

TSAKOS ENERGY NAVIGATION LTD

Form 20-F

April 12, 2019

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 20-F

REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934
OR

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2018

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
OR

SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
Date of event requiring this shell company report

For the transition period from to

Commission file number 001-31236

TSAKOS ENERGY NAVIGATION LIMITED

(Exact name of Registrant as specified in its charter)

Not Applicable

(Translation of Registrant's name into English)

Bermuda

(Jurisdiction of incorporation or organization)

367 Syngrou Avenue

175 64 P. Faliro

Athens, Greece

011-30210-9407710

(Address of principal executive offices)

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(Name, Address, Telephone Number, E-mail and Facsimile Number of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Shares, par value \$1.00 per share	New York Stock Exchange
Series B Cumulative Redeemable Perpetual Preferred Shares, par value \$1.00 per share	New York Stock Exchange
Series C Cumulative Redeemable Perpetual Preferred Shares, par value \$1.00 per share	New York Stock Exchange

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Series D Cumulative Redeemable Perpetual Preferred Shares, par value \$1.00 per share	New York Stock Exchange
Series E Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares, par value \$1.00 per share	New York Stock Exchange
Series F Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares, par value \$1.00 per share	New York Stock Exchange

Securities registered or to be registered pursuant to Section 12(g) of the Act: None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act: None

As of December 31, 2018, there were 87,604,645 of the registrant's Common Shares, 2,000,000 Series B Preferred Shares, 2,000,000 Series C Preferred Shares, 3,424,803 Series D Preferred Shares, 4,600,000 Series E Preferred Shares and 6,000,000 Series F Preferred Shares outstanding.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. Yes No

Note: Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or an emerging growth company. See the definitions of large accelerated filer, accelerated filer and emerging growth company in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated filer Non-accelerated filer Emerging growth company

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP International Financial Reporting Standards as issued by the International Accounting Standards Board Other
If Other has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow. Item 17 Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

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FORWARD-LOOKING INFORMATION

All statements in this Annual Report on Form 20-F that are not statements of historical fact are forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995. The disclosure and analysis set forth in this Annual Report on Form 20-F includes assumptions, expectations, projections, intentions and beliefs about future events in a number of places, particularly in relation to our operations, cash flows, financial position, plans, strategies, business prospects, changes and trends in our business and the markets in which we operate. These statements are intended as forward-looking statements. In some cases, predictive, future-tense or forward-looking words such as believe, intend, anticipate, estimate, project, forecast, plan, potential, may, should and expect and similar expressions are used in forward-looking statements, but are not the exclusive means of identifying such statements.

Forward-looking statements include, but are not limited to, such matters as:

future operating or financial results and future revenues and expenses;

future, pending or recent business and vessel acquisitions, business strategy, areas of possible expansion and expected capital spending and our ability to fund such expenditure;

operating expenses including the availability of key employees, crew, length and number of off-hire days, dry-docking requirements and fuel and insurance costs;

general market conditions and shipping industry trends, including charter rates, vessel values and factors affecting supply and demand of crude oil, petroleum products and LNG;

our financial condition and liquidity, including our ability to make required payments under our credit facilities, comply with our loan covenants and obtain additional financing in the future to fund capital expenditures, acquisitions and other corporate activities;

the overall health and condition of the U.S. and global financial markets, including the value of the U.S. dollar relative to other currencies;

the carrying value of our vessels and the potential for any asset impairments;

our expectations about the time that it may take to construct and deliver new vessels or the useful lives of our vessels;

our continued ability to enter into period time charters with our customers and secure profitable employment for our vessels in the spot market;

the ability and willingness of our counterparties, including our charterers and shipyards, to honor their contractual obligations;

our expectations relating to dividend payments and ability to make such payments;

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our ability to leverage to our advantage the relationships and reputation of Tsakos Columbia Shipmanagement within the shipping industry;

our anticipated general and administrative expenses;

environmental and regulatory conditions, including changes in laws and regulations or actions taken by regulatory authorities;

risks inherent in vessel operation, including terrorism, piracy and discharge of pollutants;

potential liability from future litigation;

global and regional political conditions;

tanker, product carrier and LNG carrier supply and demand; and

other factors discussed in the Risk Factors described in Item 3 of this Annual Report on Form 20-F.

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We caution that the forward-looking statements included in this Annual Report on Form 20-F represent our estimates and assumptions only as of the date of this Annual Report on Form 20-F and are not intended to give any assurance as to future results. These forward-looking statements are not statements of historical fact and represent only our management's belief as of the date hereof, and involve risks and uncertainties that could cause actual results to differ materially and inversely from expectations expressed in or indicated by the forward-looking statements. Assumptions, expectations, projections, intentions and beliefs about future events may, and often do, vary from actual results and these differences can be material. There are a variety of factors, many of which are beyond our control, which affect our operations, performance, business strategy and results and could cause actual reported results and performance to differ materially from the performance and expectations expressed in these forward-looking statements. These factors include, but are not limited to, supply and demand for crude oil carriers, product tankers and LNG carriers, charter rates and vessel values, supply and demand for crude oil and petroleum products and liquefied natural gas, accidents, collisions and spills, environmental and other government regulation, the availability of debt financing, fluctuation of currency exchange and interest rates and the other risks and uncertainties that are outlined in this Annual Report on Form 20-F. As a result, the forward-looking events discussed in this Annual Report on Form 20-F might not occur and our actual results may differ materially from those anticipated in the forward-looking statements. Accordingly, you should not unduly rely on any forward-looking statements.

We undertake no obligation to update or revise any forward-looking statements contained in this Annual Report on Form 20-F, whether as a result of new information, future events, a change in our views or expectations or otherwise. New factors emerge from time to time, and it is not possible for us to predict all of these factors. Further, we cannot assess the impact of each such factor on our business or the extent to which any factor, or combination of factors, may cause actual results to be materially different from those contained in any forward-looking statement.

PART I

Tsakos Energy Navigation Limited is a Bermuda company that is referred to in this Annual Report on Form 20-F, together with its subsidiaries, as Tsakos Energy Navigation, the Company, we, us, or our. This report should be read in conjunction with our consolidated financial statements and the accompanying notes thereto, which are included in Item 18 to this report.

Item 1. Identity of Directors, Senior Management and Advisers

Not Applicable.

Item 2. Offer Statistics and Expected Timetable

Not Applicable.

Item 3. Key Information

Selected Consolidated Financial Data and Other Data

The following table presents selected consolidated financial and other data of Tsakos Energy Navigation Limited for each of the five years in the five-year period ended December 31, 2018. The table should be read together with Item 5. Operating and Financial Review and Prospects. The selected consolidated financial data of Tsakos Energy Navigation Limited is a summary of, is derived from and is qualified by reference to, our consolidated financial statements and notes thereto which have been prepared in accordance with U.S. generally accepted accounting principles (US GAAP).

Our audited consolidated statements of comprehensive (loss) income, other comprehensive (loss) income, stockholders' equity and cash flows for the years ended December 31, 2018, 2017, and 2016, and the

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consolidated balance sheets at December 31, 2018 and 2017, together with the notes thereto, are included in Item 18. Financial Statements and should be read in their entirety.

Selected Consolidated Financial and Other Data

(In thousands of U.S. dollars, except for share and per share amounts and fleet data)

	2018	2017	2016	2015	2014
Income Statement Data					
Voyage revenue	\$ 529,879	\$ 529,182	\$ 481,790	\$ 587,715	\$ 501,013
Expenses					
Voyage expenses	125,350	113,403	106,403	131,878	154,143
Charter hire expense	10,822	311			
Vessel operating expenses ⁽¹⁾	181,693	173,864	146,546	142,117	146,902
Depreciation and amortization	146,798	139,020	113,420	105,931	102,891
General and administrative expenses	27,032	26,324	25,611	21,787	21,029
Net loss (gain) on sale of vessels	364	3,860		(2,078)	
Vessels impairment charge	65,965	8,922			
Operating (loss) income	(28,145)	63,478	89,810	188,080	76,048
Other expenses (income):					
Interest and finance costs, net	76,809	56,839	35,873	30,019	43,074
Interest and investment income	(2,507)	(1,082)	(623)	(234)	(498)
Other, net	(1,405)	(1,464)	(1,935)	(128)	(246)
Total other expenses, net	72,897	54,293	33,315	29,657	42,330
Net (loss) income	(101,042)	9,185	56,495	158,423	33,718
Less: Net loss (income) attributable to non-controlling interest	1,839	(1,573)	(712)	(206)	(191)
Net (loss) income attributable to Tsakos Energy Navigation Limited	\$ (99,203)	\$ 7,612	\$ 55,783	\$ 158,217	\$ 33,527
Effect of preferred dividends	(33,763)	(23,776)	(15,875)	(13,437)	(8,438)
Net (loss) income attributable to Tsakos Energy Navigation Limited common stockholders	\$ (132,966)	\$ (16,164)	\$ 39,908	\$ 144,780	\$ 25,089
Per Share Data					
(Loss) Earnings per share, basic	\$ (1.53)	\$ (0.19)	\$ 0.47	\$ 1.69	\$ 0.32
(Loss) Earnings per share, diluted	\$ (1.53)	\$ (0.19)	\$ 0.47	\$ 1.69	\$ 0.32
Weighted average number of shares, basic	87,111,636	84,713,572	84,905,078	85,827,597	79,114,401
Weighted average number of shares, diluted	87,111,636	84,713,572	84,905,078	85,827,597	79,114,401
Dividends per common share, paid	\$ 0.15	\$ 0.20	\$ 0.29	\$ 0.24	\$ 0.15
Cash Flow Data					
Net cash provided by operating activities	73,945	170,827	170,354	234,409	106,971
Net cash used in investing activities	(179)	(241,797)	(576,075)	(174,754)	(254,307)
Net cash (used in) provided by financing activities	(55,913)	75,870	298,488	30,910	190,013
Balance Sheet Data (at year end)					
Cash and cash equivalents	\$ 204,763	\$ 189,763	\$ 187,777	\$ 289,676	\$ 202,107
Cash, restricted	15,763	12,910	9,996	15,330	12,334
Investments	1,000	1,000	1,000	1,000	1,000
Advances for vessels under construction	16,161	1,650	216,531	371,238	188,954
Vessels, net book value	2,829,447	3,028,404	2,677,061	2,053,286	2,199,154
Total assets	3,205,058	3,373,636	3,277,575	2,893,166	2,692,737
Long-term debt, including current portion	1,595,601	1,751,869	1,753,855	1,392,563	1,411,976
Total stockholders' equity	1,506,777	1,508,138	1,417,450	1,415,072	1,177,912
Fleet Data					
Average number of vessels	64.3	62.6	52.6	49.2	49.0
Number of vessels (at end of period)	64.0	65.0	58.0	49.0	50.0
Average age of fleet (in years) ⁽²⁾	8.2	7.7	7.9	8.5	7.7
Earnings capacity days ⁽³⁾	23,460	22,850	19,244	17,970	17,895
Off-hire days ⁽⁴⁾	887	755	674	376	406
Net earnings days ⁽⁵⁾	22,573	22,095	18,570	17,594	17,489
Percentage utilization ⁽⁶⁾	96.2%	96.7%	96.5%	97.9%	97.7%
Average TCE per vessel per day ⁽⁷⁾	\$ 18,226	\$ 18,931	\$ 20,412	\$ 25,940	\$ 19,834
Vessel operating expenses per ship per day ⁽⁸⁾	\$ 7,745	\$ 7,688	\$ 7,763	\$ 7,933	\$ 8,209

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Vessel overhead burden per ship per day ⁽⁹⁾	\$	1,152	\$	1,152	\$	1,331	\$	1,212	\$	1,175
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- (1) Vessel operating expenses are costs that vessel owners typically bear, including crew wages and expenses, vessel supplies and spares, insurance, tonnage tax, routine repairs and maintenance, quality and safety costs and other direct operating costs.
- (2) The average age of our fleet is the age of each vessel in each year from its delivery from the builder, weighted by the vessel's deadweight tonnage (dwt) in proportion to the total dwt of the fleet for each respective year.

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- (3) Earnings capacity days are the total number of days in a given period that we own or control vessels.
- (4) Off-hire days are days related to repairs, dry-dockings and special surveys, vessel upgrades and initial positioning after delivery of new vessels.
- (5) Net earnings days are the total number of days in any given period that we own vessels less the total number of off-hire days for that period.
- (6) Percentage utilization represents the percentage of earnings capacity days that the vessels were actually employed, i.e., net earnings days as a percentage of earnings capacity days
- (7) The shipping industry uses time charter equivalent, or TCE, to calculate revenues per vessel in dollars per day for vessels on voyage charters. The industry does this because it does not commonly express charter rates for vessels on voyage charters in dollars per day. TCE allows vessel operators to compare the revenues of vessels that are on voyage charters with those on time charters. TCE is a non-GAAP measure. For vessels on voyage charters, we calculate TCE by taking revenues earned on the voyage and deducting the voyage expenses (bunker fuel, port expenses, canal dues, charter commissions) and dividing by the actual number of voyage days. For the year ended December 31, 2018, TCE is calculated by taking voyage revenue less voyage costs divided by the number of revenue days less 378 days lost as a result of calculating revenue on a loading to discharge basis. The change in the calculation of days is due to the adoption of the new revenue recognition standard. For vessels on bareboat charter, for which we do not incur either voyage or operation costs, we calculate TCE by taking revenues earned on the charter and adding a representative amount for vessel operating expenses. TCE differs from average daily revenue earned in that TCE is based on revenues after voyage expenses and does not take into account off-hire days.

Derivation of time charter equivalent per day (amounts in thousands of U.S. dollars except for days and per day amounts):

	2018	2017	2016	2015	2014
Voyage revenues	\$ 529,879	\$ 529,182	\$ 481,790	\$ 587,715	\$ 501,013
Less: Voyage expenses	(125,350)	(113,403)	(106,403)	(131,878)	(154,143)
Add: Representative operating expenses for bareboat charter (\$10,000 daily)		2,500	3,660	560	
Time charter equivalent revenues	404,529	418,279	379,047	456,397	346,870
Net earnings days	22,195	22,095	18,570	17,594	17,489
Average TCE per vessel per day ⁽⁷⁾	\$ 18,226	\$ 18,931	\$ 20,412	\$ 25,940	\$ 19,834

- (8) Vessel operating expenses per ship per day represents vessel operating expenses divided by the earnings capacity days of vessels incurring operating expenses. Earnings capacity days of vessels on bareboat charters or chartered-in have been excluded.
- (9) Vessel overhead burden per ship per day is the total of management fees, management incentive awards, stock compensation expense and general and administrative expenses divided by the total number of earnings capacity days.

Capitalization

The following table sets forth our (i) cash and cash equivalents, (ii) restricted cash and (iii) consolidated capitalization as of December 31, 2018 on:

an actual basis; and

as adjusted basis giving effect to (i) debt repayments of \$50.6 million, (ii) the drawdown of \$150.7 million for the refinancing of five vessels and repayment of the same amount of debt, (iii) the drawdown and the payment of \$5.2 million to the shipbuilding yard for the Aframax tanker *Hull 5036*, (iv) the payment of \$15.0 million to the shipbuilding yard for the two Suezmax tankers, *Hull 8041* and *Hull 8042*, (v) the payment of \$10.2 million of preferred share dividends, (vi) the declaration of \$4.4 million common share dividend and (vii) the declaration of \$5.7 million preferred share dividends, all of which occurred after December 31, 2018 and on or before April 11, 2019.

Other than these adjustments, there has been no material change in our capitalization from debt or equity issuances, re-capitalization or special dividends between December 31, 2018 and April 11, 2019.

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This table should be read in conjunction with our consolidated financial statements and the notes thereto, and Item 5. Operating and Financial Review and Prospects, included elsewhere in this Annual Report.

<i>In thousands of U.S. Dollars</i>	As of December 31, 2018		
	Actual	Adjustments (Unaudited)	Adjusted (Unaudited)
Cash			
Cash and cash equivalents	\$ 204,763	(85,914)	118,849
Restricted cash	15,763		15,763
Total cash	220,526	(85,914)	134,612
Capitalization			
Debt:			
Long-term secured debt obligations (including current portion)	\$ 1,607,122	(45,471)	1,561,651
Stockholders equity:			
Preferred shares, \$1.00 par value; 25,000,000 authorized and 2,000,000 Series B Preferred Shares, 2,000,000 Series C Preferred Shares, 3,424,803 Series D Preferred Shares, 4,600,000 Series E Preferred Shares and 6,000,000 Series F Preferred Shares issued and outstanding at December 31, 2018 on an actual and as adjusted basis.	18,025		18,025
Common shares, \$1.00 par value; 175,000,000 shares authorized at December 31, 2018; 87,604,645 shares issued and outstanding on an actual and as adjusted basis	87,605		87,605
Additional paid-in capital	996,833		996,833
Accumulated other comprehensive loss	(8,660)		(8,660)
Retained earnings	400,933	(20,256)	380,677
Non-controlling interest	12,041		12,041
Total stockholders equity	1,506,777	(20,256)	1,486,521
Total capitalization	\$ 3,113,899	(65,727)	3,048,172

Reasons For the Offer and Use of Proceeds

Not Applicable.

General Market Overview***World Oil Demand/Supply and the Tanker Market***

All text, data and charts provided by Howe Robinson Partners

2018 was by many accounts the worst year on record for tanker shipping in the 21st century. Earnings for both the crude and products tanker markets disappointed for a third year in a row, with tonnage oversupply across the board and rising bunker prices hurting both segments. Excess OPEC crude production in Q4-18 ahead of a further 1.2 million bpd output cut agreement starting from January 2019 pushed earnings down to levels not seen since winter 2016/2017, resulting in yearly averages equal or below the 2017 levels in some cases. Despite some small pockets of positive news, especially US crude exports, the overall market picture for crude tankers was one of largely flat tonne-mile growth in 2018, as OPEC adjusted production when needed to restore some price stability in the market.

Global oil production rose by 2.5 million bpd YoY to 99.99 million bpd in 2018 as any losses from the OPEC+ group were more than offset by increases elsewhere, mostly in North America. Meanwhile, significant OECD crude stock-drawing over the past year also contributed to almost flat crude tanker tonne-miles in 2018.

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Clean petroleum products stock-draws kept up a strong pace as well, keeping product tanker trade growth at a negative deviation from its long term mean of 4-5% per year. The reversal of the 2015-2016 stockpiling dragged down cargo counts significantly in the first half of the year, and the absence of major export refinery expansions since 2015 also allowed the significantly high supply growth to catch up with ease and take a toll on owners' earnings. Refinery throughput, however, continued to grow last year with an estimated YoY increase of 600,000 bpd in 2018, followed by a further 1.2 million bpd rise in refinery runs in 2019.

VLCC earnings (basis TD3_C) fell 18% YoY to average \$19,000/day in 2018, with earnings stubbornly below \$10,000/day in the first half of the year.

Suezmax earnings (basis 70% TD20 and 30% TD6) rose slightly by ~\$1,000/day to \$14,000/day while the Aframax Composite (basis an average of TD7, TD8, TD9, TD19 & TD17) increased by 16% YoY to \$13,000/day.

In the products market, LR2 (basis TC1) earnings remained at similar levels to 2017 at \$11,000/day, LR1 (basis TC5) earnings fell 10% YoY to \$6,700/day while the MR Composite (basis an average of TC2/14, TC6, TC7, TC10 & TC11/4) dropped 8% YoY to average \$11,000/day.

Nominal freight rates (on a \$/tonne basis) in 2018 rose slightly for all sizes relative to 2017; however, rising bunker prices reduced owners' earnings for most of the year.

Newbuilding and second-hand prices increased across the board on the back of increased steel prices and a rush by some owners to catch the bottom of the market. Ordering activity, however, was relatively muted last year with VLCCs and MRs as the only sectors in which owners showed real interest, mostly in the first half of the year. Some relief for supply growth was provided by record high scrapping activity, mostly in the crude sector, with 32 VLCCs, 21 Suezmaxes and 42 Aframaxes heading for scrap yards during the year.

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Global Oil Supply and Demand

Total World Crude Production Excluding Biofuels (Source: IEA)

World oil production rose by 2.5 million bpd YoY to 99.99 million bpd in 2018 as any losses from OPEC+ were more than offset by increases elsewhere. OPEC, along with ten non-OPEC producing countries, extended their 1.2 million bpd production cuts into the first half of 2018; however, involuntary losses from the likes of Venezuela and Angola pushed total OPEC production 150,000 bpd lower YoY to 31.91 million bpd in the first half of 2018. This led major producers within the OPEC+ group to step in and increase their output to bring compliance down to 100% (as opposed to the 140% overcompliance at the time). US sanctions re-imposition on Iran started taking a toll on total production in the second half of the year with Iran losing almost 1 million bpd since the announcement was made in May 2018, to end the year at 2.8 million bpd, the lowest level since March 2015. A rebound in Nigerian and Libyan production, increases from Saudi Arabia, Russia, the UAE and Iraq, and ever-growing US output led to supply outpacing demand by 1.07 million bpd in Q3-18, resulting in the OPEC+ group announcing a new round of 1.2 million bpd production cuts, this time excluding Iran, Venezuela and Libya, as of January 19. Saudi Arabia, the UAE and Russia alone opened the floodgates in Q4-18 to manage and pocket any revenues from the additional barrels in the market before the cuts come into place in January with their production dropping by 780,000 bpd quarter-on-quarter to 25.8 million bpd.

OPEC's crude production fell by 580,000 bpd YoY to 32.04 million bpd in 2018 driven by countries that saw their output decreasing involuntarily through the year due to ageing fields, financial difficulties, and sanctions, among other reasons. Falling by 570,000 bpd YoY, Venezuelan output reached a historical low level in 2018 to 1.4 million bpd. As output sinks and the economy spirals deeper into crisis, it is hard to imagine a scenario under which production in the country is recovered, especially now that US sanctions have been imposed on Caracas and the political crisis deepens. US sanctions have also proved detrimental for Iranian output, which declined by 230,000 bpd YoY to 3.58 million bpd and currently stands at levels last seen in 2015.

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Since the announcement of sanctions was made, Iranian exports have collapsed below 1 million bpd and despite waivers granted to a few countries, traditional buyers in Europe, Japan and South Korea have appeared to be quite sceptical on purchasing these barrels.

Angola has also been one of last year's underperformers as steep declines at mature fields and years' long under-investment pushed output 150,000 bpd lower at 1.49 million bpd. However, Total's ultra-deep Kaombo project start-up in July 2018, and an improvement in the country's commercial terms has recently sparked some interest from international oil majors, which might revive somewhat the West African country's oil industry in 2019.

On the bright side, Libyan and Nigerian output rebounded in 2018 with combined gains of 210,000 bpd YoY to 970,000 bpd and 1.6 million bpd, respectively, however Libya's sustainability remains questionable as militia attacks shut in significant volumes from month to month. Saudi Arabian output stood 370,000 bpd higher YoY to 10.33 million bpd; however, it fluctuated from 9.92 million bpd in March 2018 to its historically high levels of 11.06 million bpd in November 2018 as the Kingdom was opening/closing the taps when necessary to keep oil supply on track with oil demand during the year. The UAE hit a record-high output in November 2018 at 3.33 million bpd, to average the year 2.5% higher YoY at 3 million bpd, while Iraqi production rose by 90,000 bpd to 4.56 million bpd with exports from Basrah rising to an unprecedented 3.63 million bpd in December 2018.

Total non-OPEC production rose by 2.7 million bpd YoY to 62.58 million bpd in 2018, driven by increases mostly in North America. US oil production climbed by 2.15 million bpd to average the year at 15.42 million bpd, with crude accounting for 1.6 million bpd of the total growth. Increased production and some infrastructure developments have more than doubled crude exports, which as of Nov-18 were at 2.33 million bpd. The majority of these additional barrels are heading east, contributing to the tonne-mile effect on the crude tanker market. U.S. supply growth is expected to slow down in 2019, remaining at a rather healthy 1.3 million bpd YoY, due to increasing base decline and as shale producers moderate the pace of expansion following an almost 40% drop in crude prices in Q4-18.

Canadian production rose by 7.3% YoY to 5.17 million bpd; however, oil production might decline this year as it faces record high discounts for its crude and brimming inventories. Alberta announced in early December it would mandate temporary production cuts of 325,000 bpd in Q1-19 to drawdown the excess crude in storage and 95,000 bpd for the rest of the year. For the remaining OECD countries, North Sea crude production dropped by 100,000 bpd YoY to 3.39 million bpd, while Mexican output fell by 6.7% YoY to 2.08 million bpd. Total OECD oil output was 2.27 million bpd higher YoY, while a further 1.23 million bpd increase is expected in 2019.

Non-OECD production rose only marginally YoY to 29.06 million bpd with Russia providing the only significant gains in total output. Even though Russia was part of the OPEC+ production cut agreement and its adherence to the deal had been quite strong, production set an all-time high of 11.78 million bpd in Dec-18, to average the year 170,000 bpd higher at 11.49 million bpd. Kazakhstan's oil output set a record high level of 2.03 million bpd in Nov-18 with the year averaging at 1.93 million bpd, 5.6% higher compared to 2017, as its Tengiz, Kashagan and Karachaganak were pumping at steadily growing rates. Output in non-OECD Asia continued its downward trajectory for a third consecutive year driven by falling Chinese production that has posted losses of 40,000 bpd which are expected to deepen by a further 50,000 bpd drop in 2019. Brazilian production was quite disappointing last year, as the much-anticipated jump in output didn't materialise with 2018 standing 40,000 bpd lower compared to 2017 at 2.7 million bpd due to delays on offshore production platforms' start-ups. However, thanks to some FPSOs and offshore fields that started up at the end of 2018, and a number of additional offshore production facilities scheduled to come online in 2019, Brazilian output is expected to post the second biggest growth after the US this year at around 365,000 bpd.

OECD industry crude stocks have come significantly off their early 2017 peak levels, averaging 100 million bbls lower YoY at 1,087.5 million bbls in 2018, comfortably below their five-year average (although not below the pre-2015 stock-build average). Between May and September, OECD crude inventories dropped by 77 million

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bbls; however, lower oil prices and seasonal factors contributed to a 48 million bbl build in the last quarter of the year. The increase in Q4-18 was driven by stockbuilding in North America where crude inventories rose counter-seasonally to 610.9 million bbls in Nov-18 their highest level in a year, despite refineries coming back from maintenance. High refining utilisation pushed down crude stocks during the first eight months of the year; however, higher shale oil and Canadian production have started to overwhelm capacity and stocks are currently above their five-year average. OECD Europe stocks reached their lowest level since Feb-15 in Dec-18 at 325.3 million bbls, while OECD Pacific inventories have stood below their five-year average since Mar-18.

Total OECD Crude Stocks vs. 5-Year Average (Source: IEA)

2018 global oil demand grew by 1.3 million bpd YoY, at a slower pace compared to 2017 (+1.6m bpd YoY) and below initial expectations of 1.5 million bpd YoY growth. Demand marginally outpaced supply by 100,000 bpd in Q1-18 before the market turned into oversupply for the rest of the year. World oil demand started the year strongly, supported by cold weather in Europe and the US, the start-up of petrochemical capacity in the US, and solid economic growth. As a result Q1-18 demand grew by 1.8 million bpd YoY, with OECD nations contributing 1 million bpd of the total. A significant YoY drop in European demand and a slowdown in US growth pushed world demand growth in Q2-18 at only 560,000 bpd. A 50% increase in oil prices in Q2-18 that was partly passed through to end-users and currency depreciation in some countries that amplified the impact of higher oil prices were partly responsible for the slowdown. Robust non-OECD demand growth in Q3-18 increased total demand up to 99.79 million bpd. Non-OECD Asia, supported by China and India, continued to be the main contributor to global growth accounting for 74% of the total growth in Q3-18. Global oil demand growth accelerated slightly through the end of the year to 1.4 million bpd in Q4-18. The US was the main contributor to OECD growth in the second half of the year, supported by ethane and gasoil, with OECD demand posting 420,000 bpd gains in the year. Total non-OECD demand was stronger, with growth accelerating in the second half of 2018, and is estimated to have increased by 850,000 bpd in 2018.

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Total Global Oil Demand (Source: IEA)

Crude Tanker Demand

In 2018, world crude trade experienced a 1.8% YoY fall in terms of volumes due to excessive stock-drawing, a slowdown in total oil demand growth, geopolitical turmoil, and production losses from Venezuela, Angola and Iran that offset Atlantic production increases and OPEC decision making just to name a few. In terms of tonne-miles, however, crude tanker trade saw a slight YoY increase of 0.5% amid increased Atlantic/East crude trade in the first half of the year. VLCC demand came off by 1.8% YoY with volumes falling from 21.49 million bpd in Jan-18 down to 19.22 million bpd in Sep-18 before rebounding back at 20.82 million bpd in Q4-18.

Significant increases on VLCC crude liftings from the US heading east were not enough to offset any losses from South America and West Africa. On the other hand, Suezmax trade grew by 2.3% YoY in terms of volumes, while the tonne-mile effect was much more pronounced with a YoY growth of 6.5%. The main contributor to the growth was the market share Suezmaxes gained on the long-haul Brazil/East and Libya/East trades, while additional barrels from West Africa in the first quarter of the year also supported the overall Suezmax trade in 2018.

Aframax crude volumes collapsed last year by 6.1% to an average of 11.32 million bpd compared to 12.05 million bpd in 2017 as liftings from traditional key regions including the Baltic, the Mediterranean (the Med) and the Caribbean towards the end of the year and increased competition from Suezmaxes in the Black Sea, South America and Libya took a toll on total Aframax crude shipments. Despite a dip in Q1-18, tonne-miles rebounded and following a strong Q4-18 they saw a 3.4% YoY increase as more NW Europe barrels made their way to the US.

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Fuel oil trade also declined last year across all sectors posting a 4.7% YoY drop in terms of volumes and a 6.2% YoY fall in terms of tonne-miles, with Aframaxes hurt the most. Falling fuel oil trade is expected to continue going forward especially as the new lower sulphur bunker regulation comes into play in less than a year from now.

Total Crude Tanker Demand Split by Vessel Size Volumes vs. Tonne-miles (Source: Lloyds List Intelligence)

Asia/Far East imports were once again the main contributor to the tonne-mile growth in 2018. Tonne-miles rose by 6.2% YoY driven by a 13.6% quarter-on-quarter increase in Q4-18 most of which was concentrated in China. Other than the traditional MEG suppliers, Chinese imports from Russia and Brazil surged last year, while Libyan barrels made their way east in 2018 supporting longer-haul Suezmax trade. US exports to Asia stood at 1.13 million bpd in Nov-18 compared to 524,000 bpd at the beginning of the year. Despite strong buying interest for US barrels from China in the first half of year, trade war tensions between the two countries brought volumes down to zero with US crude making its way to South Korea, Japan and Taiwan instead. With the production cuts in place, exports from the Middle East dropped slightly YoY. Despite growing shipments to Asia Far East, the loss of market share in the US and the Med pushed tonne-miles ex-MEG down by 2.6% YoY, hurting primarily the VLCC sector. Flows from the Middle East were also affected by the significant drop in exports from Iran after the US announced re-imposition of sanctions on Tehran. Iranian shipments fell to 0.62 million bpd in Dec-18 compared to April's high of 2.61 million bpd. Declining local production resulted in a fall in West African exports last year; however, exports out of Nigeria were boosted in the second half of the year. As explained above, South American exports dropped last year following a 570,000 bpd YoY fall in Venezuelan output and Brazil's disappointing output levels; however, tonne-miles out of the region rose by 8.4% YoY in the last quarter of the year as the start-up of a few offshore platforms in Brazil pushed exports higher with the majority of these incremental barrels heading east of Suez.

