

# BOARD OF DIRECTORS' REPORT



**Chaipatr Srivisarvacha**

Chairman of the Board of Directors

## TO THE SHAREHOLDERS:

The directors are pleased to present the 32<sup>nd</sup> Annual Report of the Company along with the Audited Financial Statements as on 31 December 2020.

### Freight Markets and the Baltic Dry Index (BDI):

- Please watch this beautiful video by BIMCO & ITN (<https://www.bimco.org/ShipsMakeTheWorldGo>) on the role of ships and the 1.7 million seafarers who serve on them.
- The dry bulk market will have the same macro issues of supply/demand balance dominating its narrative. Please see the next section for a comprehensive explanation.
- 2020 was a year of two halves. In the FH we had the mother of all black swans, Covid-19, descend on the unsuspecting dry bulk markets resulting in demand destruction and a global economic recession as bad as the 1929 great depression. The pundits proclaimed that the dry bulk market was condemned to perdition. But just as the pundits were murmuring our last rights, China and its USD 667 billion stimulus plan announced in May, brought the dry bulk market and demand roaring back into life!
- The BDI averaged 685 in FH, and 1,444 in SH (+110%) having started the year at 976 points and ended on 24 December 2020 at 1,366 points (+40%).
- To emphasize the above, in the FH Capes averaged USD 7,186 and, in the SH, averaged USD 18,913 (+163%!) Capes started the year at USD 11,976 on 2 January, dropped to a low of USD 1,992 on 14 May, rose to a high of USD 34,896 on 6 October and ended the year at USD 16,633 on 24 December while net supply grew by 3.73% during 2020!
- 19.9% of Chinese iron ore imports came from Brazil up by 7.4% and 62.5% from Australia up by 5.9% in 2020.
- Brazilian iron ore exports were down 1.2% while Australian exports were up by 3.4%. As longer ton-mile was replaced with shorter ton-mile, it negatively affected the Cape sector in the FH.
- Scrubbers fitted onto 3,000+ ships have 'wasted' minimum USD 6 billion or more that could have been much better spent on real problems like decarbonization.
- Net supply growth of 3.84% exceeded ton-mile demand growth, estimated by Clarksons (Research) at -2.19% and by Clarksons Platou (Analysts) at +0.5%, during 2020.
- India's rice exports rose by 45.9% from a year ago to 14.4 MMT in 2020.



**Mr. Khalid Moinuddin Hashim**

Managing Director

- China's hog population is surging after eradication of African Swine Fever requiring larger imports of Soybeans and corn.
- American consumers have paid down debt dramatically during Covid-19 as compared to the GFC so could be on a spending spree once vaccines become freely available. Consumer spending accounts for 70% of USA GDP!
- Federal Reserve officials are predicting that 2021 would be 'impressive!'
- The port of LA reported a 27.3% increase in imports in October 2020 compared to October 2019, being the highest-ever in its 114-year history!
- China's imports and exports rose 13.2% and 9.9% in September 2020 compared to September 2019.
- China's shipments to the USA increased by 46% in November 2020 compared with November 2019.
- USA has shipped 27.3 MMT Soybeans in 2020 to China.
- USA had shipped 1.9 MMT of wheat in 2020 to China.
- China imported 8.5 MMT of wheat up 58% in 2020 compared to 2019.
- China imported 11.3 MMT of corn up 49% in 2020 compared to 2019.
- China imported 1,170 MMT of iron ore up 9.3% in 2020 compared to 2019.
- China imported 304.1 MMT of coal up 1.5% in 2020 compared to 2019.
- China imported 100.3 MMT of Soybean up 13.3% in 2020 compared to 2019.
- China produced 1,053 MMT of Steel up 5.7% in 2020 compared to 2019.
- China exported 53.7 MMT of Steel down 16.5% in 2020 compared to 2019.
- China imported 20.23 MMT of Steel up 64% in 2020 compared to 2019.
- China's PMI index was 51.9 during 2020 due to stimulus measures from the Chinese government.
- China's GDP growth was 2.3%, the only major economy to have grown in 2020. The Chinese government have certainly stimulated economic activity and increased demand for dry bulk commodities. The IMF expects 8.1% GDP growth for China for 2021.
- The EU has agreed to a USD 2.2 trillion Covid-19 stimulus package!

- Government and Central Banks pumped more than USD 17.9 trillion of monetary/fiscal stimulus which should translate into strong ton-mile demand growth in 2021/2022.
- La Nina has been pronounced and may lead to supply chain disruption in FH 2021.
- UK GDP fell a staggering 11.4% in 2020.
- Japan's GDP contracted by 5.4% in 2020.
- India's GDP shrank by 12.2% in 2020.
- Singapore's GDP shrank by 6.7% in 2020.
- In Jan 2021, IMF calculated world GDP shrank by 3.5% in 2020. IMF revised 2021 world GDP growth to +5.5% and +4.2% for 2022. The latest Jan 2021 IMF forecast for 2021 GDP growth rates was Australia +3.5%, Canada +3.6%, China +8.1%, France +5.5%, Germany +3.5%, India +11.5%, Indonesia +4.8%, Italy +3.0%, Japan +3.1%, Netherlands +3.0%, Saudi Arabia +2.6%, South Korea +3.1%, Spain +5.9%, Thailand +2.7%, United Kingdom +4.5% and United States +5.1%. There were no changes to forecast for 2021 GDP growth rates for Denmark +3.5%, Greece +4.1%, New Zealand +4.4%, Norway +3.6%, Sweden +3.5%, Switzerland +3.6%, Taiwan +3.2% and United Arab Emirates +1.3% from the last reported outlook in October 2020.
- Covid-19 continues to pose a threat to individual countries as well as to the world economy. If this threat dissipates by the FH of 2021, which appears a distinct possibility thanks to more than three vaccines crossing the finish line before the end of 2020, then shipping would be back to normal by the SH of 2021.
- Capital markets remained frozen in 2020. We hope for the reopening of debt/equity capital markets during 2021, especially now that we have vaccines up and running.
- The Regional Comprehensive Economic Partnership (RCEP), a free trade pact signed in November by 15 major economies (combined GDP of USD 26 trillion), including China, Japan, South Korea, Australia, New Zealand and 10 Southeast Asian countries will spur regional trade and reduce anti-globalization risks.
- President-elect, Joe Biden, has pledged to spend \$2 trillion on roads, bridges, and electric-car charging points.
- Brexit is finally done. Another uncertainty holding back markets has been removed!
- The EU-China pact was signed in November allowing access to EU investments into China.
- The current orderbook to fleet ratio (end 2020) is at 6.07% (for the geared sector 4.39% and for the gearless sector 6.99%) or the lowest quarterly reading for over 20 years!
- Almost 4 times as much DWT was delivered (48.66 MDWT) in 2020 than was ordered (13.87 MDWT). This has happened twice in the last decade in 2012 and 2016. On both occasions the BDI increased in the subsequent year by 31% in 2013 and 70% in 2017.
- Recycling has gone from 8.23 MDWT in 2019 to 15.1 MDWT (+83.5%) in 2020 despite the Covid-19 lockdown disrupting one quarter of recycling.
- Covid-19 induced congestion delays, deviations for crew changes adding to ton-miles, and delays due to 14-day quarantine of ships have all tightened supply of ships.
- Owners continue to reduce the speed of their ships further tightening supply.
- PSL's exposure to the smaller geared segments means that it will be exposed to lower growth in net supply of 0.84% in 2021.
- Net supply growth in 2020 of 3.84% has exceeded ton-mile demand growth of -2.19% to +0.5% (differing estimates from Clarksons Research and Clarksons Platou Analysts). The reverse is expected for 2021

and 2022 with expectations that ton-mile demand will handsomely exceed net supply growth in each of these two years.

- Ships 20 years or older, comprising about 56.2 MDWT or 6.2% of the existing fleet (31.71 MDWT of geared ships or 9.85% and 24.48 MDWT of the gearless fleet or 4.18%) at the end of 2020 would be ideal candidates for recycling as they would have to invest in ballast water treatment systems, IMO2020, expensive special surveys, and possibly face regulatory-led recycling after 2023.
- Another way to look at market prospects would be to compare the current forward orderbook of 55.06 MDWT (till end of 2023) as a percentage (6.07%) of the existing fleet at the end of 2020 and see when it was as low as this number, that would have been in the mid 1980's!
- Clarksons data shows a net fleet growth rate of 3.84% in 2020 (873.43 MDWT to 906.99 MDWT.) Our read of the growth in supply by end of 2021 and 2022 of 1.84% and 0.22% (906.99 MDWT to 923.66 MDWT by end 2021 and then to 925.73 MDWT by end 2022), assumes recycling of 16 MDWT/year and slippage of 15% per year in 2021 and 2022.
- If our reading of net supply growth at 1.84% pans out, then 2021 should be a good year considering the world GDP growth rate of 5.5% indicated by the IMF.
- If the supply side gets a dividend by the recycling of the very old ships, slow steaming by the rest of the owners who are using LSFO and forced down time in dry docks for those owners passing special surveys on 20+ year older ships, then the market would further benefit from this tightening of available ships.

