greenland was 1.5 degrees Celsius hotter than it has been in the last 1,000 years!
- The World Bank, IFC, IMF, and other development banks hold the key that could open a torrent of private funding into fighting the climate crisis.
- Exxon's scientific research, going back decades, showed the adverse impact their business had on global warming. But the executives at Exxon cast doubt publicly on such research to ensure their profit steam never dried up.
- The insurance industry is struggling with climate change induced regular annual losses of over $100b.
- Coal's share of the USA's electricity mix has fallen from 50% in 2005 to just 22% as natural gas and renewable energy make big strides.
- If cement production were a country, it would be the world's 3rd largest emitter.

- Water levels in seas are rising at the fastest rate in over 3,000 years and temperatures are the highest in 11,000 years. Island nations are right to push for a CO2 tax on shipping at the IMO to save their nations from drowning.
- Hydroclimate whiplash is when droughts are followed by floods as happened in Pakistan and California recently.
- The big wall street banks funded the fossil fuel industry with $4.6t while funding green energy with just half that number since the Paris COP21 in 2015 that agreed a 1.5-degree max warming target. Shows you the hypocrisy and profit-focused nature of these banks.
- 1 million Somalis have abandoned their homes, searching for food in the worst drought in over 40 years.
- 2022 was the hottest year in UK's history.
- 2023 started with the warmest start-of-the-year day on record in parts of EU.
- In mid-December, 195 nations pleasantly surprised the world with a pledge to restore 30% of the world's land and water resources by 2030!
- The 4-decade worst drought in the horn of Africa and water shortages in West Africa have left 76m people food insecure with Somalia on the verge of famine.
- The IEA says that new wind and solar power in 2022 will be 460 TWH, equal to that consumed by France in 2019, and in 2023 that figure will jump to 650 TWH equal to what Brazil consumed in 2019!
- According to a 16 December article in Bloomberg 'In the next decade, millions of new cars will go electric, and thousands of energy grids will switch to renewable sources. For many regular drivers and small business owners, this will mean an enormous, and very unpredictable, shift in their electricity bills. Ford uses a software service called Arc to sort out the best time for customers to charge their electric cars and assess how much charging will cost.'
- 342,000 electric vehicles were exported from China up to end of Q3 of 2022 equal to 29% of vehicle exports, a big increase from 2019.
- US scientists have created more heat output than energy used in nuclear fusion. The clean fuel of the future should be within our grasp in the next decade or so.
- The IMF approved $319 million for Rwanda to help deal with risks of climate change.
- A 13-day leak from a natural gas storage facility operated by Equitrans released ~1 billion cubic feet of natural gas, mainly consisting of Methane, that is 80 times more harmful than CO2 to the atmosphere, negating 50% of the emission gains from selling 656,000 EVs in USA in 2021.
- As ton-mile demand increases above tons carried, more CO2 is released while carrying less cargo. This is due to the inefficiency in the globally sanctioned trading system.
- A video, released in October 2021 by the UN makes the climate crisis feel very real, close, and personal. At just 2.5 minutes this video is well worth your time.
- The dirtiest industries from a GHG perspective have raised $4.3t of debt, more than double that in in 2015.
- The US East Coast got hit by a winter storm in late November that dropped 6 feet of snow, or double the previous record, in Buffalo.
- India is generating more power from coal than ever before since the start of the Russia-Ukraine war, showing the difficulty of transitioning to clean energy.

- If ever proof was needed, 74% of natural disasters between 2001 and 2018 are water related, according to UN-Water, as reported by Bloomberg. Temperatures are rising everywhere leading to glacier melts, adding to floodings from unpredictable rain patterns according to the WMO.
- The total insurance cost due to natural catastrophes in 2022 reached $260b.
- The third pole is on its way to extinction, by the end of this century, due to global warming.
- The IEA's annual report shows global renewable power capacity will grow by 2,400 GW, equal to the entire power capacity of China today, to 5,640 GW by 2027.

COP27:

COP (Conference of the Parties) is the annual meeting of the ~200 countries that are signatories of the UN Climate Convention committed to tackling global warming. In 2022, we reached annual meeting number 27, named COP27. Concrete joint targets are rarely set at the COPs, they are there to negotiate and agree on long-term political signals. The Paris Agreement resulting from COP21 in 2015 was a landmark COP since it was a legally binding treaty requiring countries to submit and follow concrete climate targets and required each member-country to increase its climate targets every five years. Around 90% of all global emissions are covered by 'Net Zero 2050' i.e., to cut emissions and achieve carbon neutrality by 2050. The 2022 COP27 is considered the 'implementing COP', with focus on holding parties to account for their targets announced last year. The EU, US, and China have set clear pledges backed by policies.

Takeaways from COP27:

- The gap between the promises governments, companies and investors have made to cut planet-warming emissions in future years, and their actions today, has caused emissions to keep rising. This increase was driven by higher oil use in transport, particularly aviation, as economies continued to reopen from lockdowns during covid.
- The Russia-Ukraine war created an energy crisis with the EU's sudden need to replace Russian gas causing the price of oil, coal and, especially, LNG to surge.
- Emissions from burning coal increased, as countries turned to the most-polluting fossil fuel after sanctions on imports of Russian gas supplies by the US/UK/EU.
- The optics of European countries burning more coal and funding new projects to burn more gas, while at the same time urging poorer countries to wean themselves off the fuel, have led some countries at the climate summit to complain of backsliding on green goals.
- CO2 emissions from burning fossil fuels will rise by 1% in 2022, scientists said, warning this would make it harder for the world to avoid disastrous levels of climate change.
- The very countries that made Saudi Arabia and the UAE feel unwelcome at the COP26 summit in Glasgow, are now pressing them to pump more oil and gas to fill the gap left by plunging Russian supplies. That has driven up prices and filled their coffers just as consuming nations struggle with rising inflation and slowing economies.

- The UN Environment Program's (UNEP) initiative, dubbed MARS or Methane Alert and Response System, that uses the existing network of space satellites to spot methane plumes around the globe, estimate how big they are, identify the responsible party, and encourage companies and governments to curb emissions of the powerful GHG through its public database.
- 150 nations have signed up to the methane pledge to cut emissions of the super-harmful greenhouse gas by 30% by the end of the decade.
- USA will toughen a proposed crackdown on methane emissions from their oil and gas industry by requiring all leaks to be fixed, not just the biggest, and through new rules on flaring.
- The US Inflation Reduction Act will see more than $300 billion spent on boosting renewable energy and curbing emissions. It puts the US on a more credible path to meeting its 2030 emission targets.
- Agriculture escapes scrutiny at climate summits, considering its the second biggest emitting sector globally, just below heating and electricity generation. The US-UAE pledged $8b into R&D to reduce the impact from farming.
- Today 87 countries are drawing at least 5% of their electricity from wind and solar. The US hit 5% in 2011 and surged past 20% renewable electricity in 2021. If the US follows the trend set by others, wind and solar will account for 50% of US power-generating capacity in just 10 years from now.
- In 2022, ten percent of people still do not have electricity.
- China, US, and Europe, the three biggest polluters, and the other 70 countries, that account for more than 75% of global emissions, have set targets to cut their greenhouse gas pollution to zero.
- Transportation is responsible for 25% of the world's energy consumption.
- Turkey's carbon emissions will rise by 32% by the end of this decade, based on figures from its new climate plan.
- Brazil's president, Luiz Inácio Lula da Silva, got a reception unlike any other for a leader at COP27. And Lula did not disappoint in his 10-minute speech, delivered in Portuguese, he vowed to fight the illegal destruction of the world's greatest forest, the Amazon.
- France and Spain joined a pledge to stop sales of gasoline-driven vehicles by 2035, five years earlier than planned.
- Approved unanimously, the creation of a new fund for loss and damage to help developing nations face the devastation of climate change is a precedent-setting moment three decades in the making.
- The US and China started working together on climate again.
- In a year when demonstrations were very limited, young climate activists managed to maintain momentum. Their pavilion at the expo area was possibly the liveliest place of the meeting.
- Two Energy Transition Partnership funding deals were announced, shifting Vietnam and Indonesia away from coal power.
- A call to reform the global financial architecture so that it better aligns with climate goals by tweaking the mandates of the World Bank and the IMF, to ensure greater financing flows to energy-transition projects and efforts to adapt to a warming planet.

- COP27 failed to raise ambitions on reducing emissions and means the world will miss the under 1.5 degrees Celsius warming target enshrined in the 2015 Paris COP21 Agreement.
- As many as 80 countries now support the phase down of all fossil fuels that didn't make it to the final text, yet it wasn't even on the cards before the summit.
- Efforts to secure stronger commitments on cutting GHG emissions failed. And attempts to have nations agree to peak global emissions by 2025 or phase down all unabated fossil fuels also fell flat.
- Overall, However, this COP proves that multilateral negotiations are still relatively intact.
- Environmental groups were disappointed by a lack of progress on their calls for a ban on exhaust gas scrubbers.

Regulations:

Environmental groups have referred to the IMO's legal division their calls for a ban on scrubbers that conflict with the UN Law of the Sea. Their argument is very simple, scrubbers take pollution from the air and pass it into the sea, harming the marine environment, which goes against UNCLOS.

The IMO has declared the Mediterranean Sea will become a 0.1% Sulphur Emission Control Area from 2025.

An article in TradeWinds dated 18 Jan 23 stated: 'When an EU-funded project studying shipping emissions tested the impact of scrubber discharges on organisms that live in the ocean, they found harmful effects even if the tiniest amount of the pollutants were present. The EMERGE project is coordinated by the Finnish Meteorological Institute and involves scientists in nine universities and five research institutes. Its partners also include Greek container ship manager Danaos Shipping, technology company Creative Nano and the Baltic Marine Environment Protection Commission. Looking forward, Maria Granberg, a senior researcher at IVL Swedish Environmental Research Institute, thinks there should be a ban on discharges of scrubber water into the sea. I've been working as an ecotoxicologist for 25-30 years now, and it's very rare that we see such strong effects at such low concentrations of something, and it really calls for action.'

PSL maintains it is not justifiable to transfer pollution from the air to the sea, hence we only use low sulphur fuel oil on all our ships.

We have said this before, but it bears repeating; the IMO must place a ban on the delivery of any fossil fuel-burning new ship from a specific date, say 1 January 2030, or earlier. At the same time, older vessels must be recycled by 2030 at the latest. These hard deadlines would focus the collective minds of shipyards, engine makers, regulators, zero-emission fuel suppliers and their entire land/sea supply chain, and shipowners on the choice of fuel for the future ZEVs.

PSL plans to order brand new ZEVs starting in 2028. The reason for waiting is for clarity on the 'fuel of the future'. Besides, there is no reward, but all the risk, for being a first mover, and PSL is too small to take on this role. Right now, it appears the fuel of the future will be Ammonia, but Methanol is making a strong bid too, but has issues that remain unresolved like production of e-methanol, energy density, tank capacity needed, etcetera.

China and Covid-Zero:

The mainstream media could not stop criticizing China's covid-zero policy while it was in force. Now that China has abandoned this policy in December 2022, the same mainstream media cannot stop criticizing China for doing this 'abruptly and with no exit strategy' in place. In China's covid-zero case, it is damned if you do, and damned if you don't. The IEA forecast China's oil consumption could be between 15 to 15.8 MBPD in 2023. It all depends on the number of covid infections, hospital admissions, death rates, and if the latter two are low, oil consumption will be high and vice versa. China's oil consumption is expected to have dropped from 15.4 MBPD in 2021 to 15 MBPD in 2022. Jet fuel consumption in China is expected to be far below its 2019 levels while most countries are back at pre-pandemic levels in 2022. But if covid hospitalizations/death rates are low we could see a spike in China's oil consumption above 2019 levels in 2023.