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Monthly US Crude Exports By Destination (Source: Energy Information Administration)

Products Tanker Demand

Despite a 1.2% increase in global oil demand, products tanker trade disappointed for another year in 2018. Sizeable stock-drawing since mid-2016 significantly dampened trade and arbitrage movements, as major OECD regions relied less on imports to serve their energy needs. For the first half of the year, OECD products inventories were on average 25 million bbls below their five-year average at 1,414 million bbls. During Q3-18, OECD products stocks rose by 64.6 million bbls compared to Q2-18, the largest quarterly gain in three years, amid record high refinery runs in the US driven by lower crude prices and strong demand for products exports. Following a counter-seasonal reduction in gasoline US stocks due to lower prices that reduced gasoline imports to the US and an 8.2 million bbls fall in middle distillates on the back of higher demand, OECD America inventories dropped by 19 million bbls on the quarter in Q4-18. Lower diesel refinery output in Europe and a seasonal increase in kerosene consumption in Asia due to colder weather contributed to total OECD products stocks to fall again below their five-year average. The closer global product stocks are to their normalized historical levels, the more sensitive to arbitrage-driven movements the market becomes, with a large portion of the past years stock-draws expected to return to seaborne volumes in 2019 and beyond.

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Total OECD Product Stocks vs. 5-Year Average (Source: IEA)

Refining margins in 2018 were 24.7% lower YoY in NW Europe/Med, 24.5% lower YoY on the US Gulf and 28.7% lower YoY in Singapore. The impact of stock-drawing finally appeared in refinery margins in May-18 when despite a \$5/bbl increase in Brent prices, product cracks persisted and margins rose.

Refining margins strengthened in NW Europe/Med during the first couple months of the second half of the year, as volatile crude prices in August eventually resulted in a lower average feedstock cost to refiners. However, Sep-18 brought an unpleasant surprise as the rapid rise in oil prices resulted in margins crashing in most of the regions to levels last seen at the start of the year even as refinery throughput was lower on the back of seasonal maintenance. The year closed with refinery margins in Singapore falling by 65% month-on-month and by 46% in NW Europe/Med despite a significant drop in Brent crude prices with global refinery throughput hitting 83.03 million bpd in Dec-18.

Following high refinery runs of 81.7 million bpd in Q4-17, Q1-18 throughput was 1 million bpd lower quarter-on-quarter to 80.7 million bpd due to unplanned outages in the US, lower than expected throughput in China and a more extensive maintenance programme in the MEG. Driven by a push in Q2-18, refinery runs closed the first half of the year on a positive note with the east of Suez dominating the growth in refining activity, as China's 760,000 bpd YoY growth proved to be higher than total growth of 380,000 bpd, more than offsetting a 605,000 bpd decline in the Atlantic Basin.

Following a 3.2 million bpd decline between September-October, OECD throughput rose to 39.43 million bpd in Dec-18. Non-OECD throughput growth fell to just 230,000 bpd in Q4-18, significantly lower compared to the rest of the year's 1.1 million bpd average growth. The drop came from Latin America, which posted its largest YoY decline at 630,000 bpd. Total refinery throughput has been growing consistently on a yearly basis with the IEA estimating a 0.6 million bpd YoY increase in 2018 to 82.1 million bpd. In 2019 global refinery

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throughput is expected to rise by a further 1.2 million bpd YoY to 83.3 million bpd with non-OECD countries contributing 44.4 million bpd of the total (+0.7 million bpd YoY) and OECD the remaining 38.9 million bpd (+0.5 million bpd). China is expected to be the driving force with an estimated 0.5 million bpd increase to 12.5 million bpd, followed by OECD Americas that is forecast to gain 0.3 million bpd YoY to 19.7 million bpd this year.

Refining Margins (Brent in EU, Dubai in Singapore) and Global Refinery Throughput (Source: IEA)

The lack of mega export-refinery additions over the past three years has also hurt the product tanker market; however, this trend is expected to reverse this year as 2.6 million bpd of refining capacity is scheduled to come online in 2019. Most of last year's refinery additions came online at the end of the year, hence they are expected to ramp up production this year. Petrochina's 260,000 bpd Anning refinery exported its first diesel cargo end-April, while a 200,000 bpd expansion at the state-owned CNOOC's Huizhou refinery has supported gasoline exports from China. Vietnam's 200,000 bpd Nghi Son refinery started commercial production in mid-November after months of tests and it offered its first gasoline export cargo in Sep-18 after receiving the government's approval to start exporting oil products. Along with the 130,000 Dung Quat refinery that came online in 2009, they are expected to meet 70% of the country's oil products demand and reduce Vietnam's dependency on supply mainly from South Korea. The 300,000 RAPID refinery in Malaysia has started test runs after receiving its first cargo in Dec-18, while Chinese refiner Hengli's 400,000 bpd Dalian plant started trial operations in mid-December. SOCAR inaugurated its 215,000 bpd STAR refinery in Turkey in mid-October; however, the first tanker delivery is not expected before Jun-19.

World Tanker Fleet (all numbers from 1st of January 2018 to 1st of January 2019).

After a couple years of stubbornly high fleet growth, VLCC fleet growth in 2018 came in at its lowest level in a decade at 0.8%, driven by increased removals that made 2018 the heaviest scrapping year since 2010. Despite 38 VLCC deliveries, 32 vessels were reported as scrapped with the vast majority leaving the fleet in the

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first half of the year (24 removals, as opposed to eight in the second half of 2018). Due to weak market conditions slippage averaged at 37.7% much higher than the historical average of 25.1%. 76 VLCCs are scheduled to come into the market in 2019 with ten of them already delivered in January. Scrapping is expected to slow down this year as owners might be tempted to keep older tonnage around in anticipation of a stronger market in 2020. Despite a forecasted 5.9% fleet growth in 2019, after accounting for slippage and scrapping, 2019 might prove to be another year of low fleet growth if we effectively remove roughly 1% of the VLCC fleet due to scrubber retrofits, 25 NITC vessels which may turn to storage under sanctions, and increased removals/scrapping if this year turns out to be another poor year in terms of earnings.

The Suezmax fleet came off peak fleet growth last year. Similar to the VLCC fleet, 21 vessels that were removed from the Suezmax fleet were enough to offset 31 additions bringing the year's growth to 2%. Excluding six cancellations, slippage for 2018 was at 35.4%, marginally lower than the historical average of 37%. We are counting 30 scheduled deliveries for 2019 with six of them already delivered in January; however, after accounting for slippage and forecasted removals, Suezmax fleet growth is expected at 3.2% in 2019.

In 2018, a total of 48 Aframax (including fully coated LR2s) were added to the fleet, bringing total fleet growth down to 0.6% compared to 4% in 2017 due to negative growth in the uncoated Aframax fleet. Slippage was close to the historical averages at about 31.4% as in the beginning of the year a total of 70 Aframax (including LR2s) were due to come into the market. 38 removals from the uncoated Aframax fleet more than offset the 26 additions, bringing fleet growth further down to 2%, while 22 deliveries in the LR2 fleet combined with only four removals brought fleet growth for their coated counterparts to 4.9%, albeit a five-year low level. Following another disappointing year in the products market and an uptick in the crude market in the second half of 2018, the clean trading LR2 fleet posted negative fleet growth for the first time since 2011 as in 2018 we saw 27 vessels switching from trading Clean Petroleum Products (CPP) to trading Dirty Petroleum Products (DPP) as opposed to seven that cleaned-up bringing the year's switching activity down to 20 net dirty-ups, providing extra pressure on the total dirty trading Aframax fleet. A total of 65 Aframax are due to be delivered in 2019, out of which 39 are coated. In January we counted eight LR2 deliveries and seven uncoated Aframax additions. 2019 is expected to be a higher year in terms of fleet growth 2.3% after slippage and forecasted scrapping however the market's anticipation for a much stronger products market in lieu of the new lower sulphur regulation in January 2020 might decelerate the dirty-ups we have seen the past four years.

Panamax fleet growth (including fully coated LR1s) dropped to 0.9% in 2018 compared to 3.7% in 2017. 13 vessels from the originally scheduled 25 were delivered in 2018, while nine were removed. All of the 2018 additions were coated LR1s that saw their 2018 growth at 2.5%. The clean trading LR1 fleet rose by 5.4% YoY as net switching activity came down to zero last year (five dirty-ups vs five clean-ups). 19 vessels are due to be delivered this year out of which three have already come into the market, while only one of the scheduled deliveries is yet to be reported as coated. Due to the small orderbook and the relatively young LR1 fleet, fleet growth is expected slightly lower YoY at 1.9% in 2019.

The MR fleet (45k-55k dwt) grew 2.6% in 2018, a touch below the 2017 growth rate of 3.2%. A total of 52 MRs hit the water in 2018 from the originally 70 vessels that were due for delivery in the beginning of 2018 pushing the year's slippage rate slightly lower compared to its long-term average at about 25%. In terms of scrapping, we witnessed the highest scrapping year since 2010 with 15 MRs of an average age of 23.6 years leaving the market mostly in the first half of the year (11 removals in the first half of 2018). 113 vessels are due for delivery in 2019 out of which nine have already come into the market in January. After accounting for slippage and lower scrapping activity, 2019 MR fleet growth is expected closer to its historical average at 5.4%.

From the originally scheduled 23 Handys (27k-45k dwt) a total of 14 delivered in 2018, while 29 were removed bringing total Handy fleet growth to its lowest level since 2013 at -1.7%. For 2019, 25 vessels are scheduled to hit the water with three of them already delivered. However, the quite squeezed orderbook and the current 47 vessels that are over 25 years old are expected to generate another year of low fleet growth for the Handy fleet at around 1%. As the vessel size isn't quite the flavour of the month in terms of ordering, when combined with an ageing fleet, the Handy fleet growth is expected to remain below 2% during the next five years.

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	Newbuilding Tanker Prices (South Korea)												
	Jan-07	Jan-08	Jan-09	Jan-10	Jan-11	Jan-12	Jan-13	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18	Jan-19
VLCC	\$130.0m	\$146.0m	\$130.0m	\$100.0m	\$105.0m	\$100.0m	\$90.0m	\$92.0m	\$98.0m	\$93.0m	\$83.0m	\$82.8m	\$92.2m
Suezmax	\$ 80.5m	\$ 86.0m	\$ 90.0m	\$ 60.0m	\$ 65.0m	\$ 62.0m	\$60.0m	\$67.0m	\$65.0m	\$65.0m	\$55.0m	\$53.0m	\$61.4m
Aframax (Uncoated)	\$ 65.5m	\$ 72.0m	\$ 75.0m	\$ 51.0m	\$ 57.0m	\$ 52.0m	\$48.0m	\$53.0m	\$54.0m	\$53.0m	\$42.0m	\$44.0m	\$52.0m
47k dwt (Epoxy Coated)	\$ 47.0m	\$ 51.0m	\$ 48.0m	\$ 32.0m	\$ 37.0m	\$ 34.5m	\$32.0m	\$37.0m	\$36.0m	\$35.3m	\$32.0m	\$34.0m	\$36.5m

2018 was a relatively muted year in terms of ordering activity as persistent low earnings, arguably lower availability of traditional finance, uncertainty over the upcoming regulations and higher steel prices have resulted in ordering focusing primarily on VLCCs and MRs, with the rest of the sectors receiving little-to-no buying interest at all.

VLCC newbuilding prices in South Korea rose by \$9.4 million YoY to \$92.2 million, although the \$90 million threshold was only passed end-November with the year averaging at \$87.5 million until then. Ordering activity was front loaded, with 34 out of the total 42 orders placed in the first half of the year. South Korea remained at the pole position with 69% of the total orders placed in the country's shipyards. Ten orders were placed in Japan and the remaining three in China. Six VLCC orders have already been placed in the first month of 2019.

2018 was the lowest contracting year for Suezmaxes since 2013, with only eleven firm orders from a handful of owners as soon as the crude market picked up from September onwards. Before September, the Suezmax orderbook additions were close to zero, with only two orders in April. Following an ordering spree at the end of Q3-18, newbuilding prices rose by 15.8% YoY to \$61.4 million. Apart from one vessel ordered in China, the rest have been contracted in South Korea yards. So far in 2019 there have been two Suezmax orders.

Aframax newbuilding South Korean prices increased by \$8 million to \$52 million by the end of 2018. Aframax ordering activity came off significantly in 2018 with 12 uncoated Aframax and 14 LR2 orders placed as opposed to 22 and 32 in 2017, respectively. Coated orders however might prove to be higher the closer we head to the delivery date and more information in terms of the vessels' coating is revealed. Half of the 2018 firm orders have been concluded with South Korean yards, followed by Philippines. No Panamax/LR1 order had been reported in 2018 compared to 11 in 2017.

MR newbuilding South Korean prices rose by \$2.5 million over 2018 to \$36.5 million by the end of the year. 68 MR orders were placed last year with 40 of them contracted in the first half of the year when average MR newbuilding prices were at \$35.1m. South Korean yards remained at the top spot with 35 orders placed, followed by China where 19 orders were placed. In January we saw four MR orders from a single buyer. For a third consecutive year, Handy ordering activity remained below ten, with only seven firm orders in 2018 – six in China and one in South Korea – all of them placed in the first half of the year.

Given the past few years' low earnings environment and aforementioned factors that continue to weigh on ordering activity, we may experience another year of low ordering activity in 2019. However, the orderbook looks relatively empty after 2019 and if 2020 proves to be a good year for vessel owners as many anticipate, combined with the need for replacement tonnage due to the fleet's ageing profile, we might see an uptick in ordering from the start of the new decade.

Second-hand Prices

	5-Year Old Tanker Prices												
	Jan-07	Jan-08	Jan-09	Jan-10	Jan-11	Jan-12	Jan-13	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18	Jan-19
VLCC	\$117.0m	\$138.0m	\$110.0m	\$77.0m	\$80.0m	\$55.0m	\$51.0m	\$60.8m	\$77.0m	\$78.0m	\$55.0m	\$61.0m	\$65.0m
Suezmax	\$ 80.0m	\$ 96.0m	\$ 82.5m	\$55.0m	\$56.0m	\$43.0m	\$37.0m	\$38.0m	\$55.8m	\$60.0m	\$40.6m	\$40.0m	\$43.5m
Aframax (Uncoated)	\$ 65.0m	\$ 73.0m	\$ 61.0m	\$39.0m	\$41.0m	\$32.0m	\$27.0m	\$29.5m	\$42.5m	\$44.0m	\$27.0m	\$30.0m	\$30.0m
47k dwt (Epoxy Coated)	\$ 47.0m	\$ 52.0m	\$ 40.0m	\$24.5m	\$26.0m	\$25.5m	\$22.0m	\$28.0m	\$26.4m	\$28.0m	\$20.0m	\$23.0m	\$26.0m

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Second-hand prices increased across all sectors YoY, driven by a rush to catch the bottom of the cycle that sparked more buying interest. However, five-year old prices did not rise as much as newbuilding prices. For a VLCC, second-hand prices rose by 6.6%, compared to 11.4% for newbuildings. The VLCC market looks quite well-supplied up to at least 2020, meaning owners with access to finance might prefer to pay the premium of a newbuild in anticipation of better market earnings against an empty orderbook for the new decade and an ageing fleet that should keep removals elevated going forward. Suezmax second-hand prices increased by 8.8% to \$43.5 million, while Aframax five-year old prices remained largely unchanged as opposed to an 18.2% increase in newbuilding prices. MR second-hand prices rose by 13% to \$26 million, a much stronger growth compared to the newbuildings, with the strengthening starting at the end of Q1-18.

Vessel Earnings

2018 turned out to be the one of the most disappointing years for tanker earnings in recent decades. Earnings were dragged further down for a third consecutive year by oversupply and higher bunker costs and it would have been even worse if it wasn't for the Q4 uptick driven by a wave of excess OPEC crude production that led to a decent winter market for all vessel sizes.

VLCC earnings (basis TD3C round voyage) fell 18% YoY to average \$19,000/day in 2018 with earnings stubbornly below \$10,000/day in the first half of the year. Suezmax earnings (basis 70% TD20 and 30% TD6 round voyages) rose slightly by ~\$1,000/day to \$14,000/day while the Aframax Composite (basis an average of TD7, TD8, TD9, TD19 & TD17 round voyages) increased by 16% YoY to \$13,000/day. In the products market, LR2 (basis TC1 round voyage) earnings remained at similar levels to 2017 at \$11,000/day, LR1 (basis TC5 round voyage) earnings fell 10% YoY to \$6,700/day while the MR Composite (basis an average of TC2/14, TC6, TC7, TC10 & TC11/4) dropped 8% YoY to average \$11,000/day.

Oil prices and by extension bunker prices rose steadily up until end-October when they took a hit reaching 2017 low levels by the end of the year. Rotterdam IFO380 averaged at \$401/tonne in 2018, \$100/tonne higher compared to 2017. Going forward, oil prices are expected to fall with EIA forecasting Brent averaging \$10/bbl lower YoY to \$61/bbl and WTI to \$55/bbl pushing bunker prices lower giving owners earnings room for improvement this year. However, with the IMO2020 regulation just months away from implementation, the price for HSFO is expected to start coming off the closer we head to the deadline as demand for the fuel will start falling. That should support owners earnings in Q2-Q3; however, the need to use bunker costlier compliant fuels in Q4 might put a ceiling on the earnings upside.

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VLCC Time Charter Equivalent Spot Market Earnings

VLCC Spot Market Earnings (Source: Howe Robinson Partners)

VLCC

Starting from a low level in January, VLCC earnings stood well below \$10,000/day for the first half of the year and at times below OPEX levels. The uptick in Q4 pushed the average at ~\$19,000/day (basis TD3C MEG/China round voyage). The OPEC+ group's commitments to extend their production cuts to Q1-18 along with involuntary losses from elsewhere (i.e. Venezuela, Angola) and stock-drawing in OECD nations were enough to push Q1-18 and Q2-18 earnings to their lowest quarterly levels on record since 2000 with Q1-18 averaging at ~\$8,750/day and Q2-18 at \$9,500/day.

On the back of OPEC's decision to increase production in order to achieve 100% compliance on its original 1.2 million bpd, VLCC earnings rose to \$14,500/day in Q3-18, while the re-imposition of US sanctions on Iran and OPEC's decision to further cut production by 1.2 million bpd in Q1-19 generated an influx of barrels in Q4-18, pushing the market to a Q4 average last seen in 2016 at around \$46,000/day.

VLCCs started 2019 quite positive; however, the market came off as quickly as expected and it would appear that this year's demand for crude tankers could look strikingly similar to 2018 if it wasn't for US crude exports. These are expected to be the main factor helping to absorb any tonnage growth given OPEC+ production cuts combined with what is setting up to be a record high maintenance season ahead of IMO2020 implementation.

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Suezmax Time Charter Equivalent Spot Market Earnings

Suezmax Spot Market Earnings (Source: Howe Robinson Partners)

Suezmax

Suezmax earnings followed the same trajectory as VLCCs; however, the winter impact was much stronger with Q4-18 averaging at ~\$34,000/day, \$23,000/day higher compared to Q3-18. TD6 (Black Sea/Med) earnings averaged 42% higher YoY at ~\$19,000/day, whereas TD20 (WAF/UKC) closed the year 6% lower YoY at ~\$12,000/day. Despite a much more manageable fleet growth, Suezmaxes in West Africa didn't manage to surprise on the upside with TD20 earnings setting record low levels for the most of the first half of the year.

Despite Nigeria's production rebound to an average of 1.6 million bpd in 2018 compared to 1.53 million bpd in 2017, a 150,000 bpd YoY fall in Angolan output led to a decline in the area's total production resulting in West African exports dropping by 1.4% YoY to 4.32m bpd. Suezmaxes ex-WAF were traded below \$9,000/day in the first three quarters of 2018, while a \$20,000/day increase quarter-on-quarter to \$28,000/day in Q4-18 brought the year's average above that threshold. Following the VLCC market, Suezmaxes in West Africa have already lost 50% of their early Jan-19 earnings. Suezmaxes in the Black Sea started showing signs of recovery in May-18 when earnings rose to \$14,000/day from the Jan-Apr average of \$5,500/day.

Suezmax liftings ex-Black Sea rose by 9.3% YoY to 1.13 million bpd in 2018 and combined with weather related delays pushed the end of year earnings to levels last seen in 2015, with Nov-Dec averaging at \$60,000/day. Since then however, TD6 has dipped to an average of \$22,000/day in Feb-19.

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Aframax Time Charter Equivalent Spot Market Earnings

Aframax Spot Market Earnings (Source: Howe Robinson Partners)

Aframax

The Aframax Composite earnings (basis an average of TD7, TD8, TD9, TD19, TD14 and TD17) were no different to their VLCC and Suezmax counterparts and with the second half of 2018 support they posted their first yearly gains since 2015. The Aframax Composite averaged 16% higher YoY to ~\$13,000/day in 2018, ranging from \$5,000/day in April to \$41,000/day in December. With the uncoated Aframax fleet falling by -2% YoY, the upside might have been stronger if it wasn't for the 20 LR2 dirty-ups as soon as Aframax started trading at an \$8,000/day premium to the LR2s in Q4-18. Apart from TD17 (Baltic/UKC), the rest of the Aframax routes were trading below \$10,000/day for the first half of the year bringing the combined average to ~\$8,000/day. TD7 (North Sea/UKC) earnings doubled in Q3-18 to over \$14,000/day compared to \$7,000/day in Q2-18 amid a 10% increase in Aframax liftings from the North Sea, while seasonal factors and an 11.3% quarter-on-quarter increase in Aframax liftings ex-Baltic pushed TD17 earnings \$19,000/day higher at ~\$31,000/day in Q4-18.

Libya's return supported the Med market with TD19 earnings increasing by 22% YoY to ~\$14,000/day; however, Aframax haven't managed to pocket the whole benefit of the additional Libyan barrels as increased flows to the east have favoured Suezmaxes taking away market share from Aframax (58.3% in 2018 vs 72.6% in 2017). The Caribbean market (TD9) was quite resilient during 2018, averaging 26% higher YoY at \$15,000/day; however, it remains to be seen how US sanctions on Venezuela will affect this market in 2019.

The east market didn't experience the Q4 uptick at the same magnitude as the west, resulting in TD8 (MEG/Singapore) and TD14 (SE Asia/EC Australia) falling slightly YoY to \$9,000/day and \$11,500/day, respectively.

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Similar to VLCCs and Suezmaxes, the Aframax market started this year quite strongly; however, earnings have more than halved compared to early January currently trading at \$16,000/day. Nevertheless, the LR2 market looks more balanced with TC1 earnings (MEG/Japan) currently trading at a \$6,000/day premium to the Aframax Composite and relatively rangebound at the \$22,000/day-\$26,000/day level.

MR Time Charter Equivalent Spot Market Earnings

MR Spot Market Earnings (Source: Howe Robinson Partners)

MR

Historically speaking, according to our records (since 2000) the MR Composite (basis an average of TC6, TC7, TC10 and TC2/14) has almost never averaged below \$10,000/day annually apart from 2002 and even though last year it was looking like they would have broken that floor, it turned out that the Q4-18 uptick brought 2018 MR earnings at around \$11,000/day. 2018 set the historical minimum levels between May-June and end July-September, with the first week of September as the lowest week reported in terms of earnings since 2000 at below \$6,000/day.

Even though it is difficult to pinpoint specific factors for the products market weakness in such a fragmented environment, we would highlight a massive 204 million bbls stockdrawing in OECD countries/Singapore between Aug-16 and May-18 as a major culprit, as well as a lack of new mega/export refinery start-ups since 2015, and of course stubbornly high fleet growth.

Fluctuations in MR earnings were driven by the west as the east markets were largely rangebound on a quarterly basis with TC7 (Singapore/EC Australia) averaging between \$10,000/day in Q3-18 to \$12,000/day in Q2-18 and TC10 (South Korea/WCC) between \$10,000/day in Q3-18 to \$13,000/day in Q4-18. In the west, TC6

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(cross-Med) posted its historical low quarterly earnings in Q3-18 at \$3,000/day to average the year at \$10,000/day, \$2,000/day lower YoY. Atlantic basin activity saw a huge jump due to record high US gasoline exports with Q4-18 earnings 81% higher compared to Q3-18 at \$14,000/day (basis TC2/14 triangulation).

MRS started 2019 above their historical levels; however, following the rest of the market's downward trajectory they have already come off quite significantly albeit according to historical seasonality trends. With stock levels below their five-year average in the major consuming regions, 1.2 million bpd YoY growth in refinery runs, 2.2 million bpd of additional refinery capacity, of which around 45% will be export-oriented, and an increase in gasoil trade ahead of the IMO2020 implementation, the products market looks underway in its long-awaited recovery as of mid-2019.

General LNG Market Overview

2018 was certainly one of the better years in recent memory for LNG shipping because of the significant increase in short term rates and the large number of new buildings placed on order.

Although there was some consensus in early 2018 that the market was due to improve on the back of fundamentals, industry participants certainly hadn't anticipated such a rapid increase in rates. This rise can to some extent be attributed to floating storage, a new feature of the LNG market that is partially driven by China and its hunger for evermore LNG. Indeed, up to 30 vessels were kept as floating storage worldwide with cargoes on board waiting to discharge, and the demand for these vessels coupled with the increase in tonne miles due to the open arbitrage, pushed up rates to a peak which had not been seen before.

Storage for LNG over a period of time rather than straight discharge is an unusual feature for the LNG market, and can now be considered due to the partial or full re-liquefaction (PRS or FRS) units on board the vessels, which allows the boil off to be re-liquefied and placed back into the cargo tanks. LNG carriers can therefore store LNG on board without losing much of their cargo.

New LNG production

Many new facilities were expected to start up in 2018; however, as is often the case with LNG, some of these facilities have seen their start-up delayed due to several reasons, including plant issues, floods, etc., and the full effect of which is now expected to be seen in 2019.

Nevertheless, the following four major facilities did commence operations in 2018:

Plant	Location	Size million TPA	Start up
Ichthys	Australia	4.45	September
Wheatstone	Australia	5.50	June
Yamal LNG train 2	Russia	5.50	August
Cove Point LNG	USA	5.25	March

Whilst not in full operation, both the Sabine Pass Train 5 and the Corpus Christi train 1 were also started, although full commercial operation would not be seen until 1Q 2019.

However, we also saw the delay of the following plants which will be pushed back into 2019:

Plant	Location	Size million TPA	Start up
Prelude LNG	Australia	3.5	2Q 2019
Cameron LNG	USA	4.95	1H 2019
Elba Island LNG	USA	6.0	1H 2019
Freeport LNG	USA	4.2	3/4Q 2019

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Overall, LNG supply is now becoming plentiful. With production levels rising from the USA and Australia during 2018, markets became more fluid with tonne miles increasing, assisted by the ability for LNG carriers to go through the Panama Canal, something which only became a possibility with the installation of the new locks in 2016.

However, even though additional transits have been allocated to LNG, these remain difficult to obtain and although things have been improved, it may take a couple of days to obtain a transit passage without a firm booking.

Qatar's approval to go ahead with its planned expansion of the North Field was announced in 2018 as expected, producing up to a further 30 million tonnes of LNG by 2024. This could have a dramatic impact upon the shipping markets with a further influx of tonnage to move these volumes.

Final Investment Decision (FID) was given to the LNG Canada project on the west coast of Canada together with approval for Corpus Christi train 3, which saw the first signing of contracts for export of shale gas from the USA to China. A considerable number of FIDs are due within 2019, which could add a minimum of 100 million tonnes of LNG by the middle of the next decade, and these include the vast projects in Mozambique, at least 5 additional USA shale gas projects, additional trains to existing shale gas projects in the USA; expansion plans to both PNG and Sakhalin and a further new Arctic facility. This does not include the plans for a 7th train in Nigeria.

We are in an era of continued expansion within the LNG export industry and we expect that there will be a continual demand for additional LNG carriers to meet this demand.

LNG Tanker Demand

The 2018 year began very lacklustre as the market tumbled at the beginning of the year. Rates had begun to decline at the end of 2017 and these continued to fall with the emphasis of the Chinese New Year having a full effect and knocking demand backwards. Although signs of improvement were slow to come in 2018, gradually both positioning and ballast bonus fees began to improve, indicating a rally to the market which consequently led to an increase in freight levels.

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Freight Rates for Steam/TFDE/Gas Injection (Source: Howe Robinson Partners)

The largest catalyst for market improvement in 2018 was the chartering-in by a large energy company of around 16 LNGCs for up to two-year periods. This transaction occurred whilst markets were still reasonably low for short-term charter rates and absorbed a considerable amount of tonnage which had been either on the short-term markets or were to be there due to their projects being delayed. Delivery of many of these vessels did not begin until September/October, by which time short term market rates had begun to improve.

Rates continued to climb towards the end of the year, up to an October peak of \$198,000/day, although some believe this was over \$200,000/day which could have been a time charter equivalent once ballast bonus and positioning had been considered.

A further significant dynamic change to the LNG market during 2018 was the ability for vessels to store LNG, rather than deliver their cargoes straight to their discharge terminal. During November 2018, up to 30 LNGCs were understood to be holding cargoes, with the majority of these based in the Far East and primarily held by portfolio players and trading houses.

However, once these cargoes had been discharged, the market quickly began to soften in the east and with the combination of the lead up to the Chinese New Year in January 2019 and the build-up of stocks within other countries, charter rates began to soften in December. Vessels coming out of dry dock in the east in early December found it difficult to obtain cargoes and this softening continued into the new year.

Going forward, LNG markets show signs of a far more volatile environment, following a 2018 year that was particularly fertile in this respect. A host of factors including low demand, vessels being absorbed whilst market rates are low, new plants delayed and/or new plants starting up, restocking, restart of nuclear power plants, closure of coal fired generation, arbitrage or lack thereof, and finally floating storage will come together to drive the market in the near future, with more sensitive freight rates and an upwards trajectory.

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LNG Carrier Newbuildings

2018 saw an unprecedented 62 vessels delivered during the year (of which eight were below 100,000 cubic metres), with a combined cubic capacity of just over 9.3 million cubic metres. The number of vessels delivered included a large proportion of those vessels which had been previously contracted for earlier delivery, and which had been delayed in their delivery schedule due to their projects, primarily based on shale gas projects from the USA being pushed back beyond their original completion date.

This also included 3 of the 4 new buildings contracted to a major Japanese energy company from the new JMU yard in Japan, and which had the expanded SPB containment system. The remaining three, which had originally been planned for delivery in 2017, are now likely to be delivered during 2019. Many of the deliveries were also sub-contracted to existing players, with their own projects being delayed.

Fleet Deliveries Versus Fleet Orders to 2021 (Source: Howe Robinson Partners)

2018 started quietly for new building orders with momentum building up towards the year end, as many of the independent players took stock prior to the promise of hefty rises in prices. The lowest price seen during the year were those vessels contracted at below US\$ 180 million each from HHI in Korea. These vessels each received a charter rate of US\$ 63,500/day for a period of 7 years from a major French energy company.

The orders were a steady trickle throughout the year being contracted for delivery between 2020 and late 2021, and notably, many of these orders were contracted by new entrants in the LNG market with differing interests, typically ordered by major ship owners and time-chartered to energy companies and trading houses for seven-year periods around US\$65,000-67,000/day.

Many owners committed to a first step into LNG shipping with new orders, and by the end of 2018 there were around 38 vessels without firm commitment for the future. Many of these owners were also holding options for 2021 delivery.

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As we have mentioned, the increased volumes in LNG anticipated through to the middle of the next decade should absorb a considerable proportion of these vessels.

As for the type of LNG carrier, either the MEGi or the XDF engine is the option of choice together with a base of a 174,000 to 180,000 cubic metres size of vessel. Containment system, in the main is the GTT MK III flex or flex plus which has replaced the potential GTT Mk V. Boil off rates today have been reduced to around the 0.075% per day and PRS (partial re-liquefaction) seems to be a standard.