## Is it different this time, really?

### Signs Of A Recovery – This time *it is* different!

Capes TCE (Year)	2009*	2016**	2020**	2021 (as of 27 Jan)**
Start	\$8,997 (2 Jan)	\$4,811 (4 Jan)	\$11,976 (2 Jan)	\$16,656 (4 Jan)
Low	\$8,997 (2 Jan)	\$1,985 (17 Mar)	\$1,992 (14 May)	\$16,656 (4 Jan)
High	\$93,197 (3 Jun)	\$19,515 (17 Nov)	\$34,896 (6 Oct)	\$26,489 (13 Jan)
End	\$37,191 (24 Dec)	\$10,078 (23 Dec)	\$16,409 (23 Dec)	\$17,790 (27 Jan)
Demand (BilliofTonnemiles)	-3.36%	+2.10%	-2.19% to +0.5% <sup>A</sup>	+4.36% (+6.7% DNB)
Chinese Stimulus	USD 578 bn	-	USD 667 bn	-
Orderbook / Fleet ratio	+80.49%	+17.99%	+6.07%	-
Net Supply Growth	+9.23%	+2.40%	+3.84%	+1.7% (+1.5% DNB)

- **Recycling:** 2019 = 8.23 MDWT, 2020 = 15.10 MDWT (+83.5%).
- **Old Age Profile** 20+ years of age end of 2020 = 56.23 MDWT / 6.20% of existing fleet.

Note: \* 2009 basis the Baltic 172K Capesize Index (4 Routes).

\*\* 2016, 2020 & 2021 basis the Baltic 180K Capesize Index (5 Routes)

<sup>A</sup>Clarksons explanation for the varying estimates: It is worth making clear that the dry bulk trade forecasts on Shipping Intelligence Network (derived from the Dry Bulk Trade Outlook) are produced by Clarksons Research, an independent part of the Clarksons Group, while the analysts' report is produced by the dry cargo analysts within the broking department at Clarksons Platou. While we generally have a well aligned view of the markets, it is not uncommon – particularly in such a dramatic and volatile year as 2020 – for our forecasts to show some differences. It is worth pointing out that tracking every single tonne of dry bulk trade, and its exact trade route, is not possible, and so any tonne-mile trade estimate published by either Clarksons Research or the Clarksons Platou analysts represent estimates based on a selection of trade flows and assumptions and the methodology used may not be the same. Both estimates do however show a clear tonne-mile bonus compared to the estimated growth rate of dry bulk trade in tons last year. We are also currently working on the January edition of the DBTO – the first since full-year data became available for some trade flows, which may well lead to some upwards revisions to our trade position for full year 2020. It will likely also be a few months until complete full year 2020 data is available for all countries and commodities, so there may well be further small changes to estimates published from both ourselves and the dry cargo analysts.

Precious Shipping PCL

Source: Clarksons

To better understand the above slide, please read the commentary that follows:

- We have selected the years 2009 (immediately following the GFC), 2016 (worst year ever in shipping), and 2020 (impacted by the Mother of all Black Swans, Covid-19).
- The orderbook to existing fleet ratio in 2009 was an astronomical 81% and explains why the industry was in a recession for 12 years thereafter (2009 to 2020) just trying to absorb this excessive supply.
- China enacted a steel-intensive stimulus plan of USD 578 billion immediately following the GFC resulting in the BDI recovering from 663 points on 5 December 2008 to an intermediate high of 4,291 points on 3 June 2009 and a final high of 4,661 on 29 November 2009.
- 2016 was a classic year of supply exceeding demand (2.4% versus 2.1%) while still struggling with the excess supply created after the GFC. 2016 also had a high order book to fleet ratio of 18% and was not blessed with any stimulus from the Chinese government making it the worst year ever for dry bulk shipping.
- In 2020 demand dropped in FH but grew in SH for an estimate of -2.19% (Clarksons research) to +0.50% (Clarksons Platou analysts) ton-mile demand growth for the year. Cape time charter rates went from an average of USD 7,186 in the FH to an average of USD 18,913 in the SH (+163%) despite the net Cape fleet growth of 3.73% during the year, confirming supply/demand balance is at hand!
- Why will 2021 be different? The new ship orderbook to existing fleet ratio (6.07%) is the lowest in 20+ years. This means that even if there is minimal scrapping, new ship supply will be insignificant and allow owners to make money over the next few years as demand is expected to continue to expand.
- Almost 4 times as much DWT was delivered (48.66 MDWT) than was ordered (13.87 MDWT) in 2020. This has happened twice in the last decade in 2012 and 2016. On both occasions the BDI increased in the subsequent year by 31% in 2013 and 70% in 2017.
- Ships that are +20 years old are 6.2% of the existing fleet, higher than the orderbook to fleet ratio of 6.07% at the end of 2020.
- 2020 new ship orderbook has been restrained due to the 12-year long recession; banks not lending to shipowners; capital markets remaining frozen; 5-year-old Ultras selling at USD 16/18m versus brand new Ultras marketed at USD26/27m, a no brainer for buying secondhand ships; and the massive uncertainty surrounding new regulations on GHG curtailing new ship orders.
- Capes started the year at USD 16,656 on 4 January and had reached a peak of 26,489 on 13 January and finally closing at 15,675 on 29 January 2021. This has been the highest January in over a decade. Dare we say, a portend of better times to come?
- Cargo volume by 2050 will be about 3.5 times 2008 volumes, requiring 3.5 times more ships, yet IMO has mandated GHG must be cut by 50% compared to that in 2008!
- Any ship built with an Internal Combustion engine after 2025 would, therefore, have a shortened economical life of just 10 to 15 years before being replaced by zero GHG emitting vessels for future regulatory compliance.
- New regulations, under IMO formulation, may oblige owners of 20-year-old, gas guzzling ships to scrap them reducing the supply side even further after 2023.
- China enacted a USD 667 billion stimulus plan in end May 2020, almost 16% larger than what it did after the GFC, to combat Covid-19 which should support the dry bulk market in 2021 and beyond.
- The record monetary and fiscal stimulus of \$ 17.9 trillion by the governments around the world pledged during 2020/2021 will push demand higher in 2021/2022.
- 2021 has demand growth rate of 4.36% (Clarksons) to 6.7% (asper DNB Markets) versus a net fleet growth rate of 1.7% (Clarksons) to 1.5% (DNB Markets). This will result in strong time charter rates and 2021 will be the start of strong earnings for dry bulk ships.

## Notable events at PSL During 2020:

**The arbitration with Sainty finally** came to an amicable end. The result of this settlement was as follows:

1. We received net cash payment of USD 40.5 million on 29<sup>th</sup> July 2020.
2. Against the above sum, USD 67.90 million was shown as an 'advance to ship builders' on the asset side of our balance sheet.
3. That 'advance to ship builders' were removed and replaced by USD 40.5 million in the cash portion of our balance sheet.
4. At the same time, we took a non-cash loss of USD 27.4 million in our P&L account.
5. This non-cash loss reduced our Equity by an equivalent amount of USD 27.4 million.
6. We did the above to get much needed cash, into PSL, as soon as possible.
7. Savings of additional legal costs of about USD 3 million per annum and management time.
8. Removal of this uncertainty has strengthened our perception.

**On 19<sup>th</sup> May and 30<sup>th</sup> July 2020, we successfully amended both our bonds: PSL206A & PSL211A.**

1. PSL206A was partly redeemed by Baht 392 million on 9<sup>th</sup> June 2020, Baht 627.2 million on 22<sup>nd</sup> October 2020 and Baht 282.24 million on 5<sup>th</sup> January 2021. A further Baht 329.28 million will be redeemed on 12<sup>th</sup> March 2021. The outstanding after this redemption payment will be Baht 329.28 million with final maturity on 9<sup>th</sup> December 2021.
2. PSL211A was partly redeemed by Baht 359 million on 22<sup>nd</sup> October 2020, and after another partial redemption of Baht 359 million on 16<sup>th</sup> November 2020, the outstanding is Baht 2,872 million with final maturity on 22<sup>nd</sup> July 2022.

Our intention is to continue to redeem the balance outstanding amounts on both these bonds before their respective maturity dates.

**We took steps to reduce our overall cost of capital through an innovative transaction** with one of our key customers. An out of the box solution and a historic first for PSL!

1. PSL managed to get prepayment of 1-year worth of charter hire on 5 ships on long-term period charter on 1<sup>st</sup> October 2020.
2. The gross advance of hire equates to USD 26.55 million.
3. PSL was able to accomplish this due to an extremely close relationship with the client.
4. This is a historic first within the shipping industry and has never been done before!
5. Considering the state of capital markets, banks unwillingness to lend and the global pandemic-hit economy, this was the equivalent of pulling a rabbit out of a hat!
6. PSL prepaid one year of outstanding principal on these ships to their respective mortgagee banks amounting to USD 4.85 million.
7. A large portion (USD 19.71 million equivalent to Baht 627.2 million) was used to partly redeem our bond PSL206A (see above).
8. The remaining proceeds was used for general corporate purposes.

## FINANCIAL HIGHLIGHTS (THAI BAHT TERMS) AND REVIEW OF THE YEAR:

In terms of operations, during the year under review, the Total Revenues of the Company were Baht 3,751.06 million (2019: Baht 4,183.03 million) and the Company incurred a Net Loss of Baht 1,294.85 million, including a one-time loss of Baht 868.72 million in relation to the settlement agreement with Sainty Shipyard.