Russia-Ukraine War:

- This war will severely test UK/EU's willingness to go along with America, if a severe winter sets in and people start dying due to the extreme cold, with heating costs being so high that they cannot afford to keep sufficiently warm to avoid the grim reaper's call. So far, the winter has been much warmer than usual, and hence the pressure on the EU has receded.
- According to Reuters calculations, Germany has spent $500b since the war, and sanctions imposed on Russia, on combatting the fallout from the rising cost of energy, and the nationalization of Uniper will add another $216b to that figure.
- For a different view of the world around us, this article by Ted Snider, who has a graduate degree in philosophy and writes on analyzing patterns in US foreign policy and history, is a good read.
- In the FH of 2022 US was the largest exporter of LNG and in Sep exported 4M cubic meters per day, a new record.
- War games replicating a Chinese invasion of Taiwan are the latest moves by the neocon hawks within the military-industrial-congressional-complex. Looks like the neocons are not happy with just one hot war, they are pushing scenarios for the next hot war in the South China Sea.
- Finally, a top can stand only when spinning very fast; a bicycle only when it is moving; a tripod can stand even if it is stationary; a table is even more stable. Clearly, a multipolar world headed by core countries, is the natural state of stable equilibrium for the world.

Container Shipping:

The dramatic collapse in the Container markets is due to a significant reduction in waiting times at ports. The SCFI was up WOW on 30 December, but down 78% YOY from the boom, however, 37% above the spot level prevailing in 2019. The order book at 28% (for ships over 17K TEU, it is at 61%). And that is scary, but with industry consolidation as high as it is, reduction of supply is something that can be managed as we have seen in 2020. At the start of 2020, the shipping pundits were reading the last rights for container shipping, but by managing supply the industry turned 2020 into the start of three consecutive years with multiple billion dollars of profits!

Inflation:

In an article by Professor James K Galbraith, in Project Syndicate, dated 18 Nov 22, on taming of inflation, he writes 'Debt rose in the second quarter and even more in the third. The price of Bitcoin increased until late March, after which it fell by about two-thirds, including by 20% in the space of five days earlier this month. Similarly, the US housing price index peaked in May and has been falling ever since. The yield curve is now inverted, meaning that short-term interest rates on Treasuries are higher than long-term ones, a strong sign of more trouble ahead.' You can read the entire article here.

Nobel Laureate, Professor Joseph Stiglitz, in this article explaining the cause of inflation, states 'Faithful consumers of America's elite media, TV news, the New York Times, the Washington Post, generally get the impression that everyone in the US is on the same team. While we may disagree on how to get there, we all share the same economic goals: a fast-growing economy with low unemployment and a thriving middle class, one whose members keep doing better than their parents. This is absolutely false. The people at America's commanding heights do not want this at all. And if you look at it from their perspective, that's easy to understand. Low unemployment means an unruly workforce with the leverage and confidence to unionize. Rising wages for employees means less money for employers.'

Inequality:

2022 showed that there is some justice or equalization on this planet, but not necessarily for all.

- Elon Musk lost more than $208b.
- Jeff Bezos lost $80b.
- Mark Zuckerberg lost $78b.
- Larry Page and Sergey Brin each lost $40b.
- Phil Knight lost $18.3b.
- Leonard Lauder lost $9.8b.
- Dan Gilbert lost $8.1b.
- Theranos founder, billionaire, and convicted fraudster, Elizabeth Holmes might land in a 'heavenly jail'.
- FTX's Sam Bankman-Fried faces 115 years in a 'non-heavenly' jail.
- Jack Ma lost $13.1b.
- Yang Huiyan lost $11.6b.
- Zhong Shanshan lost $11.3b.
- Collectively, the billionaires lost $1.4 trillion in 2022.
- Evergrande's chairman, once one of China's richest men, lost 93% of his $42b wealth.
- 10% of people in the UK will not manage heating bills without government aid in 2023.

- Hypocrisy, when dealing with white versus colored people, was called out when the Irish MP took the President of the EU to task in this video.
- This article by Thom Hartman is worth a read as it describes the exacerbation of inequality due to vested interests.

Shipping News:

In the 2000s bulkers enjoyed a "supercycle" (driven notably by Chinese demand for raw materials) over an extended period of >70 months from end 2001, which saw average earnings multiply by ~10. Similarly, the recent container boom, a year was spent around the peak of the cycle (2007-08). Previous trends also make clear that, following extraordinary conditions, sharp returns to normal levels are not unusual once supply tightness "loosens". The bulker and tanker examples show downswings just as sharp as the drop seen recently in containers. (Clarksons – 4 Nov 22)

LNG carrier spot rates surged rapidly through Sept and Oct. The spot rate assessment for a 174k cbm 2-stroke unit reached $480,000/day on 18 Nov, while the rate for a 160k cbm DFDE LNG carrier stood at $445,250/day, six times the long-run average of $75,000/day, almost double the previous record high set last winter. (Clarksons – 18 Nov 22)

Ship speeds go up and down with market conditions. Bulker and containership speeds increased across 2020 and 2021 as market conditions rebounded from the initial impacts of covid-19. Bulker speeds increased by >2% between start-20 and start-22 as markets saw significant gains, whilst boxship speeds rose by >3% between May-20 and May-22 in the extraordinary container markets. However, speeds slowed recently as the bulker market has softened and containers have seen a dramatic correction. In October, containership speeds were down by 3% on Oct-21, and bulker speeds down 4%. Recent upticks in speed have been modest. Despite record container markets and very strong bulker markets, current average speeds are ~2% below 2019 average pre-covid levels. Tracking speeds will be part of monitoring the impact of new regulations, with capacity supply and market impacts. (Clarksons – 25 Nov 22)

A huge wave has smashed into a Viking Ocean Cruises vessel off Argentina, killing one person and injuring four more on the Viking Polaris built 2022, on 30 November 2022. (TradeWinds – 2 Dec 22)

Car carriers are chalking up new records, supported by long-haul trends. Factors influencing the outlook are, from pent-up demand, shifting trade patterns, and EV uptake, to macroeconomic headwinds and fleet inefficiencies; 1 year TC rate for a c.6,500 ceu PCTC now stands at $105,000/day (double the Q2 '08 record), with fixtures now typically being concluded for multiple years and much of the charter fleet now 'fixed forwards'. (Clarksons – 9 Dec 22)

The IMO's 79th MEPC session this week designated the Mediterranean Sea as a 0.1% Sulphur Emission Control Area from 2025. Continuing pressure on dry bulk trade with our global seaborne dry bulk trade indicator (SIN TSID 546175) down 3.3% y-o-y in November amid a clear slowdown in minor bulk trade volumes where our indicator was down 15% y-o-y. (Clarksons – 16 Dec 22)

Environmental groups were disappointed by a lack of progress on their calls for a ban on exhaust gas scrubbers that conflict with the UN Law of the Sea, have been referred to the UN shipping regulator's legal division. (TradeWinds – 26 Dec 22)

The SCFI was marginally up WOW for the first time since July to 1,108 on 30 December but is down 78% YOY which was the peak level during the container boom. Having corrected sharply this fall (c5% weekly decline on average between September and November), the Shanghai spot index remains 37% above the 2019 levels. (DNB Markets – 3 Jan 23)

Deliveries of bulkers in 2023 will increase to 30.15 MDWT. In 2022, deliveries totaled 28.68 MDWT, -20% y-o-y from 35.91 MDWT in 2021. Demolition activity in 2023 will rebound to 5.12 MDWT. In 2022, recycling of 3.37 MDWT, was -48% y-o-y from 6.54 MDWT in 2021. Net fleet growth for 20-64,999 DWT will continue around +3% y-o-y in 2023, and then slow to about +2% in 2024. The fleet grew by +3% y-o-y in 2021. Contracting has slowed down throughout 2022. The orderbook-to-trading ratio is a modest 7.1% in DWT. Trade volumes in 2022, iron ore shipments declined by -2.3% y-o-y to 1,519.4 MMT. Exports from Australia increased by +1.5% but from Brazil, declined by -2.0% y-o-y. In 2022, global seaborne coal increased by +5.8% y-o-y to 1,204.8 MMT. Coal loadings from Australia -5.0% y-o-y, from Indonesia +21.1% y-o-y, from Russia +3.0% y-o-y, from USA +6.7% y-o-y. (Banchero Costa – 20 Jan 23)

Sales of excavators in China correlate closely with fluctuations in the BDI and rose steadily in the five consecutive months to November 2022, Arrow Shipbroking said in a research note on Thursday. Sales in November were up by 15.8% year-on-year. December data is expected to be published soon but may show a slight fall due to disruptions caused by China's rapid reopening, following widespread Covid lockdowns, Arrow noted. "Excavator sales have been one of the most reliable leading indicators of construction activity in the past and picked up all the turning points in the BDI since 2008," Burak Cetinok, head of research at Arrow Shipbroking. (TradeWinds – 20 Jan 23)

At the heart of reducing shipping's 2.3% (855 MMT) contribution to global CO2 will be an unprecedented fueling transition and we project increasing underlying fleet renewal requirements as the decade develops. The entry into force of IMO "short term measures" (EEXI, CII) is a hugely significant milestone in shipping's decarbonization pathway (as will the EU's ETS be in 2024) and is a market "wildcard". (Clarksons – 20 Jan 23)

In 2022, iron ore imports to China declined by 1.0% y-o-y to 1,077.7 MMT. Imports from Australia increased by 3.4% to 739.5 MMT, and from Brazil declined by 7.1% y-o-y to 223.4 MMT. (Banchero Costa – 22 Jan 23)

During 2022, BSI time charter averaged $22,078/day, -17.1% y-o-y, whilst BHSI time charter averaged $21,282/day, -16.9% y-o-y. During 2022, Handy and Supra deliveries totaled 8.68 MDWT, +6% y-o-y over 2021. Demolition will increase in 2023 to 1.09 MDWT. During 2022, demolition totaled 0.41 MDWT, -62% y-o-y over 2021. Net fleet growth for bulkers in the 20,000-64,999 DWT range is expected at +3% y-o-y in 2023, and +3% in 2024. The fleet grew by +3% y-o-y in 2022. Contracting has slowed in 2022 with orderbook-to-trading ratio at a modest 8.0% in DWT terms. (Banchero Costa – 26 Jan 23)

Chinese regional carrier SITCs profits nearly doubled last year on the back of the booming container market. The Hong Kong-listed feeder operator made a net profit of more than $1.9bn in 2022, according to preliminary and unaudited accounts. That is up from $1.17bn for the previous year. (TradeWinds – 1 Feb 23)

Economic News:

Uniper reported a record $39.3 billion net loss, among the biggest in German corporate history, reflecting expected future losses in the wake of Russia's move to stop its supplies. (Reuters – 4 Nov 22)

Europe is racing to fill the gap left by Russian gas, but emerging nations like Pakistan, Bangladesh and Thailand are the ones who will suffer as they compete with economies several times their size. (Bloomberg – 8 Nov 22)

Britain's GDP shrank by 0.2% in the third quarter, official data showed. (Reuters – 11 Nov 22)

At his peak, crypto mogul Sam Bankman-Fried was worth $26 billion. At the start of this week, he still had $16 billion. Now: a whole lot less. The collapse of FTX.com, the biggest bankruptcy of the year, provides another lesson in what happens when the hype of personality meets the cold wind of reality. (Bloomberg – 11 Nov 22)

The UK has tipped into recession, with its economy having shrunk by 0.2% in Q3. The Bank of England expects this to be a prolonged recession, perhaps into 2024. The European Commission said that the EU would also probably tip into recession during the current quarter, with growth returning in the spring. (Fortune - 11 Nov 22)