Risk Factors

Risks Related To Our Industry

The tanker industry is cyclical, resulting in charter rates that can be volatile. Poor charter markets for crude oil and product tankers may adversely affect our future revenues and earnings.

The volatility in charter rates, and in turn our revenue and earnings, is due to the historically cyclical nature of the tanker industry. The typical cycle is partly created by material changes in the number of tankers available in the market resulting primarily from new deliveries to the market less vessels demolished or converted due to technical obsolescence and the number of vessels occupied on long-distance travel or delayed by geopolitical events. The cycle is also impacted by material changes to the supply of and demand for oil due primarily to corrections in the price of oil and to geopolitical factors. As of April 2 2019, about half of the vessels owned by our subsidiary companies were employed under charters based upon prevailing market rates (including time charters with a profit share component), and the remaining vessels were employed on time charters which, if not extended, are scheduled to expire on various dates between April 2019 and June 2028. Tanker charter rates declined significantly in 2016 and 2017 and further declined through most 2018, which had an adverse effect on our revenues, profitability and cash flows. If rates continue to be low in the charter market for any significant period in 2019, it will have a further adverse effect on our revenues, profitability and cash flows. Declines in prevailing charter rates also affect the value of our vessels, which are correlated to the trends of charter rates, and could affect our ability to comply with our loan covenants.

Disruptions in world financial markets and economic conditions, and protectionist trade measures and other governmental action in the United States and in other parts of the world could have a material adverse impact on our results of operations, financial condition, cash flows and share price.

Global financial markets and economic conditions have been disrupted and volatile at times over the past decade and remain subject to significant vulnerabilities, such as the deterioration of fiscal balances and the rapid accumulation of public debt, continued deleveraging in the banking sector and a limited supply of credit in the shipping industry. While the global economy has improved and may continue to do so, it remains subject to downside risk. There can be no assurance that global economic weakness or a recession will not return and that tight credit markets will not continue or become more severe.

In addition, the process of the UK exiting the European Union, as well as continued turmoil and hostilities in the Middle East or potential hostilities elsewhere in the world, could contribute to volatility in the global financial markets. These circumstances, along with the re-pricing of credit risk and the reduced participation of certain financial institutions from financing of the shipping industry, will likely continue to affect the availability, cost and terms of vessel financing. If financing is not available to us when it is needed, or is available only on unfavorable terms, our business may be adversely affected, with corresponding effects on our profitability, cash flows and ability to pay dividends.

Moreover, as a result of the continuing economic crisis in Greece and the related austerity measures implemented by the Greek government, as well as the capital controls in effect in Greece since mid-2015, despite

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recent relaxation of controls, our operations may be subjected to new regulations that may require us to incur new or additional compliance or other administrative costs and may require that we pay to the Greek government new taxes or other fees or that dividends we pay be subject to withholding taxes. Furthermore, the commitments by the Greek government to the nations' creditors and potential shift in its policies may potentially lead to Greece's exit from the Eurozone, if not satisfied, which could affect our technical and commercial managers' operations located in Greece.

The implementation by the U.S. or other governments of protectionist trade measures, including tariffs or other trade restrictions such as those imposed by the U.S. and China, could also adversely affect the world oil and petroleum markets.

The tanker industry is highly dependent upon the crude oil and petroleum products industries.

The employment of our subsidiaries' vessels is driven by the availability of and demand for crude oil and petroleum products, the availability of modern tanker capacity and the scrapping, conversion or loss of older vessels. Historically, the world oil and petroleum markets have been volatile and cyclical as a result of the many conditions and events that affect the supply, price, production and transport of oil, including:

increases and decreases in the demand and price for crude oil and petroleum products;

availability of crude oil and petroleum products;

demand for crude oil and petroleum product substitutes, such as natural gas, coal, hydroelectric power and other alternate sources of energy that may, among other things, be affected by environmental regulation;

actions taken by OPEC and major oil producers and refiners;

political turmoil in or around oil producing nations;

global and regional political and economic conditions;

developments in international trade;

international trade sanctions;

environmental factors;

natural catastrophes;

terrorist acts;

weather; and

changes in seaborne and other transportation patterns.

Despite turbulence in the world economy at times in recent years, worldwide demand for oil and oil products continues to rise. In the event that this trend falters, the production of and demand for crude oil and petroleum products will again encounter pressure which could lead to a decrease in shipments of these products and consequently this would have an adverse impact on the employment of our vessels and the charter rates that they command. Also, if oil prices again fall to uneconomic levels for producers, it may lead to declining output. As a result of any reduction in demand or output, the charter rates that we earn from our vessels employed on charters related to market rates may decline and possibly remain at low levels for a prolonged period of time.

Our operating results are subject to seasonal fluctuations.

The tankers owned by our subsidiary companies operate in markets that have historically exhibited seasonal variations in tanker demand, which may result in variability in our results of operations on a quarter-by-quarter

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basis. Tanker markets are typically stronger in the winter months as a result of increased oil consumption in the northern hemisphere, but weaker in the summer months as a result of lower oil consumption in the northern hemisphere and refinery maintenance. As a result, revenues generated by the tankers in our fleet have historically been weaker during the fiscal quarters ended June 30 and September 30. However, there may be periods in the northern hemisphere when the expected seasonal strength does not materialize to the extent required to support sustainable profitable rates due to tanker overcapacity.

An increase in the supply of vessels without an increase in demand for such vessels could cause charter rates to decline, which could have a material adverse effect on our revenues and profitability.

Historically, the marine transportation industry has been cyclical. The profitability and asset values of companies in the industry have fluctuated based on certain factors, including changes in the supply and demand of vessels. The supply of vessels generally increases with deliveries of new vessels and decreases with the scrapping of older vessels and/or the removal of vessels from the competitive fleet either for storage purposes or for utilization in offshore projects. The newbuilding order book equaled approximately 9% of the existing world tanker fleet at February 1, 2019, by number of vessels, with a significant amount of these newbuilding vessels scheduled to be delivered in 2019. No assurance can be given that the order book will not increase further in proportion to the existing fleet. If supply increases, and demand does not match that increase, the charter rates for our vessels could decline significantly. In addition, any decline of trade on specific long-haul trade routes will effectively increase available capacity with a detrimental impact on rates. A decline in, or prolonged period of, already weak charter rates could have a material adverse effect on our revenues and profitability.

The global tanker industry is highly competitive.

We operate our fleet in a highly competitive market. Our competitors include owners of VLCC, suezmax, aframax, panamax, handymax and handysize tankers, as well as owners in the shuttle tanker and LNG markets, which are other independent tanker companies, as well as national and independent oil companies, some of which have greater financial strength and capital resources than we do. Competition in the tanker industry is intense and depends on price, location, size, age, condition, and the acceptability of the available tankers and their operators to potential charterers.

Acts of piracy on ocean-going vessels, although recently declining in frequency, could still adversely affect our business.

Despite a decline in the frequency of pirate attacks on seagoing vessels in the western part of the Indian Ocean, such attacks remain prevalent off the west coast of Africa and between Malaysia and Indonesia. If piracy attacks result in regions in which our vessels are deployed being characterized by insurers as war risk zones, as the Gulf of Aden has been, or Joint War Committee (JWC) war and strikes listed areas, premiums payable for such insurance coverage could increase significantly and such insurance coverage may be more difficult to obtain. Crew costs, including those due to employing onboard security guards, could increase in such circumstances. In addition, while we believe the charterer remains liable for charter payments when a vessel is seized by pirates, the charterer may dispute this and withhold charter hire until the vessel is released. A charterer may also claim that a vessel seized by pirates was not on-hire for a certain number of days and it is therefore entitled to cancel the charter party, a claim that we would dispute. We may not be adequately insured to cover losses from these incidents, which could have a material adverse effect on us. In addition, hijacking as a result of an act of piracy against our vessels, or an increase in cost, or unavailability of insurance for our vessels, could have a material adverse impact on our business, financial condition, results of operations and cash flows.

Terrorist attacks, international hostilities, economic and trade sanctions and the economic situation in the Eurozone can affect the tanker industry, which could adversely affect our business.

Major oil and gas producing countries in the Middle East have become involved militarily in conflicts in Iraq, Syria and Yemen. Armed conflicts with insurgents and others continue, as well, in Libya, and political

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unrest and instability have adversely affected the infrastructure and economic stability of Venezuela, each of which is a major oil exporting country. Any such hostility or instability could seriously disrupt the production of oil or LNG and endanger their export by vessel or pipeline, which could put our vessels at serious risk and impact our operations and our revenues, expenses, profitability and cash flows in varying ways that we cannot now project with any certainty.

The increasing number of terrorist attacks throughout the world, longer-lasting wars, international incidents or international hostilities, such as in the Ukraine, Afghanistan, Iraq, Syria, Libya, Yemen and the Korean peninsula, could damage the world economy and adversely affect the availability of and demand for crude oil and petroleum products and negatively affect our investment and our customers' investment decisions over an extended period of time. In addition, sanctions against oil exporting countries such as Iran, Sudan, Syria, Russia and Venezuela may also impact the availability of crude oil which would increase the availability of tankers, thereby negatively impacting charter rates. We conduct our vessel operations internationally and despite undertaking various security measures, our vessels may become subject to terrorist acts and other acts of hostility like piracy, either at port or at sea. Such actions could adversely impact our overall business, financial condition and results of operations. In addition, terrorist acts and regional hostilities around the world in recent years have led to increases in our insurance premium rates and the implementation of special war risk premiums for certain trading routes.

Our charterers may direct one of our vessels to call on ports located in countries that are subject to restrictions imposed by the U.S. government, the UN or the EU, which could negatively affect the trading price of our common shares.

On charterers' instructions, our subsidiaries' vessels may be requested to call on ports located in countries subject to sanctions and embargoes imposed by the U.S. government, the UN or the EU and countries identified by the U.S. government, the UN or the EU as state sponsors of terrorism. The U.S., UN- and EU- sanctions and embargo laws and regulations vary in their application, as they do not all apply to the same covered persons or proscribe the same activities, and such sanctions and embargo laws and regulations may be amended or strengthened over time.

On January 16, 2016, Implementation Day for the Iran Joint Comprehensive Plan of Action (JCPOA), the United States lifted its secondary sanctions against Iran which prohibited certain conduct by non-U.S. companies and individuals that occurred entirely outside of U.S. jurisdiction involving specified industry sectors in Iran, including the energy, petrochemical, automotive, financial, banking, mining, shipbuilding and shipping sectors. By lifting the secondary sanctions against Iran, the U.S. government effectively removed U.S. imposed restraints on dealings by non-U.S. companies, such as our Company, and individuals with these formerly targeted Iranian business sectors. Non-U.S. companies continued to be prohibited under U.S. sanctions from (i) knowingly engaging in conduct that seeks to evade U.S. restrictions on transactions or dealings with Iran or that causes the export of goods or services from the United States to Iran, (ii) exporting, reexporting or transferring to Iran any goods, technology, or services originally exported from the U.S. and / or subject to U.S. export jurisdiction and (iii) conducting transactions with the Iranian or Iran-related individuals and entities that remain or are placed in the future on OFAC's list of Specially Designated Nationals and Blocked Persons (SDN List), notwithstanding the lifting of secondary sanctions.

However, on August 6, 2018, the U.S. re-imposed an initial round of secondary sanctions and as of November 5, 2018, virtually all of the secondary sanctions the U.S. had suspended under the JCPOA have been re-imposed.

The U.S. government's primary Iran sanctions have remained in place throughout recent years and as a consequence, U.S. persons continue to be broadly prohibited from engaging in transactions or dealings in or with Iran or its government. In addition, U.S. persons continue to be broadly prohibited from engaging in transactions or dealings with the Government of Iran and Iranian financial institutions, which effectively impacts the transfer of funds to, from, or through the U.S. financial system whether denominated in U.S. dollars or any other currency.

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The U.S. also maintains embargoes on Cuba, North Korea and Syria. We can anticipate that some of our charterers may request our vessels to call on ports located in these countries. Although we believe that we are in compliance with all applicable sanctions and embargo laws and regulations, and intend to maintain such compliance, there can be no assurance that we will be in compliance in the future, particularly as the scope of certain laws may be unclear and may be subject to changing interpretations. Any such violation could result in fines or other penalties and could result in some investors deciding, or being required, to divest their interest, or not to invest, in us. Additionally, some investors may decide to divest their interest, or not to invest, in us simply because we do business with companies that do lawful business in sanctioned countries. Moreover, our charterers may violate applicable sanctions and embargo laws and regulations as a result of actions that do not involve us or our vessels, and those violations could in turn negatively affect our reputation. Investor perception of the value of our shares may also be adversely affected by the consequences of war, the effects of terrorism, civil unrest and governmental actions in these and surrounding countries.

Failure to comply with the U.S. Foreign Corrupt Practices Act and other anti-bribery legislation in other jurisdictions could result in fines, criminal penalties, contract terminations and an adverse effect on our business.

We may operate in a number of countries throughout the world, including countries known to have a reputation for corruption. We are committed to doing business in accordance with applicable anti-corruption laws and have adopted a code of business conduct and ethics which is consistent and in full compliance with the U.S. Foreign Corrupt Practices Act of 1977, or the FCPA. We are subject, however, to the risk that persons and entities whom we engage or their agents may take actions that are determined to be in violation of such anti-corruption laws, including the FCPA. Any such violation could result in substantial fines, sanctions, civil and/or criminal penalties, or curtailment of operations in certain jurisdictions, and might adversely affect our business, results of operations or financial condition. In addition, actual or alleged violations could damage our reputation and ability to do business. Furthermore, detecting, investigating, and resolving actual or alleged violations is expensive and can consume significant time and attention of our senior management.

Efforts to take advantage of opportunities in pursuit of our growth strategy may result in financial or commercial difficulties.

A key strategy of management is to continue to renew and grow the fleet by pursuing the acquisition of additional vessels or fleets or companies that are complementary to our existing operations. If we seek to expand through acquisitions, we face numerous challenges, including:

difficulties in raising the required capital;

depletion of existing cash resources more quickly than anticipated;

assumption of potentially unknown material liabilities or contingent liabilities of acquired companies; and

competition from other potential acquirers, some of which have greater financial resources.

We cannot assure you that we will be able to integrate successfully the operations, personnel, services or vessels that we might acquire in the future, and our failure to do so could adversely affect our profitability.

We are subject to regulation and liability under environmental, health and safety laws that could require significant expenditures and affect our cash flows and net income.

Our business and the operation of our subsidiaries' vessels are subject to extensive international, national and local environmental and health and safety laws and regulations in the jurisdictions in which our vessels operate, as well as in the country or countries of their registration. In addition, major oil companies chartering our vessels impose, from time to time, their own environmental and health and safety requirements. To comply with these requirements and regulations, including the new MARPOL Annex VI sulfur emission requirements

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instituting a global 0.5% sulfur cap on marine fuels from January 1, 2020 and the IMO ballast water management (BWM) convention, which requires vessels to install expensive ballast water treatment systems (BWTS) before the first MARPOL renewal survey conducted after September 8, 2019, for newly constructed vessels after September 8, 2017 to have a BWTS installed by delivery and for all vessels to be certified in accordance with the BWM convention by September 8, 2024, we may be required to incur additional costs to meet new maintenance and inspection requirements, develop contingency plans for potential spills, and obtain insurance coverage.

These and future environmental regulations, which may become stricter, may limit our ability to do business, increase our operating costs and/or force the early retirement of our vessels, all of which could have a material adverse effect on our financial condition and results of operations.

International, national and local laws imposing liability for oil spills are also becoming increasingly stringent. Some impose joint, several, and in some cases, unlimited liability on owners, operators and charterers regardless of fault. We could be held liable as an owner, operator or charterer under these laws. In addition, under certain circumstances, we could also be held accountable under these laws for the acts or omissions of Tsakos Shipping & Trading S.A. (Tsakos Shipping), Tsakos Columbia Shipmanagement Ltd. (TCM) or Tsakos Energy Management Limited (Tsakos Energy Management), companies that provide technical and commercial management services for our subsidiaries vessels and us, or others in the management or operation of our subsidiaries vessels. Although we currently maintain, and plan to continue to maintain, for each of our subsidiaries vessels pollution liability coverage in the amount of \$1 billion per incident (the maximum amount available), liability for a catastrophic spill could exceed the insurance coverage we have available and result in our having to liquidate assets to pay claims. In addition, we may be required to contribute to funds established by regulatory authorities for the compensation of oil pollution damage or provide financial assurances for oil spill liability to regulatory authorities.

Maritime disasters and other operational risks may adversely impact our reputation, financial condition and results of operations.

The operation of ocean-going vessels has an inherent risk of maritime disaster and/or accident, environmental mishaps, cargo and property losses or damage and business interruptions caused by, among others:

mechanical failure;

human error;

labor strikes;

adverse weather conditions;

vessel off hire periods;

regulatory delays; and

political action, civil conflicts, terrorism and piracy in countries where vessel operations are conducted, vessels are registered or from which spare parts and provisions are sourced and purchased.

Any of these circumstances could adversely affect our operations, result in loss of revenues or increased costs and adversely affect our profitability and our ability to perform our charters.

Our subsidiaries vessels could be arrested at the request of third parties.

Under general maritime law in many jurisdictions, crew members, tort claimants, vessel mortgagees, suppliers of goods and services and other claimants may lien a vessel for unsatisfied debts, claims or damages. In many jurisdictions a maritime lien holder may enforce its lien by

arresting a vessel through court process. In

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some jurisdictions, under the extended sister ship theory of liability, a claimant may arrest not only the vessel with respect to which the claimant's maritime lien has arisen, but also any associated vessel under common ownership or control. While in some jurisdictions which have adopted this doctrine, liability for damages is limited in scope and would only extend to a company and its ship-owning subsidiaries, we cannot assure you that liability for damages caused by some other vessel determined to be under common ownership or control with our subsidiaries vessels would not be asserted against us.

Risks Related To Our Business

Any significant future declines in the values of our vessels could affect our ability to comply with various covenants in our credit facilities unless waived or modified by our lenders.

Our credit facilities, which are secured by mortgages on our subsidiaries' vessels, require us to maintain specified collateral coverage ratios and satisfy financial covenants, including requirements based on the market value of our vessels, such as maximum corporate leverage levels. The appraised value of a ship fluctuates depending on a variety of factors including the age of the ship, its hull configuration, prevailing charter market conditions, supply and demand balance for ships and new and pending legislation. The oversupply of tankers and depressed tanker charter market adversely affected tanker values from the middle of 2008 to late 2013, and despite the young age of our subsidiaries' fleet and extensive long-term charter employment on many of the vessels, resulted in a significant decline in the charter-free values of our vessels. Vessel values recovered from the end of 2013, but again declined during 2016 and 2017 and remained at relatively low levels through 2018 due primarily to global fleet overcapacity and lack of financing for potential buyers to acquire second-hand, charter free vessels. Values may remain at current levels for a prolonged period, further decline or rise. Low values may result in our inability to comply with the financial covenants under our credit facilities which relate to our consolidated leverage and loan-to-asset value collateral requirements. If we were unable to obtain waivers in case of non-compliance or post additional collateral or prepay principal in the case of loan-to-asset value requirements, our lenders could accelerate our indebtedness. We have paid all of our scheduled loan installments and related loan interest consistently without delay or omission and none of our lenders under our credit facilities has requested such prepayment or additional cash collateral where non-compliance has occurred.

Charters at attractive rates may not be available when our current time charters expire.

During 2018, we derived approximately 65% of our revenues from time charters, as compared to 63% in 2017. As our current period charters on six of the vessels owned by our subsidiary companies expire in the remainder of 2019, it may not be possible to re-charter these vessels on a period basis at attractive rates if the current softness in the tanker charter market continues. If attractive period charter opportunities are not available, we may seek to charter the vessels owned by our subsidiary companies on the spot market, which is subject to significant fluctuations. In the event a vessel owned by one of our subsidiary companies may not find employment at economically viable rates, management may opt to lay up the vessel until such time that rates become attractive again (an action which our subsidiary companies have never undertaken). During the period of any layup, the vessel would continue to incur expenditures such as debt service, insurance, reduced crew wages and maintenance costs.

We are dependent on the ability and willingness of our charterers to honor their commitments to us for substantially all of our revenues and the failure of our counterparties to meet their obligations under our charter agreements could cause us to suffer losses or otherwise adversely affect our business.

We derive substantially all of our revenues from the payment of charter hire by our charterers. 46 of our 64 vessels are currently employed under time charters including time charters with profit share. We could lose a charterer or the benefits of a time charter if:

the charterer fails to make charter payments to us because of its financial inability, disagreements with us, defaults on a payment or otherwise;

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the charterer exercises certain specific limited rights to terminate the charter;

we do not take delivery of a newbuilding vessel we may contract for at the agreed time; or

the charterer terminates the charter because the vessel fails to meet certain guaranteed speed and fuel consumption requirements and we are unable to rectify the situation or otherwise reach a mutually acceptable settlement.

If we lose a time charter, we may be unable to re-deploy the related vessel on terms as favorable to us or at all. We would not receive any revenues from such a vessel while it remained unchartered, but we may be required to pay expenses necessary to maintain the vessel in proper operating condition, insure it and service any indebtedness secured by such vessel.

If our charterers fail to meet their obligations to us or attempt to renegotiate our charter agreements, as part of a court-led restructuring or otherwise, we could sustain significant reductions in revenue and earnings which could have a material adverse effect on our business, financial condition, results of operations and cash flows, as well as our ability to pay dividends, if any, in the future, and comply with the covenants in our credit facilities.

If our exposure to the spot market increases, our revenues could suffer and our expenses could increase.

The spot market for crude oil and petroleum product tankers is highly competitive. Beginning in 2016, we modified our chartering strategy to place more of our subsidiaries' vessels on time-charter. As of April 2, 2019, 18 of the vessels owned by our subsidiary companies were employed under spot charters. If we were to increase participation in the spot market, we may experience a lower overall utilization of our fleet through waiting time or ballast voyages, leading to a decline in operating revenue. Moreover, to the extent our vessels are employed in the spot market, both our revenue from vessels and our operating costs, specifically our voyage expenses, will be significantly impacted by adverse movements in the cost of bunkers (fuel), including the price of low sulfur fuel certain of our vessels may be required to use beginning in 2020. See Fuel prices may adversely affect our profits. Unlike time charters in which the charterer bears all of the bunker costs, in spot market voyages we bear the bunker charges as part of our voyage costs. As a result, while historical movements in bunker charges are factored into the prospective freight rates for spot market voyages periodically announced by World Scale Association (London) Limited and similar organizations, increases in bunker charges in any given period could have a material adverse effect on our cash flow and results of operations for the period in which the increase occurs. In addition, to the extent we employ our vessels pursuant to contracts of affreightment or under pooling arrangements, the rates that we earn from the charterers under those contracts may be subject to reduction based on market conditions, which could lead to a decline in our operating revenue.

We depend on Tsakos Energy Management, Tsakos Shipping and TCM to manage our business.

We do not have the employee infrastructure to manage our operations and have no physical assets. In common with industry practice, our subsidiaries own the vessels in the fleet and any contracts to construct newbuildings. We have engaged Tsakos Energy Management to perform all of our executive and management functions. Tsakos Energy Management employees directly provide us with financial, accounting and other back-office services, including acting as our liaison with the New York Stock Exchange and the Bermuda Monetary Authority. Tsakos Energy Management, in turn, oversees and subcontracts part of commercial management (including treasury, chartering and vessel purchase and sale functions) to Tsakos Shipping, and day-to-day fleet technical management, such as vessel operations, repairs, supplies and crewing, to TCM. As a result, we depend upon the continued services provided by Tsakos Energy Management and Tsakos Energy Management depends on the continued services provided by Tsakos Shipping and TCM.

We derive significant benefits from our relationship with Tsakos Energy Management and its affiliated companies, including purchasing discounts to which we otherwise would not have access. We would be materially adversely affected if any of Tsakos Energy Management, Tsakos Shipping or TCM becomes unable or

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unwilling to continue providing services for our benefit at the level of quality they have provided such services in the past and at comparable costs as they have charged in the past. If we were required to employ a ship management company other than Tsakos Energy Management, Tsakos Shipping or TCM, we cannot offer any assurances that the terms of such management agreements would be on terms as favorable to the Company in the long term.

Tsakos Energy Management, Tsakos Shipping and TCM are privately held companies and there is little or no publicly available information about them.

The ability of Tsakos Energy Management, Tsakos Shipping and TCM to continue providing services for our and our subsidiaries' benefit will depend in part on their own financial strength. Circumstances beyond our control could impair their financial strength and, because each of these companies is privately held, it is unlikely that information about their financial strength would become public. Any such problems affecting these organizations could have a material adverse effect on us.

Tsakos Energy Management has the right to terminate its management agreement with us and Tsakos Shipping and TCM have the right to terminate their respective contracts with Tsakos Energy Management.

Tsakos Energy Management may terminate its management agreement with us at any time upon one year's notice. In addition, if even one director were to be elected to our board without having been recommended by our existing board, Tsakos Energy Management would have the right to terminate the management agreement on 10 days' notice. If Tsakos Energy Management terminates the agreement for this reason, we would be obligated to pay Tsakos Energy Management the present discounted value of all payments that would have otherwise become due under the management agreement until June 30 in the tenth year following the date of the termination plus the average of the incentive awards previously paid to Tsakos Energy Management multiplied by 10. A termination as of December 31, 2018 would have resulted in a payment of approximately \$161.8 million. Tsakos Energy Management's contracts with Tsakos Shipping and with TCM may be terminated by either party upon six months' notice and would terminate automatically upon termination of our management agreement with Tsakos Energy Management.

Our ability to pursue legal remedies against Tsakos Energy Management, Tsakos Shipping and TCM is very limited.

In the event Tsakos Energy Management breaches its management agreement with us, we or our subsidiaries could bring a lawsuit against it. However, because neither we nor they are ourselves party to a contract with Tsakos Shipping or TCM, it may be difficult to sue Tsakos Shipping and TCM for breach of their obligations under their contracts with Tsakos Energy Management, and Tsakos Energy Management may have no incentive to sue Tsakos Shipping and TCM. Tsakos Energy Management is a company with no substantial assets and no income other than the income it derives under the management agreement with us. Therefore, it is unlikely that we or our subsidiaries would be able to obtain any meaningful recovery if we or they were to sue Tsakos Energy Management, Tsakos Shipping or TCM on contractual grounds.

Tsakos Shipping provides chartering services to other tankers and TCM manages other tankers and could experience conflicts of interests in performing obligations owed to us and the operators of other tankers.

In addition to the vessels that it manages for our fleet, TCM technically manages a fleet of privately owned vessels and wishes to acquire third-party clients. These vessels are operated by the same group of TCM employees that manage our vessels, and we are advised that its employees manage these vessels on an ownership neutral basis; that is, without regard to who owns them. It is not impossible that Tsakos Shipping, which provides chartering services for nearly all vessels technically managed by TCM, might allocate charter or spot opportunities to other TCM managed vessels when our subsidiaries' vessels are unemployed. It is also possible that TCM could in the future agree to manage more tankers that might directly compete with the fleet.

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Clients of Tsakos Shipping have acquired and may acquire additional vessels that may compete with our fleet.

Tsakos Shipping and we have an arrangement whereby it affords us a right of first refusal on any opportunity to purchase a tanker which is 10 years of age or younger or contract to construct a tanker that is referred to or developed by Tsakos Shipping. Were we to decline any opportunity offered to us, or if we do not have the resources or desire to accept it, other clients of Tsakos Shipping might decide to accept the opportunity. In this context, Tsakos Shipping clients have in the past acquired modern tankers and have ordered the construction of vessels. They may acquire or order tankers in the future, which, if we decline to buy from them, could be entered into charters in competition with our vessels. These charters and future charters of tankers by Tsakos Shipping could result in conflicts of interest between their own interests and their obligations to us.

Our chief executive officer has affiliations with Tsakos Energy Management, Tsakos Shipping and TCM which could create conflicts of interest.

Nikolas Tsakos is the president, chief executive officer and a director of our company and the director and sole shareholder of Tsakos Energy Management. Nikolas Tsakos is also the son of the founder of Tsakos Shipping. These responsibilities and relationships could create conflicts of interest that could result in our losing revenue or business opportunities or increase our expenses.

Our commercial arrangements with Tsakos Energy Management and Argosy may not always remain on a competitive basis.

We pay Tsakos Energy Management a management fee for its services pursuant to our management agreement. We also place our hull and machinery insurance, increased value insurance and loss of hire insurance through Argosy Insurance Company, Guernsey, a captive insurance company affiliated with Tsakos interests. We believe that the management fees that we pay Tsakos Energy Management compare favorably with management compensation and related costs reported by other publicly traded shipping companies and that our arrangements with Argosy are structured at arm's-length market rates. Our board reviews publicly available data periodically in order to confirm this. However, we cannot assure you that the fees charged to us are or will continue to be as favorable to us as those we could negotiate with third parties and our board could determine to continue transacting business with Tsakos Energy Management and Argosy even if less expensive alternatives were available from third parties.

We depend on our key personnel.

Our future success depends particularly on the continued service of Nikolas Tsakos, our president and chief executive officer and the sole shareholder of Tsakos Energy Management. The loss of Mr. Tsakos's services or the services of any of our key personnel could have a material adverse effect on our business. We do not maintain key man life insurance on any of our executive officers.

Because the market value of our vessels may fluctuate significantly, we may incur impairment charges or losses when we sell vessels which may adversely affect our earnings.

The fair market value of tankers may increase or decrease depending on any of the following:

general economic and market conditions affecting the tanker industry;

supply and demand balance for ships within the tanker industry;

competition from other shipping companies;

types and sizes of vessels;

other modes of transportation;

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cost of newbuildings;

governmental or other regulations;

prevailing level of charter rates; and

technological advances.

The global economic downturn that commenced in 2008 resulted in a decrease in vessel values. Since then valuations have fluctuated, falling whenever there was excess fleet capacity and falling freight rates, as in 2013, and recovering when tanker market conditions improved as in 2015. Valuations declined again in 2016 and remained low through 2017 and 2018. In addition, although our subsidiaries currently own a modern fleet, with an average age of 8.5 years as of April 2, 2019, as vessels grow older, they generally decline in value.

We have a policy of considering the disposal of tankers periodically. If our subsidiaries' tankers are sold at a time when tanker prices have fallen, the sale may be at less than the vessel's carrying value on our financial statements, with the result that we will incur a loss.

In addition, accounting pronouncements require that we periodically review long-lived assets and certain identifiable intangibles for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. An impairment charge for an asset held for use should be recognized when the estimate of undiscounted cash flows, excluding interest charges, expected to be generated by the use of the asset is less than its carrying amount. Measurement of the impairment charge is based on the fair value of the asset as provided by third parties. Such reviews may from time to time result in asset write-downs, which could adversely affect our results of operations, such as we did in the fourth quarter of 2017 and 2018 with respect to two and five of our older tankers, respectively.

If TCM is unable to attract and retain skilled crew members, our reputation and ability to operate safely and efficiently may be harmed.

Our continued success depends in significant part on the continued services of the officers and seamen whom TCM provides to crew the vessels owned by our subsidiary companies. The market for qualified, experienced officers and seamen is extremely competitive and has grown more so in recent periods as a result of the growth in world economies and other employment opportunities. Although TCM has a contract with a number of manning agencies in Philippines, Ukraine, Romania, Georgia, Latvia, Greece and Russia and sponsors various academies in the relevant regions, we cannot assure you that TCM will be successful in its efforts to recruit and retain properly skilled personnel at commercially reasonable salaries. Any failure to do so could adversely affect our ability to operate cost-effectively and our ability to increase the size of the fleet.