The Net Loss before accounting for the one-time loss is Baht 426.13 million (2019: Net Loss of Baht 228.49 million). The Shareholders' Equity of the Company is Baht 10,134.29 million (2019: Baht 11,559.05 million) and the Total Assets of the Company have decreased during the year to Baht 21,396.85 million (2019: Baht 25,060.55 million). The decrease in Total Assets is mainly from the settlement of cross currency swaps, the settlement of advances for vessel constructions with Saintry Shipyard and the depreciation on Vessels. The Company operated 36 vessels in both 2019 and 2020.

During the year, the Company incurred Baht 1,275.67 million (2019: Net Loss of Baht 219.74 million) as the Net Loss before Exchange Loss of Baht 14.74 million (2019: Baht 6.04 million) and Income Tax of Baht 4.44 million (2019: Baht 2.71 million). The Covid-19 pandemic had an adverse effect on earnings particularly between February and May 2020, however freight rates recovered after the harsh Covid-19 related lockdowns in various parts of the world came to an end. In addition, an infrastructure centric stimulus package by China buoyed freight rates on the back of strong demand for dry-bulk commodities. The Company's vessels achieved an average time charter equivalent earnings of USD 8,332 per day per vessel in 2020 as compared to USD 9,622 per day per vessel in 2019. The Net Vessel Operating Income (net of voyage disbursements and bunker consumption) in terms was 12% lower compared to the previous year. The average vessel running cost per day per vessel (Average Opex per Day) decreased from USD 4,778 in the previous year to USD 4,705 in 2020. Absolute vessel running expenses (Opex) in Thai Baht terms, decreased by about 1%. The average technical downtime was 7.63 days per vessel (average vessel age of 9.3 years in 2020), as 14 vessels underwent for dry-docking and special survey during the year.

We conducted an "in-house" exercise again this year to determine Total Return to Shareholders, which was calculated for the 27 years that we have been operating as a listed entity. Based on the closing share price as on Friday the 16 September 2020 of Baht 4.32 per share (we started trading on the SET on the 16 September 1993) and assuming you had subscribed at the IPO, then, at the end of 27 years, you would have 8.23 times 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	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Av. BDI	6,390	2,617	2,758	1,549	920	1,206	1,105	719	673	1,145	1,353	1,353	1,066
Net Profit (loss) \$m	148.1	88.1	35.5	23.6	4.5	17.5	(2.5)	(69.41)	(75.61)	(3.76)	14.1	(7.25)	(40.80)
Av. No. of Ships	44.12	32.79	21.39	21.91	30.44	38.93	41.66	45.46	40.29	36.02	36	36	36
Profit (loss) / Ship \$m	3.36	2.69	1.66	1.08	0.15	0.45	(0.06)	(1.53)	(1.88)	(0.10)	0.39	(0.20)	(1.13)

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; pre-paid 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 Saintry Shipyard and received ~USD 26.55 million of gross proceeds through a 12-month advance charter-hire agreement with a customer.

**Our Fleet:** At the end of 2020, our fleet comprised of 36 ships on the water (8 Ultras, 9 Supras and 19 Handy sizes) with an aggregate capacity of 1,585,805 DWT. This worked out to an average 44,050 DWT per ship, and an average age of about 9.3 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.

**The average Time Charter Equivalent (TCE)** earnings of our Fleet in 2020 were USD 8,332 per day per ship. Our average daily Operating Expenses (Opex) were higher than our target of USD 4,650 per day per ship reaching a figure of USD 4,705 per day per ship. This was mainly due to the extraordinary circumstances surrounding crew changes being hampered by nonavailability of flights; Covid-19 tests pre/post flights; 14-day quarantine impositions in expensive hotels; chartered flights costing an arm and a leg; deviating ships at tremendous cost, where practical, to complete crew changes.

**Market Segmentation/Benchmarking:** In 2020, the Baltic Handy Size Index (BHSI) averaged 445 points, equivalent to a Time Charter (TC) rate of USD 8,003 per day. In comparison, our Handies earned USD 8,214 per day, outperforming the BHSI TC rate by 2.64%. Further, the Baltic Supramax Index (BSI) averaged 744 points, equivalent to TC rate of USD 8,189 per day. In comparison, our Supras/Ultramax earned USD 8,464 and outperformed the BSI TC rate by 3.36%. Our target is to outperform both the indices.

**Long Term versus short term Charters:** The long-term charters, over 1 year, already booked as of 1<sup>st</sup> January 2021 are shown in the chart below. As can be seen, our forward four-year rolling book is currently at the 15% level with a visible revenue stream of USD 137.5 million.

Year	2021	2022	2023	2024	2025
Total Available Days	13,140	13,140	13,140	13,176	13,140
Fixed T/C Days	2,190	1,992	1,825	1,830	1,825
%age Fixed T/C Days	17%	15%	14%	14%	14%
Av. T/C Rate/Day in USD	13,577	14,062	14,550	14,550	14,550
Contract value in million USD	29.7	28.0	26.6	26.6	26.6

**Ship recycling has progressed** with 15.1 MDWT of ships being recycled during 2020 (despite the lockdowns experienced in the Indian subcontinent between the 3<sup>rd</sup> week of March and the end of May) in the dry bulk fleet as compared to 8.23 MDWT in 2019 (+83.5%.) The existing age profile at the end of 2020 of 56.2 MDWT (31.71 MDWT in the geared segment and 24.48 MDWT in the gearless segment) or 6.2% (9.85% in the geared segment and 4.18% in the gearless segment) of the world fleet being 20 years or older, together with low levels of the order book to fleet ratio of 6.07% (order book up to end 2023 compared to net supply end of 2020), should result in the world dry bulk fleet growing at a slower pace.

## THE INDUSTRY OUTLOOK:

**A truncated supply** of new ships is expected for the next few years. The fleet stood at 873.43 MDWT at the start of 2020 and by the end of the year had grown to 906.99 MDWT. During the year, 15.1 MDWT was recycled, and 48.66 MDWT was delivered, thus making net fleet growth of 3.84%. As of 31 December 2020, the existing orderbook stood at 55.06 MDWT (deliveries up to end of 2023), or 6.07% of the world fleet at the start of 2021. Specifically, in the geared segment, net fleet growth was 2.69% in 2020 in the Handy/Supra/Ultra segment and the existing orderbook for the geared fleet stood at 14.15 MDWT (deliveries up to end of 2023), or 4.39% of the geared world fleet at the start of 2021. 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 upcoming regulatory impacts or the current age profile of the fleet. At the start of 2021, 6.19% (56.2 MDWT) of the world dry bulk fleet (9.85% or 31.71 MDWT of the geared dry bulk fleet) was over the age of 20, and 10.65% (96.62 MDWT) of the world dry bulk fleet (14.75% or 47.49 MDWT of the geared dry bulk fleet) will be over 20 by the end of 2023 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 not additional 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 2021, recycling should pick up, and new orders should slow as new



regulations are promulgated. Ships 20 years or older, comprising 56.2 MDWT or 6.19% of the existing fleet (31.71 MDWT of geared ships or 9.85% and 24.48 MDWT of the gearless fleet or 4.18%) at the end of 2020 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 after 2023.

**The Cape sector** (90,000+ DWT: 2154 ships of 390.63 MDWT at the end of 2020): 135 ships of 27.6 MDWT or 7.06% of the existing DWT are scheduled for delivery up to end of 2023. In this sector, 113 ships of 18.96 MDWT or 4.85% will be over 20 years of age by end of 2023 and some or all of them are likely to be recycled during 2021 to 2023.

**The Panamax sector** (70 – 90,000 DWT: 2451 ships of 194.5 MDWT at the end of 2020): 161 ships of 13.31 MDWT or 6.84% of the existing DWT are scheduled for delivery up to end of 2023. In this sector, 404 ships of 30.17 MDWT or 15.51% will be over 20 years of age by end of 2023 and some or all of them are likely to be recycled during 2021 to 2023.

**The Supra/Ultramax sector** (40 – 70,000 DWT: 3777 ships of 212.23 MDWT at the end of 2020): 180 ships of 10.52 MDWT or 4.96% of the existing DWT are scheduled for delivery up to end of 2023. In this sector, 578 ships of 28.83 MDWT or 13.58% will be over 20 years of age by end of 2023 and some or all of them are likely to be recycled during 2021 to 2023.

**The Handysize sector** (10 – 40,000 DWT: 4029 ships of 109.63 MDWT at the end of 2020): 137 ships of 3.64 MDWT or 3.32% of the existing DWT are scheduled for delivery up to end of 2024. In this sector, 758 ships of 18.66 MDWT or 17.02% will be over 20 years of age by end of 2023 and some or all of them are likely to be recycled during 2021 to 2023.

When reading the above numbers please keep in mind that Slippage was 11.79% and recycling accounted for 15.1 MDWT in 2020. Slippage has averaged 22.8% over the last 5 years and recycling accounted for 14.7 MDWT annually over the last 5 years and both slippage and recycling fluctuate inversely with the BDI and availability of finance.