Big tech has big problems. After a bull run that lasted years, the sector is suffering a sharp correction. Alphabet, Amazon, Apple, and Microsoft have collectively lost $2trn in stock market value in the past year. On November 9th Meta, the parent of Facebook, Instagram, and WhatsApp, said it would shed 11,000 people, or 13% of its workforce; Twitter's new owner, Elon Musk, sacked half its personnel. According to Crunchbase, more than 60,000 American techies have been shown the door in 2022. Beset by bloating and egomania, big tech would benefit from active boards and investors. What do big tech and buy-out barons have in common with GE? Unaccountable bosses, declining returns on capital, and fed-up investors. (The Economist – 12 Nov 22)

China issued sweeping relaxation measures on property and Covid controls, in the strongest signal yet that President Xi Jinping is now turning his attention on rescuing the economy. Beijing unveiled an extensive 16-point rescue package for the struggling real estate market, just days after announcing 20 measures to guide officials as it eases its contentious Covid-Zero policy. (Bloomberg – 12 Nov 22)

Amazon is going to fire 10,000 people, the largest-ever mass termination by the e-commerce giant founded by Jeff Bezos. The company faces slower growth and fear of a downturn, like other tech companies that have cut thousands of people over the past few weeks. (Bloomberg – 14 Nov 22)

Over the past week we have been watching the collapse of the crypto universe with grim fascination. Only recently, Sam Bankman-Fried was in the stratosphere. FTX, his cryptocurrency exchange, then the third largest, was valued at $32bn; his own wealth was estimated at $16bn. Today there is nothing left but 1m furious creditors, dozens of shaky crypto firms, and a proliferation of regulatory and criminal probes. The exchange’s own terms of service said it would not lend customers’ assets to its trading arm. Yet of $14bn of such assets, it had reportedly lent $8bn-worth to Alameda Research, a trading firm also owned by Mr Bankman-Fried. It accepted as collateral its own digital tokens, which it had conjured out of thin air. A fatal run on the exchange exposed the gaping hole in its balance-sheet. To cap it all, after FTX declared bankruptcy in America, hundreds of millions of dollars flowed out of its accounts. (The Economist – 17 Nov 22)

Joe Biden and Xi Jinping met in-person for the first time as leaders on Monday (14 Nov 22) and signaled their desire to salvage fraying US-China ties ahead of this week’s G20 summit in Bali. It’s positive that talks took place at all, as relations between the two powers have hit a 10-year low due to tensions over Taiwan and US-imposed export controls targeting China’s semiconductor industry. (Financial Times – 17 Nov 22)

After two years in which the pandemic was the force shaping the immediate future, the main driver now is the war in Ukraine. The world will have to contend with the conflict’s impact on geopolitics and security; high inflation; chaos in energy markets; and China’s uncertain post-pandemic path. To complicate matters, all these are tightly coupled, like interlocking series of gear wheels. The pandemic marked the end of a period of relative stability. Unpredictability is the new normal, and there is no getting away from it. (The Economist – 19 Nov 22)

The world's poorest countries now owe $62 billion in annual debt service to official bilateral creditors, an increase of 35% over the past year, World Bank President David Malpass said, warning of defaults. (Bloomberg – 1 Dec 22)

According to research by the Social Market Foundation think-tank, and the Public First consultancy, there are 7.2 million people in Britain who face an energy bill crisis without help. (Reuters – 1 Dec 22)

Vladimir Putin is open to negotiations on Ukraine if the West recognizes Russia's "new territories", the Kremlin said, after Joe Biden said he was willing to talk (though not right now, the White House said). (Reuters – 2 Dec 22)

China has ordered its top four state-owned banks to issue offshore loans to help developers repay overseas debt, in Beijing's latest support measure for the cash-starved property sector. (Reuters – 2 Dec 22)

China's exports and imports shrank at their steepest pace in at least 2-1/2 years in November, as feeble global and domestic demand, covid-led production disruptions and a property slump piled pressure on the world's second-biggest economy. (Reuters – 7 Dec 22)

The pain has been intense. As of mid-October, a portfolio split 60/40 between American equities and Treasuries had fallen more than in any year since 1937. House prices are dropping everywhere from Vancouver to Sydney. Bitcoin has crashed. Gold did not glitter. Commodities alone had a good year, and that was in part because of war. (The Economist – 8 Dec 22)

The Fed’s monetary tightening campaign is having a major impact in deflating asset bubbles that swelled during the first years of the pandemic. The cryptocurrency market, once valued at $3 trillion, has shrunk by more than two-thirds; Investor-favored technology stocks have tumbled by more than 50%; Red-hot housing prices are falling for the first time in 10 years. And all of this is occurring without upending the financial system. (Bloomberg – 8 Dec 22)

Britain's jobless rate rose for a second month amid signs that inflationary heat in the labor market is cooling as the economy stumbles, and an increase in older people looking for work. The UK recorded the highest number of working days lost to labor disputes in October for more than ten years. (Bloomberg – 13 Dec 22)

US scientists are set to announce a breakthrough on fusion energy, potentially a step toward one day harnessing the process that fires the sun to generate carbon-free electricity. (Bloomberg – 13 Dec 22)

Former FTX CEO Sam Bankman-Fried faces extradition after he was arrested in the Bahamas last night. Prosecutors from the Southern District of New York are this morning due to unseal money-laundering and fraud charges against him in connection with his stewardship of the now-collapsed FTX empire. Bahaman authorities said the US had formally notified them that an extradition request was on its way. (Fortune – 13 Dec 22)

The US got the strongest sign that inflation may have finally peaked. Excluding food and energy, the consumer price index rose only 0.2% in November, the smallest monthly increase since August 2021. This inflation gauge is a key one for economists and a favorite of Fed Chair Jerome Powell. It is a promising sign that the central bank’s strategy is working. (Bloomberg – 13 Dec 22)

The US Fed is not close to ending its anti-inflation campaign of interest-rate increases Powell said, after raising rates by 50 basis points to a 4.25% to 4.5% target range. Policymakers projected rates would end next year at 5.1%, before being cut to 4.1% in 2024. Powell said the size of the next rate increase, on Feb. 1, would depend on incoming data, leaving the door open to another half-percentage point move. (Bloomberg - 14 Dec 22)

The labor market, despite thousands of firings by tech firms, banks, and others in recent weeks, remained resilient as employers largely held onto workers. Retail sales fell in November by the most in nearly a year, a broad-based decline reflecting the strain of inflation and a shift toward spending on services. Several factory gauges also showed contraction, burdened by higher borrowing costs and weaker demand. (Bloomberg – 15 Dec 22)

After setting aside almost half a trillion dollars tackling its energy crisis, Germany is poised to take on risks of 216 billion euros ($229 billion) of derivatives built up by energy giant Uniper. Germany is nationalizing Uniper in the biggest corporate bailout in the country's history, after Russia's move to choke off gas threw Europe's biggest economy into chaos. (Reuters – 19 Dec 22)

Together, the 500 richest people on the planet (as listed in the Bloomberg Billionaires Index), managed to lose $1.4 trillion. (Bloomberg – 29 Dec 22)

IMF chief Kristalina Georgieva warned one third of the world would be in recession in 2023. (Bloomberg – 3 Jan 23)

Tesla stock dropped 65% in 2022, but the company’s market value of $389 billion, still makes it more valuable than Toyota, General Motors, Stellantis, and Ford, combined. (Bloomberg – 3 Jan 23)

Wall Street and its brethren clearly remain dedicated to funding the companies most responsible for global warming. Since the Paris climate agreement was announced in 2015, banks have raised almost $4.6t for oil, gas, and coal companies, double the $2.3t for green loans/bond sales. (Bloomberg – 4 Jan 23)

Fed Reserve last month affirmed their resolve to bring down inflation and, in an unusually blunt warning to investors, cautioned against underestimating their will to keep interest rates high for some time. (Bloomberg – 4 Jan 23)

For nearly three years China has been closed: hardly anyone has entered or left it. From January 8th it will reopen its borders, thus scrapping the last remnant of Xi Jinping’s zero-covid policy. Because the government has failed to prepare properly by vaccinating the elderly, the coming months will see widespread infection and death within China. But eventually something resembling normality will return. The revival of commercial, intellectual, and cultural contact with China should be welcomed. But its post-covid economic recovery will be hugely disruptive for the global economy, pushing up the price of oil, gas, and other commodities, stoking inflation and forcing central banks to keep monetary policy tighter for longer. (The Economist – 5 Jan 23)

Campbell Harvey, the economist who pioneered the link between inversions and slowdowns, reckons this time maybe we will not get a US contraction despite the deepest inversion since 2001 between 10-year and three-month yields. Part of his reasoning is that his model was linked to inflation-adjusted yields, and market expectations for a rapid slowdown in CPI growth boost the odds of avoiding recession. (Bloomberg – 5 Jan 23)

According to a recent report from the World Bank, China contributed an average of 38.6% to global economic growth from 2013 to 2021, more than the G7 countries combined. (China.org – 6 Jan 23)

India's thermal coal import, used for power generation, grew 14.7% to 161.18 MMT in 2022. (Reuters – 9 Jan 23)

A Chinese invasion of Taiwan would quickly collapse but exact high costs on the island democracy and the US Navy, according to the results of an extensive set of war games by Center for Strategic and International Studies, a Washington think tank. (Bloomberg – 9 Jan 23)

Andy Rothman, an investment strategist at the Matthews Asia fund, says that a huge pool of Chinese household savings could fuel a spree of spending once the exit from Covid lockdowns is achieved. He notes that family bank balances are up 42%, or $4.8tn, since the start of 2020, an amount larger than the UK's GDP. (FT – 10 Jan 23)

"The outlook for the world economy is actually improving," the president and founder of Yardeni Research said. US equities "made a low on Oct 12. That was the end of the bear market, and we are back in a bull market." Since closing at 3,577.03 that day, the S&P 500 has risen almost 10%. (Bloomberg – 11 Jan 23)

During the car-buying frenzy of the early pandemic, the global auto industry enjoyed tremendous pricing power. In 2023, the market is set to skid off the road. Morgan Stanley warns that "we may be witnessing the sharpest pivot from undersupply to oversupply of light vehicles in a generation." (Bloomberg – 11 Jan 23)

The World Bank sharply reduced its forecast of world economic growth this year, to 1.7%, which would be the third-weakest pace in nearly three decades, behind the global recessions of 2009 and 2020. (The Economist – 12 Jan 23)

The World Economic Forum's annual meeting began in Davos with corporate executives and economists warning a global recession is likely this year. (Bloomberg – 16 Jan 23)

Surging energy prices found funds from Saudi Arabia to Qatar and Abu Dhabi managing more than $3.5 trillion, an amount that exceeds the UK's GDP. (Bloomberg – 18 Jan 23)

China could see a sharp recovery in economic growth from Q2 onwards based on current infection trends after the dismantling of most covid restrictions, IMF Deputy Managing Director Gita Gopinath said. (Reuters - 19 Jan 23)

8 BMT of coal is expected to be consumed by the world each year in 2023 and 2024, a new record as the energy crunch fuels demand. (Bloomberg – 19 Jan 23)

Air travel in China has already bounced back to January 2019 levels, but departures from the country are almost 90% lower compared with pre-pandemic levels. (Bloomberg – 22 Jan 23)

Overseas shipments of cars made in China crossed 2.5 million last year, triple what they were in 2020, and just 60,000 units behind Germany. As a result, China is poised to become the world's No. 2 exporter of passenger vehicles. (Bloomberg – 27 Jan 23)

The $160 billion memory-chip industry is suffering one of its worst routs ever. There is a glut of chips sitting in warehouses, customers are cutting orders as they cope with inflation and rising interest rates, and product prices have plunged. The unprecedented crisis is wiping out cash at industry leaders, destabilizing suppliers and denting Asian economies that rely on tech exports. (Bloomberg – 29 Jan 23)