Labor interruptions could disrupt our operations.

Substantially all of the seafarers and land based employees of TCM are covered by industry-wide collective bargaining agreements that set basic standards. We cannot assure you that these agreements will prevent labor interruptions. In addition, like many other vessels internationally, some of our subsidiaries' vessels operate under so-called flags of convenience and may be vulnerable to unionization efforts by the International Transport Federation and other similar seafarer organizations which could be disruptive to our operations. Any labor interruption or unionization effort which is disruptive to our operations could harm our financial performance.

Contracts for any newbuildings we may order present certain economic and other risks.

As of April 2, 2019, our subsidiaries have contracts for the construction of two aframax and two suezmax crude carriers for delivery in 2019 and 2020. Our subsidiaries may also order additional newbuildings. During the course of construction of a vessel, we are typically required to make progress payments. While we typically

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have refund guarantees from banks to cover defaults by the shipyards and our construction contracts would be saleable in the event of our payment default, we can still incur economic losses in the event that we or the shipyards are unable to perform our respective obligations. Shipyards may periodically experience financial difficulties.

Delays in the delivery of these vessels, or any newbuilding or secondhand vessels our subsidiaries may agree to acquire, could delay our receipt of revenues generated by these vessels and, to the extent we have arranged charter employment for these vessels, could possibly result in the cancellation of those charters, and therefore adversely affect our anticipated results of operations. The delivery of newbuilding vessels could be delayed because of, among other things: work stoppages or other labor disturbances; bankruptcy or other financial crisis of the shipyard building the vessel; hostilities or political or economic disturbances in the countries where the vessels are being built, including any escalation of tensions involving North Korea; weather interference or catastrophic events, such as a major earthquake, tsunami or fire; our requests for changes to the original vessel specifications; requests from our customers, with whom our commercial managers arrange charters for such vessels, to delay construction and delivery of such vessels due to weak economic conditions and shipping demand or a dispute with the shipyard building the vessel.

Credit conditions internationally might impact our ability to raise debt financing.

Global financial markets and economic conditions have been disrupted and volatile for periods in recent years. At times, the credit markets as well as the debt and equity capital markets were distressed and it was difficult for many shipping companies to obtain adequate financing. The cost of available financing also increased significantly, but for leading shipping companies has since declined. The global financial markets and economic conditions could again experience volatility and disruption in the future.

We have traditionally financed our vessel acquisitions or constructions with our own cash (equity) and bank debt from various reputable national and international commercial banks. In relation to newbuilding contracts, the equity portion usually covers all or part of the pre-delivery obligations while the debt portion covers the outstanding amount due to the shipyard on delivery. More recently, however, we have arranged pre-delivery bank financing to cover much of the installments due before delivery, and, therefore, we would be required to provide the remainder of our equity investment at delivery. In addition, several of our existing loans will mature over the next few years, including the current year. In the event that the related vessels are not sold, or we do not wish to use existing cash for paying the final balloon payments, then re-financing of the loans for an extended period beyond the maturity date will be necessary. Current and future terms and conditions of available debt financing, especially for older vessels without time charter could be different from terms obtained in the past and could result in a higher cost of capital, if available at all. Any adverse development in the credit markets could materially alter our current and future financial and corporate planning and growth and have a negative impact on our balance sheet.

The future performance of our subsidiaries LNG carriers depends on continued growth in LNG production and demand for LNG and LNG shipping.

The future performance of our subsidiaries LNG carriers will depend on continued growth in LNG production and the demand for LNG and LNG shipping. A complete LNG project includes production, liquefaction, storage, re-gasification and distribution facilities, in addition to the marine transportation of LNG. Increased infrastructure investment has led to an expansion of LNG production capacity in recent years, but material delays in the construction of new liquefaction facilities could constrain the amount of LNG available for shipping, reducing ship utilization. The rate of growth in global LNG demand has fluctuated due to several factors, including global economic conditions and economic uncertainty, fluctuations in the price of natural gas and other sources of energy, growth in natural gas production from unconventional sources in regions such as North America and the highly complex and capital intensive nature of new or expanded LNG projects, including

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liquefaction projects. Growth in LNG production and demand for LNG and LNG shipping could be negatively affected by a number of factors, including:

increases in the cost of natural gas derived from LNG relative to the cost of natural gas generally;

increases in the production levels of low-cost natural gas in domestic natural gas consuming markets, which could further depress prices for natural gas in those markets and make LNG uneconomical;

increases in the production of natural gas in areas linked by pipelines to consuming areas, the extension of existing, or the development of new pipeline systems in markets we may serve, or the conversion of existing non-natural gas pipelines to natural gas pipelines in those markets;

decreases in the consumption of natural gas due to increases in its price, decreases in the price of alternative energy sources or other factors making consumption of natural gas less attractive;

any significant explosion, spill or other incident involving an LNG facility or carrier;

infrastructure constraints such as delays in the construction of liquefaction facilities, the inability of project owners or operators to obtain financing or governmental approvals to construct or operate LNG facilities, as well as community or political action group resistance to new LNG infrastructure due to concerns about the environment, safety and terrorism;

labor or political unrest or military conflicts affecting existing or proposed areas of LNG production or re-gasification;

decreases in the price of LNG, which might decrease the expected returns relating to investments in LNG projects; or

negative global or regional economic or political conditions, particularly in LNG consuming regions, which could reduce energy consumption or its growth.

Reduced demand for LNG or LNG shipping, or any reduction or limitation in LNG production capacity, could have a material adverse effect on our ability to secure future multi-year time charters for the LNG carriers, or for any new LNG carriers our subsidiaries may acquire, which could harm our business, financial condition, results of operations and cash flows, including cash available for dividends to our shareholders.

Demand for LNG shipping could be significantly affected by volatile natural gas prices and the overall demand for natural gas.

Gas prices are volatile and are affected by numerous factors beyond our control, including but not limited to the following:

the supply and cost of crude oil and petroleum products;

worldwide demand for natural gas;

the cost of exploration, development, production, transportation and distribution of natural gas;

expectations regarding future energy prices for both natural gas and other sources of energy;

the level of worldwide LNG production and exports;

government laws and regulations, including but not limited to environmental protection laws and regulations;

local and international political, economic and weather conditions;

political and military conflicts; and

the availability and cost of alternative energy sources, including alternate sources of natural gas in gas importing and consuming countries.

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In recent years, global crude oil prices were very volatile. Any decline in oil prices can depress natural gas prices and lead to a narrowing of the gap in pricing in different geographic regions, which can adversely affect the length of voyages in the spot LNG shipping market and the spot rates and medium-term charter rates for charters which commence in the near future. Any continued period of low oil prices could adversely affect both the competitiveness of gas as a fuel for power generation and the market price of gas, to the extent that gas prices are benchmarked to the price of crude oil. Some production companies have announced delays or cancellations of certain previously announced LNG projects, which, unless offset by new projects coming on stream, could adversely affect demand for LNG charters over the next few years, while the amount of tonnage available for charter is expected to increase.

An oversupply of LNG carriers may lead to a reduction in the charter hire rates we are able to obtain when seeking charters in the future.

Driven in part by an increase in LNG production capacity and the expectation of further future capacity, the construction and delivery of new LNG carriers has been increasing. Any future expansion of the global LNG carrier fleet that cannot be absorbed by existing or future LNG projects may have a negative impact on charter rates, ship utilization and ship values. Such impact could be amplified if the expansion of LNG production capacity does not keep pace with fleet growth.

Hire rates for LNG carriers may fluctuate substantially and if rates are low, as was the case in 2016 and 2017, when we are seeking a new charter, our revenues and cash flows may decline.

The significant fall in oil prices in the second half of 2014 contributed to substantial declines in the price of LNG, which coupled with delays in the completion of liquefaction and regasification facilities around the world and a high order book, particularly with vessels ordered on speculation, led to declines in average rates for new spot and shorter-term LNG charters. Rates have recovered more recently and are expected to improve in the future. However, if LNG charter market conditions decline over the next eighteen months, we may have difficulty in securing new charters at attractive rates and durations for our two LNG carriers when their current charters expire.

We depend upon Hyundai Ocean Services to manage our subsidiaries' LNG carriers.

Tsakos Energy Management has subcontracted all technical management of our LNG operations to Hyundai Ocean Services Co., Ltd (HOS) for a fee. Neither Tsakos Energy Management nor TCM has the dedicated personnel for running LNG operations nor can we guarantee that they will employ an adequate number of employees to conduct LNG operations in the future. As such, we are currently dependent on the reliability and effectiveness of third-party managers for whom we cannot guarantee that their employees, both onshore and at-sea are sufficient in number or capability for their assigned role. We also cannot assure you that we will be able to continue to receive such services from HOS on a long-term basis on acceptable terms or at all.

Our growth in shuttle tankers depends partly on continued growth in demand for offshore oil transportation, processing and storage services.

Our growth strategy includes expansion in the shuttle tanker sector. Growth in this sector depends on continued growth in world and regional demand for these offshore services, which could be negatively affected by a number of factors, such as:

decreases in the actual or projected price of oil, which could lead to a reduction in or termination of production of oil at certain offshore fields our shuttle tankers will service or a reduction in exploration for or development of new offshore oil fields;

increases in the production of oil in areas linked by pipelines to consuming areas, the extension of existing, or the development of new, pipeline systems in markets we may serve, or the conversion of existing non-oil pipelines to oil pipelines in those markets;

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decreases in the consumption of oil due to increases in its price relative to other energy sources, other factors making consumption of oil less attractive or energy conservation measures;

availability of new, alternative energy sources;

negative global or regional economic or political conditions, particularly in oil consuming regions, which could reduce energy consumption or its growth; and

fall in the price of oil leading to cut-backs in the offshore industry.

Oil prices declined substantially in the second half of 2014, which resulted in oil companies announcing reductions in oil production and exploration activities, including in offshore fields. Oil prices have recovered since then although volatility still exists depending on the policies of oil production countries and cartels.

Fuel prices may adversely affect our profits.

While we do not bear the cost of fuel (bunkers) under time and bareboat charters, fuel is the largest expense in our shipping operations when vessels are under spot charters. Increases in the price of fuel may, as a result, adversely affect our profitability. The marine fuel with low sulfur content required to comply with the 0.5% sulfur cap on marine fuels effective January 1, 2020, for vessels without scrubbers, is presently substantially more expensive compared to the currently widely used marine fuel, which, if this price differential continues, could increase our fuel costs for vessels employed in the spot market. The price and supply of fuel is unpredictable and fluctuates based on events outside our control, including geopolitical developments.

If our counterparties were to fail to meet their obligations under a charter agreement we could suffer losses or our business could be otherwise adversely affected.

As of April 2, 2019, 46 of our subsidiaries' vessels were employed under time charters and time charters with profit share. The ability and willingness of each of the counterparties to perform their obligations under their charters will depend on a number of factors that are beyond our control and may include, among other things, general economic conditions, the condition of the oil and energy industries and of the oil and oil products shipping industry as well as the overall financial condition of the counterparties and prevailing charter rates. There can be no assurance that some of our subsidiaries' customers would not fail to pay charter hire or attempt to renegotiate charter rates and, if the charterers fail to meet their obligations or attempt to renegotiate charter agreements, we could sustain significant losses which could have a material adverse effect on our business, financial condition, results of operations and cash flows, as well as our ability to pay dividends in the future.

The shipping industry has inherent operational risks that may not be adequately covered by our insurance.

We believe that we maintain as much insurance on the vessels in the fleet, through insurance companies, including Argosy, a related party company, and P&I clubs, as is appropriate and consistent with industry practice. While we endeavor to be adequately insured against all known risks related to the operation of our subsidiaries' ships, there remains the possibility that a liability may not be adequately covered and we may not be able to obtain adequate insurance coverage for the fleet in the future. The insurers may also not pay particular claims. Even if our insurance coverage is adequate, we may not be able to obtain a replacement vessel in a timely manner in the event of a loss. Our insurance policies contain deductibles for which we will be responsible and limitations and exclusions which may increase our costs or lower our revenue. In addition, some of our insurance coverage is maintained through mutual protection and indemnity associations, and as a member of such associations we may be required to make additional payments over and above budgeted premiums if member claims make an excessive impact on association reserves.

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Failure to protect our information systems against security breaches could adversely affect our business and financial results. Additionally, if these systems fail or become unavailable for any significant period of time, our business could be harmed.

The efficient operation of our business is dependent on computer hardware and software systems. Information systems are vulnerable to security breaches by computer hackers and cyber terrorists. We rely on industry-accepted security measures and technology to securely maintain confidential and proprietary information maintained on our information systems. However, these measures and technology may not adequately prevent cybersecurity breaches, the access, capture or alteration of information by criminals, the exposure or exploitation of potential security vulnerabilities, the installation of malware or ransomware, acts of vandalism, computer viruses, misplaced data or data loss. In addition, the unavailability of the information systems or the failure of these systems to perform as anticipated for any reason could disrupt our business and could result in decreased performance and increased operating costs, causing our business and results of operations to suffer. Any significant interruption or failure of our information systems or any significant breach of security could adversely affect our business and financial results, as well as our cash flows available for distribution to our shareholders

Our degree of leverage and certain restrictions in our financing agreements impose constraints on us.

We incur substantial debt to finance the acquisition of our vessels. At December 31, 2018, our debt to capital ratio was 51.6% (debt / debt plus equity), with \$1.6 billion in debt outstanding. We are required to apply a substantial portion of our cash flow from operations to the payment of principal and interest on this debt. In 2018, all of our cash flow derived from operations was dedicated to debt service, voluntary early debt prepayments and balloon payments to be refinanced. This limits the funds available for working capital, capital expenditures, dividends and other purposes. Our degree of leverage could have important consequences for us, including the following:

a substantial decrease in our net operating cash flows or an increase in our expenses could make it difficult for us to meet our debt service requirements and force us to modify our operations;

we may be more highly leveraged than our competitors, which may make it more difficult for us to expand our fleet; and

any significant amount of leverage exposes us to increased interest rate risk and makes us vulnerable to a downturn in our business or the economy in general.

In addition, our financing arrangements, which we secured by mortgages on our ships, impose operating and financial restrictions on us that restrict our ability to:

incur additional indebtedness;

create liens;

sell the capital of our subsidiaries or other assets;

make investments;

engage in mergers and acquisitions;

make capital expenditures;

repurchase or redeem common or preferred shares; and

pay cash dividends.

We have a holding company structure which depends on dividends from our subsidiaries and interest income to pay our overhead expenses and otherwise fund expenditures. As a result, restrictions contained in our financing arrangements and those of our subsidiaries on the payment of dividends may restrict our ability to fund our various activities.

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We are exposed to volatility in LIBOR and selectively enter into derivative contracts, which can result in higher than market interest rates and charges against our income.

Over the past 15 years we have selectively entered into derivative contracts both for investment purposes and to hedge our overall interest expense and, more recently, our bunker expenses. Our board of directors monitors the status of our derivatives in order to assess whether such derivatives are within reasonable limits and reasonable in light of our particular investment strategy at the time we entered into the derivative contracts.

Loans advanced under our secured credit facilities are, generally, advanced at a floating rate based on LIBOR, which increased in recent years after a long period of stability at historically low levels, and has been volatile in past years, which can affect the amount of interest payable on our debt, and which, in turn, could have an adverse effect on our earnings and cash flow. LIBOR rates were at historically low levels for an extended period of time and may continue to increase from these low levels. Our financial condition could be materially adversely affected at any time that we have not entered into interest rate hedging arrangements to hedge our interest rate exposure and the interest rates applicable to our credit facilities and any other financing arrangements we may enter into in the future, including those we enter into to finance a portion of the amounts payable with respect to newbuildings, increase. Moreover, even if we have entered into interest rate swaps or other derivative instruments for purposes of managing our interest rate or bunker cost exposure, our hedging strategies may not be effective, and we may incur substantial loss.

We have a risk management policy and the Audit Committee oversees all our derivative transactions. It is our policy to monitor our exposure to business risk, and to manage the impact of changes in interest rates, foreign exchange rate movements and bunker prices on earnings and cash flows through derivatives. Derivative contracts are executed when management believes that the action is not likely to significantly increase overall risk. Entering into swaps and derivatives transactions is inherently risky and presents various possibilities for incurring significant expenses. The derivatives strategies that we employ in the future may not be successful or effective, and we could, as a result, incur substantial additional interest costs. See Item 11. Quantitative and Qualitative Disclosures About Market Risk for a description of our current interest rate swap arrangements.

Uncertainty relating to the LIBOR calculation process and potential phasing out of LIBOR after 2021 may adversely affect the amounts payable under our credit facilities and our preferred shares.

On July 27, 2017, the United Kingdom Financial Conduct Authority (FCA), which regulates LIBOR, announced that it intends to stop persuading or compelling banks to submit rates for the calculation of LIBOR to the administrator of LIBOR after 2021 (FCA Announcement). The FCA Announcement indicates that the continuation of LIBOR on the current basis is not guaranteed after 2021.

Our credit facilities bear interest costs at a floating rate based on LIBOR. Uncertainties surrounding changes to the basis of which LIBOR is calculated or the phase-out of LIBOR, which may cause a sudden and prolonged increase or decrease in LIBOR, could adversely affect our operating results and financial condition, as well as our cash flows, including cash available for dividends to our shareholders. While we use interest rate swaps to reduce our exposure to interest rate risk and to hedge a portion of our outstanding indebtedness, there is no assurance that our derivative contracts will provide adequate protection against adverse changes in interest rates or that our bank counter parties will be able to perform their obligations.

If a three-month LIBOR rate is not available, the terms of our various credit facilities, and to the extent applicable, our preferred shares will require alternative determination procedures which may result in an interest and/or a dividend rate differing from expectations and could materially affect the value of the such instruments.

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Our subsidiaries' vessels may suffer damage and we may face unexpected dry-docking costs which could affect our cash flow and financial condition.

If our vessels suffer damage, they may need to be repaired at a dry-docking facility. The costs of dry-dock repairs can be both substantial and unpredictable. We may have to pay dry-docking costs that our insurance does not cover. This would result in decreased earnings.

If we were to be subject to corporate income tax in jurisdictions in which we operate, our financial results would be adversely affected.

Under current Bermuda law, there is no income, corporate or profits tax or withholding tax, capital gains tax or capital transfer tax, estate or inheritance tax payable by us or our shareholders, other than shareholders ordinarily resident in Bermuda, if any. We have received from the Minister of Finance under The Exempted Undertaking Tax Protection Act 1966, as amended of Bermuda, an assurance that, in the event that Bermuda enacts legislation imposing tax computed on profits, income, any capital asset, gain or appreciation, or any tax in the nature of estate duty or inheritance, then the imposition of any such tax shall not be applicable to us or to any of our operations or shares, debentures or other obligations, until March 23, 2035. We believe that we should not be subject to tax under the laws of various countries, other than the United States, in which our subsidiaries' vessels conduct activities or in which our subsidiaries' customers are located. However, our belief is based on our understanding of the tax laws of those countries, and our tax position is subject to review and possible challenge by taxing authorities and to possible changes in law or interpretation. We cannot determine in advance the extent to which certain jurisdictions may require us to pay corporate income tax or to make payments in lieu of such tax. In addition, payments due to us from our subsidiaries' customers may be subject to tax claims. As a result of the continuing economic crisis in Greece, our operations in Greece may be subjected to new regulations that may require us to incur new or additional compliance or other administrative costs, which may include requirements that we pay to the Greek government new taxes or other fees. In addition, China has enacted a new tax for non-resident international transportation enterprises engaged in the provision of services of passengers or cargo, among other items, in and out of China using their own, chartered or leased vessels, including any stevedore, warehousing and other services connected with the transportation. The new regulation broadens the range of international transportation companies which may find themselves liable for Chinese enterprise income tax on profits generated from international transportation services passing through Chinese ports.

If we or our subsidiaries are not entitled to exemption under Section 883 of the United States Internal Revenue Code of 1986, as amended, for any taxable year, we or our subsidiaries would be subject for those years to a 4% United States federal income tax on our gross U.S.-source shipping revenue, without allowance for deductions, under Section 887 of the Internal Revenue Code. The imposition of such tax could have a negative effect on our business and would result in decreased earnings and cash flows available for distribution to our shareholders.

See Item 10. Additional Information Tax Considerations United States federal income tax considerations for additional information about the requirements of this exemption.

If we were treated as a passive foreign investment company, a U.S. investor in our shares would be subject to disadvantageous rules under the U.S. tax laws.

If we were treated as a passive foreign investment company (a PFIC) in any year, our U.S. shareholders would be subject to unfavorable U.S. federal income tax treatment. We do not believe that we will be a PFIC in 2019 or in any future year. However, PFIC classification is a factual determination made annually and we could become a PFIC if the portion of our income derived from bareboat charters or other passive sources were to increase substantially or if the portion of our assets that produce or are held for the production of passive income were to increase substantially. Moreover, the IRS may disagree with our position that time and voyage charters do not give rise to passive income for purposes of the PFIC rules. Accordingly, we can provide no assurance that

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we will not be treated as a PFIC for 2019 or for any future year. Please see Tax Considerations United States federal income tax considerations Passive Foreign Investment Company Considerations herein for a description of the PFIC rules.

Distributions on shares of non-U.S. companies that are treated as dividends for U.S. federal income tax purposes and are received by individuals generally will be eligible for taxation at capital gain rates if the shares with respect to which the dividends are paid are readily tradable on an established securities market in the United States. This treatment will not be available to dividends we pay, however, if we qualify as a PFIC for the taxable year of the dividend or the preceding taxable year, or to the extent that (i) the shareholder does not satisfy a holding period requirement that generally requires that the shareholder hold the shares on which the dividend is paid for more than 60 days during the 121-day period that begins 60 days before the date on which the shares become ex-dividend with respect to such dividend, (ii) the shareholder is under an obligation to make related payments with respect to substantially similar or related property or (iii) such dividend is taken into account as investment income under Section 163(d)(4)(B) of the Internal Revenue Code. We do not believe that we qualified as a PFIC for our last taxable year and, as described above, we do not expect to qualify as a PFIC for our current or future taxable years.

Because some of our subsidiaries vessels expenses are incurred in foreign currencies, we are exposed to exchange rate risks.

The charterers of the vessels owned by our subsidiary companies pay in U.S. dollars. While most of the expenses incurred by our managers or by us on our subsidiaries behalf are paid in U.S. dollars, certain of these expenses are in other currencies, most notably the Euro. In 2018, Euro expenses accounted for approximately 31% of our total operating expenses, including dry-dockings. Declines in the value of the U.S. dollar relative to the Euro, or the other currencies in which we incur expenses, would increase the U.S. dollar cost of paying these expenses and thus would adversely affect our results of operations.

The Tsakos Holdings Foundation and the Tsakos family can exert considerable control over us, which may limit your ability to influence our actions.

As of April 2, 2019, companies controlled by the Tsakos Holdings Foundation or affiliated with the Tsakos Group own approximately 34.7% of our outstanding common shares. The Tsakos Holdings Foundation is a Liechtenstein foundation whose beneficiaries include persons and entities affiliated with the Tsakos family, charitable institutions and other unaffiliated persons and entities. The council which controls the Tsakos Holdings Foundation consists of five members, two of whom are members of the Tsakos family. As long as the Tsakos Holdings Foundation and the Tsakos family beneficially own a significant percentage of our common shares, each will have the power to influence the election of the members of our board of directors and the vote on substantially all other matters, including significant corporate actions.

Risks Related To Our Common and Preferred Shares

Future sales of our common shares could cause the market price of our common shares to decline.

Sales of a substantial number of our common shares in the public market, or the perception that these sales could occur, may depress the market price for our common shares. These sales could also impair our ability to raise additional capital through the sale of our equity securities in the future. We may issue additional common shares in the future and our shareholders may elect to sell large numbers of shares held by them from time to time.

The market price of our common shares and preferred shares may be unpredictable and volatile.

The market price of our common shares and Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares may fluctuate due to factors such as

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actual or anticipated fluctuations in our quarterly and annual results and those of other public companies in our industry, mergers and strategic alliances in the tanker industry, market conditions in the tanker industry, changes in government regulation, shortfalls in our operating results from levels forecast by securities analysts, announcements concerning us or our competitors, our sales of our common shares or of additional preferred shares, changes in prevailing interest rates and the general state of the securities market. The tanker industry has been highly unpredictable and volatile. The market for common stock and preferred stock in this industry may be equally volatile. Therefore, we cannot assure you that you will be able to sell any of our common shares and preferred shares you may have purchased, or will purchase in the future, at a price greater than or equal to the original purchase price.

If the market price of our common shares remains below \$5.00 per share, under stock exchange rules, our shareholders will not be able to use such shares as collateral for borrowing in margin accounts. This inability to use common shares as collateral may depress demand and certain institutional investors are restricted from investing in or holding shares priced below \$5.00, which could lead to sales of such shares creating further downward pressure on and increased volatility in the market price of our common shares.

We may not be able to pay cash dividends on our common shares or preferred shares as intended if market conditions change.

During 2018, we paid dividends on our common shares totaling \$0.15 per common share, or \$13.1 million. On March 29, 2019, the Company announced a common share dividend of \$0.05 per common share to be paid on May 30, 2019 to holders of record as of May 24, 2019. In addition, during 2018 we paid dividends on our preferred shares totaling \$31.3 million. In 2019 we have paid \$10.2 million, between January 1 and April 5. A further \$4.4 million in common share dividends has been declared for payment on May 30, 2019 and \$5.7 million in preferred share dividends for payment on April 30, 2019. Subject to the limitations discussed below, we currently intend to continue to pay cash dividends on our common shares and preferred shares. However, there can be no assurance that we will pay dividends or as to the amount of any dividend. The payment and the amount will be subject to the discretion of our board of directors and will depend, among other things, on restrictions in the Companies Act of 1981 of Bermuda, as amended, or the Companies Act, on our available cash balances, anticipated cash needs, our results of operations, our financial condition, and any loan agreement restrictions binding us or our subsidiaries, including a prohibition of dividend distribution should there be an event of default in existence relating to any loan, as well as other relevant factors. In addition, dividends on our common shares are subject to the priority of our dividend obligations relating to our Series B, Series C, Series D, Series E and Series F Preferred Shares. We may have insufficient cash to pay dividends on or redeem our Series B, Series C, Series D, Series E and Series F Preferred Shares or pay dividends on our common shares. Depending on our operating performance for a particular year, this could result in no dividend at all despite the existence of net income, or a dividend that represents a lower percentage of our net income.

Because we are a holding company with no material assets other than the stock of our subsidiaries, our ability to pay dividends will depend on the earnings and cash flow of our subsidiaries and their ability to pay us dividends. In addition, the financing arrangements for indebtedness we incur in connection with our newbuilding program may further restrict our ability to pay dividends. In the event of any insolvency, bankruptcy or similar proceedings of a subsidiary, creditors of such subsidiary would generally be entitled to priority over us with respect to assets of the affected subsidiary. Investors in our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares may be adversely affected if we are unable to or do not pay dividends as intended.

Market interest rates may adversely affect the value of our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares.

One of the factors that influences the price of our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares and Series E Preferred Shares and Series F Preferred Shares is the dividend yield on

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these preferred shares (as a percentage of the price thereof) relative to market interest rates. An increase in market interest rates, which are currently at low levels relative to historical rates and have recently been increasing, may lead to lower prices for our shares when valued using their dividend yields. Higher interest rates would likely increase our borrowing costs and potentially decrease funds available for dividends. Accordingly, higher interest rates could cause the market prices of our preferred shares to decrease.

Holders of our Preferred Shares have extremely limited voting rights.

The voting rights of holders of Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares are extremely limited. Our common shares are the only class or series of our shares carrying full voting rights. The voting rights of holders of these preferred shares are limited to the ability, subject to certain exceptions, to elect, voting together as a class with all other classes or series of parity securities upon which like voting rights have been conferred and are exercisable, one director if dividends for six quarterly dividend periods (whether or not consecutive) payable thereon are in arrears and certain other limited protective voting rights described in Item 10. Additional Information Description of Share Capital Preferred Shares.

Provisions in our Bye-laws and our management agreement with Tsakos Energy Management would make it difficult for a third party to acquire us, even if such a transaction is beneficial to our shareholders.

Our Bye-laws provide for a staggered board of directors, blank check preferred stock, super majority voting requirements and other anti-takeover provisions, including restrictions on business combinations with interested persons and limitations on the voting rights of shareholders who acquire more than 15% of our common shares. In addition, Tsakos Energy Management would have the right to terminate our management agreement and seek liquidated damages if a board member were elected without having been approved by the current board. These provisions could deter a third party from tendering for the purchase of some or all of our shares. These provisions may have the effect of delaying or preventing changes of control of the ownership and management of our company.

Because we are a foreign corporation, you may not have the same rights as a shareholder in a U.S. corporation.

We are a Bermuda company. Our Memorandum of Association and Bye-laws and the Companies Act govern our affairs. While many provisions of the Companies Act resemble provisions of the corporation laws of a number of states in the United States, Bermuda law may not as clearly establish your rights and the fiduciary responsibilities of our directors as do statutes and judicial precedent in some U.S. jurisdictions. In addition, apart from three non-executive directors, our directors and officers are not resident in the United States and all or substantially all of our assets are located outside of the United States. As a result, investors may have more difficulty in protecting their interests and enforcing judgments in the face of actions by our management, directors or controlling shareholders than would shareholders of a corporation incorporated in a U.S. jurisdiction.

In addition, you should not assume that courts in the country in which we are incorporated or where our assets are located would enforce judgments of U.S. courts obtained in actions against us based upon the civil liability provisions of applicable U.S. federal and state securities laws or would enforce, in original actions, liabilities against us based on those laws.

We are a foreign private issuer under NYSE rules, and as such we are entitled to exemption from certain NYSE corporate governance standards, and you may not have the same protections afforded to shareholders of companies that are subject to all of the NYSE corporate governance requirements.

We are a foreign private issuer under the securities laws of the United States and the rules of the NYSE. Under the securities laws of the United States, foreign private issuers are subject to different disclosure

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requirements than U.S. domiciled registrants, as well as different financial reporting requirements. Under the NYSE rules, a foreign private issuer is subject to less stringent corporate governance requirements. Subject to certain exceptions, the rules of the NYSE permit a foreign private issuer to follow its home country practice in lieu of the listing requirements of the NYSE, including (i) the requirement that a majority of the board of directors consist of independent directors, (ii) the requirement that the nominating/corporate governance committees be composed entirely of independent directors and have a written charter addressing the committee's purpose and responsibilities, (iii) the requirement that the compensation committee be composed entirely of independent directors and have a written charter addressing the committee's purpose and responsibilities, and (iv) the requirement of an annual performance evaluation of the nominating/corporate governance and compensation committees.

Nonetheless, a majority of our directors are independent, all of the members of our compensation, nominating and corporate governance committee are independent directors, and all of our board committees have written charters addressing their respective purposes and responsibilities.

Item 4. Information on the Company

Tsakos Energy Navigation Limited is a leading provider of international seaborne crude oil and petroleum product transportation services. In 2007, it also started to transport liquefied natural gas. It was incorporated in 1993 as an exempted company under the laws of Bermuda under the name Maritime Investment Fund Limited and in 1996 was renamed MIF Limited. Our common shares were listed in 1993 on the Oslo Stock Exchange (OSE) and the Bermuda Stock Exchange, although we de-listed from the OSE in March 2005 due to limited trading. The Company's shares are no longer actively traded on the Bermuda exchange. In July 2001, the Company's name was changed to Tsakos Energy Navigation Limited to enhance our brand recognition in the tanker industry, particularly among charterers. In March 2002, we completed an initial public offering of our common shares in the United States and our common shares began trading on the New York Stock Exchange under the ticker symbol TNP. Since incorporation, the Company has owned and operated 96 vessels and has sold 35 vessels (of which five had been chartered back and three of these eventually repurchased at the end of their charters; all three have since been sold again).