On a net basis, the global fleet increased by 3.84% in 2020. According to Clarksons, the fleet is forecast to grow at 1.7% while ton-mile demand (for dry bulk seaborne trade) will grow at 4.36% in 2021. This gap between expected demand growth and expected supply growth in 2021 should make for an increasingly strong but volatile market. As supply and demand balance has either been reached or is very close, the market would be characterized by extreme volatility as 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 ending up at the recycling yards. Deliveries in 2020 were muted when compared to average deliveries for the decade, with 48.66 MDWT 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 1<sup>st</sup> January 2020. As a result, the level of pollutants reaching the air that we breathe, as well as the 'acid' rain that results from such emissions, has been reduced.

## The macro picture:

**USA:** President-elect Joe Biden will aim to ease the domestic woes plaguing the world's largest economy. The economy is recovering after being severely affected by the Covid-19 pandemic in 2020. Real GDP is anticipated to contract by 3.7% in 2020, before rising by 3.2% in 2021 and 3.5% in 2022. The unemployment rate is expected to gradually decline but will remain elevated relative to pre-pandemic levels due to the ongoing rise in Covid-19 cases. However, the prolonged period of joblessness faced by many will continue to put downward pressure on demand and contribute towards rising defaults going forward. The rollout of the vaccine will greatly ease the strain felt by small businesses, households, and the service sector.

**China:** Following the steepest quarterly dive, and subsequent surge, on record in the first and second quarters of 2020 respectively, with stabilization in the third quarter, activity is projected to return to its past trajectory, with growth of about 8% in 2021 and 4.9% in 2022. Investment, in particular debt- and stimulus-fueled infrastructure investment, has boosted growth in 2020. Real estate investment has also remained strong. Exports have boomed on the back of pent-up demand for masks and other Covid-19-related materials and equipment as well as teleworking-related goods. Consumption is still to recover from the hit caused by the outbreak. Monetary stimulus, which was needed during the outbreak, is now being withdrawn as the recovery is gaining momentum. Shadow banking has also picked up following a few years of decline. Increasing corporate defaults have sharpened risk pricing. Fiscal policy will remain supportive, with several tax cuts and extensions of social benefits promoting consumption amid weak consumer confidence.

**EU:** The EU trading bloc started 2020 with a great deal of uncertainty regarding the outcome of Brexit negotiations, only to get severely affected by the Covid-19 pandemic in Q1 2020. The OECD projects the economy to contract a full 7.5% in 2020, and 2 full years before the economy reaches its pre-pandemic level of output. The EU is one of the first major economies to begin a phased approach to vaccinating its population. This will improve business conditions; help ease uncertainty and boost consumption that has been subdued due to the pandemic. To avoid a premature tightening that could derail the recovery, national fiscal policies should also remain supportive over the coming two years, taking advantage of very low interest rates and sizeable financing under the EU recovery plan. However, as the pandemic will likely have a durable negative impact on some sectors, the composition of fiscal measures needs to shift from an emphasis on income support to the promotion of labour and capital reallocation.

**Japan:** The Covid-19 pandemic hit the Japanese economy hard, causing a 5.25% decline in real GDP. While the economy is recovering, growth remains sluggish, and the economy continues to remain at the mercy of the coronavirus until a vaccine can be distributed widely. As restrictions are lifted, consumption is expected to recover, supported by government subsidies and incentives. In addition, as key trading partners see their economic prospects improve, export growth will continue to strengthen. The Japanese government acted appropriately to sustain the economy with strong fiscal stimulus. However, without any action beyond the measures currently in place, the recovery may slow. A resilient and sustainable economic expansion will require further policy support and structural reforms.

**India:** India experienced one of the most severe lockdowns globally, forcing millions to walk thousands of miles back to their homes and experienced the most severe contraction in GDP among the G20 countries. While agriculture has benefited from favorable weather conditions, manufacturing and services are penalized by containment measures and uncertainty. Significant social hardship persists and the fall in the unemployment rate must be seen against the background of declining labor force participation. Covid-19 is exacerbating pre-existing vulnerabilities related to poverty, high informality, environmental degradation, and lack of employment opportunities. To increase resilience, the government has responded with three stimulus packages, but additional fiscal measures are needed to mitigate the damage, together with a credible medium-term consolidation plan.

## **The Annual PSL Maritime Day Run:**

The International Maritime Organization (IMO) celebrates World Maritime Day to focus its attention on the importance of shipping safety and the marine environment. The Theme for 2020 was “Sustainable Shipping for a Sustainable Planet”. It provided an opportunity for leaders from various sectors, including shipping, to reflect on the work done and address urgent steps that need to be taken towards a sustainable future. This has also provided an opportunity to raise awareness of the United Nations Sustainable Development Goals (SDGs) and showcase the work that the International Maritime Organization and its Member States undertook to achieve their targets. PSL strongly believes in sharing these ideals and its own values, as it provides guidance for organizational decision-making and a kind of ethical compass for action. For many years in the past, PSL embraced this opportunity and organized “The Annual PSL Maritime Day Run”. The Annual PSL Maritime Day Run was always of significance, attracting a sizeable number of participants from within the organization as

well as students from the Merchant Marine Training Center. Besides raising awareness on topics related to the Shipping industry, PSL used this opportunity to raise awareness on health-related issues and promote fitness. However, during recent years, we were unable to organize this run due to some procedural constraints and in 2020 due to Covid-19. It is our intention to hold this run again after such events are permitted by the authorities and the situation returns to normalcy.

## **Maritime Training Center:**

As previously reported, the Company set up a full-fledged Maritime Training Center at its Head Office in Bangkok in March 2008. The PSL Training Center includes a state-of-the-art Bridge Navigation Simulator for training of maritime personnel. Vessel-type specific Simulator recreates the actual maneuvering characteristics of the ship and its bridge controls as it enters a specific major port and provides ideal conditions in which Officers get hands-on experience for effective bridge teamwork and competence in ship-handling and navigation. This is a significant step taken to train and equip our Officers and Crew to take better care of themselves and their ships, all with a view to ensuring safety of the crew, cargo, and the ship by preventing accidents, thus helping to preserve the environment. In the current scenario of a worldwide shortage of trained personnel, and the rapid promotions that is a natural result of such a shortage, this is a major step to provide specialized training that would otherwise have been acquired 'on the job'. In February 2020, the Bridge Navigation Simulator was upgraded to the latest design. This involved a total renewal of all projectors, panels, consoles, and the software updated as per the requirements of our fleet.

The International Convention on Standards of Training, Certification and Watch-keeping for Seafarers 1978, which establishes the basic requirements for seafarers was revised in 1995 and again in June 2010 in a conference in Manila, known as the Manila amendments, brought about more stringent requirements for global standards of competency for seafarers. The Manila amendments have entered into force on 1 January 2017. The PSL training and fleet department had been preparing in advance so that, by the date of enforcement, all vessels had seafarers with the required training and certificates on board our ships.

**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. Considering the fact that 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 trouble-shooting. 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 I 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 2020 with the Covid-19 pandemic in full flow, courses were conducted online and with minimal interruptions. A total of 626 sea going officers and crew members attended a total of 14 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.

There are already conceptual designs on small crafts that try to eliminate or minimize the human effort onboard ships. Some experts in automation visualize that in the next twenty years or so, ships may be totally un-manned with automated equipment using sensors, smart digital systems, and other technologies, which can be monitored and controlled from shore-based stations, completely removing the element of "Human Error" on board. Although the concept of such Autonomous vessels appeared unrealistic initially, bold steps were made in this direction in 2017, both in the industry and by regulators. In May 2017, Yara and Kongsberg, introduced the concept of the autonomous, zero emission 120 TEU container vessel Yara Birkeland. The vessel was delivered to her owners in November 2020 and is currently being tested before being placed in service. In October of 2017 Rolls-Royce partnered with Google and introduced Augmented Reality software as part of their remote operation solutions for autonomous vessels. Simultaneously with these developments in autonomous shipping, IMO's Maritime Safety Committee agreed to map out a new international legal framework for the safe operation of autonomous ships, as operating a completely unmanned vessel brings a host of legal issues into focus. Stakeholders in shipping need to keep abreast of these developments to ensure the most beneficial application of the technology. Stakeholders would do well to keep in mind that while there is little doubt that most accidents occur primarily because of human error, the number of such accidents that are prevented solely because of human intervention cannot be downplayed.

## THE ISSUES FACING OUR INDUSTRY:

**Operating expenses** for year 2020 were USD 4,705 per day per vessel and were lower than our 2019 figure of USD 4,778. This was to a large extent on account of reduced crewing expenses during the first three quarters of 2020 when practically no crew change was possible because of Covid-19 related travel restrictions imposed by most countries. By Q4 of 2020, few countries began to permit crew travel albeit with several restrictions in place including the requirement to have crew members placed in quarantine on arrival in their home countries. Therefore, expenses for crew change increased disproportionately over the last quarter. These increased expenses for crewing are likely to continue into 2021 and until the situation worldwide returns to the pre Covid-19 levels. Expenses incurred on account of superintendents travelling the world over for vessel inspections were lower in 2020, again due to travel restrictions. Most of the other expense heads were maintained without any significant changes. Further, greater emphasis is continually being placed on the standards of training for the senior personnel required to operate our technologically advanced modern fleet. Insurance costs were under control, because of our favorable claims record and because of our long-standing and mutually beneficial relationship with the insurers and brokers.