The IMF raised its growth outlook for the first time in a year, saying it sees a "turning point" for the global economy. The risk of a global recession remains, as well as one in the US, but it's diminishing, the IMF said, thanks in part to resilient American spending and China's reopening. (Bloomberg – 31 Jan 23)

Climate News:

On day two at COP27 speaking on behalf of the Alliance of Small Island States, Antigua's PM Gaston Browne told delegates in Egypt: "The oil and gas industry continues to earn almost USD 3 billion in daily profits. It is about time that these companies are made to pay a global carbon tax on their profits as a source of funding for loss and damage." A report commissioned by Egypt and Britain shows that developing countries need to work with investors, rich countries, and development banks to secure $1.0t a year in external financing for climate action by the end of the decade and to match that with their own funds. (Reuters – 8 Nov 22)

The Third Pole is a region defined by 6,000 cubic kilometers of glacial ice, the largest volume outside the North and South Poles. It is a reservoir that unites Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, and Nepal, as well as 10 of Asia's greatest rivers, from the Indus to the Yangtze. The area is also known as Asia's Water Tower, and it supplies freshwater to over 20% of the global population. With the world on track to surpass 1.5C of warming over pre-industrial levels, some two-thirds of the Third Pole ice will melt away by the end of the century. (Bloomberg – 8 Nov 22)

At COP27 UN experts published a list of projects worth $120 billion that investors could back to help poorer countries cut emissions and adapt to the impacts of global warming. However, a new report by UN experts said that promises by companies, banks, and cities to achieve net-zero emissions often amount to little more than greenwashing. (Reuters – 9 Nov 22)

Floods in West Africa have destroyed the harvest for this season, while nearly 1 million hectares of farmland across the region remain under water, with soil nutrients being washed away, setting the scene for an even worse crop production next season. (Reuters – 9 Nov 22)

Global CO2 emissions from burning fossil fuels are on track to rise around 1% this year, scientists said, warning this would make it harder for the world to avoid disastrous levels of climate change. (Reuters – 11 Nov 22)

In America's dusty Corn Belt this spring, the land was drowning. In China's Yangtze River basin, it's bone dry. Farmers in both are fighting a losing battle to save the soil that produces our food. A prolonged drought in Iraq, which has only worsened in recent years, was crippling livelihoods. Farmers in neighboring Syria and Turkey are also struggling with lower rainfall. (Reuters – 14 Nov 22)

The EU supports India to phase down fossil fuel use as part of a COP27 deal, Frans Timmermans the bloc's climate policy chief said, provided it does not weaken previous agreements on reducing the use of coal. His comments come even as the EU ramps up its quest for coal and natural gas in the near term to counter an energy supply crunch triggered by high demand and supply disruptions since Russia's invasion of Ukraine. (Reuters – 16 Nov 22)

The COP27 climate conference in Egypt may be remembered as the moment when the world gave up on limiting global warming to 1.5 degrees Celsius, the most ambitious goal set by the 2015 Paris Agreement. On the last scheduled day of the climate talks in Sharm el-Sheikh, the heads of the national delegations were still discussing if the final documents should include a reference to that temperature target, which scientists call a limit that, if breached, would push some Earth systems past dangerous and irreversible tipping points. (Inside Climate News – 19 Nov 22)

Western New York state got slammed with 6 feet of snow, that more than doubled the city of Buffalo’s previous one-day snowfall record. (Reuters – 21 Nov 22)

India's coal-fired power output is surging, faster than any other Asia-Pacific country since Russia invaded Ukraine in February, and underscores just how difficult it will be to transition away from the world’s dirtiest fossil fuel. The IEA puts India’s coal consumption at 1,053 MMT in 2021, an all-time high, and India is the only major country in Asia besides Japan where coal-fired power in overall electricity production increased in the six months since March. (Reuters – 21 Nov 22)

Trade is a major cause of global warming. Think of all those goods traveling from far away on ships emitting CO2, and raw materials and components whizzing across the world in complex supply chains. So, the right trade policies can do a lot to save the planet. (Reuters – 22 Nov 22)

The 16 industries considered to have ‘very high’ environmental risks have $4.3t of rated debt (equal to Germany’s GDP), up from $2t in November 2015. That equals about 5.1% of total debt outstanding, up from 3% in 2015. Whether this upward trend continues “largely depends upon the direction of environmental regulations, policy and corporate actions,” said SS Ram, lead author of the report. (Bloomberg – 30 Nov 22)

$260 billion is the estimated total economic losses from natural catastrophes such as floods, hurricanes, and wildfires in 2022. (Bloomberg – 1 Dec 22)

The IEA expects 460 terawatt-hours of new wind and solar power generation in 2022, about as much power as France consumed from all sources in 2019. In 2023, the clean energy research firm BNEF expects about 650 terawatt-hours of new wind and solar, more power than all that Brazil consumed in 2019. Since 1950, US power generation has expanded more than 12 times, from 300 terawatt-hours a year to more than 4,000. Its key resources, however, have taken very different paths. Coal has peaked and fallen; nuclear rose and plateaued; petroleum has nearly vanished. Today, gas and renewables are both growing. (Bloomberg – 22 Dec 22)

Climate-driven weather disasters across a dozen African countries are threatening the physical and mental development of an entire generation, and their plight is expected to get even worse next year. The worst drought in at least four decades across the Horn of Africa in the east and floods and water shortages in West Africa's Sahel region have left 76 million people food insecure. Parts of Somalia are on the verge of famine. (Bloomberg – 23 Dec 22)

74% is the share of natural disasters that were water related between 2001 and 2018, according to UN-Water. Climate change is distorting rain patterns across the planet, leading to drought and floods, while rising temperatures are causing glaciers to melt, according to the first ever comprehensive review of water resources by the World Meteorological Organization (WMO). (Bloomberg – 29 Nov 22)

Thirteen new pathogens have been found under ancient permafrost in Siberia, and the so-called "zombie viruses" remained infectious despite being trapped for millennia. Researchers say the discovery is the latest threat to humans posed by the climate crisis. (Bloomberg – 2 Dec 22)

The IEA's annual report shows that global renewable power capacity is expected to grow by 2,400 gigawatts (GW), equal to the entire power capacity of China today, to 5,640 GW by 2027. (Reuters – 5 Dec 22)

Researchers have long warned of the negative impact's climate change will have on the world's staple crops. A recent spike in hunger and famine reveals the instability of a global food system that is ill prepared for shocks from war, pandemics, severe storms, or drought. In the Horn of Africa nearly 26 million people are facing extreme hunger and some areas are already reaching catastrophic famine levels, according to the UN. (Inside Climate News – 11 Dec 22)

About 1 million Somalis have abandoned their homes in search of food amid their country's worst drought in over four decades. (Bloomberg – 12 Dec 22)

A leak from a 4.1 cm vent on a natural gas storage well operated by Equitrans Midstream Corp was discovered on Nov 6 and lasted for 13 days, allowing more than 1 billion cubic feet to escape. Methane, the primary component of natural gas, has a devastating impact on the climate if released directly into the atmosphere, where it has more than 80 times the warming power of carbon dioxide in its first two decades. (Bloomberg – 13 Dec 22)

The IMF approved $319 million for Rwanda under a new arrangement aimed at helping countries deal with risks such as climate change. (Bloomberg – 13 Dec 22)

COP15, the UN Biodiversity Conference in Montreal, delivered a surprise win in the form of a pledge by 195 nations to protect and restore at least 30% of the Earth's land and water by 2030. (Bloomberg – 17 Dec 22)

A first-draft estimate issued by the WMO in November predicted the year would rank as the fifth or sixth hottest on record, 1.15C above the 1850-1900 average. That would make the last eight years the hottest since global measurements began, according to the WMO's count. (Bloomberg – 3 Jan 23)

The first few days of 2023 produced record-high winter temperatures across parts of Europe, bringing calls for faster action against climate change. Britain experienced its hottest year on record in 2022, the national weather service confirmed, saying human-induced climate change had made what would normally be a once-in-500-year event likely to happen every three or four years. Germany's CO_2 emissions held steady in 2022, jeopardizing its climate targets as higher use of oil and coal offset lower energy consumption and record renewables output. India approved a $2.11b plan to promote green hydrogen to cut emissions and become a major exporter in the field. (Reuters – 5 Jan 23)

California's extreme swings from dry weather to drenching, highlight what's known as "hydroclimate whiplash," another effect of global warming. (Bloomberg – 6 Jan 23)

In the first half of 2022, the US became the world's top exporter of LNG. Then, in September, crude oil exports hit an all-time high when the country sent abroad about 4 million BPD. (Inside Climate News – 7 Jan 23)

Sea-level rise is already faster than it's been in at least 3,000 years and water temperatures are warmer than they have been in the last 11,000. Speed at which ice sheets melt could yet affect the rate of sea-level rise, and by extension the fate of coastlines and islands, in unexpected ways. (Bloomberg – 9 Jan 23)

The insurance industry is struggling to adapt to a new normal in which climate change-fueled losses are now regularly exceeding $100 billion a year. Insured losses from natural disasters hit about $120 billion in 2022, most of which was weather related, according to data compiled by Munich Re. (Bloomberg – 9 Jan 23)

A kilowatt-hour of lithium-ion battery storage declined in cost by 80% from 2013 to 2021. That trend reversed last year. As commodity price increases and inflation hit the battery sector, prices rose for the first time in at least 12 years, by 7%. They are expected to remain elevated this year and not drop until 2024. (Bloomberg – 12 Jan 23)

New research shows that oil giant Exxon's own climate projections, dating back decades, consistently predicted how burning fossil fuels would cause global warming.

The finding lends understanding that Exxon executives knew climate change was real, but publicly cast doubt on the science anyway. (Inside Climate News – 14 Jan 23)

The World Bank is set to wield huge influence over how the energy transition is financed, dwarfing the promised efforts of Wall Street giants like JPMorgan or BlackRock to help eliminate emissions. In fact, without the World Bank and other multilateral development banks (MDBs), the dollars in the balance sheets of financial firms may never be reallocated to climate-positive investments at the magnitude required to slow catastrophic global warming. While asset managers, banks, and insurers with more than $140 trillion of assets have promised to zero out their financed emissions by 2050, just a fraction of that money has been used to address the climate crisis. As Larry Fink, BlackRock's CEO, has argued, the World Bank and IMF would be most useful in the transition to clean energy if they acted like insurers that reduce risk for private investors. (Bloomberg – 17 Jan 23)

The coldest and highest parts of the Greenland ice sheet, nearly two miles above sea level in many locations, are warming rapidly and showing changes that are unprecedented in a millennium, scientists reported. "We find the 2001-2011 decade the warmest of the last 1,000 years," said Maria Hörhold, the study's lead author and a scientist at the Alfred Wegener Institute in Bremerhaven, Germany. Compared with the 20th century, the enormous north-central region of Greenland, is now 1.5 degrees Celsius warmer, and that the rate of melting and water loss, which raises sea levels, has increased in tandem with these changes. (Washington Post – 18 Jan 23)

China recorded its coldest day ever in a city in the north as it continues to fight infections. (Bloomberg – 23 Jan 23)

2022 was the first year when investment in energy transition equaled global investment in fossil fuels at $1.1t. (Bloomberg – 26 Jan 23)

Covid-19 News:

China eased some of its strict Covid rules, including shortening quarantines by two days for close contacts of infected people and for inbound travelers, and removing a penalty for airlines for bringing in too many cases. (Reuters - 11 Nov 22)