Our principal offices are located at 367 Syngrou Avenue, 175 64 P. Faliro, Athens, Greece. Our telephone number at this address is 011 30 210 9407710. Our website address is <http://www.tenn.gr>.

For additional information on the Company, see Item 5. Operating and Financial Review and Prospects.

Business Overview

As of April 2, 2019, we operated a fleet of 59 modern crude oil and petroleum product tankers (including two vessels chartered-in) that provide world-wide marine transportation services for national, major and other independent oil companies and refiners under long, medium and short-term charters. Our fleet also includes two LNG carriers and three suezmax shuttle tankers with advanced dynamic positioning technology (DP2), bringing our total operating fleet to 64 vessels. The resulting fleet (assuming no further chartered-in vessels and no sales or acquisitions) comprises 64 vessels representing approximately 6.9 million dwt.

We believe that we have established a reputation as a safe, high quality, cost efficient operator of modern and well-maintained tankers. We also believe that these attributes, together with our strategy of proactively working towards meeting our customers' chartering needs, has contributed to our ability to attract world-class energy producers as customers and to our success in obtaining charter renewals generating strong fleet utilization.

Our fleet is managed by Tsakos Energy Management, a company owned by our chief executive officer. Tsakos Energy Management provides us with strategic advisory, financial, accounting and administrative

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services, while subcontracting the commercial management of our business to Tsakos Shipping. In its capacity as commercial manager, Tsakos Shipping provides various services for our vessels, including charterer relations, obtaining insurance and vessel sale and purchase, supervising newbuilding construction and vessel financing. Tsakos Energy Management subcontracts the technical and operational management of our fleet to TCM. TCM was formed in February 2010 by Tsakos family interests and a German private company, the owner of the ship management company Columbia Shipmanagement Ltd., or CSM, as a joint-venture ship management company on an equal partnership basis to provide technical and operational management services to owners of vessels, primarily within the Greece-based market. TCM, which formally commenced operations on July 1, 2010, now manages the technical and operational activities of all of our operating vessels apart from the LNG carriers *Neo Energy* and *Maria Energy*, the VLCCs *Ulysses* and *Hercules I*, the suezmax tanker *Eurochampion 2004* and the aframax tankers *Maria Princess* and *Sapporo Princess* which are technically managed by a non-affiliated ship manager. TCM is based in Athens, Greece. TCM and CSM cooperate in the purchase of certain supplies and services on a combined basis. By leveraging the purchasing power of CSM, which currently provides full technical management services for 320 vessels and crewing services for an additional 54 vessels, we believe TCM is able to procure services and supplies at lower prices than Tsakos Shipping could alone, thereby reducing overall operating expenses for us. In its capacity as technical manager, TCM manages our day-to-day vessel operations, including provision of supplies, maintenance and repair, and crewing. Members of the Tsakos family are involved in the decision-making processes of Tsakos Energy Management, Tsakos Shipping and TCM.

As of April 2, 2019, our operational fleet consisted of the following 64 vessels:

Number of Vessels	Vessel Type
2	VLCC
13	Suezmax
17	Aframax
3	Aframax LR2
11	Panamax LR1
6	Handymax MR2
7	Handysize MR1
2	LNG carrier
3	Shuttle DP2
Total 64	

Twenty-five of the operating vessels are of ice-class specification. This fleet diversity, which includes a number of sister ships, provides us with the capability to be one of the more versatile operators in the market. The current operating fleet totals approximately 6.9 million dwt, all of which is double-hulled. As of April 2, 2019, the average age of the tankers in our current operating fleet was 8.5 years, compared with the industry average of 10.8 years.

We believe the following factors distinguish us from other public tanker companies:

Modern, high-quality, fleet. We own a fleet of modern, versatile, high-quality tankers that are designed for enhanced safety and low operating costs. Since inception, we have committed to investments of approximately \$5.1 billion, including investments of approximately \$4 billion in newbuilding constructions, in order to maintain and improve the quality of our fleet. We believe that increasingly stringent environmental regulations and heightened concerns about liability for oil pollution have contributed to a significant demand for our vessels by leading oil companies, oil traders and major government oil entities. TCM, the technical manager of our fleet, has ISO 14001 environmental certification and ISO 900 quality certification, based in part upon audits conducted on our vessels.

Diversified fleet. Our diversified fleet, which includes VLCC, suezmax, aframax, panamax, handysize, handymax tankers, LNG carriers and DP2 shuttle tankers, allows us to better serve our customers' international petroleum product and crude oil transportation needs. 25 of our tankers are ice-class, so may

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access ice-bound ports depending on accumulation of brash ice. We entered the LNG market with the delivery of our first LNG carrier in 2007 and took delivery of a second LNG carrier in 2016. We entered the shuttle tanker market with two DP2 suezmax shuttle tankers *Rio 2016* and *Brasil 2014* delivered in March and April 2013, respectively, each of which immediately entered into a 15-year time charter with Petrobras. A third DP2 suezmax shuttle tanker, *Lisboa*, was delivered on May 4, 2017 for charter to a European state-owned oil major.

Stability throughout industry cycles. Historically, we have employed a high percentage of our fleet on long and medium-term employment with fixed rates or minimum rates plus profit sharing agreements. We believe this approach has resulted in high utilization rates for our vessels, reflecting our industrial shipping model. At the same time, we maintain flexibility in our chartering policy to allow us to take advantage of favorable rate trends through spot market employment, pools and contract of affreightment charters with periodic adjustments. Over the last five years, our overall average fleet utilization rate was 97%.

High-Quality, sophisticated clientele. For 48 years, Tsakos entities have maintained relationships with and achieved acceptance by national, major and other independent oil companies and refiners. Several of the world's major oil companies and traders, including Equinor (formerly Statoil), BP, ExxonMobil, Flopec, Hyundai Merchant Marine, Petrobras, Chevron, Shell and Vitol are among the regular customers of Tsakos Energy Navigation.

Developing LNG and offshore shuttle tanker platform. We believe we are well positioned to capitalize on demand for LNG sea transport as well as offshore shuttle tanker transport because of our extensive relationships with existing customers, strong safety track record, superior technical management capabilities and financial flexibility. We already operate two LNG carriers and three DP2 suezmax shuttle tankers, in these high-end markets.

Significant leverage from our relationship with Tsakos Shipping and TCM. We believe the expertise, scale and scope of TCM, which spreads costs over a vessel base much larger than our fleet, are key components in maintaining low operating costs, efficiency, quality and safety. We leverage Tsakos Shipping's reputation and longstanding relationships with leading charterers to foster charter renewals.

As of April 2, 2019, our fleet consisted of the following 64 vessels:

Vessel	Year Built	Deadweight Tons	Year Acquired	Charter Type ⁽¹⁾	Expiration of Charter	Hull Type ⁽²⁾ (all double hull)	Cargoes
VLCC							
1. <i>Hercules</i>	2017	300,000	2017	time charter	November 2021		Crude
2. <i>Ulysses</i>	2016	300,000	2016	CoA			Crude
SUEZMAX							
1. <i>Eurovision</i> ⁽³⁾	2013	158,000	2014	time charter	September 2020		Crude
2. <i>Euro</i>	2012	158,000	2014	spot			Crude
3. <i>Decathlon</i> ⁽³⁾	2012	162,710	2016	time charter	April 2020		Crude
4. <i>Spyros K</i> ⁽⁴⁾	2011	157,648	2011	time charter	May 2022		Crude
5. <i>Dimitris P</i> ⁽⁴⁾	2011	157,740	2011	time charter	August 2023		Crude
6. <i>Pentathlon</i>	2009	158,475	2015	spot			Crude
7. <i>Arctic</i> ⁽³⁾	2007	163,216	2007	time charter	March 2020	ice-class 1A	Crude
8. <i>Antarctic</i> ⁽³⁾	2007	163,216	2007	time charter	April 2020	ice-class 1A	Crude
9. <i>Archangel</i> ⁽³⁾	2006	163,216	2006	time charter	May 2020	ice-class 1A	Crude
10. <i>Alaska</i> ⁽³⁾	2006	163,250	2006			ice-class 1A	Crude

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<i>11. Eurochampion 2004⁽³⁾(10)(11)</i>	2005	164,608	2005	time charter	September 2020	ice-class 1C	Crude
<i>12. Euronike⁽³⁾(11)</i>	2005	164,565	2005	time charter	January 2020	ice-class 1C	Crude
<i>13. Silia T</i>	2002	164,286	2002	time charter	April 2020	ice-class 1C	Crude
SUEZMAX DP2 SHUTTLE							
<i>1. Lisboa</i>	2017	157,000	2017	time charter	October 2019		Crude
<i>2. Rio 2016</i>	2013	155,709	2013	time charter	May 2025		Crude/Products
<i>3. Brasil 2014</i>	2013	155,721	2013	time charter	May 2028		Crude/Products
AFRAMAX							
<i>1. Bergen TS</i>	2017	112,108	2017	time charter	June 2028	ice-class 1B	Crude
<i>2. Stavanger TS</i>	2017	113,004	2017	time charter	October 2022 ⁽⁷⁾	ice-class 1B	Crude

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Vessel	Year Built	Deadweight Tons	Year Acquired	Charter Type⁽¹⁾	Expiration of Charter	Hull Type⁽²⁾ (all double hull)	Cargoes
3. <i>Oslo TS</i>	2017	112,949	2017	time charter	May 2022 ⁽⁷⁾	ice-class 1B	Crude
4. <i>Marathon TS</i>	2017	113,651	2017	time charter	February 2022 ⁽⁷⁾	ice-class 1B	Crude
5. <i>Sola TS</i>	2017	112,700	2017	time charter	April 2022 ⁽⁷⁾		Crude
6. <i>Elias Tsakos</i>	2016	113,737	2016	time charter	June 2023 ⁽⁸⁾		Crude
7. <i>Thomas Zafiras</i>	2016	113,691	2016	time charter	August 2023 ⁽⁸⁾		Crude
8. <i>Leontios H</i>	2016	113,611	2016	time charter	October 2023 ⁽⁸⁾		Crude
9. <i>Parthenon TS</i>	2016	113,554	2016	time charter	November 2021 ⁽⁷⁾		Crude
10. <i>Sapporo Princess</i>	2010	105,354	2010	spot		DNA	Crude
11. <i>Uruga Princess</i>	2010	105,344	2010	spot		DNA	Crude
12. <i>Ise Princess</i>	2009	105,361	2009	CoA		DNA	Crude
13. <i>Asahi Princess</i>	2009	105,372	2009	time charter	April 2020	DNA	Crude
14. <i>Maria Princess</i>	2008	105,346	2008	spot		DNA	Crude
15. <i>Nippon Princess</i>	2008	105,392	2008	CoA		DNA	Crude
16. <i>Izumo Princess</i>	2007	105,374	2007	time charter	August 2020	DNA	Crude
17. <i>Sakura Princess</i>	2007	105,365	2007	CoA		DNA	Crude
18. <i>Proteas</i>	2006	117,055	2006	spot		ice-class 1A	Crude/Products
19. <i>Promitheas</i>	2006	117,055	2006	spot		ice-class 1A	Crude/Products
20. <i>Propontis</i>	2006	117,055	2006	time charter	April 2019	ice-class 1A	Crude
PANAMAX							
1. <i>Sunray</i> ⁽³⁾	2016	74,039	2016	time charter	February 2021 ⁽⁹⁾		Crude/Products
2. <i>Sunrise</i> ⁽³⁾	2016	74,043	2016	time charter	March 2021 ⁽⁹⁾		Crude/Products
3. <i>World Harmony</i> ⁽⁴⁾	2009	74,200	2010	time charter	March 2021 ⁽⁵⁾		Crude/Products
4. <i>Chantal</i> ⁽⁴⁾	2009	74,329	2010	time charter	May 2021 ⁽⁵⁾		Crude/Products
5. <i>Selini</i> ⁽⁴⁾	2009	74,296	2010	time charter	January 2022		Crude/Products
6. <i>Salamina</i> ⁽⁴⁾	2009	74,251	2010	time charter	January 2022		Crude/Products
7. <i>Selecao</i> ⁽⁴⁾	2008	74,296	2008	time charter	June 2021		Crude/Products
8. <i>Socrates</i> ⁽⁴⁾	2008	74,327	2008	time charter	June 2021		Crude/Products
9. <i>Andes</i>	2003	68,439	2003	time charter	September 2019		Crude/Products
10. <i>Maya</i> ⁽⁶⁾	2003	68,439	2003	time charter	July 2019		Crude/Products
11. <i>Inca</i> ⁽⁶⁾	2003	68,439	2003	spot			Crude/Products
HANDYMAX							
1. <i>Artemis</i>	2005	53,039	2006	time charter	April 2019	ice-class 1A	Products
2. <i>Afrodite</i>	2005	53,082	2006	time charter	August 2020	ice-class 1A	Products
3. <i>Ariadne</i>	2005	53,021	2006	time charter	June 2020	ice-class 1A	Products
4. <i>Aris</i>	2005	53,107	2006	time charter	May 2020	ice-class 1A	Products
5. <i>Apollon</i>	2005	53,149	2006	time charter	April 2020	ice-class 1A	Products
6. <i>Ajax</i>	2005	53,095	2006	time charter	September 2020	ice-class 1A	Products
HANDYSIZE							
1. <i>Andromeda</i>	2007	37,061	2007	spot		ice-class 1A	Products
2. <i>Aegeas</i>	2007	37,061	2007	spot		ice-class 1A	Products
3. <i>Byzantion</i>	2007	37,275	2007	spot		ice-class 1B	Products
4. <i>Bosporos</i>	2007	37,275	2007	spot		ice-class 1B	Products
5. <i>Arion</i>	2006	37,061	2006	spot		ice-class 1A	Products
6. <i>Amphitrite</i>	2006	37,061	2006	spot		ice-class 1A	Products
7. <i>Didimon</i>	2005	37,432	2005	time charter	December 2019		Products
LNG							
1. <i>Maria Energy</i>	2016	93,301	2016	time charter	March 2020	Membrane	LNG
						(161,870 cbm)	
2. <i>Neo Energy</i>	2007	85,602	2007	time charter	March 2021	Membrane	LNG
						(150,000 cbm)	
Total Vessels	64	6,937,158					

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- (1) Certain of the vessels are operating in the spot market under contracts of affreightment (CoA).
- (2) Ice-class classifications are based on ship resistance in brash ice channels with a minimum speed of 5 knots for the following conditions ice-1A: 1m brash ice, ice-1B: 0.8m brash ice, ice-1C: 0.6m brash ice. DNA- design new aframax with shorter length overall allowing greater flexibility in the Caribbean and the United States.
- (3) The charter rate for these vessels is based on a fixed minimum rate for the Company plus different levels of profit sharing above the minimum rate, determined and settled on a calendar month basis.
- (4) These vessels are chartered under fixed and variable hire rates. The variable portion of hire is recognized to the extent the amount becomes fixed and determinable at the reporting date. Determination is every six months.
- (5) Charterers have the option to terminate the charter party after at least 12 months with three months notice.

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- (6) 49% of the holding company of these vessels is held by a third party.
(7) The charterer of each of these vessels has options to extend the term of the charter for up to seven additional years.
(8) The charterer of each of these vessels has the option to extend the term of the charter for up to five additional years.
(9) The charterer of each of these vessels has the option to extend the term of the charter for up to two additional years.
(10) The charterer has the option to extend the term of this charter for up to an additional 6 months.
(11) This vessel is chartered-in on a bare-boat basis until 2022 by a subsidiary company.

Subsidiaries of the Company took delivery of five aframax tankers in 2017 (*Marathon TS, Sola TS, Oslo TS, Stavanger TS* and *Bergen TS*) from Daewoo Shipbuilding in Romania. In addition, one DP2 suezmax shuttle tanker (*Lisboa*) was delivered from Sungdong in South Korea and one VLCC tanker (*Hercules I*) from Hyundai Samho in South Korea. The newbuildings have a double hull design compliant with all classification requirements and prevailing environmental laws and regulations. Tsakos Shipping worked closely with the shipyards in the design of the newbuildings and TCM provided supervisory personnel present during the construction.

Our newbuildings under construction, as of April 2, 2019, consisted of the following:

Vessel Type	Expected Delivery	Shipyard	Deadweight Tons	Purchase Price ⁽¹⁾ (in millions of U.S. dollars)
Aframaxes				
1. HN 5033	Q4 2019	Daehan Shipbuilding	115,000	51.85
2. HN 5036	Q1 2020	Daehan Shipbuilding	115,000	51.85
Suezmaxes				
1. HN 8041	Q3 2020	Hyundai Samho	158,000	70.43
2. HN 8042	Q4 2020	Hyundai Samho	158,000	67.98
Total			546,000	242.11

(1) Including any extra costs agreed as of April 2, 2019

Fleet Deployment

Depending on management's view of the state of the current spot market and future prospects for the market, we aim to optimize the financial performance of our fleet by deploying at least two-thirds of our vessels on either time charters or period employment with variable rates, as we take proactive steps to meet any potential impact of the expanding world fleet on freight rates. As at April 2, 2019, the percentage of the fleet that is in employment at fixed rates (including time charters with a profit share component) was approximately 72%. We believe that our fleet deployment strategy and flexibility provide us with the ability to benefit from increases in tanker rates while at the same time maintaining a measure of stability through cycles in the industry. The following table details the respective employment basis of our fleet during 2018, 2017 and 2016 as a percentage of operating days.

Employment Basis	Year Ended December 31,		
	2018	2017	2016
Time Charter - fixed rate	43%	41%	37%
Time Charter - variable rate	29%	29%	21%
Period Employment at variable rates	5%	5%	5%
Spot Voyage	23%	25%	37%
Total Net Earnings Days	22,573	22,095	18,570

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Tankers operating on time charters may be chartered for several months or years whereas tankers operating in the spot market typically are chartered for a single voyage that may last up to several weeks. Vessels on period employment at variable rates related to the market are either in a pool or operating under contract of affreightment for a specific charterer. Tankers operating in the spot market may generate increased profit margins during improvements in tanker rates, while tankers operating on time charters generally provide more predictable cash flows. Accordingly, we actively monitor macroeconomic trends and governmental rules and regulations that may affect tanker rates in an attempt to optimize the deployment of our fleet. Our fleet has 18 tankers currently operating on spot voyages.

We have also secured charters from the delivery of each of our four newbuildings for periods from five to twelve years, including charterer options for extension.

Operations and Ship Management

Our operations

Management policies regarding our fleet that are formulated by our Board of Directors are executed by Tsakos Energy Management under a management contract. Tsakos Energy Management's duties, which are performed exclusively for our benefit, include overseeing the purchase, sale and chartering of vessels, supervising day-to-day technical management of our vessels and providing strategic, financial, accounting and other services, including investor relations. Our tanker fleet's technical management, including crewing, maintenance and repair, and voyage operations, have been subcontracted by Tsakos Energy Management to TCM. Tsakos Energy Management also engages Tsakos Shipping to arrange chartering of our vessels, provide sales and purchase brokerage services, procure vessel insurance and arrange bank financing. Seven vessels were sub-contracted to third-party ship managers during 2018.

The following chart illustrates the management of our fleet as of April 2, 2019:

Technical management of the LNG carriers *Neo Energy* and *Maria Energy*, the VLCCs *Hercules I* and *Ulysses*, the suezmax *Eurochampion 2004* and the aframax *Maria Princess* and *Sapporo Princess*, is subcontracted to unaffiliated third-party ship managers.

Management Contract

Executive and Commercial Management

Pursuant to our management agreement with Tsakos Energy Management, our and our subsidiaries' operations are executed and supervised by Tsakos Energy Management, based on the strategy devised by our

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Board of Directors and subject to the approval of our Board of Directors as described below. In accordance with the management agreement, we pay Tsakos Energy Management monthly management fees for its management of our vessels.

The monthly fee may be adjusted annually in accordance with the terms of the agreement with Tsakos Energy Navigation, if both parties agree. There has not been an adjustment to fees relating to the conventional oil tankers payable to Tsakos Energy Management since 2012. In 2018 and 2017, the monthly fees for operating conventional vessels were \$27,500 and \$20,400 for vessels chartered in or chartered out on a bare-boat basis or for vessels under construction and \$35,000 for the DP2 shuttle tankers. In 2018 and 2017, the monthly fees for LNG carriers amounted to \$36,877 and \$36,350, respectively. From the above fees, in 2018 a third-party manager was paid \$26,877 for the LNG carriers, \$14,503 for each of the suezmax *Eurochampion 2004*, the aframax *Maria Princess* and *Sapporo Princess*, and the VLCCs *Ulysses* and *Hercules*. In 2017 and in 2016, a third-party manager was paid \$26,350 and \$25,833 for the LNG carriers, \$14,219 and \$13,940 for each of the suezmax *Eurochampion 2004*, the aframax *Maria Princess* and the VLCC *Ulysses* and \$14,219 for the aframax *Sapporo Princess*. Management fees for the VLCC *Millennium* were \$27,500 per month of which \$13,940 were payable until December 31, 2016, from January 1, 2017 until December 31, 2017 \$14,219, and since January 1, 2018 until the day it was sold, on April 11, 2018, \$14,503, were payable to a third-party manager, other than from November 5, 2015 until September 8, 2017, during which time the vessel was employed on a bareboat charter.

The management fee starts to accrue for a vessel at the point a newbuilding contract is executed. To help ensure that these fees are competitive with industry standards, our management has periodically made presentations to our Board of Directors in which the fees paid to Tsakos Energy Management are compared against the publicly available financial information of integrated, self-contained tanker companies. We paid Tsakos Energy Management aggregate management fees of \$20.2 million in 2018, \$19.5 million in 2017 and \$16.9 million in 2016. From these amounts, Tsakos Energy Management paid a technical management fee to Tsakos Columbia Shipmanagement. For additional information about the management agreement, including the calculation of management fees, see Item 7. Major Shareholders and Related Party Transactions and our consolidated financial statements which are included as Item 18 to this Annual Report.

Chartering. Our board of directors formulates our chartering strategy for all our vessels and Tsakos Shipping, under the supervision of Tsakos Energy Management, implements the strategy by:

evaluating the short, medium, and long-term opportunities available for each type of vessel;

balancing short, medium, and long-term charters in an effort to achieve optimal results for our fleet; and

positioning such vessels so that, when possible, re-delivery occurs at times when Tsakos Shipping expects advantageous charter rates to be available for future employment.

Tsakos Shipping utilizes the services of various charter brokers to solicit, research, and propose charters for our vessels. The charter brokers' role involves researching and negotiating with different charterers and proposing charters to Tsakos Shipping for cargoes to be shipped in our vessels. Tsakos Shipping negotiates the exact terms and conditions of charters, such as delivery and re-delivery dates and arranges cargo and country exclusions, bunkers, loading and discharging conditions and demurrage. Tsakos Energy Management is required to obtain our approval for charters in excess of six months and is required to obtain the written consent of the administrative agents for the lenders under our secured credit facilities for charters in excess of thirteen months. There are frequently two or more brokers involved in fixing a vessel on a charter. Brokerage fees typically amount to 2.5% of the value of the freight revenue or time charter hire derived from the charters. A chartering commission of 1.25% is paid to Tsakos Shipping for every charter involving the vessels in the fleet. In addition, Tsakos Shipping may charge a brokerage commission on the sale of a vessel. In 2018, the Company sold the VLCC tanker *Millennium* and for this service, Tsakos Shipping charged a brokerage commission 0.5% of the sale price of the vessel. In 2017 and 2016, there was no such commission. The total amount paid for these chartering

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and acquisition brokerage commissions was \$6.7 million in 2018, \$6.5 million in 2017 and \$6.0 million in 2016. Tsakos Shipping may also charge a fee of \$200,000 (or such other sum as may be agreed) on delivery of each newbuilding vessel in payment for the cost of design and supervision of the newbuilding by Tsakos Shipping. In 2017, \$3.1 million in aggregate was charged for supervision fees on fifteen vessels which were delivered between May 2016 and October 2017. No such fee was paid in 2018 or 2016.

Tsakos Shipping supervises the post fixture business of our vessels, including:

monitoring the daily geographic position of such vessels in order to ensure that the terms and conditions of the charters are fulfilled by us and our charterers;

collection of monies payable to us; and

resolution of disputes through arbitration and legal proceedings.

In addition, Tsakos Shipping appoints superintendents to supervise the construction of newbuildings and the loading and discharging of cargoes when necessary. Tsakos Shipping also participates in the monitoring of vessels' operations that are under TCM management and TCM's performance under the management contract.

General Administration. Tsakos Energy Management provides us with general administrative, office and support services necessary for our operations and the fleet, including technical and clerical personnel, communication, accounting, and data processing services.

Sale and Purchase of Vessels. Tsakos Energy Management advises our Board of Directors when opportunities arise to purchase, including through newbuildings, or to sell any vessels. All decisions to purchase or sell vessels require the approval of our Board of Directors.

Any purchases or sales of vessels approved by our Board of Directors are arranged and completed by Tsakos Energy Management. This involves the appointment of superintendents to inspect and take delivery of vessels and to monitor compliance with the terms and conditions of the purchase or newbuilding contracts.

In the case of a purchase of a vessel, each broker involved will receive commissions from the seller generally at the industry standard rate of one percent of the purchase price, but subject to negotiation. In the case of a sale of a vessel, each broker involved will receive a commission generally at the industry standard rate of one percent of the sale price, but subject to negotiation. In accordance with the management agreement, Tsakos Energy Management is entitled to charge for sale and purchase brokerage commission, but to date has not done so.

Technical Management

Pursuant to a technical management agreement, Tsakos Energy Management employs TCM to manage the day-to-day aspects of vessel operations, including maintenance and repair, provisioning and crewing of the vessels in the fleet. We benefit from the economies of scale of having our vessels managed as part of the TCM managed fleet. On occasion, TCM subcontracts the technical management and manning responsibilities of our vessels to third parties. The executive and commercial management of our vessels, however, is not subcontracted to third parties. TCM, which is privately held, is one of the largest independent tanker managers with a total of 81 operating vessels under management (including 57 of our subsidiaries' vessels) at April 2, 2019, totaling approximately 7.8 million dwt. TCM employs full-time superintendents, technical experts and marine engineers and has expertise in inspecting second-hand vessels for purchase and sale, and in fleet maintenance and repair. They have approximately 183 employees engaged in ship management and approximately 3,654 seafaring employees, of whom approximately 1,900 are employed at sea and the remainder is on leave at any given time. Their principal office is in Athens, Greece. The fleet managed by TCM consists mainly of tankers, but also includes feeder container vessels, dry bulk carriers and other vessels owned by affiliates and unaffiliated third parties.

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Tsakos Energy Management pays TCM a fee per vessel per month for technical management of operating vessels and vessels under construction. This fee was determined by comparison to the rates charged by other major independent vessel managers. We generally pay all monthly operating requirements of our fleet in advance.

TCM performs the technical management of the vessels under the supervision of Tsakos Energy Management. Tsakos Energy Management approves the appointment of fleet supervisors and oversees the establishment of operating budgets and the review of actual operating expenses against budgeted amounts. Technical management of the LNG carriers *Neo Energy* and *Maria Energy*, the VLCCs *Hercules I* and *Ulysses*, the suezmax *Eurochampion 2004* and the aframax *Maria Princess* and *Sapporo Princess*, is subcontracted to unaffiliated third-party ship managers.

Maintenance and Repair. Each of the vessels is dry-docked once every five years in connection with special surveys and, after the vessel is fifteen years old, the vessel is dry-docked every two and one-half years after a special survey (referred to as an intermediate survey), or as necessary to ensure the safe and efficient operation of such vessels and their compliance with applicable regulations. TCM arranges dry-dockings and repairs under instructions and supervision from Tsakos Energy Management. We believe that the continuous maintenance program we conduct results in a reduction of the time periods during which our vessels are in dry-dock.

TCM routinely employs on each vessel additional crew members whose primary responsibility is the performance of maintenance while the vessel is in operation. Tsakos Energy Management awards and, directly or through TCM, negotiates contracts with shipyards to conduct such maintenance and repair work. They seek competitive tender bids in order to minimize charges to us, subject to the location of our vessels and any time constraints imposed by a vessel's charter commitments. In addition to dry-dockings, TCM, where necessary, utilizes superintendents to conduct periodic physical inspections of our vessels.

Crewing and Employees

We do not employ personnel to run our business on a day-to-day basis. We outsource substantially all of our executive, commercial and technical management functions.

TCM arranges employment of captains, officers, engineers and other crew who serve on the vessels. TCM ensures that all seamen have the qualifications and licenses required to comply with international regulations and shipping conventions and that experienced and competent personnel are employed for the vessels.

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Several of the world's major oil companies are among our regular customers. The table below shows the approximate percentage of revenues we earned from some of our customers in 2018.

Customer	Year Ended December 31, 2018
Equinor (ex-Statoil)	15.0%
Shell	10.2%
Petrobras	10.1%
Koch	8.7%
Flopec	7.5%
Vitol	5.0%
Litasco	4.7%
Eiger	4.3%
BP Shipping	3.9%
Sinopec	3.5%
STLLC	3.5%
Glovis	3.2%
HMM	3.2%
Chevron	2.8%
CSSA	2.5%
CNOOC	1.5%
Repsol	1.1%
ST Shipping	1.0%
Seariver	0.7%
Trafigura	0.6%
Regulation	

Our business and the operation of our vessels are materially affected by government regulation in the form of international conventions and national, state and local laws and regulations in force in the jurisdictions in which our vessels operate, as well as in the country or countries of their registration. Because these conventions, laws, and regulations are often revised, we cannot predict the ultimate cost of complying with them or their impact on the resale price and/or the useful lives of our vessels. Additional conventions, laws and regulations may be adopted which could limit our ability to do business or increase the cost of our doing business and which may have a material adverse effect on our operations. Various governmental and quasi-governmental agencies require us to obtain permits, licenses, certificates, and financial assurances with respect to our operations. Subject to the discussion below and to the fact that the kinds of permits, licenses, certificates and financial assurances required for the operation of our vessels will depend upon a number of factors, we believe that we have been and will be able to obtain all permits, licenses, certificates and financial assurances material to the conduct of our operations.

The heightened environmental and quality concerns of classification societies, insurance underwriters, regulators and charterers has led to the imposition of increased inspection and safety requirements on all vessels in the tanker market and the scrapping of older vessels throughout the industry has been accelerated.

IMO. The International Maritime Organization (IMO) has adopted international conventions that impose liability for oil pollution in international waters and in a signatory's territorial waters, including amendments to Annex I of the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL) which set forth new and upgraded requirements for oil pollution prevention for tankers. These regulations are effective in relation to tankers in many of the jurisdictions in which our tanker fleet operates. They provide that: (1) tankers 25 years old and older must be of double-hull construction and (2) all tankers will be subject to enhanced inspections. All of the vessels in our fleet are of double hull construction. Revised regulations, effective since

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September 2002, provide for increased inspection and verification requirements and for a more aggressive phase-out of single-hull oil tankers, in most cases by 2015 or earlier, depending on the age of the vessel and whether the vessel complies with requirements for protectively located segregated ballast tanks. Segregated ballast tanks use ballast water that is completely separate from the cargo oil and oil fuel system. Segregated ballast tanks are currently required by the IMO on crude oil tankers of 20,000 tons deadweight or more constructed after 1982. The regulations are intended to reduce the likelihood of oil pollution in international waters. On April 5, 2005 an amendment to MARPOL became effective, which accelerated the phase out of single-hull tankers from 2015 to 2010 unless the relevant flag state, in a particular case, extended the date to either 2015 or the date on which the ship reaches 25 years of age after the date of its delivery, whichever is earlier. This amendment became effective on April 5, 2005.