**International Maritime Organization (IMO) conventions** are constantly updated to match demands for enhanced steps to protect the environment. '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 world-wide availability of VLSFO, the oil industry stood up to the challenge and ensured that the product was made available all over the world. There remain some 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.

The alternative to VLSFO was installing Exhaust Gas Cleaning Systems - also referred to as exhaust gas scrubbers or simply scrubbers - in which case vessels could continue using high sulphur fuel oils (HSFO; Sulphur content of up to 3.5%) and the scrubbers would then be expected to wash down and 'scrub' the exhaust gases to reduce the sulphur content to below 0.5% levels. The inherent drawback with such a system was that the wash water which would have to be discharged at sea would contain all the additional sulphur in the form of sulphuric and sulphurous acids; thereby polluting the seas instead! Several countries the world over have already banned discharging of wash water in their territorial waters; thereby requiring owners going with the scrubber option to carry on board adequate reserves of VLSFO in addition to HSFO. In addition to the high costs involved in purchasing scrubber units, a downtime of about two to three months for installing the equipment, there remain technical challenges in designing fail-safe scrubbing systems; a fact that became evident when several scrubber units installed on vessels failed in service; some within a few months after installation requiring expensive repairs, towage to nearest port on account of the main engine breaking down because of scrubber failure etc.

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 first renewal of IOPP (International Oil Pollution Prevention) certificate after 8 September 2019. There are a few IMO approved treatment plants presently in the market have not yet met the more stringent USCG approval requirements. There is also a separate schedule provided by the USCG for 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 28 vessels in PSL's fleet. The remaining 8 vessels, which currently are required to exchange the ballast water taken at ports with ballast taken at over 200 nautical miles from any coast so that they may be permitted to discharge the ballast water at the next port, will also be fitted with such approved BWTS before the IMO/USCG compliance dates.

As a result of initiatives from the International Labor Organization (ILO), working and living conditions of crewmembers on board are receiving increased importance. To formalize this and ensure uniform compliance, ILO has adopted the Maritime Labour Convention 2006 (MLC 2006). A Maritime Labour Certificate (MLC) and a Declaration of Maritime Labour Compliance (DMLC) is required on board to ensure compliance with the Convention for all ships above 500 tons in international trade. These certificates are to be obtained from the Flag state and their recognized organizations after verification and surveys on board each vessel. The MLC 2006 has attained the required number of member state ratifications in August 2012. All ships were required to meet the compliance requirement and have valid certificate for compliance with MLC 2006 before 20 August 2013. In April 2014, the ILO agreed to make several amendments to the MLC to implement the principles agreed back in 2009 by the joint IMO/ILO financial security working group. These amendments have entered into force on 18 January 2017. Thailand ratified MLC 2006 on 7 June 2016 and as a result MLC 2006 entered into force for Thai flagged vessels from 7 June 2017. The Statement of Compliance (SOC) with MLC 2006 which was being issued till date on our Thai flagged vessels has now been replaced with a Marine Labour Certificate. This is a welcome development and facilitates smooth trading of Thai flagged vessels worldwide, as it eliminates the risk of the SOC not being acceptable in some countries. Singapore had ratified MLC 2006 earlier. Hence the Company's vessels that are registered in Singapore have already been compliant all along. Ships that are subject to MLC 2006 are now required to display certificates issued by an insurer or other financial security provider confirming that insurance or other financial security is in place for the cost and expense of crew repatriation, as well as up to four months contractually entitled arrears of wages and entitlements in case a vessel is abandoned (Regulation 2.5). A further certificate will be required for liabilities for contractual claims arising from seafarer personal injury, disability, or death (Regulation 4.2). P+I Clubs of the respective vessels have provided such certificates for all ships in our fleet.

**Focus on the environment** is becoming even more important. It is no longer just fashionable to say we are "Going Green"; organizations world-over are being pushed by their stakeholders to become more environment-conscious, guided by compliance with the newer regulations. IMO, along with the ICS, is playing a pro-active role to put in place regulations which will apply to shipping globally. One of these is the mandatory reporting of CO2 emissions (measured in grammes/tonne-mile) on voyages, like the European Union MRV rules (Monitoring, Reporting, Verification of CO2 emissions), which has been implemented from January 2018 for all vessels operating in the EU region. IMO also requires all vessels to implement a fuel consumption data collection system (DCS) from January 2019. This requires vessels to report annual fuel oil consumption worldwide to IMO through the flag administration. The regulation also requires the existing SEEMP plans to be updated and certified by the flag authority or a RO. In April 2018, the IMO adopted a resolution on the strategy of a 50% reduction of total GHG emissions by 2050, as compared to the levels of the year 2008. These regulations will in turn phase out older, less efficient vessels. We have taken the initiative to prepare in advance for these regulations by monitoring and collecting CO2 emissions data on all vessels in the fleet. The company arranged for all vessels to report such fuel consumption data to a RO approved by the flag, from 1<sup>st</sup> January 2019 onwards. The vessels are always operated with clean hulls (by using efficient anti fouling paints and also by hull cleaning when necessary) as this increases efficiency (thereby reducing carbon emission). The new acquisitions for the fleet have been selected primarily on their 'Eco' operational characteristics. 'Eco' operation will be possible with larger cargo hauls on vessels with very fuel-efficient engines, and through optimized use of waste heat from the engines (even the exhaust gases from the auxiliary engines are diverted through the boiler to use the available heat). These new Ultramax vessels with larger cargo carrying capacity operate with substantially lower CO2 emissions. There are specific IMO Conventions, and regulations mandated by individual countries, to control the emission of Nitrogen oxides, Halons and CFCs from ships. These regulations are expected to become more stringent in the coming years. Certain states in the USA are likely to require ships calling their ports to use shore power which is greener than the power generated on board ships. 'Bonnet' technology is another



concept, presently available only in certain ports, which can receive the exhaust gas from ships for treatment before discharging into the atmosphere.

To formalize the Company's commitment towards preserving and conserving environment and to reduce carbon footprint, the Company completed the transition audit for ISO 14001 on 30 August 2017 and received the new ISO 14001:2015 certification from Class NK of Japan. Prior to this transition, the Company was holding the ISO 14001:2004 certification which was issued on 18 December 2009. The ISO 14001:2015 provides a framework for a holistic and strategic approach to the Company's environmental policy, plans and actions and will demonstrate that the Company is an environmentally responsible organization. PSL vessels have implemented the SEEMP as required by MARPOL Annex VI regulations from January 2013. Vessels have also fully implemented the more stringent garbage disposal regulations required by MARPOL Annex V which came into force from January 2013.

With effect from 31 December 2020, EU Regulation on Ship Recycling are applicable to foreign ships in EU waters. Ships are required to comply by having an 'Inventory of Hazardous Materials (IHM)' certificate issued by a Recognized Organization. The certificate basically lists both the quantity as well as all the locations on board vessels where materials considered to be potentially harmful to humans and the environment are present. Although both time consuming as well as expensive, the company prepared for compliance with the regulation well in advance. The company's senior technical superintendents were trained by Classification Societies to acquire the necessary competencies to complete the procedures to obtain IHM compliance for all vessels. All PSL's vessels are in full compliance and were certified well before the EU deadline of 31 December 2020.

The Safety of Life at Sea (SOLAS) convention may have amendments in the future. This is driven by one of the worst maritime disasters in US history - the loss of the US-flagged ro-ro vessel El Faro and its 33 crew, which sank in the Bahamas in October 2015 while trying to navigate through Hurricane Joaquin. The detailed USCG investigation report, published in September 2017, highlighted several errors, mainly by the Master, and includes 36 recommendations on safety and seeks several amendments in the SOLAS convention.

With the melting of the polar ice cap due to global warming, and the consequent increase in navigability through the northern route, on 1 January 2017, the IMO has adopted the Polar Code and related amendments in 2014 - 2015 to make it mandatory under both SOLAS and the International Convention for the Prevention of Pollution from Ships (MARPOL). The code's focus is on the safety of ships, seafarers and passengers who are on board in the harsh polar environment and the regulations to prevent discharge of Oil, Noxious liquid substances in bulk, Sewage and Garbage. IMO's sub-committee on Pollution prevention and response agreed in principle in 2020 to draft amendments requiring vessels navigating through Arctic waters to not carry any grade of Heavy Fuel oil. The regulation is expected to enter into force on 1 July 2024.

## Fuel Saving Devices:

The shipping industry is concerned with reducing fuel consumption and carbon emissions. Technological advancement and design modification are being used extensively to address these concerns. At PSL, the management understood its business implications, evaluated the efficiency of potential designs, and took a leap forward. As part of the strategy, it was decided to retrofit some of the vessels with Hydrodynamic Energy Saving Devices (ESDs), such as **THE MEWIS DUCT – A fin system which provides a pre-swirl to the ship wake which reduces losses in the propeller stream, PRE-SHROUDED VANES – A device which reduces the rotational energy loss of the propeller slipstream by generating pre-swirl flow for energy-saving and HUB VORTEX ABSORBED FINS – A set of fins fitted on the cap of a propeller to reduce energy losses by propeller hub vortex.** Analysis indicates energy savings in the range of 3 to 6 %. Older vessel's, which were considered less-fuel efficient were replaced with 'Eco' vessels between the years 2013 and 2017. The "Eco" vessels have offered more economical machinery, very efficient electronically controlled engines, lower lightship, better hull-form, and optimized use of waste heat from the engines. PSL is committed to further reducing its carbon footprint and is monitoring the progress being made on the following fronts.