China is reporting a near-record number of Covid-19 cases, spurring major cities from Beijing to Shanghai to revert to broad restrictions and mass testing. Amid its extended "Covid-zero" policy, the Chinese government signaled more monetary stimulus is possible. But dissent is becoming more readily apparent as workers at Apple's main iPhone-making plant in China clashed with security personnel. Protests also broke out in China's far western Xinjiang region, with crowds shouting at guards after a fire there killed 10 people and triggered anger over their prolonged Covid-19 lockdown. Authorities said the building's residents were able to go downstairs, but videos of emergency crews' efforts led many internet users to surmise that residents could not escape in time because the building was partially locked down. Many of Urumqi's 4 million residents have been barred from leaving their homes for as long as 100 days. (Reuters – 26 Nov 22)

China said it would bolster vaccinations of senior citizens; a move regarded by health experts as crucial to reopening an economy that's been stuck in a loop of "Covid zero" curbs. (Bloomberg – 29 Nov 22)

China's abrupt reversal on "Covid zero" may trigger a tidal wave of infections in which the country suddenly catches up to the rest of the world in a very bad way. Little time has been spent putting in place the mitigation measures needed to deal with the resulting explosion in cases, which could total 5.6 million a day. The deaths that may result could top 2 million. (Bloomberg – 9 Dec 22)

Chinese officials continued to downplay the risks of Covid-19 as restrictions are eased, with a top medical adviser saying the fatality rate from the omicron variant of the virus is around 0.1%, like that of the common flu. (Bloomberg – 11 Dec 22)

Covid is rapidly spreading through Chinese households and offices after the country's pandemic rules were unexpectedly unwound last week, sparking confusion on the ground as ill-prepared hospitals struggle to deal with a surge in cases. Meanwhile, Chinese officials continued to downplay the risks of Covid-19 as restrictions are eased, with a top medical adviser saying the fatality rate from the omicron variant of the virus is in line with influenza. (Bloomberg – 12 Dec 22)

A growing number of China's doctors and nurses are catching covid, and some have been asked to keep working, as people showing mostly moderate symptoms throng hospitals and clinics. China raced to vaccinate its most vulnerable people in anticipation of waves of Covid infections, with some analysts expecting the death toll to soar after it eased strict controls that had kept the pandemic at bay for three years. (Reuters – 14 Dec 22)

The tsunami of Covid-19 that's taking hold across China is spurring concern that a dangerous new variant could emerge for the first time in more than a year. Medical experts and political leaders in the US and elsewhere fear another round of disease caused by the mutating virus could be unleashed. Daniel Lucey, a fellow at the Infectious Diseases Society of America, said: "It could be more contagious, more deadly, or evade drugs, vaccines and detection from existing diagnostics." Meanwhile, the country's virus surge is now hitting Shanghai, and people are turning to the black market for Covid drugs. (Bloomberg - 22 Dec 22)

International Maritime Organization (IMO) conventions:

International Maritime Organization (IMO) conventions are constantly updated to match demands for enhanced steps to protect the environment. The increasing standards made by the IMO have triggered research and development of 'green technology for the shipping industry. 'IMO 2020' as the regulation on the global cap on sulphur levels is referred to colloquially, entered into force on 1 January 2020. The regulation mandated that sulphur levels in fuel oils consumed by ships outside emission control areas not to exceed 0.5% by mass (referred to as Very Low Sulphur Fuel Oil or VLSFO). While there were concerns initially in the industry regarding the worldwide availability of VLSFO, the oil industry stood up to the challenge and ensured that the product was made available all over the world. Initial concerns regarding the quality of

VLSFO being supplied at several ports and suitability for use on ship's equipment that were designed primarily for use with fuels with higher sulphur levels which contributed towards lubricity as well as optimum viscosity have largely been addressed and there have been no major incidents in our fleet on account of the quality or availability of VLSFO.

Ships need to take ballast - basically sea water - in dedicated ballast tanks on board, so that the ship remains stable when there is no cargo on board and so that the ship's propeller is kept well submerged in the water. Administrations of most countries in the world insist on stringent ballast water management practices on board ships so that potentially invasive aquatic life forms from one part of the world do not get deposited in their waters, thereby affecting the local eco-system. Hence the need for regulations that require ships to treat the ballast water taken in the ballast tanks by means of approved Ballast Water Treatment Systems (BWTS) which need to be installed on board. The IMO Ballast Water Management Convention entered into force on 8 September 2017, 12 months after ratification by 30 States, representing 35% of world merchant shipping tonnage. All vessels are required to carry a Ballast Water Management certificate. New vessels built (date of keel laying) after the above date are required to be fitted with IMO approved ballast treatment plants and existing vessels are required to retrofit such plants in a phased manner along with surveys associated with the first renewal of IOPP (International Oil Pollution Prevention) certificate after 8 September 2019. There is also a separate schedule provided by the USCG for the installation of BWTS defined mainly by the number of USCG approved BWTS that were available in the market. USCG as well as IMO approved BWTS have already been fitted on 37 vessels in PSL's fleet. The 1 remaining vessel is currently required to exchange the ballast water taken at ports with ballast taken at over 200 nautical miles from any coast so that she may be permitted to discharge the ballast water at the next port. This last remaining ship will be fitted with an approved BWTS in early 2023.

Decarbonization in shipping: Overview of the regulatory framework:

In 2015, the Paris Agreement on climate change was agreed by parties to the United Nations Framework Convention on Climate Change (UNFCCC). It entered into force on 4 November 2016. Its goal is to keep global temperature rise below 2°C above pre-industrial levels, and preferably limited to 1.5°C.

Even though the Paris Agreement does not include international shipping, the International Maritime Organization (IMO) committed to contribute its efforts to address climate change features prominently in its strategic plan. Consequently, in April 2018, IMO adopted an initial strategy on the reduction of greenhouse gas (GHG) from ships, i.e. emissions including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), expressed in CO_2e (carbon dioxide equivalent).

The IMO's initial strategy envisages:

1. a reduction of the average carbon intensity (carbon dioxide (CO_2) emissions per transport work) of international shipping by at least 40% by 2030, pursuing efforts towards 70% by 2050, as compared to 2008 levels; and,

2. to reduce total annual GHG emissions from shipping by at least 50% by 2050 compared to 2008, while pursuing efforts towards phasing them out entirely within this century.

2008 is the baseline year against which future reduction targets are assessed, while 2050 represents an important milestone in the Paris Agreement, which the IMO explicitly references in its strategy. These ambitions are to be accomplished by a blend of measures applicable in the short, medium, and long-term.

Measures have been recently adopted by the IMO as amendments to the MARPOL Annex VI, requiring ships to take a technical and operational approach to reduce their carbon intensity. The mid- and long-term measures are likely to require a high degree of innovation and to result in the global uptake of new fuels and new technologies.

Shipping emissions:

The focus of maritime sector was drawn to air emissions in 1997, when air pollution was included in MARPOL as Annex VI. For the first time, limits were set on main air pollutants contained in ships exhaust gas, including sulphur oxides (SOx) and nitrous oxides (NOx), and prohibiting deliberate emissions of ozone-depleting substances.

This annex has since undergone several amendments to reflect the increased focus on reducing ship emissions, for example, on 1 January 2020 a 0.5% sulphur content limit in the fuel oil used on board ships came into force, marking a significant milestone to improve air quality.

Even though shipping is one of the most energy efficient modes of mass transport, it was estimated to have contributed about 2.2% to the global emissions of CO2 in 2012. As sea transport continues to grow in tandem with world trade, it is imperative to have a global approach to further improve the energy efficiency and effective emission control of the maritime sector.

According to the fourth IMO greenhouse gas study, which was published in 2020, the GHG emissions of total shipping (international, domestic and fishing) have increased from 977 million tonnes in 2012 to 1,076 million tonnes in 2018, a 9.6% increase. Over the period from 2012 to 2018, the carbon intensity of shipping operations improved by about 11%, but these efficiency gains were outstripped by growth in activity. If changes are not made, shipping emissions are projected to increase by up to 50% until 2050 relative to 2018 despite further efficiency gains, as transport demand is expected to continue to grow.

The seventy-fifth session of the IMO's Marine Environment Protection Committee (MEPC-75), held in November 2020, approved the findings of this study and measures to reduce GHG emissions from international shipping were deliberated. Consequently, in June 2021, MEPC-76 adopted amendments to MARPOL Annex VI to reflect the technical and operational goal-based measures to reduce the carbon intensity of international shipping.

IMO Regulations, The International Context:

The IMO has been actively engaged in a global approach to enhance ship's energy efficiency and develop measures to reduce GHG emissions from ships.

The first major step to reduce these emissions was announced in 2011, when the IMO adopted mandatory measures to increase energy efficiency of international shipping. This paved the way for the regulations on Energy Efficiency Design Index (EEDI) for new ships, and Ship Energy Efficiency and Management Plan (SEEMP) – a ship-specific document that provides a mechanism to help improve the energy efficiency of a ship in a cost-effective manner. These mandatory measures (EEDI/SEEMP) entered into force on 1 January 2013, while targets to improve design efficiency (EEDI) of new build ships commenced in 2015.

For new ships, the EEDI requires that energy efficiency is improved in phases such that CO2 emissions are progressively reduced:

1. During phase one, running from 1 January 2015 to 31 December 2019, the EEDI requires a 10% reduction of carbon intensity below the relevant reference line for newly built ships.
2. In phase two, running from 1 January 2020 to 31 December 2024, the EEDI requires up to 20% reduction of carbon intensity.
3. Phase three of the EEDI, due to commence in 2025, requires an additional 10% reduction, i.e., ships being built in 2025 will be required to be 30% more carbon efficient than those built in between 2000 to 2010.

However, during the MEPC-75, it was decided to move forward the effective date of phase 3, from 1 January 2025 to 1 April 2022, for containerships, large gas carriers (15,000 DWT and above), general cargo ships, LNG carriers and cruise passenger ships having non-conventional propulsion. A carbon intensity reduction requirement will apply to containerships, starting with 15-30% reduction rate for small container vessels and increasing up to 50% for large containerships (200,000 DWT and above). There are also considerations to introduce fourth phase of EEDI in 2027.

In addition to the above, since 2019, under the IMO Data Collection System (IMO-DCS), ships of 5,000 GT and above must collect and report data on fuel consumption under SEEMP Part II. These ships account for close to 85% of CO2 emissions from international shipping. The data collected will provide a firm basis on which future decisions on additional measures will be made.

The European Union (EU) has also implemented similar regulations on monitoring, reporting, and verifying fuel consumption (EU-MRV) for ships of 5,000 GT and above calling at European ports. While IMO-DCS is an anonymous public database, the EU-MRV is a distinctive public database.

More recently, during the MEPC-76 meeting in June 2021, amendments relating to technical and operational measures to cut the carbon intensity of international shipping were adopted. These amendments will enter into force on 1 November 2022, and include the following:

1. calculation and verification of Energy Efficiency Existing Ship Index (EEXI) – retroactive EEDI requirements applied to existing ships from 1 January 2023;
2. introduction of a rating mechanism (A to E) linked to the operational Carbon Intensity Indicator (CII), taking effect from 1 January 2023; and
3. enhanced Ship Energy Efficiency Management Plan (SEEMP) to include targets for operational emissions, where an approved SEEMP needs to be kept onboard from 1 January 2023.

Technical Measures: Energy Efficiency Existing Ship Index (EEXI):

Like the EEDI, the aim of the EEXI is to measure ship's energy efficiency based on its design and arrangements. This regulation is applicable to all existing ships of 400 GT and above falling under MARPOL Annex VI. The revised MARPOL Annex VI include new regulation 23 (attained EEXI) and 25 (required EEXI).

Ships to which the regulation applies will be required to calculate EEXI value of each individual ship (i.e., attained EEXI) and the value shall be equal to or less than the allowable maximum value (i.e., required EEXI). As such, it is required to develop an EEXI Technical File, which includes the data used for calculation and will be used as a basis for verification of compliance.