On January 1, 2007 Annex I of MARPOL was revised to incorporate all amendments since the MARPOL Convention entered into force in 1983 and to clarify the requirements for new and existing tankers.

Regulation 12A of MARPOL Annex I came into force on August 1, 2007 and governs oil fuel tank protection. The requirements apply to oil fuel tanks on all ships with an aggregate capacity of 600 cubic meters and above which are delivered on or after August 1, 2010 and all ships for which shipbuilding contracts are placed on or after August 1, 2007. Since March 1, 2018, Form B of the Supplement to the International Oil Pollution Prevention Certificate contained in MARPOL Annex I has been amended to simplify its completion with respect to segregated ballast tanks.

MARPOL Annex IV entered into force on September 27, 2003 and requires ships engaged in international voyages and certified to carry more than 15 persons to have systems and controls in place to deal with human sewage, for governments to have port reception facilities and a requirement for survey and certification. Annex IV prohibits the discharge of sewage into the sea, except when the ship has an approved sewage treatment plant in operation or when the ship is discharging comminuted and disinfected sewage using an approved system at a distance of three nautical miles from the nearest land.

In September 1997, the IMO adopted Annex VI to MARPOL to address air pollution from ships. Annex VI came into force on May 19, 2005. It set limits on sulfur oxide and nitrogen oxide emissions from ship exhausts and prohibited deliberate emissions of ozone depleting substances, such as chlorofluorocarbons. Annex VI also included a global cap on the sulfur content of fuel oil and allowed for the designation of special areas known as Emission Control Areas (ECAs) where more stringent controls on sulfur emissions would apply. Annex VI has been ratified by some, but not all IMO member states. All vessels subject to Annex VI and built after May 19, 2005 must carry an International Air Pollution Prevention Certificate evidencing compliance with Annex VI. In October 2008, the Marine Environment Protection Committee (MEPC) of the IMO adopted amendments to Annex VI regarding particulate matter, nitrogen oxide and sulfur oxide emissions standards. These amendments, which entered into force in July 2010, seek to reduce air pollution from vessels by establishing a series of progressive standards to further limit the sulfur content in fuel oil, which would be phased in by 2020, and by establishing new tiers of nitrogen oxide emission standards for new marine diesel engines, depending on their date of installation. Additionally, more stringent emission standards could apply in ECAs. The United States ratified the amendments in October 2008. Amendments to Annex VI to address greenhouse gas emissions from shipping came into force on January 1, 2013. New vessels of 400 tons or greater are required to meet minimum energy efficiency levels per capacity mile (the Energy Efficient Design Index (EEDI)), while existing vessels were required to implement Ship Energy Efficiency Management Plans (SEEMPs). All our vessels have SEEMPs. However, the EEDI requirements do not apply to a liquefied natural gas (LNG) carrier unless the construction contract for the carrier is placed on or after September 1, 2015. Our LNG carriers comply with EEDI requirements.

We have obtained International Air Pollution Prevention certificates for all of our vessels. Implementing the requirements of Annex VI may require modifications to vessel engines or the addition of post combustion emission controls, or both, as well as the use of lower sulfur fuels. In April 2016, the IMO adopted an

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amendment to Annex VI regarding record requirements for operational compliance with NOX Tier III emission control areas and a further amendment to the NOX Technical Code 2008 to facilitate the testing of gas and dual fuel engines. This amendment entered into force on September 1, 2017. We believe that maintaining compliance with Annex VI will not have a significantly adverse financial impact on the operation of our vessels.

Further amendments to Annex VI of MARPOL were adopted by the MEPC in October 2016. Beginning on January 1, 2019, the new Regulation 22A of chapter 4 of Annex VI added a requirement for ships of 5,000 gross tons and above to collect consumption data for each type of fuel oil used as well as other specified data. This information must be submitted to the flag state which in turn must submit data to an IMO Ship Fuel Oil Consumption Database. Other regulations were amended to cater to this new requirement, including those related to certificates, surveys and port state control. The MEPC also adopted amendments to Annex VI setting the global limit for sulfur content of ships' fuel oil to 0.50% m/m (mass by mass) as opposed to the current global limit of 3.50% m/m. The new sulfur limit will enter into effect from January 1, 2020. We do not believe compliance with such regulations will have a material effect on the operation or financial viability of our business.

In April 2016, a revised annex to the Convention on Facilitation of International Maritime Traffic (FAL) was adopted by the IMO. It contains revised mandatory requirements for the electronic exchange of information on cargo and crew. This electronic exchange of information is mandatory beginning April 9, 2019, with a transition period of no less than 12 months. Other revised standards cover discrimination in respect to shore leave and access to shore-side facilities and updates to recommended practice in relation to stowaways. The revised annex entered into force on January 1, 2018. We comply with these regulations.

In 2001, the IMO adopted the International Convention on the Control of Harmful Anti-fouling Systems on Ships (the Anti-fouling Convention) which prohibits the use of organotin compound coatings to prevent the attachment of mollusks and other sea life to the hulls of vessels. The Anti-fouling Convention came into force on September 17, 2008 and applies to vessels constructed prior to January 1, 2003 that have not been in dry-dock since that date. Since January 1, 2008 under the Anti-fouling Convention, exteriors of vessels have had to be either free of the prohibited compounds, or have had coatings that act as a barrier to the leaching of the prohibited compounds applied. Vessels of over 400 gross tons engaged in international voyages must obtain an International Anti-fouling System Certificate and must undergo a survey before the vessel is put into service or when the anti-fouling systems are altered or replaced. We have obtained Anti-fouling System Certificates for all of our vessels that are subject to the Anti-fouling Convention and do not believe that maintaining such certificates will have an adverse financial impact on the operation of our vessels.

In addition, our LNG carriers meet IMO requirements for liquefied gas carriers. In order to operate in the navigable waters of the IMO's member states, liquefied gas carriers must have an IMO Certificate of Fitness demonstrating compliance with construction codes for liquefied gas carriers. These codes, and similar regulations in individual member states, address fire and explosion risks posed by the transport of liquefied gases. Collectively, these standards and regulations impose detailed requirements relating to the design and arrangement of cargo tanks, vents, and pipes; construction materials and compatibility; cargo pressure; and temperature control. Liquefied gas carriers are also subject to international conventions that regulate pollution in international waters and a signatory's territorial waters. Under the IMO regulations, gas carriers that comply with the IMO construction certification requirements are deemed to satisfy the requirements of Annex II of MARPOL applicable to transportation of chemicals at sea, which would otherwise apply to certain liquefied gases. With effect from January 1, 2007, the IMO revised the Annex II regulations that restrict discharges of noxious liquid substances during cleaning or de-ballasting operations. The revisions include significantly lower permitted discharge levels of noxious liquid substances for vessels constructed on or after the effective date, made possible by improvements in vessel technology. These discharge requirements apply to the Company's LNG carriers.

On January 1, 2013 new MARPOL Annex V Regulations came into force with regard to the disposal of garbage from ships at sea. These regulations prohibit the disposal of garbage at sea other than certain defined

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permitted discharges or when outside one of the MARPOL Annex V special areas. The regulations do not only impact the disposal of traditional garbage but also the disposal of harmful hold washing water and cargo residues. Products considered suitable for discharge are those not defined as harmful by the criteria set out in MARPOL Annex III and which do not contain carcinogenic, mutagenic or reprotoxic components. We have a protocol in place to ensure that (i) garbage is disposed of in accordance with the Annex V Regulations and that the vessels in our fleet maintain records showing that any cleaning agent or additive used was not harmful to the marine environment and (ii) the supplier provides a signed and dated statement to this effect, either as part of a Material Safety data Sheet (MSDS) or as a stand-alone document. Annex V establishes certain areas as special areas in which, for reasons relating to their oceanographical and ecological condition and/or their sea traffic, the adoption of special mandatory methods for the prevention of sea pollution is required. Under MARPOL, these special areas are provided with a higher level of protection than other areas of the sea. These areas are: (i) Mediterranean Sea; (ii) Baltic Sea; (iii) Black Sea; (iv) Red Sea; (v) Gulfs area; (vi) North Sea; (vii) Antarctic sea; and (viii) Wider Caribbean region including the Gulf of Mexico and the Caribbean Sea. Our protocol addresses these special areas and we do not consider them likely to adversely affect our ability to operate our vessels.

In October 2016, the IMO adopted amendments to Annex V which place responsibility on shippers to determine whether or not their cargo is hazardous to the marine environment (categorization to be carried out in accordance with the UN Globally Harmonized System of Classification and Labelling of Chemicals) and introduce a new two-part garbage record book which splits cargo residues from garbage other than cargo residues. These amendments entered into force on March 1, 2018. We have policies and procedures in place to ensure compliance with these amendments to Annex V.

Tsakos Columbia Shipmanagement S.A. or TCM, our technical manager, is ISO 14001 compliant. ISO 14001 requires companies to commit to the prevention of pollution as part of the normal management cycle. Additional or new conventions, laws and regulations may be adopted that could adversely affect our ability to manage our vessels.

In addition, the European Union and countries elsewhere have considered stricter technical and operational requirements for tankers and legislation that would affect the liability of tanker owners and operators for oil pollution. In December 2001, the European Union adopted a legislative resolution confirming an accelerated phase-out schedule for single hull tankers in line with the schedule adopted by the IMO in April 2001. Any additional laws and regulations that are adopted could limit our ability to do business or increase our costs. The results of these or potential future environmental regulations could have a material adverse effect on our operations.

Under the current regulations, the vessels of our existing fleet will be able to operate for substantially all of their respective economic lives. However, compliance with the new regulations regarding inspections of all vessels may adversely affect our operations. We cannot at the present time evaluate the likelihood or magnitude of any such adverse effect on our operations due to uncertainty of interpretation of the IMO regulations.

The operation of our vessels is also affected by the requirements set forth in the IMO's International Safety Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) which came into effect in relation to oil tankers in July 1998 and which was further amended on July 1, 2010. The ISM Code requires ship owners, ship managers and bareboat (or demise) charterers to develop and maintain an extensive safety management system that includes the adoption of a safety and environmental protection policy setting forth instructions and procedures for safe operation and describing procedures for dealing with emergencies. The failure of a shipowner, ship manager or bareboat charterer to comply with the ISM Code may subject that party to increased liability, may decrease available insurance coverage for the affected vessels, and may result in a denial of access to, or detention in, some ports. All of our vessels are ISM Code certified.

The International Convention for the Safety of Life at Sea (SOLAS) was amended in November 2012 to incorporate mandatory maximum noise level limits for machinery spaces, control rooms, accommodation and

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other spaces on board vessels. The amendments came into force on July 1, 2014 and require ships of 1,600 gross tons or more, for which the building contract was placed on or after July 1, 2014 or were constructed on or after January 1, 2015 or will be delivered on or after July 1, 2018 to be constructed to reduce on-board noise and to protect personnel from noise on board ships. All of our vessels comply with existing guidelines, and our new buildings will meet the new requirements.

SOLAS Regulations II-2/4.5 and II-2/11.6 have been amended to clarify the provisions relating to the secondary means of venting cargo tanks in order to ensure adequate safety against over and under pressurization. SOLAS Regulation II-2/20 relating to the performance of ventilation systems was also amended. These changes apply to all tankers constructed on or after January 1, 2017. All of our tankers constructed on or after January 1, 2017 comply with, and our new buildings will meet these requirements.

SOLAS Regulation II-2 10.10.1 and 10.10.3 have been amended and requires ships constructed on or after July 1, 2014 to be fitted with the following by July 1, 2019: a) compressed air breathing apparatus fitted with an audible alarm and a visual or other device which will alert the user before the volume of the air in the cylinder has been reduced to no less than 200 liters; b) a minimum of two two-way portable radiotelephone apparatus for each fire party for fire-fighter's communication. The two-way portable radiotelephone apparatus must be explosion-proof or intrinsically safe. Fire parties are individuals or groups listed on the Muster List.

Performance standards for EGC (Enhanced Group Call) and NAVTEX Equipment have also been amended. Such equipment installed after July 1, 2019 must comply with SOLAS IV/7 and SOLAS IV/14.

SOLAS Regulations III/3 and III/20 have been amended with changes entering into force January 1, 2020. From this time all ships must comply with requirements for maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear currently contained in SOLAS Chapter III.

SOLAS Regulation V/20 makes amendments to the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual which will come into force on July 1, 2019.

The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW Convention) and its associated Code was amended in June 2010 (the Manila Amendments) with such amendments entering into force on January 1, 2012, with a five-year transitional period until January 1, 2017. From January 1, 2017 all of our crew STCW certificates are issued, renewed and revalidated in accordance with the provisions of the Manila Amendments.

The Nairobi Wreck Removal Convention 2007 (Wreck Convention) entered into force on April 14, 2015. The Wreck Convention provides a legal basis for sovereign states to remove, or have removed, shipwrecks that may have the potential to affect adversely the safety of lives, goods and property at sea, as well as the marine and coastal environment. Further, the Wreck Convention makes ship owners financially liable for wreck removal and require them to take out insurance or provide other financial security to cover the costs of wreck removal. All of our fleet has complied with the certification requirements stipulated by the Wreck Convention with regards to financial security.

OPA 90. The U.S. Oil Pollution Act of 1990 (OPA 90) established an extensive regulatory and liability regime for the protection and cleanup of the environment from oil spills. OPA 90 affects all owners and operators whose vessels trade to the United States or its territories or possessions or whose vessels operate in United States waters, which include the United States territorial sea and its two hundred nautical mile exclusive economic zone.

Under OPA 90, vessel owners, operators and bareboat charterers are responsible parties and are jointly, severally and strictly liable (unless the spill results solely from the act or omission of a third party, an act of God

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or an act of war) for all containment and clean-up costs and other damages arising from discharges or threatened discharges of oil from their vessels. Tsakos Shipping and Tsakos Energy Management would not qualify as third parties because they perform under contracts with us. These other damages are defined broadly to include (1) natural resources damages and the costs of assessing them, (2) real and personal property damages, (3) net loss of taxes, royalties, rents, fees and other lost revenues, (4) lost profits or impairment of earning capacity due to property or natural resources damage, (5) net cost of public services necessitated by a spill response, such as protection from fire, safety or health hazards, and (6) loss of subsistence use of natural resources. OPA 90 incorporates limits on the liability of responsible parties for a spill. Between July 31, 2009 and December 21, 2015, liability in respect of a double-hulled tanker over 3,000 gross tons was limited to the greater of \$2,000 per gross ton or \$17,088,000 (subject to periodic adjustment). On December 21, 2015, these limits of liability were increased and are now the greater of \$2,200 per gross ton or \$18,796,800. These limits of liability would not apply if the incident was proximately caused by violation of applicable United States federal safety, construction or operating regulations or by the responsible party (or its agents or employees or any person acting pursuant to a contractual relationship with the responsible party) or by gross negligence or willful misconduct, or if the responsible party fails or refuses to report the incident or to cooperate and assist in connection with the oil removal activities. We continue to maintain, for each of our vessels, pollution liability coverage in the amount of \$1 billion per incident. A catastrophic spill could exceed the insurance coverage available, in which case there could be a material adverse effect on us.

Under OPA 90, with some limited exceptions, all newly built or converted tankers operating in United States waters must be built with double-hulls, and existing vessels which do not comply with the double-hull requirement should have been phased out by December 31, 2014. All of our fleet is of double-hull construction.

OPA 90 requires owners and operators of vessels to establish and maintain with the United States Coast Guard (the Coast Guard) evidence of financial responsibility sufficient to meet their potential liabilities under OPA 90. Under the regulations, evidence of financial responsibility may be demonstrated by insurance, surety bond, letter of credit, self-insurance, guaranty or other satisfactory evidence. Under the self-insurance provisions, the ship owner or operator must have a net worth and working capital, measured in assets located in the United States against liabilities located anywhere in the world, that exceeds the applicable amount of financial responsibility. OPA 90 requires an owner or operator of a fleet of tankers only to demonstrate evidence of financial responsibility in an amount sufficient to cover the tanker in the fleet having the greatest maximum liability under OPA 90.

OPA 90 specifically permits individual U.S. coastal states to impose their own liability regimes with regard to oil pollution incidents occurring within their boundaries, and some states have enacted legislation providing for unlimited liability for oil spills.

Owners or operators of tankers operating in United States waters are required to file vessel response plans with the Coast Guard for approval, and their tankers are required to operate in compliance with such approved plans. These response plans must, among other things, (1) address a worst case scenario and identify and ensure, through contract or other approved means, the availability of necessary private response resources to respond to a worst case discharge, (2) describe crew training and drills, and (3) identify a qualified individual with full authority to implement removal actions. All our vessels have approved vessel response plans.

We intend to comply with all applicable Coast Guard and state regulations in the ports where our vessels call.

Environmental Regulation

The U.S. Comprehensive Environmental Response, Compensation, and Liability Act. The U.S. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) applies to spills or releases of hazardous substances other than petroleum or petroleum products, whether on land or at sea.

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CERCLA imposes joint and several liability, without regard to fault, on the owner or operator of a ship, vehicle or facility from which there has been a release, and on other specified parties. Liability under CERCLA is generally limited to the greater of \$300 per gross ton or \$0.5 million per vessel carrying non-hazardous substances (\$5.0 million for vessels carrying hazardous substances), unless the incident is caused by gross negligence, willful misconduct or a violation of certain regulations, in which case liability is unlimited.

U.S. Clean Water Act: The U.S. Clean Water Act of 1972 (CWA) prohibits the discharge of oil or hazardous substances in navigable waters and imposes strict liability in the form of penalties for any unauthorized discharges. The CWA also imposes substantial liability for the costs of removal, remediation and damages and complements the remedies available under OPA 90. Under U.S. Environmental Protection Agency (EPA) regulations, vessels must obtain CWA permits for the discharge of ballast water and other substances incidental to normal operation in U.S. territorial or inland waters. Commercial vessels greater than 79 feet in length are required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) Vessel General Permit (the VGP) to discharge ballast water and other wastewater into U.S. waters by submitting a Notice of Intent (a NOI). The VGP requires vessel owners and operators to comply with a range of best management practices and reporting and other requirements for a number of incidental discharge types and incorporates current U.S. Coast Guard requirements for ballast water management, as well as supplemental ballast water requirements. The EPA finalized the 2013 VGP in March 2013 which became effective in December 2013 and then expired on December 18, 2018 (although its provisions remain in force, as described below). The 2013 VGP included ballast water numeric discharge limits and best management practices for certain discharges. On June 11, 2012 the Coast Guard and the EPA published a memorandum of understanding which provides for collaboration on the enforcement of the VGP requirements and the Coast Guard routinely include the VGP as part of its normal Port State Control inspections.

On December 4, 2018, the Vessel Incident Discharge Act (VIDA) was signed into law establishing a new framework for the regulation of vessel incidental discharges under the CWA. VIDA requires the EPA to develop performance standards for those discharges within two years of enactment and requires the U.S. Coast Guard to develop implementation, compliance, and enforcement regulations within two years of EPA's promulgation of standards. Under VIDA, all provisions of the 2013 VGP will remain in force and effect until the U.S. Coast Guard regulations are finalized.

We intend to comply with the VGP and the record keeping requirements and we do not believe that the costs associated with obtaining such permits and complying with the obligations will have a material impact on our operations.

The Clean Air Act: The U.S. Clean Air Act (CAA) requires the EPA to promulgate standards applicable to emissions of volatile organic compounds and other air contaminants. Our vessels are subject to CAA vapor control and recovery standards for cleaning fuel tanks and conducting other operations in regulated port areas and emissions standards for so-called Category 3 marine diesel engines operating in U.S. waters. On December 22, 2009 the EPA adopted final emission standards for Category 3 marine diesel engines equivalent to those adopted in the amendments to Annex VI to MARPOL. As a result, the most stringent engine emissions and marine fuel sulfur requirements of Annex VI will apply to all vessels regardless of flag entering U.S. ports or operating in U.S. waters. The emission standards apply in two stages: near-term standards for newly-built engines, which have applied since the beginning of 2011, and long-term standards requiring an 80% reduction in nitrogen oxides (NOx) by 2030, which has applied from the beginning of 2016, requiring the use of emission control technology.

In response to a request from the United States and Canada to designate specific areas of their respective coastal waters (extending to 200 nautical miles offshore) as ECAs under the MARPOL Annex VI amendments, the IMO designated the waters off North American coasts as an ECA on March 26, 2010. The North American ECA has been in force since August 1, 2012. In July 2011, the IMO designated the United States Caribbean ECA in the waters of Puerto Rico and the U.S. Virgin Islands, which took effect on January 1, 2014. All vessels operating in these ECAs must use fuel with a sulfur content of 0.1%. Since January 1, 2016 NOx after-treatment

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requirements have also applied. California has implemented a 24 nautical mile zone within which fuel must have a sulfur content of 0.1% or less as of January 1, 2014. Currently, the California regulations run in parallel with the emissions requirements in the North American and Caribbean ECAs. Compliance with the North American and Caribbean ECA emission requirements, as well as the possibility that more stringent emissions requirements for marine diesel engines or port operations by vessels will be adopted by the EPA or the states where we operate, could entail significant capital expenditures or otherwise increase the costs of our operations.

The MEPC in May 2013 voted to postpone the implementation of MARPOL Annex VI Tier III standards until 2021. However, as the MEPC subsequently agreed that Tier III standards shall apply to marine diesel engines that are installed on a ship constructed on or after January 1, 2016 which operate in the North America ECA or the U.S. Caribbean Sea ECA, Tier III standards do now apply. In July 2017, the IMO adopted additional amendments to MARPOL Annex VI to introduce the Baltic Sea and the North Sea as ECAs in respect of sulfur content of fuels. Both ECAs will be enforced for ships constructed on or after January 1, 2021, or existing ships which replace an engine with non-identical engines, or install an additional engine. On January 1 2019 the Baltic Sea and North Sea ECAs were extended to cover NOx. Regulation 13 of MARPOL Annex VI requires engines with a power output of more than 130kw installed or replaced on or after January 1 2021 to be Tier III certified if operated in the Baltic Sea and North Sea ECAs. (There is an exemption to the Tier III requirement to allow ships fitted with dual-fuel engines or only Tier II engines to be built, converted, repaired or maintained at shipyards located inside NOx ECAs.) Regulation 18.5 MARPOL Annex VI requires ships of 400GT and above to have on board a Bunker Delivery Note (BDN) which records details (as set on in Appendix V) of fuel oil delivered and used on board for combustion purposes. The BDN now includes a selection box obliging the purchaser to obtain a notification from the purchaser that fuel is intended to be used in compliance with MARPOL, if the fuel supplied exceeds the 0.5% sulfur limit.

HNS Convention. Our vessels also may become subject to the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 as amended by the Protocol to the HNS Convention, adopted in April 2010 (HNS Convention) if it is entered into force. The HNS Convention creates a regime of liability and compensation for damage from hazardous and noxious substances (HNS), including a two-tier system of compensation composed of compulsory insurance taken out by shipowners and HNS Fund which comes into play when the insurance is insufficient to satisfy a claim or does not cover the incident. To date, the HNS Convention has not been ratified by a sufficient number of countries to enter into force.

The Maritime Labour Convention. The International Labour Organization's Maritime Labour Convention was adopted in 2006 (MLC 2006). The basic aims of the MLC 2006 are to ensure comprehensive worldwide protection of the rights of seafarers (the MLC 2006 is sometimes called the Seafarers Bill of Rights) and, to establish a level playing field for countries and ship owners committed to providing decent working and living conditions for seafarers, protecting them from unfair competition on the part of substandard ships. The MLC 2006 was ratified on August 20, 2012, and all our vessels were certified by August 2013, as required. The MLC 2006 requirements have not had, and we do not expect that the MLC 2006 requirements will have, a material effect on our operations.

European Union Initiatives: In December 2001, in response to the oil tanker *Erika* oil spill of December 1999, the European Union adopted a legislative resolution confirming an accelerated phase-out schedule for single-hull tankers in line with the schedule adopted by the IMO in April 2001. Since 2001 (1) all single-hull tankers have been banned from entering European Union ports or offshore terminals; (2) all single-hull tankers carrying heavy grades of oil have been banned from entering or leaving European Union ports or offshore terminals or anchoring in areas under the European Union's jurisdiction; and (3) since 2005 a Condition Assessment Scheme Survey for single-hull tankers older than 15 years of age has been imposed. In September 2005, the European Union adopted legislation to incorporate international standards for ship-source pollution into European Community law and to establish penalties for discharge of polluting substances from ships (irrespective of flag). Since April 1, 2007 Member States of the European Union have had to ensure that illegal

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discharges of polluting substances, participation in and incitement to carry out such discharges are penalized as criminal offences and that sanctions can be applied against any person, including the master, owner and/or operator of the polluting ship, found to have caused or contributed to ship-source pollution with intent, recklessly or with serious negligence (this is a lower threshold for liability than that applied by MARPOL, upon which the ship-source pollution legislation is partly based). In the most serious cases, infringements will be regarded as criminal offences (where sanctions include imprisonment) and will carry fines of up to Euro 1.5 million. On November 23, 2005 the European Commission published its Third Maritime Safety Package, commonly referred to as the Erika III proposals, and two bills (dealing with the obligation of Member States to exchange information among themselves and to check that vessels comply with international rules, and with the allocation of responsibility in the case of accident) were adopted in March 2007. The Treaty of Lisbon entered into force on December 1, 2009 following ratification by all 27 European Union member states and identifies protection and improvement of the environment as an explicit objective of the European Union. The European Union adopted its Charter of Fundamental Rights at the same time, declaring high levels of environmental protection as a fundamental right of European Union citizens. Additionally, the sinking of the *Prestige* in 2002 has led to the adoption of other environmental regulations by certain European Union Member States. It is impossible to predict what legislation or additional regulations, if any, may be promulgated by the European Union or any other country or authority.

The E.U. has also adopted legislation that (1) requires member states to refuse access to their ports by certain substandard vessels, according to vessel type, flag and number of previous detentions; (2) obliges member states to inspect at least 25.0% of vessels using their ports annually and increase surveillance of vessels posing a high risk to maritime safety or the marine environment; (3) provides the E.U. with greater authority and control over classification societies, including the ability to seek to suspend or revoke the authority of negligent societies; and (4) requires member states to impose criminal sanctions for certain pollution events, such as the unauthorized discharge of tank washings. It is also considering legislation that will affect the operation of vessels and the liability of owners for oil pollution.

The EU has ECAs in place in the Baltic Sea and the North Sea and English Channel within which fuel with a sulfur content in excess of 0.1% has not been permitted since January 1, 2015. The EU Commission is currently investigating the possibility of extending the ECA to the Mediterranean Sea and Black Sea. In addition, the EU Sulphur directive has since January 1, 2010 banned inland waterway vessels and ships berthing in EU ports from using marine fuels with a sulfur content exceeding 0.1% by mass. The prohibition applies to use in all equipment including main and auxiliary engines and boilers. Some EU Member States also require vessels to record the times of any fuel-changeover operations in the ship's logbook.

The Council of the EU has now approved the implementation of its 2013 strategy for Integrating maritime transport emissions in the EU's greenhouse gas reduction policies and Regulation (EU) 2015/757 of the European Parliament and of the Council on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport was adopted on April 29, 2015. It obliges owners of vessels over 5,000 gross tons to monitor emissions for each ship on a per voyage and annual basis, from January 1, 2018. There are provisions for monitoring, reporting and verifying (MRV) of carbon dioxide (CO₂) emissions from vessels using EU ports, to apply from January 1, 2018. By April 30, 2019, all ships above 5,000 GT, regardless of flag, calling at EU ports must submit a verified emissions report to the European Commission and the vessel's flag state. From June 30 2019 vessels must carry a valid Document of Compliance (DOC) confirming compliance with EU Regulation 2015/757 for the relevant reporting period. This DOC must be made available for inspection at EU ports. Individual Member States have started to introduce CO₂ emissions legislation for vessels. The French Transport Code has required vessel operators to record and disclose the level of CO₂ emitted during the performance of voyages to or from a destination in France since October 1, 2013.

The EU has introduced the European Ship Recycling Regulation, aimed at minimizing adverse effects on health and the environment caused by ship recycling, as well as enhancing safety, protecting the marine environment and ensuring the sound management of hazardous waste. The Regulation entered into force on

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November 20, 2013, and anticipates the international ratification of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships 2009 (Hong Kong Convention). The Hong Kong Convention will enter into force 24 months after the following conditions are met: (1) not less than 15 States have concluded this Convention, (2) the combined merchant fleets of the States Parties constitute not less than 40 percent of the gross tonnage of the world's merchant shipping, and (3) the combined maximum annual ship recycling volume of the States Parties during the preceding 10 years constitutes not less than 3% of the gross tonnage of the combined merchant shipping of the States Parties. The Hong Kong Convention has not yet been adopted by the necessary number of member states, but after Japan's recent adoption, the current member states represent approximately 23.16% of the gross tonnage of the world's merchant tonnage. By December 31, 2020, vessels flying the flag of EU Member States will be expected to maintain detailed records of hazardous materials on board, with some materials such as asbestos being restricted or prohibited. This obligation is extended to all non-EU flagged vessels calling at a port or anchorage in an EU Member State. The European Ship Recycling Regulation also requires EU-flagged vessels to be scrapped only in approved recycling facilities.

Other Environmental Initiatives: Many countries have ratified and follow the liability scheme adopted by the IMO and set out in the International Convention on Civil Liability for Oil Pollution Damage, 1969, as amended (CLC), and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage of 1971, as amended (Fund Convention). The United States is not a party to these conventions. Under these conventions, a vessel's registered owner is strictly liable for pollution damage caused in the territorial waters of a contracting state by discharge of persistent oil, subject to certain complete defenses. The liability regime was increased (in limit and scope) in 1992 by the adoption of Protocols to the CLC and Fund Convention which became effective in 1996. The Fund Convention was terminated in 2002 and the Supplementary Fund Protocol entered into force in March 2005. The liability limit in the countries that have ratified the 1992 CLC Protocol is tied to a unit of account which varies according to a basket of currencies. Under an amendment to the Protocol that became effective on November 1, 2003, for vessels of 5,000 to 140,000 gross tons, liability is limited to approximately \$6,263,488 plus approximately \$876 for each additional gross ton over 5,000. For vessels of over 140,000 gross tons, liability is limited to approximately \$124,672,576. As the Convention calculates liability in terms of IMF Special Drawing Rights, these figures are based on currency exchange rates on April 2, 2019. From May 1998, parties to the 1992 CLC Protocol ceased to be parties to the CLC due to a mechanism established in the 1992 Protocol for compulsory denunciation of the old regime; however, the two regimes will co-exist until the 1992 Protocol has been ratified by all original parties to the CLC. The right to limit liability is forfeited under the CLC where the spill is caused by the owner's actual fault and under the 1992 Protocol where the spill is caused by the owner's intentional or reckless conduct. The 1992 Protocol channels more of the liability to the owner by exempting other groups from this exposure. Vessels trading to states that are parties to these conventions must provide evidence of insurance covering the liability of the owner. In jurisdictions where the CLC has not been adopted, various legislative schemes or common law govern, and liability is imposed either on the basis of fault or in a manner similar to that convention. We believe that our protection and indemnity insurance will cover the liability under the plan adopted by IMO.