**Air lubrication** systems use “Bubble technology” to decrease the resistance between the ship’s hull and the water by supplying air to the ship’s underside creating a carpet of microbubbles that coat the entire flat bottom of the vessel. The technology works in all maritime conditions, is not weather dependent, and does not constrain or negatively impact the normal operational profile of the vessel. With the optimum ship hull design, the air lubrication system is expected to achieve between a 10 to 15% reduction of CO<sub>2</sub> emissions, along with significant fuel savings. Air lubrication is an EEDI-approved technology and for some sectors of the merchant fleet struggling to achieve the requisite efficiency score, it could offer a potential solution.

**Nanotechnology** fuel treatment uses a multi-functional fuel additive that contains a molecular catalyst that ensures maximum fuel efficiency. The additive can also reduce engine wear, meaning the time between maintenance can be extended: particles work on existing carbon build-up within the engine to effectively blast away residue. NanOx™ from Martek Marine is one of the most exciting nanotechnology fuel treatments to hit the market. Nanoclusters improve viscosity by more than 30% for an improved fuel/air mix, boosting engine power by more than 10%. Enhanced fuel atomization in the tank & injectors offers over 7% fuel savings and micro-explosions in the cylinders enable more complete combustion, lowering emissions by 25% and enabling savings on CO<sub>2</sub> too. Nano-catalysts remove carbon deposits and prevent future build-up, diminishing engine wear to reduce maintenance and spares costs.

**New Bulbous bow** designs reduce wave-making resistance by producing its own wave system that is out of phase with the bow wave from the hull, creating a reduction in resistance made by the waves. Volume, vertical extension of the center of volume, longitudinal extension, and shape, are all elements considered in the design. The characteristics of the bow must be carefully balanced with the shape of the entrance and the transition towards the forward shoulder and bilge. Bulbs are most effective at a specific speed-length ratio and draft. Changes in speed and draft significantly change the wave created, meaning that reductions in draft or speed can lead to increases in resistance and this being the case, compromises in the bulb design are often needed to provide good performance over the expected range of operating drafts and speeds.

**Onboard DC Grid** A power distribution system introduced by ABB helps vessels reduce their fuel consumption, cut noise, and trim their environmental impact, by matching the power that the engine needs. By ensuring the engine runs at varying speeds for ultimate fuel efficiency at each load level, fuel consumption can be dramatically reduced. Recent tests using DC Grid power distribution on a platform supply vessel showed reduced fuel consumption of up to 27%, in addition to 30% engine room noise reduction, leading to improved working conditions aboard the vessel.

**Low Loss Hybrid Energy System (LLH)** by Wartsila is an innovative technology that utilizes different power sources in combination with energy storage devices to operate the prime movers closest to their optimum performance. A key feature of the system is its ability to reduce transient engine loads that cause increased fuel consumption and added emissions. By increasing the power redundancy, the system allows the engine to operate closer to its optimum design point where it has the highest efficiency and least emissions. Reduced maintenance and increased system performance through rapid response from the energy storage system are also among the benefits offered. The overall hybrid control system is the key element in the total control and stability of the ship’s electrical system and the energy flows. In addition to annual fuel savings of up to 15%, depending on the type and configuration of the engine and mission profile, the LLH ensures a substantial reduction in exhaust gas emissions.

**Fuel Oil Emulsion (FOE) technology** (FOE) allows blended fuels to burn more completely than unmodified fuels and so uses less fuel, lowers emissions, and the engines run cooler and so would require less maintenance. This would reduce the use of fuel and the level of emissions giving a significant financial saving.

PSL is committed to further reducing its carbon footprint by continuing to upgrade systems on existing vessels, analyze its operating profiles by considering shorter ballast passages, larger cargo hauls and slow steaming.

## Getting to Zero Coalition:

The Getting to Zero Coalition is a partnership between the Global Maritime Forum, the Friends of Ocean Action, and the World Economic Forum. It builds on the Call to Action in Support of Decarbonization launched in October 2018 and signed by more than 70 leaders from across the maritime industry, financial institutions, and other stakeholders, as well as on the Poseidon Principles – a global framework for climate-aligned ship financing – launched on 18 June 2019. PSL is a member of the Getting to Zero Coalition and will help design the GHG reduced future of the maritime transportation industry. A key starting point to reach this goal is to have commercially viable zero-emission vessels (ZEVs) operating along deep-sea trade routes by 2030. This will require both developing vessels as well as the future fuel supply chain, which can only be done through close collaboration and deliberate collective action between the maritime industry, the energy sector, the financial sector, Governments and IGOs. Research presented at the working session shows that the short term-ambition – adopted by members states of the IMO in April 2018 – of reducing international shipping's emissions per transport work by at least 40% by 2030, will not be enough to prevent shipping's adverse impact on the climate. This revealed the need to develop policies, demand drivers and funding mechanisms to motivate and de-risk first-mover investments; adopt policy instruments and market-based measures to close the competitiveness gap between conventional and zero-emission fuels and associated infrastructure; explore and narrow down technologies, fuel options and transition pathways; identify and grasp global opportunities for green energy projects that can propel maritime shipping's decarbonization and contribute to sustainable and inclusive growth in developing economies – while making sure no countries are left behind. Coalition members are now prepared to move ahead of regulators to develop the technologies and business models needed to meet decarbonization targets. The maritime industry's first movers stand steadfast to take the steps needed to develop, test, and scale the technologies required to decarbonize international shipping. The sector focuses on how to eliminate emissions and is leaning its efforts into the advance of fuel and technology offerings that avoid emissions altogether. New marine fuels, derived from abundant untapped renewable resources, could bring substantial development gains, but will require significant changes to ships, ports, and operations.

## Future Fuels:

**Biofuels** could play a valuable role in reducing CO<sub>2</sub> emissions from the marine sector over the next few years. From a technological perspective they are the easiest to adopt, as they can be blended with existing marine fuels and utilized by existing vessels. Biofuels would also not require significant delivery infrastructure investment. However, Biofuels are likely to be the preferred fuel for the aviation and road sectors, given the high energy density relative to alternative clean fuels and therefore there simply may not be adequate volumes available to the marine sector over the long-term. That said, Biofuel blends are likely to gain traction in the coming years, as this is the easiest short-term solution to reducing carbon emissions in the marine sector.

**Hydrogen** as a fuel is attractive because it emits no carbon or other pollutants when used. Existing hydrogen manufactures can produce 'blue' or low-carbon hydrogen by capturing and storing the carbon emitted during the production process. However, research is underway to develop energy-efficient processes for producing 'green' hydrogen from water via thermochemical processes using renewable energy. Another potential approach to produce carbon-neutral fuels involves chemically processing green hydrogen together with carbon or nitrogen to produce gaseous or liquid fuel. The energy density of hydrogen gas is relatively low, and it would need to be liquefied and stored under pressure to be viable as fuel, creating a transportation and storage challenge. A unit of cooled liquid hydrogen has less than half the energy of diesel and requires more than double the space to store it. Furthermore, significant infrastructure investments will be necessary to store and transport the cryogenic liquid which has a -253°C boiling point. Given these limitations, Hydrogen is unlikely to gain the kind of traction that we have seen with Ammonia.

**Ammonia:** While it could be several years before it is adopted at scale, Ammonia does enjoy the privilege of having the largest share of zero-emission vessel prototype projects worldwide. Its molecular makeup (NH<sub>3</sub>) allows for a carbon and sulphur-free combustion. Today, most commercially available Ammonia is derived from fossil fuels, which makes its green credentials less than pristine. That will change once Ammonia is produced at

scale through a renewable energy powered electrolysis process, a development that is expected to take place in the latter half of this decade. Early adopters of Ammonia as a fuel are likely to be, Niche vessels operating in regions with strict emission controls and on fixed routes, Ammonia Tankers and LPG Tankers capable of transporting Ammonia. This will likely be followed by energy guzzlers such as large Cruise and Container carriers on routes where Ammonia as fuel is easily available. Bulk carriers, which consume about 5% of total marine fuel consumed globally will unlikely be early adopters because of their varied trade routes. The key to the adoption of Ammonia-powered vessels would be the establishment of safety and training standards which could take several years given the more complex nature of the fuel.

**Methanol** is a safe, cost-effective, and globally available marine fuel with global production of 110 MMT. The main feedstock in production is natural gas. However, it could be 100% renewable, as it can be produced from a variety of renewable feed-stocks or as an electro-fuel. Methanol fuel produces no sulphur emissions, very low levels of nitrogen oxide emissions, and is biodegradable. It can also be blended into existing fossil fuels. Current dual fuel Methanol engines have performed well, and upcoming technologies will further improve on this performance. Like existing marine fuels such as heavy fuel oil (HFO), Methanol is liquid at ambient temperature and therefore relatively easy to store and distribute.

**Liquefied natural gas (LNG)** is the other choice open to maritime operators being both a proven and commercially available solution. At present, there are around 120 ships already operating on dual-fuel gas engines. LNG is mostly comprised of Methane, a highly potent GHG and far more harmful to the environment than CO<sub>2</sub>. Methane traps 86 times more heat in the atmosphere than the same amount of CO<sub>2</sub> over a 20-year period. LNG fell in stature after many members of the scientific community began to publish studies that examined the “well-to-wake” emissions of methane, referred to as ‘Methane slip’. Methane slip takes place mainly during flaring (burn off at the point of production), but also at the point of consumption.