Essentially, the EEXI describes the carbon emissions per cargo ton and mile. It determines the standardized CO2 emissions related to installed engine power, fuel oil consumption and a conversion factor between fuel and the corresponding CO2 mass. The transport work is determined by capacity, which is usually the deadweight of a ship and the ship speed related to the installed power. The calculation does not consider the maximum engine power, but for most ship types it is 75% of the rated installed power (MCR), or in case where overridable power limitation is installed it is 83% of the limited installed power (MCR_{lim}). Specific fuel oil consumption of the main engine and ship speed are regarded for this specific power. There are different correction factors that apply, depending on the ship type and capacity.

For ships where the calculated (or attained) EEXI is greater than the required, there will be a need to implement countermeasures to improve its efficiency index. Being a technical or 'design' efficiency index, this may include alterations to the ship's design or machinery, such that:

- the numerator of the EEXI formula will decrease (normally action may be taken on power of main and/or auxiliary engines),
- the denominator of the EEXI formula will increase (normally action may be taken on capacity or ship's speed).

Some of the available options are:

- introduction of an engine power limitation or shaft power limitation
- increasing ship capacity (by increasing the deadweight (DWT) or gross tonnage (GT), if structurally possible)
- propulsion optimization devices, e.g., high efficiency propellers, propeller boss cap fins, Mewis duct, low friction paints, air lubrication systems, etc.

- energy efficiency technologies (EETs), such as., waste heat recovery, wind assisted propulsion, solar cells, etc.
- switching to carbon-neutral fuel, but this might not be viable for most existing ships due to very high capital expenditure (CAPEX).

The regulations are not prescriptive on which improvement method should be deployed and the right solution may vary based on ship type and size. It is vital to consider the ship's age against the cost and payback time of improvement option.

The EEXI Technical File will need to be approved by the ship's Flag State or Class and the compliance with the EEXI regime will be reflected in the International Energy Efficiency Certificate (IEEC) at the first annual, intermediate or renewal survey of the International Air Pollution Prevention (IAPP) certificate on or after 1 January 2023 for ships delivered before 1 January 2023, or at the initial survey of IEEC for ships delivered on or after 1 January 2023.

- In the PSL Fleet, 10 bulk carriers and one general cargo vessel already comply with the EEXI regulations (i.e., attained EEXI < required EEXI) and no reduction in MCR power will be required.

- For the 4 cement carriers, EEXI regulation does not apply to cement carriers. Consequently, there will be no changes to the engine power or ship speed.

- As for the rest of the 23 vessels in the fleet the engine power will have to be limited by installing EPL on or before the first IAPP (International Air Pollution Prevention) Annual survey after 1st Jan 2023. We are pleased to inform that all these 23 vessels' have already been installed with an EPL device well ahead of the deadline.

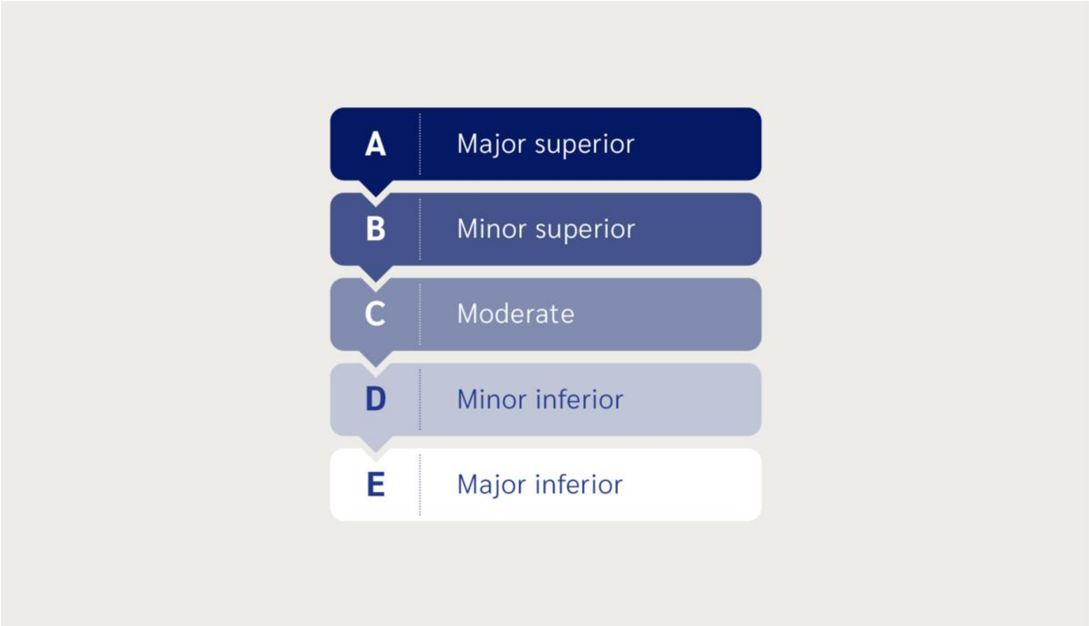
Operational Measures: Carbon Intensity Indicator (CII) and enhanced Ship Energy Efficiency Management Plan (SEEMP):

The CII is an operational measure applicable to ships of 5,000 GT and above, which aligns with the requirements for recording a ship's fuel consumption in accordance with the IMO Data Collection System (IMO-DCS).

As per the revised MARPOL Annex VI regulation 28, from 2023 applicable vessels will need to:

1. calculate attained annual operational CII over a 12-month period from 1 January to 31 December in that calendar year, and
2. demonstrate reductions of carbon intensity from 2023 to 2030. The reduction rates are intended to achieve the levels of ambitions set out in the IMO's initial strategy, in particular, the 2030 level of ambition of reducing carbon intensity of international shipping by at least 40% by 2030, compared to 2008.

Ships will be given an annual carbon intensity rating (CII rating) indicating their performance over the previous year. There are five CII rating categories given on a scale from A to E, where A is the best, based on a calculation of Annual Efficiency Ratio (AER).



The attained annual operational carbon intensity indicator will be based on IMO-DCS. Emissions data must be submitted through the IMO-DCS in addition to the existing fuel consumption requirement. Emissions reporting must, as a minimum, include the AER (for bulk carriers, tankers, container ships, general cargo, LNG carriers, gas carriers, combination carriers and reefers).

As required by the MARPOL Annex VI regulation 26, an enhanced version of the SEEMP (SEEMP-III) will need to be developed. This would include:

1. the ship's CII rating together with the description of the methodology used to calculate the ship's attained annual operational CII,
2. the required annual operational CII for the next three years,
3. an implementation plan documenting how the required annual operational CII will be achieved during the next three years, and
4. a process for reporting to Flag State for verification.

For the PSL Fleet, the enhanced SEEMP-III as required has already been developed, certified by the vessel's Class and placed on board.

From 1 January 2024, ships will be issued with a Statement of Compliance (SoC), covering verified fuel consumption, attained carbon intensity reduction and an annual rating (A to E) based on carbon intensity reduction performance against the required carbon intensity reduction. Ships rated 'D' for three consecutive years or at rating 'E' for one year, will have to submit and implement a corrective action plan showing how they can improve the vessel's efficiency to 'C' or above. The corrective action plan is to be included in the SEEMP.

Periodic SEEMP verification audits will be introduced to ensure plans are in place to achieve the targets and ensure correction plans are being followed where a ship is rated E in any given year, or D in three consecutive years. The frequency and specific requirements of these audits is expected to be discussed at MEPC-77 in November 2021, with guidance developed in 2022.

In addition to the above, the MEPC-76 approved a phased approach of 2% carbon intensity reduction as compared to the 2019 reference line from 2023 (when the MARPOL amendments would enter into force) through to 2026 (when another review to further strengthen the annual reduction rate is due to take place):

Year	Annual reduction factor (from 2019 reference)
2023	5%
2024	7%
2025	9%
2026	11%
2027-2030	Still to be decided

If regular improvements are not made, a ship's CII rating could drop as the targets will become increasingly strict every year. A consequence of this could be a loss of earnings and inability to trade, so there is a strong incentive to improve energy efficiency.

The IMO has standardized the method for calculating the Carbon Intensity Index (CII) for ships. In line with the prescribed method for calculating the CII and after the figures for total fuel consumed and distances sailed by each vessel were verified by the Recognized Organization (NKK for PSL's fleet), we have calculated the CII for the past three years for all the vessels in PSL's fleet. The average CII figures for each type of vessel in PSL's fleet are as indicated in the table below.

VESSEL TYPES	2020			2021			2022		
	No. of Vessels	CO2 emitted (MT)	Average CII (grams/ tonne-mile)	No. of Vessels	CO2 emitted (MT)	Average CII (grams/ tonne-mile)	No. of Vessels	CO2 emitted (MT)	Average CII (grams/ tonne-mile)
CEMENT CARRIERS	4	38764.85	12.95	4	42216.46	13.75	4	44476.70	13.60
HANDY-SIZE	15	185053.74	7.72	15	198769.11	7.89	17	195721.21	7.52
SUPRAMAX ES	9	137970.40	6.11	9	149800.48	6.42	9	144056.00	5.98
ULTRAMAX ES	8	118974.06	4.53	8	131048.50	4.55	8	107570.11	4.43
TOTAL	**36**	**480763.05**	**7.19**	**36**	**521834.64**	**7.42**	**38**	**491824.02**	**7.14**

As can be noted from the table, the average CII for PSL's fleet of vessels in the year 2022 was 7.14 grams of CO2 emitted per tonne-mile.

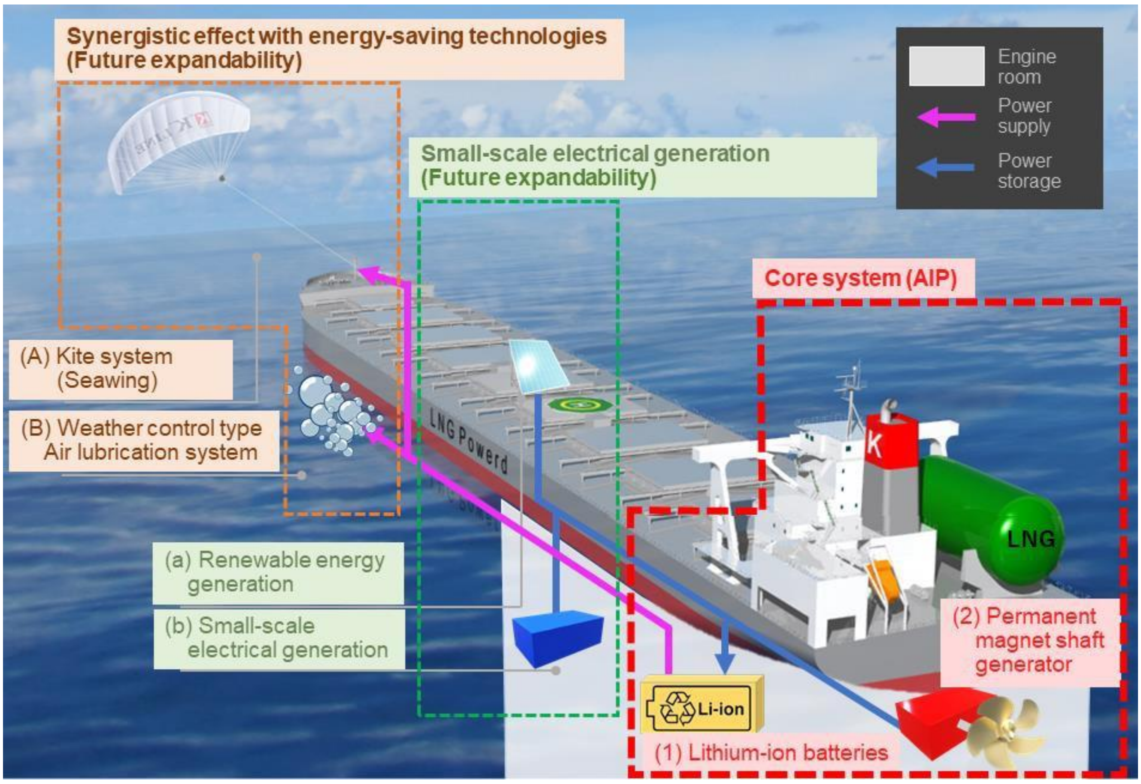
Other industry developments and new technologies:

The International Chamber of (ICS) has put forward a proposal to the IMO, calling for internationally Shipping accepted market-based measures to accelerate the uptake and deployment of zero-carbon fuels. A levy would be based on mandatory contributions by ships of 5,000GT and above trading globally for each tonne of CO2 emitted. Funds raised from the levy would go into an 'IMO Climate Fund' to accelerate the development of new fuels and infrastructure.