The U.S. National Invasive Species Act (NISA) was enacted in 1996 in response to growing reports of harmful organisms being released into U.S. ports through ballast water taken on by ships in foreign ports. Under NISA, the Coast Guard adopted regulations in July 2004 establishing a national mandatory ballast water management program for all vessels equipped with ballast water tanks that enter or operate in U.S. waters. These regulations require vessels to maintain a specific ballast water management plan. The requirements can be met by performing mid-ocean ballast exchange, by retaining ballast water on board the ship, or by using environmentally sound alternative ballast water management methods approved by the Coast Guard. However, mid-ocean ballast exchange is mandatory for ships heading to the Great Lakes or Hudson Bay, or vessels engaged in the foreign export of Alaskan North Slope crude oil. Mid-ocean ballast exchange is the primary method for compliance with the Coast Guard regulations, since holding ballast water can prevent ships from performing cargo operations upon arrival in the U.S., and alternative methods are still under development. Vessels that are unable to conduct mid-ocean ballast exchange due to voyage or safety concerns may discharge minimum amounts of ballast water (in areas other than the Great Lakes and the Hudson River), provided that they comply with record keeping

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requirements and document the reasons they could not follow the required ballast water management requirements. The Coast Guard adopted allowable concentration limits for living organisms in ballast water discharges in U.S. waters, effective June 21, 2012. All newly constructed vessels must be compliant on delivery. All existing vessels must be compliant at their first scheduled drydock after January 1, 2016 or, in the case of vessels with ballast water capacity of 1,500 – 5,000m³ their first scheduled drydock after January 1, 2014. The Coast Guard must approve any ballast water management technology before it can be placed on a vessel, and a list of approved equipment can be found on the Coast Guard Maritime Information Exchange (CGMIX) web page. As of February 2019, there are 16 approved treatment systems which have obtained USCG type approval and 10 are under review. Several U.S. states, such as California, have also adopted more stringent legislation or regulations relating to the permitting and management of ballast water discharges compared to EPA regulations.

At the international level, the IMO adopted an International Convention for the Control and Management of Ships' Ballast Water and Sediments in February 2004 (the BWM Convention). The BWM Convention entered into force on September 8, 2017. Under the BWM Convention, all ships in international traffic are required to manage their ballast water on every voyage by either exchanging it or treating it using an approved ballast water treatment system. All ships have to carry an approved Ballast Water Management Plan and a Ballast Water Record Book, and all ships of 400 gross tonnes and above have to be surveyed and issued with an International Ballast Water Management Certificate. All ships constructed after entry into force of the BWM Convention will have to be compliant on delivery. Existing ships are required to be compliant by their first International Oil Pollution Prevention (IOPP) renewal survey on or after September 8, 2017. Ships constructed before September 8, 2017 are required to comply at the first IOPP renewal survey on or after September 8, 2019. All ships must have installed a ballast water treatment system by September 8, 2024. The IOPP renewal survey refers to the renewal survey associated with the IOPP Certificate required under MARPOL Annex I. The BWM Convention does not apply to ships not carrying ballast water, domestic ships, ships that only operate in waters under the jurisdiction of one party to the BWM Convention and on the high seas, warships, naval auxiliary or other ships owned or operated by a state, or permanent ballast water in sealed tanks on ships. Furthermore, flag administrators may issue exemptions from the BWM Convention for ships engaged on occasional or one-off voyages between specified ports or locations, or ships that operate exclusively between specified ports or locations, such as ferries. Regulation D-2 of the BWM Convention outlines the standard that ballast water treatment systems must meet. The standards involve maximum levels of certain microorganisms, such as plankton and intestinal enterococci, for given amounts of ballast water.

Our vessels will comply with the BWM Convention in accordance with its terms, though the cost of compliance may result in us incurring costs to install approved ballast water treatment systems on our vessels.

In November 2014 the IMO adopted the International Code for Ships Operating in Polar Waters (the Polar Code) and related amendments to SOLAS to make it mandatory. The Polar Code comprises of detailed requirements relating to safety, design, construction, operations, training and the prevention of environmental pollution. The Polar Code applies to all shipping and maritime operations, apart from fishing boats, ships under 500 tons and fixed structures. The Polar Code entered into force on January 1, 2017 and applies to new ships constructed after that date. Ships constructed before January 1, 2017 are required to meet the relevant requirements of the Polar Code by their first intermediate or renewal survey, whichever occurs first, after January 1, 2018. The IMO adopted the SOLAS Convention and the LL, which impose a variety of standards that regulate the design and operational features of ships. The IMO periodically revises the SOLAS Convention and LL standards. SOLAS in its successive forms is generally regarded as the most important of all international maritime laws concerning the safety of merchant ships. Certain SOLAS Convention amendments entered into force as of January 1, 2014 and addressed a range of issues including regulations regarding the carriage of dangerous goods and safe manning levels. The IMO has also adopted the STCW. As of 2018 all seafarers are required to meet the STCW standards and be fully certified in accordance with the revised STCW amendments. Flag states that have ratified SOLAS and STCW generally employ the classification societies, which have incorporated SOLAS and STCW requirements into their class rules, to undertake surveys to confirm compliance. The Polar Code brings with it numerous requirements and necessities for all ships trading in the polar regions and

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therefore a great deal of investment will be needed to operate in this region. It is our intention to comply with the Polar Code as implemented through MARPOL and SOLAS and with the applicable training requirements of the STCW Convention.

MARPOL Annex I regulation 43 concerning special requirements for the use or carriage of oils in the Antarctic area to prohibit ships from carrying heavy grade oil on board as ballast, came into force on March 1, 2016. Our vessels comply with it.

Greenhouse Gases (GHG). In February 2005, the Kyoto Protocol to the United Nations Framework Convention on Climate Change entered into force. Although the Kyoto Protocol requires adopting countries to implement national programs to reduce emissions of greenhouse gases, emissions of greenhouse gases from international shipping are not subject to the Kyoto Protocol. No new treaty was adopted at the United Nations climate change conference in Cancun in December 2010. The Kyoto Protocol was extended to 2020 at the 2012 United Nations Climate Change Conference, with the hope that a new treaty would be adopted in 2015 to come into effect in 2020. There is pressure to include shipping in any new treaty. We refer to the discussion above of the regulation of greenhouse gas emissions from ocean-going vessels under the CAA and EU greenhouse gas emissions strategy. The IMO, the EU or individual countries in which we operate could pass climate control legislation or implement other regulatory initiatives to control greenhouse gas emissions from vessels that could require us to make significant financial expenditures or otherwise limit our operations. Even in the absence of climate control legislation and regulations, our business may be materially affected to the extent that climate change may result in sea level changes or more intense weather events.

The Hong Kong Air Pollution Control (Marine Light Diesel) Regulations, which entered into force on April 1, 2014, provide that the sulfur content of marine light diesel supplied to vessels in Hong Kong must contain 0.05% sulfur content or less. The Air Pollution Control (Ocean Going Vessels) (Fuel At Berth) Regulation was tabled by Hong Kong's Legislative Council on March 18, 2015 and came in to force on July 1, 2015. The Regulation prohibits ocean going vessels from using any fuel other than compliant fuel while at berth in Hong Kong, except during the first hour after arrival and the last hour before departure. Shipmasters and ship owners are required to record the date and time of fuel switching and keep relevant records for three years. From January 1 2019 the Air Pollution Control (Fuel for Vessels) Regulation requires all vessels (fitted with scrubbers), irrespective of whether they are sailing or berthing, to use fuel containing 0.5% Sulphur content or less or any other fuel approved by the Director of Environment Protection.

From January 1, 2019 vessels must switch to fuel with a sulfur content not exceeding 0.5% prior to entering China's territorial sea. From July 1, 2019 vessels other than tankers capable of receiving shore power must use shore power whilst in China's coastal and inland ECAs (if berthing for more than 3 hours and 2 hours respectively). From January 1 2020 vessels entering Inland ECAs (Yangtze River and Xi Jiang River) must use fuel with a sulfur content not exceeding 0.1% while operating within the Inland ECA. From January 1 2022 vessels must use fuel with a sulfur content not exceeding 0.10% while operating within the Hainan Coastal ECA. Ships of over 400 GT or more calling at a port in China should report energy consumption data of last voyage to China MSA before leaving a port.

From January 1 2019 ships not fitted with scrubbers are required to burn fuel with a sulfur content not exceeding 0.5% when entering Taiwan's international commercial port areas.

In December 2015, representatives of 195 countries met at the Paris Climate Conference (COP 21) and adopted a universal and legally binding climate deal commonly known as the Paris Agreement. The Paris Agreement contemplates commitments from each nation party thereto to take action to reduce greenhouse gas emissions and limit increases in global temperatures but did not include any restrictions or other measures specific to shipping emissions. The COP 21 agreement is expected to come into force in 2020. The governments agreed to the goal of keeping the increase in global average temperature to below 2°C and to aim, if possible, to limit the increase to 1.5°C. Governments also agreed to reconvene every 5 years to reassess the targets.

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Governments will be required to report to each other on their progress and the steps they have taken to reach their targets. The COP 21 came into force on November 4, 2016, and as at April 4, 2019, 185 of the 197 countries who were party to the COP 21 have ratified it. On June 1, 2017, the U.S. President announced that the United States intends to withdraw from the Paris Agreement. The timing and effect of such action has yet to be determined, but the Paris Agreement provides for a four-year exit process. The shipping industry was not included in emissions controls; however, with growing pressure being placed on the IMO to implement measures to aid the objectives agreed at the COP 21, it is now uncertain whether the agreement will in fact exclude the shipping industry.

In April 2018 the IMO's MEPC adopted an initial strategy on the reduction of greenhouse gas (GHG) emissions from ships. The Initial Strategy aims to reduce the total GHG emissions from ships (total as at 2008) by at least 50% by 2050, while at the same time pursuing efforts towards phasing them out entirely. A Follow Up Program has been agreed, is intended to act as a three-stage planning tool in meeting the timelines identified in the Initial Strategy. As referenced above, from January 1 2019, amendments to Regulation 22A of chapter 4 of MARPOL Annex VI requires ships of 5,000 GT and above to collect consumption data for each type of fuel oil they use.

On June 29, 2017, the Global Industry Alliance (the GIA) was officially inaugurated. The GIA is a program, under the Global Environmental Facility-United Nations Development Program-IMO project, which supports shipping, and related industries, as they move towards a low carbon future. The GIA includes 18 members including, but not limited to, shipowners, operators, classification societies, and oil companies. In March 2019 the GIA Taskforce formalized the extension of the GIA until December 31, 2019.

Recent action by the IMO's Maritime Safety Committee and U.S. agencies indicate that cybersecurity regulations for the maritime industry are likely to be further developed in the near future in an attempt to combat cybersecurity threats. For example, cyber-risk management systems must be incorporated by ship owners and managers by 2021. This might cause companies to cultivate additional procedures for monitoring cybersecurity, which could require additional expenses and/or capital expenditures. However, the impact of such regulations is hard to predict at this time.

Vessel Recycling Regulations: The EU has also recently adopted a regulation that seeks to facilitate the ratification of the IMO Recycling Convention and sets forth rules relating to vessel recycling and management of hazardous materials on vessels. In addition to new requirements for the recycling of vessels, the new regulation contains rules for the control and proper management of hazardous materials on vessels and prohibits or restricts the installation or use of certain hazardous materials on vessels. The new regulation applies to vessels flying the flag of an EU member state and certain of its provisions apply to vessels flying the flag of a third country calling at a port or anchorage of a member state. For example, when calling at a port or anchorage of a member state, a vessel flying the flag of a third country will be required, among other things, to have on board an inventory of hazardous materials that complies with the requirements of the new regulation and the vessel must be able to submit to the relevant authorities of that member state a copy of a statement of compliance issued by the relevant authorities of the country of the vessel's flag verifying the inventory. The new regulation will take effect on non-EU-flagged vessels calling on EU ports of call beginning on December 31, 2020.

Trading Restrictions: The Company is aware of the restrictions applicable to it on trading with Crimea, Cuba, Iran, North Korea and Syria and, in prior periods, Sudan and it has complied with those restrictions and intends to continue to so comply in all respects. The Company has not, nor does it intend to, provide any goods, fees or services to the referenced countries and has had no contacts with governmental entities in these countries nor does it intend to have any in the future.

Its vessels are not chartered to any Crimean, Cuban, Iranian, North Korean, Sudanese or Syrian companies. The voyage charter parties and all but the oldest time-charter agreements relating to the vessels in the fleet generally preclude Iran from the vessels' trading unless agreed between owner and charterer after taking into account all relevant sanctions legislation.

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Between January 1, 2017 and April 2, 2019, the Company's vessels made 5,087 port calls around the world, none of which were to those countries

None of the vessels the Company owns or operates or charters have provided, or are anticipated to provide, any U.S.-origin goods to these countries, or involve employees who are U.S. nationals in operations associated with these countries. No US companies or US Dollar payments are involved in any operations associated with these countries. The Company has no relationships with governmental entities in those countries, nor does it charter its vessels to companies based in those countries. The Company derives its revenue directly from the charterers.

The Company is also aware of the less onerous restrictions on trading with other countries, including but not limited to Russia and Venezuela. It has complied with those restrictions and intends to continue to so comply in all respects.

Classification and inspection

The vessels in the fleet have been certified as being in class by their respective classification societies: Bureau Veritas (BV), Det Norske Veritas-Germanischer Lloyd (DNV-GL), American Bureau of Shipping (ABS), Lloyd's Register (LR) and Nippon Kaiji Kyokai (NKK). Every vessel's hull and machinery is classed by a classification society authorized by its flag administration. The classification society certifies that the vessel has been built and maintained in accordance with the rules of such classification society and complies with applicable statutory rules and regulations of the country of registry of the vessel and the international conventions of which that country is a party. Each vessel is scheduled for inspection by a surveyor of the classification society every year (the annual survey), every five years (the special survey) and every thirty months after a special survey (the intermediate survey). Vessels are required to be dry-docked for the special survey process, and for vessels over fifteen years of age for intermediate survey purposes, for inspection of the underwater parts of the vessel and for necessary repairs related to such inspection. With the permission of the classification society, the actual timing of the surveys may vary by a few months from the originally scheduled date depending on the vessel's position and operational obligations.

In addition to the classification inspections, many of our customers, including the major oil companies, regularly inspect our vessels as a precondition to chartering voyages on these vessels or calling at their terminals. We believe that our well-maintained, high quality tonnage should provide us with a competitive advantage in the current environment of increasing regulation and customer emphasis on quality of service, safety and protection of the environment.

TCM, our technical manager, has obtained a Document of Compliance (DOC) for its offices and Safety Management Certificates (SMC) for our vessels, as required by the ISM Code. In addition, TCM has established, implemented and maintains a documented Health, Safety, Quality, Environmental and Energy (HSQEE) management system which complies and is certified in accordance with ISO 9001 (Quality Management), ISO 14001 (Environmental protection management), OHSAS 18001 (Occupational health & safety management) and ISO 50001 (Energy management) standards. The TCM's management system is based on the principle of continual improvement towards ensuring HSQEE excellence. The main overall objectives are to ensure flawless operations with zero accidents and zero pollution and this is carried out by instilling and maintaining a strong safety and compliance culture, operating well-maintained ships, maintaining effective risk management, reducing our environmental impact and increasing the energy efficiency of our operations.

Risk of loss and insurance

The operation of any ocean-going vessel carries an inherent risk of catastrophic marine disasters and property losses, including:

collision;

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adverse weather conditions;

fire and explosion;

mechanical failures;

negligence;

war;

terrorism; and

piracy.

In addition, the transportation of crude oil is subject to the risk of crude oil spills and business interruptions due to political circumstances in foreign countries, hostilities, labor strikes and boycotts. Tsakos Shipping arranges insurance coverage to protect against most risks involved in the conduct of our business and we maintain environmental damage and pollution insurance coverage. Tsakos Shipping arranges insurance covering the loss of revenue resulting from vessel off-hire time as a result of physical damage. We believe that our current insurance coverage is adequate to protect against most of the risks involved in the conduct of our business. The terrorist attacks in the United States and various locations abroad and international hostilities have led to increases in our insurance premium rates and the implementation of special war risk premiums for certain trading routes. See Item 5. Operating and Financial Review and Prospects for a description of how our insurance rates have been affected by previous events. We have hull and machinery insurance, increased value (actual or constructive total loss) insurance and loss of hire insurance with Argosy Insurance Company. Each of our ship owning subsidiaries is a named insured under our insurance policies with Argosy. Argosy provides the same full coverage as provided through London and Norwegian markets and reinsures most of its exposure, subject to customary deductibles, with various reinsurers in the London and international reinsurance markets. These reinsurers have a minimum credit rating of A-. We were charged by Argosy aggregate annual premiums of \$9.8 million in 2018. By placing our insurance through Argosy, we believe that we achieve cost savings over the premiums we would otherwise pay to third party insurers.

Our subsidiaries are indemnified for legal liabilities incurred while operating our vessels by protection and indemnity insurance that we maintain through their membership in a P&I club. This protection and indemnity insurance covers legal liabilities and other related expenses of injury or death of crew members and other third parties, loss or damage to cargo, claims arising from collisions with other vessels, damage to other third-party property and pollution arising from oil or other substances, including wreck removal. The object of P&I clubs is to provide mutual insurance against liability to third parties incurred by P&I club members in connection with the operation of their vessels entered into the P&I club in accordance with and subject to the rules of the P&I club and the individual member's terms of participation. A member's individual P&I club premium is typically based on the aggregate gross tonnage of the member's vessels entered into the P&I club according to the risks of insuring the vessels as determined by the P&I club. P&I club claims are paid from the aggregate premiums paid by all members, although members remain subject to calls for additional funds if the aggregate insurance claims made exceed aggregate member premiums collected. Each P&I club enters into reinsurance arrangements with other members of the International Group of P&I Clubs in order to provide the requisite amount of liability and pollution cover and as a method of preventing large losses in any year from being assessed directly against members of the P&I club.

World events have an impact on insurance costs and can result in increases in premium; however, other significant drivers of premium levels are market over capacity, inadequate deductibles, inefficient claims control by the insurers and scope of cover being too wide. Insurance premiums, having been in decline for several years with market losses having no apparent impact on renewal costs, are now under greater scrutiny from capital providers, resulting in acceleration in the firming of rates. In addition, there has been a withdrawal of insurers from the marine space leading to a reduction of choice within the market. In the six months from September 1, 2018, there were several major marine incidents with claims exceeding \$100 million, with total claims likely to

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exceed \$1.5 billion. The insurance markets maintain their list of World Wide War Risks Exclusions, as defined by the Joint War Committee in the London insurance market, and insurers are at liberty to charge increases in premium in order to provide cover for Excluded Areas which include the Indian Ocean, Gulf of Guinea, Libya and Saudi Arabia, amongst others. These additional insurance costs represent a relatively small portion of our total insurance premiums and are, in any case, largely paid by the Charterers. Protection & Indemnity (P&I) insurance costs are less affected by world events than H&M and more likely to be driven by maritime losses and whether there is a fall in the value of individual Clubs' Free Reserves. The Company's P&I renewals as of February 20, 2019 saw a reduction in costs of 2.4% partly due to reduced costs of the International Group's reinsurance programme and partly due to the Company's own record. At March 31, 2019, the International Group of P&I Clubs continued to provide its members with \$1 billion of oil pollution liability coverage and more than \$4 billion of coverage for other liabilities. P&I, Hull and Machinery and War Risk insurance premiums are accounted for as part of operating expenses in our financial statements; accordingly, any changes in insurance premiums directly impact our operating results.

Competition

We operate in markets that are highly competitive and where no owner controlled more than 5% of the world tanker fleet as of March 31, 2019. Ownership of tankers is divided among independent tanker owners and national and independent oil companies. Many oil companies and other oil trading companies, the principal charterers of our fleet, also operate their own vessels and transport oil for themselves and third-party charterers in direct competition with independent owners and operators. We compete for charters based on price, vessel location, size, age, condition and acceptability of the vessel, as well as our reputation as a tanker operator and our managers reputation for meeting the standards required by charterers and port authorities. Currently we compete primarily with owners of tankers in the ULCCs, VLCCs, suezmax, suezmax shuttle tankers, aframax, panamax, handymax and handysize class sizes, and we also compete with owners of LNG carriers.

Although we do not actively trade to a significant extent in Middle East trade routes, disruptions in those routes as a result of international hostilities, including those in Syria and Iraq, economic sanctions, including those with respect to Iran, and terrorist attacks such as those made in various international locations (Somalia, Kenya, Yemen, Nigeria) and pirate attacks repeatedly made upon shipping in the Indian Ocean, off West Africa and in South East Asia, may affect our business. We may face increased competition if tanker companies that trade in Middle East trade routes seek to employ their vessels in other trade routes in which we actively trade.

Other significant operators of multiple aframax and suezmax tankers in the Atlantic basin that compete with us include Euronav, Teekay Shipping Corporation, Frontline, International Seaways, Inc., and Nordic American Tankers. There are also numerous smaller tanker operators in the Atlantic basin.

Employees

We have no salaried employees. See Management Contract Crewing and Employees.

Properties

We operate out of Tsakos Energy Management offices in the building also occupied by Tsakos Shipping at Megaron Makedonia, 367 Syngrou Avenue, Athens, Greece.

Legal proceedings

We are involved in litigation from time to time in the ordinary course of business. In our opinion, the litigation in which we were involved as of April 2, 2019, individually and in the aggregate, was not material to us.

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None.

**Item 5. Operating and Financial Review and Prospects
Company Overview**

As of April 2, 2019, the fleet consisted of 64 double-hull vessels with an average age of 8.5 years, comprising of 59 conventional tankers, two LNG carriers and three suezmax DP2 shuttle tankers providing world-wide marine transportation services for national, major and other independent oil companies and refiners under long, medium and short-term charters. The current operational fleet consists of two VLCCs, sixteen suezmaxes (including three DP2 shuttle tankers), seventeen aframaxs, three aframax LR2s, eleven panamax LR1s, six handymax tankers, seven handysize tankers and two LNG carriers. All vessels are owned by our subsidiaries, other than two suezmax tankers which are bareboat chartered-in by our subsidiaries. The charter rates that we obtain for these services are determined in a highly competitive global tanker charter market. The tankers operate in markets that have historically exhibited both cyclical and seasonal variations in demand and corresponding fluctuations in charter rates. Tanker markets are typically stronger in the winter months as a result of increased oil consumption in the northern hemisphere. In addition, unpredictable weather conditions in the winter months in various regions around the world tend to disrupt vessel scheduling. The oil price volatility resulting from these factors has historically led to increased oil trading activities. Changes in available vessel supply are also a contributing factor in affecting the cyclical and overall volatility present in the tanker sector which is reflected both in charter rates and asset values.

Results from Operations 2018

The following discussion of our financial condition and results of operations should be read in conjunction with the financial statements and the notes to those statements included elsewhere in this Annual Report. This discussion includes forward-looking statements that involve risks and uncertainties. As a result of many factors, such as those set forth under Risk Factors and elsewhere in this Annual Report our actual results may differ materially from those anticipated in these forward-looking statements.

The decision towards the end of 2017 to cut oil production to support oil prices, primarily by OPEC countries and a number of non-OPEC nations, had a negative impact on tanker markets in the early part of 2018, especially as most producers unexpectedly adhered closely to the designated export quotas. Nose-diving Venezuelan production exacerbated the situation. U.S. sanctions on Iran increased the chances that the market would be squeezed further. The positive effect of tight supplies was that the oil market eventually returned to an effectively balanced state. However, a balanced global oil market was not necessarily in line with every nation's export strategy. In particular, exports from the U.S. doubled from earlier forecasts, removing concerns that tankers might be starved of adequate cargoes at a time when consumer demand was relatively buoyant.

However, concerns regarding global fleet over capacity were very real and continued to suppress rates throughout most of 2018, contributing to the worst year in terms of rates for several years, at least until the third quarter when there were signs that some level of recovery was returning due to increasing demand from refiners in India and China for U.S. crude and from the Middle East, and record OPEC and Russian production, ahead of new production cuts. Apart from growing U.S. production, it was also gratifying for the tanker industry to see more exports from Libya and Nigeria, while waivers from the U.S. government to customers of Iran also added to the injection of crude oil into the overall market. The availability of crude oil supplies and the deceleration of delivery of new tankers in 2018 finally contributed to a recovery in rates, culminating in a more impressive fourth quarter in terms of rates achieved compared to the first nine-months of the year.

Crude oil prices (Brent) continued to move upwards in early 2018 reaching, by early October, levels at over \$85 per barrel, not seen for nearly four years, confirming that the 2017 producer cuts had achieved their purpose

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of re-balancing the oil market. At the very end of the year, the price fell dramatically towards \$50, then in the new year started to rise again reaching \$70 by the beginning of April 2019 with current predictions for the remainder of the year, to trade in the \$60-70 range.

It is expected that towards the end of 2019 and moving into 2020, there will be some difficulties in adjusting to the new regulatory environment in respect of the appropriate bunker fuel required by vessels and the availability and quality of that fuel. Fortunately, the availability of crude oil from which to produce the required bunker fuels is likely to be more secure due to U.S. export strategy and the low sulphur quality of U.S. shale oil, which when refined yields more sulphur compliant bunker fuel and equally likely to offset any new attempts by OPEC to reset the price of oil by imposing new cuts. Either way, it is possible that the price struggle could lead to newer and longer routes to the benefit of tanker owners of both crude and product carriers. Possibly more significant for tanker owners, is that the number of new competing tankers will be reduced due to fewer new deliveries, high scrapping in 2018, and vessels out of service due to upgrading to meet the new regulations, or not being able to secure the appropriate bunker fuel at the required time and place.

While the outlook for crude and product carrying tankers looks promising based on supply and demand fundamentals, there remains a significant threat to the industry, and indeed the world economy, in the form of a trade war, especially between the U.S. and China, which could possibly have severe effects on the growth of the world economy. China's production and exports have already fallen in the first quarter of 2019, although much of this is due to an intentional state-induced brake on growth. Japan also is experiencing lower growth. There are, however, positive indications that, given that the pain from falling exports is suffered by both sides, a compromise may be reached in the near future that will at least narrow the breach between the U.S. and China on trade issues.

If differences are not addressed, the consequences to world trade and growth could worsen, which in turn may hit forecasts for world oil demand and global oil supply, possibly depressing future expectations, which in turn will damage tanker prospects in the longer term. More comforting is that the U.S. economy has been strong thanks to fiscal initiatives and looks to remain strong for the foreseeable future, while Europe, apart from Italy, also continues a slow but sure recovery from its problems over the recent past.

The consequences of Brexit, especially without a deal, remain to be seen, with diverging views on the outcome, ranging from near disaster for the British economy to a new era of prosperity for the U.K. The possible real consequences are unlikely to be known until many months are passed. It is not expected that in the event of the United Kingdom leaving the European Union that such event will have any material impact on the tanker sector and even less so on our operations, even without an agreed new treaty between the U.K. and the E.U., given that there is no significant transportation of crude oil, petroleum products and LNG between the two.

A positive, but uncertain, sign for tanker owners in a capital-intensive industry is that short-term interest rate increases may slow down in 2019, possibly even falling moderately, which will give owners some respite as the new regulations oblige owners to dig deep into their pockets to pay for new equipment and vessel upgrades. However, the opposite in terms of interest rates may equally occur and longer-term rates increase with a negative impact on future investments in fleet renewal.

Our fleet achieved voyage revenues of \$529.9 million in 2018, an increase of 0.1% from \$529.2 million in 2017. The average size of our fleet increased in 2018 to 64.3 vessels from 62.6 vessels in 2017, and fleet utilization was 96.2% during 2018, compared to a 96.7% utilization during 2017. The market remained weak in 2018 mainly due to overcapacity in the global fleet, oil production cuts and refinery outages. However, consumer demand remained relatively strong. Our average daily time charter rate per vessel, after deducting voyage expenses, decreased to \$18,226 in 2018 from \$18,931 in 2017, mainly due to the difficult freight market. Operating expenses increased by 4.5% to \$181.7 million in 2018 from \$173.9 million in 2017 due to the addition of new vessels during 2017 which were fully operational throughout 2018.

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Depreciation and amortization totaled \$146.8 million in 2018 compared to \$139.0 million in 2017 due to the addition of new vessels. General and administrative expenses which include management fees and incentive awards were \$27.0 million in 2018 and \$26.3 million in 2017, the increase mainly due to increased management fees and other general and administrative expenses.

In 2018, the review of the carrying amounts in connection with the estimated recoverable amount for certain of the Company's vessels as of December 31, 2018 indicated the need for a \$66.0 million impairment charge. There was an operating loss of \$28.1 million in 2018 compared to a gain of \$63.5 million in 2017. One vessel was sold during 2018, resulting in a loss on sale of vessel of \$0.4 million. Two vessels were sold at the end of 2017, resulting in a loss on sale of vessels of \$3.9 million. Interest and finance costs, net increased by 35.1% in 2018 to \$76.8 million, mainly due to higher interest rates. Net loss attributable to the Company was \$99.2 million in 2018 compared to net income of \$7.6 million in 2017. The effect of preferred dividends in 2018 was \$33.8 million compared to \$23.8 million in 2017. Net loss per share (basic and diluted) was \$1.53 in 2018, including the effect of preferred dividends, based on 87.1 million weighted average shares outstanding (basic and diluted), compared to loss of \$0.19 per share in 2017 based on 84.7 million weighted average shares outstanding (basic and diluted).

Some of the more significant developments for the Company during 2018 were:

the raising of \$144.3 million net of underwriters' discount and other expenses, with the issuance of 6.0 million Series F Cumulative Redeemable Perpetual Preferred Shares;

the sale of the VLCC *Millennium*;

the dry-docking of *Eurovision*, *Maya*, *Inca*, *Brasil 2014*, *Socrates*, *Selecao*, *Andes*, *Maria Princess* and *Nippon Princess* for their mandatory special or intermediate survey;

the payment to holders of Series B preferred shares of dividends totaling \$4.0 million in aggregate;

the payment to holders of Series C preferred shares of dividends totaling \$4.4 million in aggregate;

the payment to holders of Series D preferred shares of dividends totaling \$7.5 million in aggregate;

the payment to holders of Series E preferred shares of dividends totaling \$10.6 million in aggregate;

the payment to holders of Series F preferred shares of dividends totaling \$4.8 million in aggregate; and

dividends to holders of common shares totaling \$0.15 per share with total cash paid out amounting to \$13.1 million. The Company operated the following types of vessels during and at the end of 2018:

Vessel Type	LNG		Suezmax DP2			Handymax Handysize		Total Fleet	
	carrier	VLCC	Suezmax	shuttle	Aframax	Panamax	MR2		MR1
Average number of vessels	2.0	2.3	13.0	3.0	20.0	11.0	6.0	7.0	64.3
Number of vessels at end of year	2.0	2.0	13.0	3.0	20.0	11.0	6.0	7.0	64.0
Dwt at end of year (in thousands)	178.9	600.0	2,098.9	468.4	2,213.1	799.1	318.5	260.2	6,937.1

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Percentage of total fleet (by dwt at year end)	2.6%	8.6%	30.3%	6.8%	31.9%	11.5%	4.6%	3.7%	100.0%
Average age, in years, at end of year	6.9	2.3	10.6	4.4	6.6	10.1	13.5	12.2	8.2

We believe that the key factors which determined our financial performance in 2018, within the given freight rate environment in which we operated, were:

the diversified aspect of the fleet, including purpose-built vessels to access ice-bound ports, carry LNG and operate shuttle tankers between offshore installations and on-shore terminals, which allowed us to take advantage of all tanker sectors;

the benefits of the new vessels acquired in recent years in terms of operating efficiencies and desirability on the part of charterers;

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our balanced chartering strategy (discussed further below), which ensured a stable cash flow while allowing us to take advantage of the upside in the freight market;

the long-established relationships with our chartering clients and the development of new relationships with renowned oil-majors;

a high level of utilization for our vessels;

the continued control over costs by our technical managers despite pressures caused by rising operating costs;

our ability to mitigate financial costs by negotiating competitive terms with reputable banks;

our ability to manage leverage levels through cash generation and repayment/prepayment of debt;

our ability to comply with the terms of our financing arrangements, including addressing loan-to-value requirements;

our ability to reward our shareholders through cash dividends;

our ability to raise new financing through bank debt at competitive terms despite a generally tight credit environment;

our ability to access the capital markets and raise new financing on competitive terms; and

the sale of vessels when attractive opportunities arise.