**Liquefied petroleum gas (LPG)** is a combination of Propane (C<sub>3</sub>H<sub>8</sub>) and Butane (C<sub>4</sub>H<sub>10</sub>). The fuel is readily available globally and is lauded as a clean, energy-efficient, and portable fuel with an affordable price tag. It is currently sourced mainly from natural gas and oil production activities. However, in the wake of new technologies and techniques, LPG can also be produced from renewable sources. There are more than 1,000 LPG storage facilities around the world that can be used for LPG bunkering, and more than 700 small size LPG carriers, that can be used for ship-to-ship bunkering. LPG is at least as attractive an energy source as LNG, with shorter payback periods, lower investment costs, and lower sensitivity to fuel price scenarios. So far, LPG as a marine fuel has only been tried on LPG carriers. It is unlikely that owners in sectors other than LPG will adopt the fuel widely, given the increased capital cost and complexity relative to ships burning existing fuels.

**Carbon Capture and Storage** – A complex method, that involves trapping carbon dioxide emissions at its source of production or directly from the air and transporting it to a storage location usually in coal seams, aquifers, depleted oil and gas reservoirs, and other spaces deep under the surface of the Earth. Commercial viability is a major challenge at the present time. Several oil majors as well as Shipping companies are researching solutions to lower costs. If they are successful in doing so, this technology has the potential to become dominant as it would imply that existing fuels can continue to be used.

**Electrification** Semi-Electric and Electric vessels are gaining momentum, energy storage in batteries and optimized power control can provide significant reductions in fuel consumption, maintenance, and emissions. While improved battery technology has helped the new generation of electric European ventures get afloat, Electric and hybrid ships need more efficient and lighter batteries for a breakthrough. Energy density has increased considerably over the last 30 years, however, it is not yet enough to supply large ships with energy for long distances. The development of charging infrastructure and technologies for faster charging of the batteries are also crucial and hence ocean-going vessels are unlikely to become completely electrified in the near future.

## **Global Warming and Green House Gases (GHG):**

Shipping may be the cleanest, environmentally friendly, and most fuel-efficient mode of transportation, but a major source of carbon dioxide and GHGs. When it comes to decarbonization, the maritime sector must play an even larger role in addressing climate change as the sector is a key stakeholder when it comes to both the causes and solutions related to the issue.

Awareness of the detrimental effects of Global Warming, GHGs, and Sulphur dioxide pollution has become widespread and focus on the environment has come under the spotlight. Organizations world-over have become more conscious about the environment than ever before, and shipping is no exception.

According to a Bloomberg article in The Washington Post on 1 Sep 2020, the shipping industry has grown by an average of 5% per year over the last three decades and 90,000 marine vessels carry over 90% of the world trade across the oceans. The Worlds shipping fleet contributes to more than 3% of the anthropogenic CO2 produced globally and burns about 5 million barrels of fossil fuel per day. Besides CO2, ships also release a handful of other global warming pollutants like Black Carbon (BC) and Nitrous Oxide (N2O), which exacerbate global climate change and ocean acidification. These pollutants contribute to global climate change either directly, by acting as agents that trap heat in the atmosphere, or indirectly by aiding in the creation of additional greenhouse gases.

In August 2020, the IMO released the long-awaited “Fourth IMO Greenhouse Gas Study”.

On a positive note, through the years 2008 to 2018, the carbon intensity of international shipping improved roughly by 30%, and the total GHG emissions from shipping dropped by 7%, despite a 40% growth in maritime trade. However, during the years 2012 to 2018, the total GHG emissions from maritime shipping rose from 977 MMT to 1,076 MMT, while short-lived climate pollutants like black carbon and methane emissions rose by 12% and 150% respectively.

The year 2020, has seen an unprecedented decline in global emissions by 7%, which was a result of temporary behavioral changes in response to the massive economic disruption caused by the coronavirus pandemic and measures taken to contain it. Carbon intensity in shipping also improved by 11% in the year 2020, relative to 2018.

Shipping carries around 90% of all cargoes in the world by volume and is responsible for about 2-3% of GHG. Livestock, on the other hand, is responsible for 9.9% of GHG according to the United States Environmental Protection Agency. And yet, here we are, grappling with Zero Emission Vessels, whilst no one is talking about shutting down or curtailing the emissions from the livestock business. Strange world we live in!

To formalize PSL’s commitment towards preserving and conserving the environment and reducing our carbon footprint, we are ISO 14001: 2015 certified. In 2008, International shipping attributed to 916 MMT of CO2 emissions, roughly contributing to 2.85% of the global CO2 emissions, which was estimated at 32,822 MMT.

The IMO has used 2008 as a Baseline to plan and develop a roadmap for the comprehensive strategy on reducing GHGs from ships. Likewise, PSL has used 2008 as its baseline to monitor the average decline of CO2 emissions over its entire fleet. CO2 emissions were estimated at 554,145 tonnes in 2008, and 477,061 tonnes in 2020, a 13.9% (77,084 tonnes) reduction in CO2 emissions.

A clear understanding of established goals and targets over the years has led to a steady decline in the overall CO2 emissions and an improvement of the ship’s operational carbon intensity.

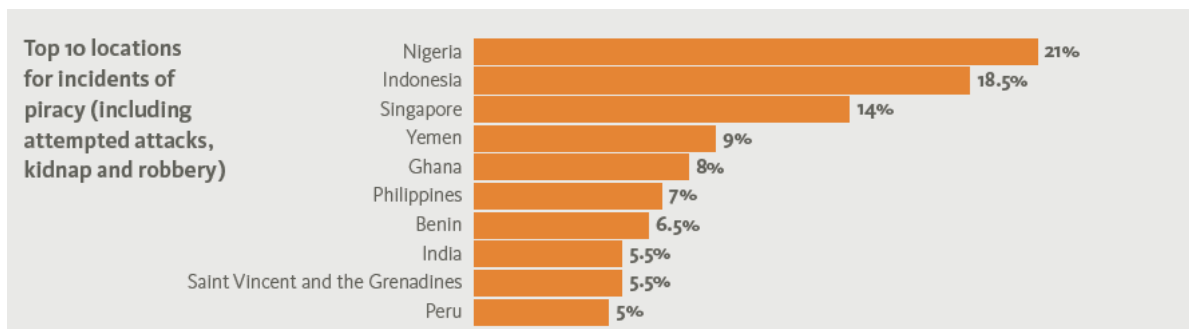
Vessel types	Y2014			Y2019			Y2020		
	No of Vessels	CO2 Emissions in tonnes	Carbon intensity - Grams CO2 per Tonne - Nautical Mile	No of Vessels	CO2 Emissions in tonnes	Carbon intensity - Grams CO2 per Tonne - Nautical Mile	No of Vessels	CO2 Emissions in tonnes	Carbon intensity - Grams CO2 per Tonne - Nautical Mile
Cement	3	16388	40.380	4	40614	28.607	4	38158	27.584
Handysize	13	168072	12.725	15	208807	11.939	15	184789	11.388
Supramax	9	148789	10.636	9	146847	9.783	9	135837	9.524
Ultramax (Eco)	2	14112	8.267	8	129815	7.167	8	118277	7.338
Log	11	103918	14.224	0	0	0.000	0	0	0.000
Bulk	6	57612	20.003	0	0	0.000	0	0	0.000
Whole Fleet	44	508891	12.884	36	526083	10.111	36	477061	9.941



Since 2014, the Company has been maintaining and evaluating emission records for the entire fleet, a credible baseline to evaluate progress. Over the years, the older vessels were phased out and additional fuel efficient “ECO” vessels were acquired. In the year 2014, the average carbon intensity per transport work was estimated at 12.884 Grams CO2 per Tonne – Nautical Mile, and in the year 2020, it was estimated at 9.941 Grams CO2 per Tonne – Nautical Mile. Using the year 2014 as a baseline, we have seen a 22.84% decline in the average carbon intensity over the entire fleet, a reduction of 2.943 grams CO2 per Tonne – Nautical Mile for the year 2020. A comparison between the years 2019 and 2020 for the same fleet of vessels, indicates a decline in CO2 emissions by 49,022 tonnes (9.32%) and a 1.68% decline in the average carbon intensity, a reduction of 0.17 grams CO2 per Tonne – Nautical Mile.

**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!

2020 witnessed an increase in the number of incidents of piracy and armed robbery the world over. The International Maritime Bureau (IMB) reports that in 2020 the number of incidents increased to 195 up from 162 in 2019. The Gulf of Guinea (GOG) is undisputedly the most dangerous stretch of water in the world. During 2020 a total of 135 seafarers, equating to around 95% of total kidnappings worldwide, were from ships trading in the GOG region. The chart which is a citation from IMB’s report for the year 2020 gives one an idea of the country-wise percentages of incidents reported during the year.