The new carbon levy proposal comes on top of an existing proposal by the industry to the IMO for a USD 2 per tonne bunker fuel levy to create a USD 5 billion research fund for shipping decarbonization. However, this remains under discussion.

The maritime finance and chartering sectors have also recognised their role in making shipping greener by creating the Poseidon Principles and Sea Cargo Charter – a framework for financial institutions and shipping interests (including charterers and cargo owners), to ensure that their interests are aligned with the targets set out in the IMO's greenhouse gas strategy.

Japanese shipping company Kawasaki Kisen Kaisha (K Line) developed two conceptual designs for LNG-fueled and battery-powered energy-saving bulk carriers and obtained approvals in principle (AIP) from the compatriot classification society ClassNK.



A future next-generation bulk carrier, Courtesy of K Line:

K Line developed a conceptual design for 200,000 tonnes class capesize bulk carrier in collaboration with Namura Shipbuilding and Taiyo Electric. The second design was jointly created by K Line, Shin Kurushima Sanoyas Shipbuilding, and Taiyo Electric for 90,000 tonnes class post-Panamax bulk carrier.

By selecting LNG as the primary fuel, an energy-saving vessel has been designed that helps reduce GHG emissions. The design was further enhanced by adopting permanent magnet (PM) shaft generator technology, along with lithium-ion batteries.

Moreover, by using batteries as part of the platform for power supply onboard, the aim is to further reduce emissions going forward by later adding green energy sources with energy-saving technology.

Using LNG as fuel allows for the reduction of GHG emissions by 25 to 30 per cent compared to the use of conventional heavy fuel oil. Besides this, AIP technical features and their benefits also include the adoption of shaft generator technology and battery technology adoption.

In addition to the equipment for greenhouse gas emissions reduction under the recent AIPs, the goal is to further reduce emissions going forward by installing various optional technologies.
In the new post-Panamax carrier design, emissions will be reduced by using large-capacity batteries instead of a dual-fuel generator during cargo loading and unloading.

In the new capesize carrier design, the battery capacity will be greater due to the amount of power required during cargo handling. Here emissions during cargo handling will also be reduced by enabling vessel connection to shore power.

Interest continues to grow in the potential of different forms of sails to provide wind propulsion assistance for large commercial vessels. In the latest development, the Singapore-based shipping subsidiary of Japanese trading house Marubeni announced plans to test a suction sail concept aboard one of its large bulkers. According to the companies, it will be the largest suction sail ever built and installed on a vessel and the first application of this form of the technology on a Panamax bulker.

Leading Flettner rotor manufacturer Norsepower has installed five tilting rotor sails on the deck of a brand new very large ore carrier (VLOC), the *Sea Zhoushan,* which will be owned by Pan Ocean Ship Management and chartered to Brazilian mining giant Vale. It marks the first installation of Norsepower's rotor sails on a bulker, one of the largest Flettner rotor installations ever implemented, and one of the first wind-assisted propulsion systems of any kind aboard a vessel of this gigantic size class.

The Norsepower system is fully automated, and it detects whenever the wind is strong enough to deliver fuel and emission savings. At that point, the rotor sails start automatically. The five-rotor project could reduce the 325,000 dwt ship's fuel costs and emissions by about eight percent, according to Norsepower - cutting the ship's annual CO_2 emissions by about 3,400 tons.

PSL's Training Department

Maritime Resource Management (MRM):

MRM is a training program for ship's officers, engineers, pilots, and shore-based personnel. The aim is to increase knowledge about human capabilities and limitations and to reinforce positive attitudes towards safety and teamwork. MRM is generally accepted to be one of the most efficient means of improving crew cooperation and minimizing the risk of accidents caused by human errors as well as failures in effective teamwork and resource management. The MRM course is authorized and licensed by

The Swedish Club, a member of the International Group of P&I Clubs, and one of the few insurers providing Hull as well as P&I insurance covers. Apart from the MRM courses, the PSL Training Center has classrooms, Video-Based Training (VBT) and Computer based training (CBT) for the ship staff. Courses include MRM, Bridge Team Management (BTM), Bridge Team Competency (BTC), Officer Of the Watch (OOW), Chief Mate Course (CMC), Command Course (Command), Shipboard Safety Course (SSC), Maritime Professional Briefing (MPB), Maritime English training (divided into 5 course levels) programs for safety and efficient ship operations of deck and engine departments. The Training Center also conducts lectures on VTS (Vessel Traffic Separation) & SMCP (Standard Marine Communication Phrases) within the BTM and MRM courses, with the aim of developing our officers' communication skills in communicating with a VTS officer using standard maritime phrases in various simulations. The courses are upgraded regularly and provide a solid foundation to the Company's training activities and enable our Officers and Engineers to keep abreast of the latest developments in ship operations.

To meet the needs of trained engineers to serve on vessels fitted with new generation Main Engines from MAN Diesel & Turbo and Wartsila, the PSL Training Center liaises very closely with the Technical Department and the engine manufacturers to continuously upgrade the training courses which were first introduced even before the vessels were delivered. Other training courses which the engineers go through before joining the ships are "Engine Room Management and Competency Enhancement" - "EMC" for Senior Engineers, "Engineer on Watch" - "EOW" for Junior Engineers, courses on "stern tube sealing systems" and "ships' cargo gears with special focus on hydraulics", and "Shipboard Safety." The PSL Training Center also augments classroom theoretical courses with practical training, wherever possible. Because the new vessels acquired are fitted with more fuel-efficient modern engines using advanced electronic controls and technology, the Company's senior engineers, Electrical Officers and shore-based Technical Superintendents are put through the engine-maker's specific training courses designed to better understand the operation and for effective troubleshooting. Junior engineers are in turn trained at the Company's Training Center and by trickle-down methods on board ships. New courses are also being introduced to prepare the ships' staff for the challenges expected in the coming years on account of the low Sulphur cap, carbon dioxide emissions and ballast water treatment regulations. To equip the officers with knowledge of new developments, the company has taken the step of organizing specialized courses conducted by experienced and proficient guest teachers.

The use of "Electronic Chart Display and Information System" (ECDIS) has become mandatory for new ships built from July 2013. All the vessels in the fleet are equipped with ECDIS with the onboard software updated to the latest version. Officers are required to complete specialized ECDIS l generic training as part of their competency certificates.

PSL is committed to ensure that navigating officers are fully conversant with ECDIS equipment prior joining the vessel. Officers are given generic ECDIS training at approved institutes. Realizing the fact that certification alone does not make an officer fully familiar and confident to use ECDIS, PSL Training Centre has equipped itself and developed ECDIS training/familiarization courses. After attending the approved ECDIS generic training course, officers are required to undergo further ECDIS familiarization course at our in-house facility.

The training department also keeps abreast of imparting awareness to Officers on the risks due to increased incidents of the liquefaction of cargoes, such as iron ore fines, coal, manganese ore fines, and nickel ore. More than a hundred seafarers have lost their lives over the past eight years on vessels which have capsized due to the liquefaction of such cargoes. The latest cargo entry in the list of solid bulk cargoes susceptible to liquefaction that can cause catastrophic results is “bauxite”. When subjected to sufficient dynamic loading, very wet fine-grained bauxites go through a process of slumping and dynamic separation, with the upward expulsion of water/slurry. This may result in free surface effect of liquid sloshing about which could significantly affect the vessel’s stability, leading to the risk of the ship capsizing. In response, the IMO’s Sub-Committee on Carriage of Cargoes and Containers issued new guidance on the carriage of bauxite, requesting adequate safety precautions to be taken when carrying this cargo.

During the year 2022 with the Covid-19 pandemic still spreading, we continued to train our officers online. A total of 1,021 sea going officers and crew members attended a total of 22 courses that were conducted during the year, which is a testament to the company’s commitment towards training our crew members and the high premium that we place on the same.

We provide below a summary of the courses conducted during the year and the number of crew members who were trained.

- Number of courses conducted at the Training facility in 2022: 4 Courses.

1) Bridge Team Competency I
2) Bridge Team Competency II
3) Bridge Team Management
4) ECDIS – Electronic Chart Display & Information System

- Number of courses conducted On-Line in 2022: 18 Courses

1) Maritime Resource Management	10) ME Advance
2) Maritime Professional Briefing	11) Basic English
3) Chief Mate Course	12) Elementary Maritime English
4) Command course	13) Intermediate English
5) EOW	14) Upper Intermediate English
6) OOW	15) Shipboard Safety for Rating

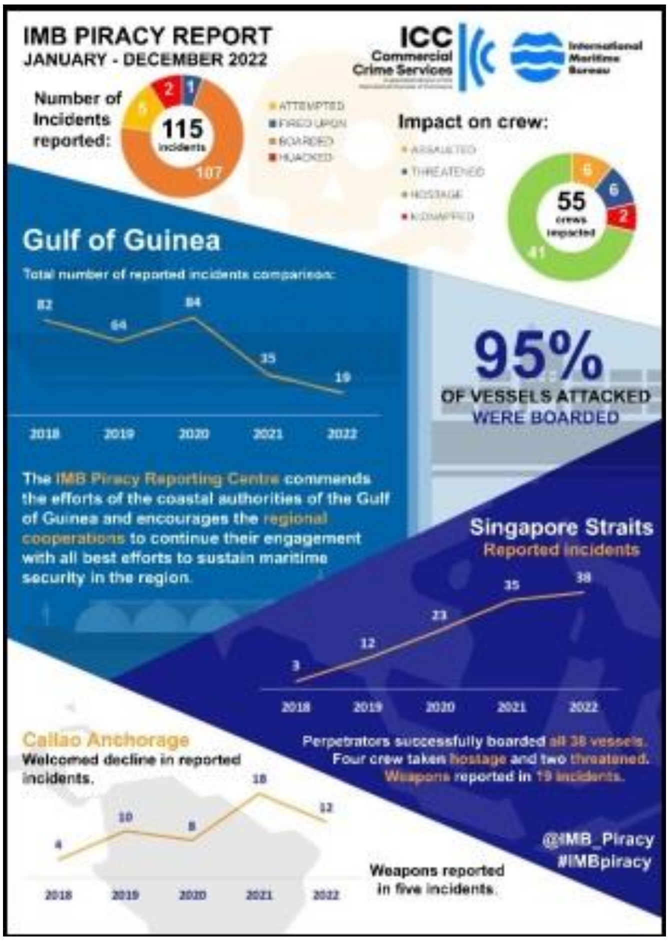
7) RT-Flex Basic	16) Maritime cyber-security awareness
8) RT-Flex Advance	17) ME-B
9) ME Basic	18) Vessel inspection

- Number of seafarers trained in 2022: 1,021 (Online)
- Total Man-days for training in 2022: 3,790 man-hours
- Additional course on Maritime Cyber Security Awareness for Seafarers was conducted online for the whole year in 2022, with total number of 249 seafarers trained on the topic of Maritime Cyber Security Awareness (Officers and Engineers: 209, Ratings: 40)
- Additional course on vessel inspections was launched and conducted online during 2022.
- Additional course on EEXI and CII commenced Jan 2022 and was conducted once a month throughout the year 2022, with a total of 131 seafarers trained on this topic (senior Officers and Engineers).
- During 2022 PSL acquired two secondhand ships installed with ME-B engine which was new to our fleet. Hence, a specialized training course on ME-B engine was launched and a total number of 29 marine engineers were trained on this new type of engine in our fleet.