On a region-wise basis, of the 195 incidents that were reported globally, 88 were in West African waters, 62 in S.E. Asia, 30 in South and Central America, 10 in the Indian sub-continent, 4 in east Asia and 1 case elsewhere in the world. There were no incidents in the Gulf of Aden and Somalia. Nevertheless, all our ships sail at least 250 NM away from the Somali coast, strictly follow BMP5 guidelines, have armed guards while transiting the Gulf of Aden, as these areas are still denoted as High-Risk Areas. The IMB reports that Somali pirates continue to have the capacity to attack ships. The presence of international Navies and their patrolling the high-risk areas, and the use of armed security guards on board, have also succeeded in making piracy for the Somalis less lucrative.

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 centre for monitoring the movement of all vessels in South East 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.

## Cybersecurity:

As modern and technologically advanced newer ships become increasingly connected and software-dependent on their day-to-day systems, cyber security continues to be a key area requiring increased attention to control operational and safety risks on these ships, while remaining a major issue to be tackled by shipping



companies during their board meetings worldwide. We continue assessing this threat to increase our overall security posture and to nurture a secure environment within which the organization can work and minimize the risk of any security breach.

Cyber risk is seen as an area where the threads in the global risk environment come together and the scale and sophistication of risks keeps growing. This is also fueled in part by geopolitical trends - more state sponsored attacks could add to those cyber-attacks that are financially motivated. Cyber exposure is growing in companies due to the rapid increase of interconnected devices, due to emerging technologies use onboard ships, and the use of artificial Intelligence. The prime focus of our industry will now be our ability to respond to these ever-increasing Cyber-attacks.

The IMO resolution MSC.428(98) on Maritime Cyber Risk Management in SMS has already come into effect from 1<sup>st</sup> of January 2021. The Resolution states that an approved SMS should consider cyber risk management in accordance with the objectives and functional requirements of the ISM Code. It encourages administrations to ensure that proper risk assessments and measures to protect ships from cyber incidents are included in the SMS. It also requires that these measures be implemented no later than the first annual verification of the company's DOC after 1<sup>st</sup> January 2021. We have already completed this on all our vessels.

Though we have not had any cybercrime incidents till date, at PSL we constantly review and maintain our findings that:

- Our present systems incorporated in Office environment and onboard ships are “robust” enough with the understanding that both IT and OT systems may be involved in cyber security incidents.
- During 2020, we have undergone a Vulnerability Assessment and Penetration Testing in the office IT infrastructure by Nettitude, a subsidiary of Lloyds Register and a member of CREST which is recognised globally as the cyber assurance body for the technical security industry. A vulnerability assessment was also done on a sample vessel in the fleet. Based on the gap analysis report, we have acted and completed all the recommended measures both in the office and on board our ships, to increase our cybersecurity posture.
- Additionally, the integrity and vulnerability of our financial and accounting related database is audited by EY once a year.
- In 2020, we have upgraded the Firewall version in Office.
- Although most ships are now connected to the internet, only permitted whitelisted websites can be accessed, minimizing the risk of malware and phishing. The OT systems in machinery spaces and the vital navigation equipment are segregated and not connected to the internet. That minimizes, if not eliminates, the risk due to Cyber-attacks onboard ships.
- AIS, ECDIS and Vessel Data Recorders (VDR) etc. are part of the Integrated Bridge System (IBS). Our system setup on-board ensures that these equipment are not directly connected to the internet at any time and hence, no data from these equipment is available or transmitted directly online.

Nevertheless, to reduce vulnerability to both cyber accidents and cyber-attacks, and to ensure safe and efficient operations of our fleet:

- at all levels of the company, from senior management ashore to the crew on-board, are involved in the safety and security culture onboard each vessel;
- in company policies, by considering how to align cyber risks with the existing security and safety risk management requirements contained in the ISPS and ISM Codes; and
- in relevant onboard procedures, by including new related requirements in in-house training programs, day to day operations of the vessel and maintenance of critical cyber systems, if any, that may exist onboard.

**Digitalization:** During 2020, due to the Covid-19 pandemic, most employees had to work remotely from home for several months. The transition from working in office to working remotely was very smooth and achieved in a very short time. This was possible because the Management at PSL has always been fully committed to support digitalization and we had been regularly going through the process of identifying and transforming the working procedures at PSL, which we are committed to continue. At PSL continuous training is the key to keep staff and seafarers up to speed with new technology which we take very seriously. Although our dedicated Training Center had to go into remote-operation mode during most part of 2020, the training of our crew was not affected as all of it was quickly moved to online platforms and the response from both the trainers and crew have been very positive.

## JOINT VENTURES:

**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 4.55 million, which works out to about 223% of our original Investment made in years 2002-2003.

## IN CONCLUSION:

**Demand:** The environment for 2020 is going to be characterized by volatility. Downside risks for 2020 will include, amongst others, Geopolitical tensions; China importing lower quantities of Coal and Iron Ore; Protectionism increasing; Vessel supply not being absorbed fast enough; and excess Shipyard capacity holding the promise of more ships to come. But it is not all gloom and doom. The upside potential for 2020 consists of, amongst others, the fiscal and monetary stimulus of \$ 17.9 trillion will steer World GDP growth to 5.5% as per the IMF; the 'One-Belt-One-Road' that China continues to invest in linking some 65 countries from Asia/China to Europe; China importing more high-grade Iron Ore as they combat pollution and shift to higher grades of Steel production requiring better quality imported Iron Ore; China importing more Coal to reduce pollution, to reduce the terrifyingly high annual death toll at Coal mines invariably accompanied by protests from the relatives of those that have perished; Slower ordering at shipyards due to challenging markets, lack of traditional finance sources and regulatory changes that could make such 'new ships' obsolete well before their retirement age; Higher slippage rates due to challenging markets; Higher recycling rates due to challenging markets and regulatory pressure; The US economy outperforming expectations; Low oil prices leading to greater World economic growth rates; and weaker currencies in the Euro zone and Japan helping them to export their economies out of trouble. Most importantly, with geopolitical tensions receding with the US under Biden; Reduction in the trade war rhetoric between US and China; Brexit uncertainty disappearing; the Federal Reserve providing liquidity as needed; 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 by removing the overhang of uncertainty that has crippled decision-making recently.

**Supply:** Under the current conditions, approximately 12.77% (111.24 MDWT) of the existing world fleet would be over 20 years of age between 2020-2023 if no ships are recycled till the end of 2023. These ships would come under tremendous financial pressure due to the upcoming expensive regulatory requirements. Depending on how challenging the freight markets turn out to be and the increasing regulatory pressure on older ships in the period 2021 to 2023 many of these ships would be forced to take the decision to head to the recycling yards in Asia.

With respect to the approximately 6.2% of new ships (56.23 MDWT) scheduled to be delivered to the end of 2023, the lack of funding coupled with delays in deliveries at shipyards would subject them to a degree of slippage (it was 11.8% in 2020), that would help slow down their arrivals into the freight market.

**Financing:** The Covid-19 pandemic created havoc in financial markets during the first half of 2020. Debt capital markets in Thailand and elsewhere were shut for businesses that were deemed to have been impacted by the pandemic. Banks around the world nervously watched as many of their customers suffered the risk of capitulation, from the onslaught wreaked upon businesses by this 100-nanometer virus. Banks focused on trying to survive themselves, rather than grow business by granting new loans. The number of ship financiers in Singapore dwindled further as banks closed their offices, to cut losses suffered mainly in the commodity and offshore sectors.

Covid-19 did not impact the conversation that the industry was having on decarbonization. If anything, there was an acceleration in the progress that the industry was making to address the vexatious issue of pollution. There was a raft of zero carbon vessel prototype projects announcements in 2020 and we expect more to come in 2021. The upside of this is that it has ground the new building orderbook to a screeching halt. A trend that we do not expect will reverse itself in 2021 or even 2022, as new vessel designs on offer by shipyards simply do not meet the International Maritime Organization's target to reduce emissions per unit of transport work by 40% in 2030 compared to the levels in 2008.

In 2019, several leading commercial banks active in Ship Finance launched the Poseidon Principles by which they committed to integrating climate considerations into their ship lending decisions. Around USD 1 Billion of Poseidon Principle linked loans were signed in 2020. This was the year that we also signed our first "green loan" with BNP Paribas to finance/refinance the aggregate cost of our ballast water treatment systems. We expect the trend of increased focus on environmental, social, and corporate governance (ESG) by the financial community to accelerate in the future.

According to Marine Money, the Shipping Industry (excluding offshore) as a whole, raised USD 9.82 Billion from capital markets in 2020 compared to USD 6.7 Billion in 2019. USD 7.86 Billion came in from Bonds and USD 1.96 billion from Public Equity. A sizeable USD 1,062 million of public equity was raised through primary offerings (IPOs), the highest figure since 2014. This compares to just USD 15 Million raised through primary offerings last year. Capital market activity was relatively muted in the first half of 2020 but recovered in the second half as economies reopened and freights rate recovered. The container shipping sector had a strong rebound in rates, and as one would expect, capital followed. The container sector was therefore the biggest issuer of debt in 2020 with over USD 3.6 Billion. In contrast, financial market participants were somewhat more circumspect about the rebound in the dry-bulk sector and so a lowly USD 227 million of debt was issued by dry-bulk companies.

## 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.

**For and on behalf of the Board of Directors of  
Precious Shipping Public Company Limited**



**Chaipatr Srivisarvacha**

Chairman of the Board of Directors



**Khalid Moinuddin Hashim**

Managing Director

19 February 2021