The Scourge of Piracy:

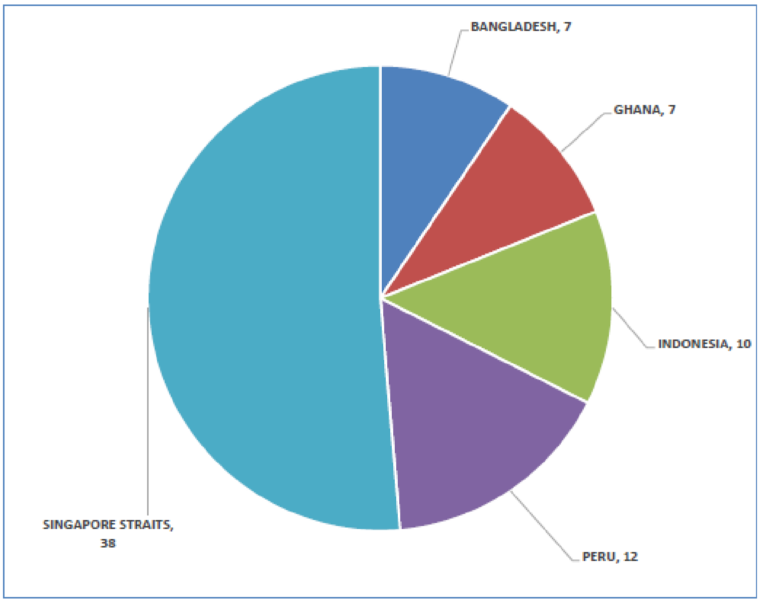
The Scourge of Piracy continues to be a serious concern to all the stake holders in the shipping industry, especially ship owners, the crewmembers on board, and their families. To help visualize, imagine being marooned on a small island from where there is no possibility of running away or escaping, no protection available from any kind of law enforcement agencies, absolutely nothing to defend oneself with and being attacked by a group of thugs, trained, and armed with military grade firearms!

The International Chamber of Commerce's International Maritime Bureau (IMB)'s annual piracy report for 2022, revealed that the maritime piracy and armed robbery attacks reached the lowest recorded level since 1994. In 2022, the IMB Piracy Reporting Centre received 115 incidents of piracy and armed robbery against ships as against 132 incidents reported in 2021. Incidents comprise 107 vessels boarded, 5 attempted attacks, one vessel fired upon, and two vessels hijacked. The chart below reveals the number of incidents region-wise. The overall reduction in reported incidents in 2022 is attributed to a decline of activity reported within the Gulf of Guinea region which has seen a decrease from 35 reported incidents in 2021 to 19 in 2022.



The following five locations contributed to 64% of the total of 115 incidents reported during the year.

CHART A: The following five locations contributed to 64% of the total 115 incidents reported in the period January – December 2022



Country-wise piracy incidents were reported as indicated in the table below: -

ICC- IMB Piracy and Armed Robbery Against Ships Report – January - December 2022

TABLE 1: Locations of ACTUAL and ATTEMPTED incidents, January – December 2018 – 2022

	Location	**2018**	**2019**	**2020**	**2021**	**2022**
S E ASIA	Indonesia	36	25	26	9	10
	Malacca Straits				1	
	Malaysia	11	11	4	2	4
	Philippines	10	5	8	9	6
	Singapore Straits	3	12	23	35	38
	Thailand			1		
EAST ASIA	China	3	3			
	Vietnam	4	2	4	1	2
INDIAN SUB	Bangladesh	12		4		7
CONTINENT	India	6	4	6	2	3
SOUTH AMERICA	Brazil	4	2	7	3	5
	Colombia	1	3	1	6	
	Dominican Republic		1			
	Ecuador	4	3	5	4	
	Guyana	2				2
	Haiti	3	2	5	4	1
	Mexico		1	4	1	1
	Panama		1			
	Peru	4	10	8	18	12
	Venezuela	11	6			3
AFRICA	Algeria		1			
	Angola			6	4	5
	Benin	5	3	11	2	
	Cameroon	7	6		1	
	Dem. Republic of Congo	1	1		1	1
	Dem. Rep. of Sao Tome & Principe		1	2	5	
	Egypt					1
	Equatorial Guinea		2	3	2	2
	Gabon		1	2	4	
	Ghana	10	3	9	5	7
	Guinea	3	2	5	3	
	Gulf of Aden*	1			1	
	Ivory Coast	1	1	3		2
	Kenya		1			
	Liberia		2	2	1	1
	Morocco		2			
	Mozambique	2	3	4	1	
	Nigeria	48	35	35	6	
	Sierra Leone		1			1
	Somalia*	2				
	South Africa					1
	The Congo	6	3	3	1	
	Togo	1	3	3		
REST WORLD OF WORLD	Iraq			1		
	Total at year end	**201**	**162**	**195**	**132**	**115**

All incidents with * above are attributed to Somali pirates.

All our vessels trading in the region observe all the BMP guidelines to deter piracy along with armed escort vessels arranged by the company as necessary and where possible.

PSL has taken an active role in reporting to the IFC (Information Fusion Centre), a center for monitoring the movement of all vessels in Southeast Asian waters. The IFC is based in the Singapore Naval Base and relays information to all regional Marine Coastguard units and has been effective in tackling piracy in the region.

Joint Venture:

International Seaports (Haldia) Pvt Ltd: This is now our only investment in Ports in the Haldia Dock Complex (about 22.4% of the total capital) under our port projects investments. This JV continues to operate very well, and we have to-date received total dividends of USD 5.99 million, which works out to about 294% of our original Investment made in years 2002-2003.

In Conclusion

Demand:

The environment for 2023 is going to be characterized by extreme volatility, as it was for 2021/2022, for the same reason that demand/supply came into perfect balance during 2021. Downside risks for 2023 will include, amongst others, geopolitical tension hot spots like Ukraine/Taiwan; China importing lower quantities of Coal and Iron Ore; real estate, steel production, cement/aluminum manufacturing slowing down and negatively impacting GDP rates in China; QE tapering in USA; interest rate hikes in USA and other major economies not slowing down or reversing; higher oil prices negatively impacting world economic growth rates; and protectionism increasing. But it is not all doom and gloom. The upside potential for 2023 consists of, amongst others, fiscal and monetary stimulus by some governments; China lowering interest rates, lowering reserve ratio requirements of their banks, lowering mortgage rates, and steel intensive stimulus of between $2.5t to $5.5t; China importing more high-grade iron ore as they combat pollution and increase steel production; China importing more coal to reduce pollution; slower ordering of new ships due to challenging regulations covering fuels of the future, lack of traditional finance sources for ‘new fuel burning ships that would become stranded assets’; the US economy may outperform expectations and grow more strongly than forecasted; and weaker currencies in the Euro zone and Japan helping them to export their economies out of trouble. Most importantly, with geopolitical tensions around Ukraine, China rescinding its unofficial ban on coal imports from Australia, and the Chinese government adding as much stimulus as needed to keep their economy chugging along at a brisk pace, should all assist the demand side of the equation at a time when the supply side shows no signs of growing at anything but the slowest pace on record this century.

Supply:

Under the current conditions, approximately 8.07% (77.97 MDWT) of the existing world fleet would be over 20 years of age between 2023-2025 if no ships are recycled till the end of 2025. These ships would come under tremendous financial pressure due to the upcoming regulatory requirements. Depending on how challenging the freight markets turn out to be and the increasing regulatory pressure on older ships in the period 2023 to 2025 many of these ships would be forced to take the decision to head to the recycling yards in Asia.

With respect to the 7.16% of new ships (69.14 MDWT) scheduled to be delivered to the end of 2025, the lack of funding for fuel burning ships coupled with slippage in deliveries at shipyards would help slow down their arrivals into the freight market.

Financing:

The year 2022 started off with a strong global economic outlook, however, the positive sentiment was disrupted by the outbreak of the Russia-Ukraine war, the deteriorating Chinese property sector and high inflation. High inflation in major economies drove Central banks led by the US Fed to sharply increase interest rates throughout the year. This crimped economic activity in much of the western world as corporate loans became much more expensive, eating into demand.

Strong performance in most shipping segments enabled shipowners to generate exceptionally strong cash flows. Shareholders and banks were the primary beneficiaries, as companies paid dividends, repurchased shares, and repaid loans. This reduced the demand for Shipping Finance to levels not seen in over a decade. Furthermore, the high prices of both second-hand and new ships, combined with uncertainty surrounding climate regulations and the choice of future fuels, deterred spending on new vessels obviating the need for financing.

As most European banks exited the shipping finance sector over the past decade, it was Chinese leasing companies that filled the vacuum, ballooning their ship finance portfolios and topping many of the finance league tables. That trend came to a halt in 2022 as the heads of several Chinese leasing companies were thrown into jail after facing corruption charges. The absence of Chinese leasing companies is not being felt by the larger ship owners as their strong balance sheets are enabling them to attract the capital necessary to pursue their objectives. That said, raising bank finance continues to be challenging for smaller private ship owners, many of whom are only able to borrow money in the high single digits or low double digits.

Against the backdrop of COP 27 which took place in November 2022, sustainability and climate change continued to be a focus for the global maritime finance community. Banks that are signatories to the Poseidon Principles reaffirmed their commitment to measuring their portfolios against a net-zero goal in 2050 that is aligned with aims to cap global warming at just 1.5C. Further, in 2022, they have decided to track all forms of greenhouse gas, rather than just CO_2, and will look at their portfolios on a well-to-wake basis, meaning emissions up and down the marine fuel value chain will be factored in.

ESG (Environmental, Social, and Governance) and sustainability are becoming increasingly important in the financial industry, with many investors placing a priority on transactions that have a sustainability component. This trend is also evident in the shipping industry, where a significant percentage of ships ordered in 2022 are dual fuel, allowing them to reduce emissions when alternative fuels become available in the future.

In 2022, we prepaid USD 24m of loans from BNP Paribas and signed a USD 17m loan with Bangkok Bank, releasing the mortgages of two of our modern Ultramaxes in the process. A further six vessels were released after we fully repaid a facility from Krungthai Bank.

According to Clarksons, the Shipping Industry (excluding offshore) as a whole, raised USD 16.2 Billion from capital markets in 2022 compared to USD 31.7 Billion in 2021. USD 13.3 Billion came in from Bonds and USD 1.7 Billion from Public Equity. USD 1.2 Billion of public equity was raised through primary offerings (IPOs), up from the USD 768 Million figure raised through IPOs in 2022. Boosted by European demand for Natural Gas, the LNG floating regasification terminal Company Excelerate Energy had the largest Shipping IPO in 2022 raising USD 384 Million through a listing on the NYSE while the second largest IPO was that of the Chinese coastal Shipping Company Xingtong Shipping, which raised USD 169.7 Million on the Shanghai Stock Exchange. Shipping industry bond issuances were dominated by the cruise sector, while issuances by dry-bulk companies comprised less than 1% of the total.

Concluding Remark:

Considering all the above, we are taking advantage of the opportunities that are present in the market. We hope to deliver to all our stakeholders the promise of this potential. This will in no small measure be due to the very dedicated and hardworking professionals that make up the office, as well as the floating staff at PSL.