We believe that the above factors will also influence our future financial performance and will play a significant role in the current world economic climate as we proceed through 2019 and into 2020. To these may be added:

any recovery of the product and crude oil tanker charter markets during the year;

any additional vessel acquisitions or newbuildings;

the appetite of oil majors to fix vessels on medium to long term charters at attractive rates; and

our ability to build our cash reserves through operations, vessel sales and capital market products.

Chartering Strategy

We typically charter our subsidiaries' vessels to third parties in any of five basic types of charter. First are voyage charters or spot voyages, under which a shipowner is paid freight on the basis of moving cargo from a loading port to a discharging port at a given rate per ton or other unit of cargo. Port charges, bunkers and other voyage expenses (in addition to normal vessel operating expenses) are the responsibility of the

shipowner.

Second are time charters, under which a shipowner is paid hire on a per day basis for a given period of time. Normal vessel operating expenses, such as stores, spares, repair and maintenance, crew wages and insurance premiums, are incurred by the shipowner, while voyage expenses, including bunkers and port charges, are the responsibility of the charterer. The time charterer decides the destination and types of cargoes to be transported, subject to the terms of the charter. Time charters can be for periods of time ranging from one or two months to more than three years. The agreed hire may be for a fixed daily rate throughout the period or may be at a guaranteed minimum fixed daily rate plus a share of a determined daily rate above the minimum, based on a given variable charter index or on a decision by an independent brokers' panel for a defined period. Many of our charters have been renewed on this time charter with profit share basis over the past three years. Time charters can also be evergreen, which means that they automatically renew for successive terms unless the shipowner or the charterer gives notice to the other party to terminate the charter.

Third are bareboat charters under which the shipowner is paid a fixed amount of hire for a given period of time. The charterer is responsible for substantially all the costs of operating the vessel including voyage

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expenses, vessel operating expenses, dry-docking costs and technical and commercial management. Longer-term time charters and bareboat charters are sometimes known as period charters.

Fourth are contracts of affreightment which are contracts for multiple employments that provide for periodic market related adjustments, sometimes within prescribed ranges, to the charter rates.

Fifth are pools. Where one of our subsidiaries vessel may also operate within a pool of similar vessels for part of the year whereby all income (less voyage expenses) is earned on a market basis and shared between pool participants on the basis of a formula which takes into account the vessel's age, size and technical features. During 2018, 2017 and 2016, none of our subsidiaries had vessels operating in a pool.

Our chartering strategy continues to be one of fixing the greater portion of our fleet on medium to long-term employment in order to secure a stable income flow, but one which also ensures a satisfactory return. This strategy has enabled us to smooth the effects of the cyclical nature of the tanker industry, achieving almost optimal utilization of the fleet. In order to capitalize on possible upturns in rates, we have chartered out several of our vessels at a fixed minimum rate plus an extra agreed percentage of an amount based on market spot or time-charter rates (profit-share).

Our Board of Directors, through its Business Development and Capital Markets Committee, formulates our chartering strategy and our commercial manager Tsakos Energy Management implements this strategy through the Chartering Department of Tsakos Shipping. They evaluate the opportunities for each type of vessel, taking into account the strategic preference for medium and long-term charters and ensure optimal positioning to take account of redelivery opportunities at advantageous rates.

The cooperation with Tsakos Shipping, which provides the fleet with chartering services, enables us to take advantage of the long-established relationships Tsakos Shipping has built with many of the world's major oil companies and refiners over 48 years of existence and high quality commercial and technical service.

Since July 1, 2010, through our cooperation with TCM, our technical managers, we are able to take advantage of the inherent economies of scale associated with two large fleet operators working together and its commitment to contain running costs without jeopardizing the vessels operations. TCM provides top grade officers and crew for our vessels and first-class superintendent engineers and port captains to ensure that the vessels are in prime condition.

Critical Accounting Estimates

Our consolidated financial statements are prepared in accordance with U.S. generally accepted accounting principles. Our significant accounting policies are described in Note 1 of the consolidated financial statements included elsewhere in this annual report. The application of such policies may require management to make estimates and assumptions. We believe that the following are the more critical accounting estimates used in the preparation of our consolidated financial statements that involve a higher degree of judgment and could have a significant impact on our future consolidated results of operations and financial position:

Revenue from Contracts with Customers. On January 1, 2018, we adopted ASC 606 Revenue from Contracts with Customers, using the modified retrospective method. The effect of the adoption of the new accounting standard resulted in a cumulative adjustment of \$1,311 in the opening balance of the retained earnings for the fiscal year 2018, as a result of the change in the recognition method of revenues related to voyage charters and their fulfillment costs. The prior period comparative information has not been restated and continues to be reported under the accounting guidance in effect for those periods. The adoption of the new standard has changed the method of recognizing revenue over time for voyage charters from the discharge-to-discharge method to the loading-to-discharge method. Under the loading-to-discharge method the commencement date of each voyage charter shall be deemed to be upon the loading of the current cargo, decreasing the period of time for recognizing revenue for voyages.

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Accounting for Revenue and Related Expenses. Our vessels are employed under a variety of charter contracts, including time, bareboat and voyage charters, contracts of affreightment and pool arrangements. Time and bareboat charter revenues are recorded over the term of the charter as the service is provided. Revenues generated under voyage charter agreements are recognized ratably from the date of loading (Notice of Readiness to the charterer, that the vessel is available for loading) to discharge of cargo (loading-to-discharge) provided an agreed non-cancelable charter between the Company and the charterer is in existence, the charter rate is fixed or determinable and collectability is reasonably assured. Voyage expenses that qualify as contract fulfillment costs and are incurred by the Company from the latter of the end of the previous vessel employment, provided that the vessel is fixed, or from the date of inception of a voyage charter contract until the arrival at the loading port, are capitalized and amortized ratably over the total transit time of the voyage (loading-to-discharge). Vessel voyage expenses that do not qualify as contract fulfillment costs, operating expenses and charter hire expense are expensed when incurred. The operating revenues and voyage expenses of vessels operating under a tanker pool are pooled and are allocated to the pool participants on a time charter equivalent basis, according to an agreed formula. Revenues from profit sharing arrangements are recognized to the extent the variable amounts earned beyond an agreed fixed minimum hire at the reporting date and all other revenue recognition criteria are met.

Depreciation. We depreciate our vessels on a straight-line basis over their estimated useful lives, after considering their estimated residual values, based on the assumed value of the scrap steel available for recycling after demolition, calculated at \$390 per lightweight ton since October 1, 2012. Our estimate was based on the average demolition prices prevailing in the market during the previous ten years for which historical data were available. Since then, management has monitored scrap values, which have risen to \$500 per lwt and fallen to as low as \$250 per lwt in 2016, and climbed again to \$450 per lwt in 2018. Given the historical volatility of scrap prices, management will continue to monitor prices going forward and where a distinctive trend is observed over a given length of time, management may consider revising the scrap price accordingly. In assessing the useful lives of vessels, we have adopted the industry-wide accepted practice of assuming a vessel has a useful life of 25 years (40 years for the LNG carriers), given that all classification society rules have been adhered to concerning survey certification and statutory regulations are followed.

Impairment. The carrying value of the Company's vessels includes the original cost of the vessels plus capitalized expenses since acquisition relating to improvements and upgrading of the vessel, less accumulated depreciation. Carrying value also includes the unamortized portion of deferred special survey and dry-docking costs. The carrying value of vessels usually differs from the fair market value applicable to any vessel, as market values fluctuate continuously depending on the market supply and demand conditions for vessels, as determined primarily by prevailing freight rates and newbuilding costs.

The Company reviews and tests all vessels and vessels under construction for impairment at each quarter-end and at any time that specific vessels may be affected by events or changes in circumstances indicate that the carrying amount of the vessel may not be recoverable, such as during severe disruptions in global economic and market conditions, and unexpected changes in employment. A vessel to be held and used is tested for recoverability by comparing the estimate of future undiscounted net operating cash flows expected to be generated by the use of the vessel over its remaining useful life and its eventual disposition to its carrying amount. The average age of our vessels is approximately 8.5 years as of April 2, 2019. The average remaining operational life is, therefore, 16.5 years. Given the extensive remaining lives, we do not believe that there is a significant risk of not generating future undiscounted net operating cash flows in excess of carrying values, other than for the five vessels with respect to which the Company recorded an impairment charge in 2018. However, as indicated above, circumstances may change at any time which would oblige us to reconsider the extent of risk of impairment.

Future undiscounted net operating cash flows are determined by applying various assumptions regarding future revenues net of commissions, operating expenses, scheduled dry-dockings and expected off-hire and scrap values. Our projections for charter revenues are based on existing charter agreements for the fixed fleet days and an estimated daily average hire rate per vessel category for the unfixed days based on the most recent ten year

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historical averages publicly provided by major brokers, which, given the wide spread of annual rates between the peaks and troughs over the decade, we believe provides as fair as any other assumption that could be used in determining a rate for a long-term forecast. In addition, we apply a 2% annual escalation in rates to take account of published long-term growth and inflation expectations in the developed world. Future operating costs are based on the 2018 average per individual vessel and vessel type to which we also apply a 2% annual escalation. Residual or scrap value is based on the same scrap price used for depreciation purposes as described above. All such estimations are inevitably subjective. In addition, the Company for additional comfort performs sensitivity analyses on the key parameters of the exercise by making use of publicly available market forecasts. Actual freight rates, industry costs and scrap prices may be volatile. As a consequence, estimations may differ considerably from actual results.

Where a vessel is deemed to be a risk, we also take into account the age, condition, specifications, marketability and likely trading pattern of each such vessel, and apply various possible scenarios for employment of the vessel during its remaining life. We prepare cash flows for each scenario and apply a percentage possibility to each scenario to calculate a weighted average expected cash flow for the vessel for assessing whether an impairment charge is required. The estimations also take into account regulations regarding the permissible trading of tankers depending on their structure and age.

While management, therefore, is of the opinion that the assumptions it has used in assessing whether there are grounds for impairment are justifiable and reasonable, the possibility remains that conditions in future periods may vary significantly from current assumptions, which may result in a material impairment loss. If current economic conditions stall or if the upward trend in oil prices continues for an extended period, oil demand over an extended period of time could be negatively impacted. This would exacerbate the consequences of overcapacity in the tanker sector. In such circumstances, the possibility will increase that both the market value of the older vessels of our fleet and the future cash flow they are likely to earn over their remaining lives will be less than their carrying value and an impairment loss will occur.

Should the carrying value of the vessel exceed its estimated undiscounted cash flows, impairment is measured based on the excess of the carrying amount over the fair value of the asset. The fair values are determined based principally from or by corroborated observable market data. Inputs considered by management in determining the fair value include independent brokers' valuations. As vessel values are also volatile, the actual market value of a vessel may differ significantly from estimated values within a short period of time.

The Company would not record an impairment charge for any of the vessels for which the fair market value is below its carrying value unless and until the Company either determines to sell the vessel for a loss or determines that the vessel's carrying amount is not recoverable.

As noted above, we determine projected cash flows for unfixed days using an estimated daily time charter rate based on the most recent ten-year historical average rates, inflated annually by a 2.0% growth rate. We consider this approach to be reasonable and appropriate. However, charter rates are subject to change based on a variety of factors that we cannot control and we note that charter rates over the last few years have been, on average, below their historical ten year average. If as at December 31, 2018 and 2017, we were to utilize an estimated daily time charter equivalent for our vessels' unfixed days based on the most recent five year, three year or one year historical average rates for one-year time charters, the impairment results would be the following:

	As of December 31, 2018		As of December 31, 2017	
	Number of Vessels(*)	Amount (U.S.\$ millions)(**)	Number of Vessels(*)	Amount (U.S.\$ millions)(**)
5-year historical average rate	0	0	3	43.2
3-year historical average rate	1	14.5	0	0
1-year historical average rate	23	371.8	23	349.4

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(*) Number of vessels the carrying value of which would not have been recovered, other than the five vessels for which we recorded an impairment as of December 31, 2018.

(**) Aggregate carrying value that would not have been recovered.

Although we believe that the assumptions used to evaluate potential impairment are reasonable and appropriate, such assumptions are highly subjective. There can be no assurance as to how long charter rates and vessel values will remain at their current levels or whether they will again decline or improve by any significant degree. Charter rates remained relatively low during most of 2017 and 2018. Although charter rates markedly increased in late 2018, they began to decline again in early 2019 to relatively low levels and are likely to remain at low levels through the first half of 2019, which may have an adverse effect on our revenue and profitability, and future assessments of vessel impairment.

At December 31, 2018, our review of the carrying amounts of the vessels, including advances for vessels under construction in connection with the estimated recoverable amount did not indicate an impairment of their carrying values, apart from one suexmax crude carrier, two panamaxs and two handysizes, plus an advance for a construction later abandoned. For those vessels the Company concluded that an impairment charge of \$66.0 million was required based on Level 2 inputs of the fair value hierarchy, as determined by management taking into consideration valuations from independent marine valuers. An impairment loss of \$8.9 million was recorded in 2017 for two vessels.

At December 31, 2018, the market value of the fleet owned by our subsidiary companies, as determined based on management estimates and assumptions and by making use of available market data and taking into consideration third party valuations, was \$2.2 billion, compared to a total carrying value of \$2.9 billion, following the impairment charge. While the future undiscounted net operating cash flows expected to be generated by each of the vessels in the fleet was comfortably in excess of its respective carrying value, there were 59 vessels in our fleet, whose carrying values exceeded their market values. As determined at December 31, 2018, the aggregate carrying value of these vessels was \$2.6 billion, and the aggregate market value of these vessels was \$1.9 billion. These vessels were:

LNG: *Neo Energy, Maria Energy*

VLCC: *Ulysses, Hercules I*

Suezmax: *Antarctic, Arctic, Alaska, Archangel, Silia T, Spyros K, Dimitris P, Eurovision, Euro, Pentathlon, Decathlon*

Aframax: *Proteas, Promitheas, Propontis, Izumo Princess, Sakura Princess, Maria Princess, Nippon Princess, Ise Princess, Asahi Princess, Sapporo Princess, Uraga Princess, Elias Tsakos, Thomas Zafiras, Leontios H, Parthenon TS, Marathon TS, Oslo TS, Sola TS, Stavanger TS, Bergen TS*

Panamax: *Selecao, Socrates, Andes, Maya, Inca, World Harmony, Chantal, Selini, Salamina, Sunray, Sunrise*

Handymax: *Artemis, Afrodite, Ariadne, Aris, Apollon, Ajax*

Handysize: *Amphitrite, Arion, Andromeda, Aegeas, Byzantion, Bosporos, Didimon*

Allowance for doubtful accounts. Revenue is based on contracted charter parties and although our business is with customers whom we believe to be of the highest standard, there is always the possibility of dispute over terms and payment of freight and demurrage. In particular, disagreements may arise as to the responsibility for lost time and demurrage revenue due to the Company as a result. As such, we periodically assess the recoverability of amounts outstanding and we estimate a provision if there is a possibility of non-recoverability, primarily based on the aging of such balances and any amounts in dispute. Although we believe any provision that we might record to be based on fair judgment at the time of its creation, it is possible that an amount under dispute is not ultimately recovered and the estimated provision for doubtful recoverability is inadequate.

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Amortization of deferred charges. In accordance with Classification Society requirements, a special survey is performed on our vessels every five years. A special survey requires a dry-docking. In between special surveys, a further intermediate survey takes place, for which a dry-docking is obligatory for vessels over fifteen years. During a dry-docking, work is undertaken to bring the vessel up to the condition required for the vessel to be given its classification certificate. The costs include the yard charges for labor, materials and services, possible new equipment and parts where required, plus part of the participating crew costs incurred during the survey period. We defer these charges and amortize them over the period up to the vessel's next scheduled dry-docking.

Fair value of financial instruments. Management reviews the fair values of financial assets and liabilities included in the balance sheet on a quarterly basis as part of the process of preparing financial statements. The carrying amounts of financial assets and accounts payable are considered to approximate their respective fair values due to the short maturity of these instruments. The fair values of long-term bank loans with variable interest rates approximate the recorded values, generally due to their variable interest rates. The present value of the future cash flows of the portion of any long-term bank loan with a fixed interest rate is estimated and compared to its carrying amount. The fair value of the investments equates to the amounts that would be received by the Company in the event of sale of those investments, and any shortfall from carrying value is treated as an impairment of the value of that investment. The fair value of the interest rate swap, bunker swap agreements, and bunker call options held by the Company are determined through Level 2 of the fair value hierarchy as defined in FASB guidance and are derived principally from or corroborated by observable market data, interest rates, yield curves and other items that allow value to be determined. The fair values of impaired vessels are determined by management through Level 2 of the fair value hierarchy based on available market data and taking into consideration third party valuations.

Basis of Presentation and General Information

Voyage revenues. Revenues are generated from freight billings and time charters. Time and bareboat charter revenues are recorded over the term of the charter as the service is provided. Revenues from voyage charters on the spot market or under contracts of affreightment are recognized from the date of loading (Notice of Readiness to the charterer, that the vessel is available for loading) to discharge date of cargo (loading-to-discharge). The operating revenues of vessels operating under a tanker pool are pooled and are allocated to the pool participants on a time charter equivalent basis according to an agreed upon formula. Revenues from profit sharing arrangements are accounted for as a variable consideration and included in the transaction price to the extent that variable amounts earned beyond an agreed fixed minimum hire are determinable at the reporting date and when there is no uncertainty associated with the variable consideration. Profit sharing revenues are calculated at an agreed percentage of the excess of the charter's average daily income over an agreed amount. Unearned revenue represents cash received prior to the year-end for which related service has not been provided, primarily relating to charter hire paid in advance to be earned over the applicable charter period.

Time Charter Equivalent (TCE) allows vessel operators to compare the revenues of vessels that are on voyage charters with those on time charters. For vessels on voyage charters, we calculate TCE by taking revenues earned on the voyage (on a loading to discharge basis) and deducting the voyage costs and dividing by the actual number of net earning days, which does not take into account off-hire days. For vessels on bareboat charters, for which we do not incur either voyage or operating costs, we calculate TCE by taking revenues earned on the charter and adding a representative amount for the vessels' operating expenses. TCE differs from average daily revenue earned in that TCE is based on revenues after commissions less voyage expenses and does not take into account off-hire days.

Commissions. We pay commissions on all chartering arrangements to Tsakos Shipping, as our broker, and to any other broker we employ. Each of these commissions generally amounts to 1.25% of the daily charter hire or lump sum amount payable under the charter. In addition, on some trade routes, certain charterers may include in the charter agreement an address commission which is a payment due to the charterer, usually ranging from

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1.25% to 3.75% of the daily charter hire or freight payable under the relevant charter. These commissions, as well as changes in prevailing charter rates, will cause our commission expenses to fluctuate from period to period. Commissions are expensed as incurred.

Voyage expenses. Voyage expenses include all our costs, other than vessel operating expenses, that are related to a voyage, including charter commissions, port charges, canal dues and bunker fuel costs. Voyage expenses that qualify as contract fulfillment costs and are incurred from the latter of the end of the previous vessel employment, provided that the vessel is fixed, or from the date of inception of a voyage charter contract until the arrival at the loading port, are capitalized and amortized ratably over the total transit time of the voyage (loading-to-discharge) when the relevant criteria under ASC 340-40 are met.

Charter hire expense. We hire certain vessels from third-party owners or operators for a contracted period and rate in order to charter the vessels to our customers. These vessels may be hired when an appropriate market opportunity arises or as part of a sale and lease back transaction or on a short-term basis to cover the time-charter obligations of one of our vessels in dry-dock. Since December 31, 2010, the Company had not had any vessels under hire from a third-party, until December 2017, when two vessels were sold and chartered back to the Company for five years.

Vessel operating expenses. These expenses consist primarily of manning, hull and machinery insurance, P&I and other vessel insurance, repairs and maintenance, spares, stores and lubricant costs. All vessel operating expenses are expensed as incurred.

Depreciation and Amortization of deferred charges. We depreciate our vessels on a straight-line basis over their estimated useful lives, after considering their estimated scrap values. Useful life is ultimately dependent on customer demand and if customers were to reject our vessels, either because of new regulations or internal specifications, then the useful life of the vessel will require revision.

We amortize the costs of dry-docking and special surveys of each of our ships over the period up to the ship's next scheduled dry-docking (generally every 5 years for vessels aged up to 15 years and every 2.5 years thereafter). These charges are part of the normal costs we incur in connection with the operation of our fleet

Impairment loss. An impairment loss for an asset held for use and for advances for vessels under construction should be recognized when indicators of impairment exist and when the estimate of undiscounted cash flows expected to be generated by the use of the asset is less than its carrying amount (the vessel's net book value plus any unamortized deferred dry-docking charges). Measurement of the impairment loss is based on the fair value of the asset as determined by reference to available market data and considering valuations provided by third parties. An impairment loss for an asset held for sale is recognized when its fair value less cost to sell is lower than its carrying value at the date it meets the held for sale criteria. In this respect, management reviews regularly the carrying amount of the vessels in connection with the estimated recoverable amount for each of the Company's vessels. As a result of such reviews, it was determined that an impairment charge was required in 2018 for five vessels, *Byzantion*, *Bosporos*, *Selini*, *Salamina*, *Silia T* and for an advance for construction (later abandoned) and in 2017 for the two oldest vessels in the fleet, *Millennium* and *Silia T*. There was no impairment charge in 2016.

General and administrative expenses. These expenses consist primarily of professional fees, office supplies, investor relations, advertising costs, directors' and officers' liability insurance, directors' fees and reimbursement of our directors' and officers' travel-related expenses. As of January 1, 2015, incentive awards and management fees are combined with general and administrative expenses under the category general and administrative expenses. Management fees are the fixed fees we pay to Tsakos Energy Management under our management agreement with them. Since 2012, there has been no increase in such fees. For 2019, no increase has been agreed by March 31, 2019 and monthly vessel management fees remain the same as in 2018, 2017 and 2016. Accordingly, monthly fees for operating vessels will be \$27,500 per owned vessel and \$20,400 for chartered-in

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vessels or vessels chartered out on a bareboat basis or under construction. The monthly fee for the LNG carriers will be \$36,877 and for the suezmax DP2 shuttle tankers will be \$35,000. The fees are recorded under General and Administrative Expenses.

Insurance claim proceeds. In the event of an incident involving one of our vessels, where the repair costs or loss of hire is insurable, we immediately initiate an insurance claim and account for such claim when it is determined that recovery of such costs or loss of hire is probable and collectability is reasonably assured within the terms of the relevant policy. Depending on the complexity of the claim, we would generally expect to receive the proceeds from claims within a twelve-month period. During the 2018 policy year, we received approximately \$2.7 million in net proceeds from hull and machinery and loss of hire claims arising from incidents where damage was incurred by one of our vessels in a previous policy year. Such settlements were generally received as credit-notes from our insurer, Argosy Insurance Company Limited, and set off against insurance premiums due to that company. Therefore, within the consolidated statements of cash flows, these proceeds are included in decreases in receivables and in decreases in accounts payable. There is no material impact on reported earnings arising from these settlements.

Financial Analysis

(Percentage calculations are based on the actual amounts shown in the accompanying consolidated financial statements)

Year ended December 31, 2018 versus year ended December 31, 2017**Voyage revenues**

Voyage revenues earned in 2018 and 2017 per charter category were as follows:

	2018		2017	
	U.S. \$ million	% of total	U.S. \$ million	% of total
Time charter-bareboat		0%	3.8	1%
Time charter-fixed rate	236.6	45%	222.1	42%
Time charter-variable rate (profit share)	108.5	20%	106.7	20%
Voyage charter-contract of affreightment	40.7	8%	38.5	7%
Voyage charter-spot market	144.1	27%	158.1	30%
Total voyage revenue	529.9	100%	529.2	100%

Revenue from vessels amounted to \$529.9 million during the year ended December 31, 2018 compared to \$529.2 million during 2017, a 0.1% increase mainly due to the upturn of the market during the fourth quarter of 2018. There was an average of 64.3 vessels operating in 2018 compared to an average of 62.6 vessels in 2017, the increase relates to the delivery of the final two vessels of the recent newbuilding program in July and October 2017, respectively, which were fully operational during 2018. The increase was partially offset by the sale of the VLCC vessel *Millennium* in April 2018. Based on the total days that the vessels were actually employed as a percentage of the days that we owned or chartered-in the vessels, the fleet enjoyed 96.2% employment in 2018 compared to 96.7% in 2017, the lost time being mainly due to dry-dockings and long-haul repositioning voyages.

Market conditions for tankers remained weak during the first nine months of 2018, with the market recovering during the fourth quarter of 2018. Production and export cuts by leading suppliers (notably OPEC countries), in addition to U.S. re-imposition of sanctions against Iran and the economic crisis in Venezuela, led to rate volatility as the tanker market underwent a cyclical low during 2018. There was significant improvement in the market rate environment in the fourth quarter of 2018, mainly due to increased oil demand as a result of lower oil prices and adequate oil supplies, particularly from U.S. exports positively affecting market rates. The Company was well positioned during the market upturn to take advantage of the strong freight rates.

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The average time charter equivalent rate per vessel achieved for the year 2018 was \$18,226 per day, down 3.7% from \$18,931 per day in 2017. In 2018, our suezmax tankers suffered an average fall of 11% in average time charter equivalent rates from the previous year, mainly due to lower minimum rates on the renewal of time charters with profit sharing arrangements. The decrease in TCE rates for the conventional tankers was partially offset by the two LNG carriers, as average time charter equivalent rates for these vessels increased by 25% for the year ended December 31, 2018 compared to the corresponding period of 2017, due to time charters renewal with higher rates. Approximately 71% of the fleet was operating on time-charters. The revenue generated by vessels on time charters alone was enough to cover all cash expenditure relating to operating costs, commissions, finance costs and overhead costs of the whole fleet. Our panamax tankers, which were trading mostly on spot and on time charters with profit sharing arrangements, earned an average time charter equivalent rate 19% lower than in 2017.

Average daily TCE rates earned for the years ended December 31, 2018 and 2017 were:

	Year ended December 31,	
	2018	2017
	U.S. \$	U.S. \$
LNG carrier	29,491	23,641
VLCC	26,139	26,490
Suezmax	17,228	19,296
DP2 shuttle	49,401	49,654
Aframax	18,926	18,818
Panamax	12,896	15,932
Handymax	12,883	14,223
Handysize	10,706	10,909

TCE is calculated by taking voyage revenue less voyage costs divided by the number of revenue days less 378 days lost as a result of calculating revenue on a loading to discharge basis for the year ended December 31, 2018. The change in the calculation of days is due to the adoption of the new revenue recognition standard. Time charter equivalent revenue and TCE rate are not measures of financial performance under U.S. GAAP and may not be comparable to similarly titled measures of other companies. However, TCE is a standard shipping industry performance measure used primarily to compare period-to-period changes in shipping performance despite changes in the mix of charter types (i.e. spot voyage charters, time charters and bare-boat charters) under which the vessels may be employed between the periods. The following table reflects the calculation of our TCE rates for the periods presented (amount in thousands of U.S. dollars, except for TCE rate, which is expressed in U.S. dollars, and operating days):

	Year ended December 31,	
	2018	2017
Voyage revenues	\$ 529,879	\$ 529,182
Less: Voyage expenses	(125,350)	(113,403)
Add: Representative operating expenses for Bareboat charter (\$10,000 daily)		2,500
Time charter equivalent revenues	\$ 404,529	\$ 418,279
Divided by: net earnings (operating) days	22,195	22,095
Average TCE per vessel per day	\$ 18,226	\$ 18,931

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	Total voyage expenses per category			Total voyage expenses per category		
	Year ended December 31,		%	Year ended December 31,		%
	2018 U.S.\$ million	2017 U.S.\$ million		2018 U.S.\$	2017 U.S.\$	
Bunkering expenses	70.2	56.2	24.8%	10,780	8,483	27.1%
Port and other expenses	36.4	37.2	(2.2)%	5,587	5,606	(0.4)%
Commissions	18.8	20.0	(5.9)%	2,892	3,018	(4.2)%
Total voyage expenses	125.4	113.4	10.5%	19,259	17,107	12.6%
<i>Days on spot and Contract of Affreightment (COA) employment</i>				6,509	6,629	(1.8)%

Voyage expenses include port charges, agents' fees, canal dues, commissions and bunker (fuel) costs relating to spot charters or contracts of affreightment. These voyage expenses are borne by the Company unless the vessel is on time-charter or operating in a pool, in which case they are borne by the charterer or by the pool operators. Commissions are borne by the Company for all types of charter. Voyage expenses were \$125.4 million during 2018 compared to \$113.4 million in 2017, a 10.5% increase. The total operating days on spot charters and contracts of affreightment totaled 6,509 days in 2018, and 6,629 days in 2017, a 1.8% reduction.

Voyage expenses are highly dependent on the voyage patterns followed and size of vessels employed on spot charter or contract of affreightment. Bunkering purchases typically constitute the largest part of voyage expenses and therefore the usual volatility and price swings of crude oil in any given year affect bunker prices and subsequently voyage expenses. While oil prices recovered during 2017, both crude oil and global bunker prices surged in 2018, with the price of Brent increasing on average 30.9% between the two years, although a sharp fall in oil and, consequently, bunker prices occurred at the end of the year. Overall, this resulted in a 34.8% increase in the average delivered price paid by the Company for the bunkers procured globally during 2018, and a 24.8% increase in the annual bunkering expenses of the fleet. Also, during 2018, there was a decrease of 2.2% in the amount of port expenses that vessels operating on spot and COA employment bearing voyage expenses incurred, due to reduced employment of vessels on spot and COA. On a per relevant vessel basis the average daily voyage expense increased by 12.6% due mainly to the increase in price of oil.

Commissions in 2018 totaled \$18.8 million compared to \$20.0 million in 2017, a 5.9% decrease. Commissions were 3.6% of revenue from vessels in 2018 and 3.8% in 2017. The decrease in total commission charges relates mainly to time charter renewals for suezmax and handymax vessels with lower commission rates.

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	Operating expenses per category			Average daily operating expenses per vessel		
	2018	2017	%	2018	2017	%
	U.S.\$ million	U.S.\$ million	increase/ (decrease)	U.S.\$	U.S.\$	increase/ (decrease)
Crew expenses	108.6	105.5	3.0%	4,630	4,663	(0.7)%
Insurances	15.6	16.4	(4.9)%	667	727	(8.3)%
Repairs and maintenance, and spares	25.4	22.2	14.3%	1,080	982	9.9%
Stores	11.3	10.2	10.7%	481	451	6.6%
Lubricants	7.3	7.1	2.9%	310	313	(0.9)%
Other (quality and safety, taxes, registration fees, communications)	13.5	11.4	19.1%	577	502	15.3%
Foreign currency losses	0.0	1.1	(100.8)%		50	(100.8)%
Total operating expenses	181.7	173.9	4.5%	7,745	7,688	0.7%
<i>Earnings capacity days excluding vessel on bare-boat charter</i>				<i>23,460</i>	<i>22,600</i>	

Vessel operating expenses include crew costs, insurances, repairs and maintenance, spares, stores, lubricants, quality and safety costs and other expenses such as tonnage tax, registration fees and communication costs, as well as foreign currency gains or losses. Total operating costs were \$181.7 million in 2018, compared to \$173.9 million during 2017, an increase of 4.5%, mainly due to the addition of the new aframax vessels which were acquired during 2017 and were fully operational throughout 2018.

Average operating expenses per ship per day for the fleet increased by 0.7% to \$7,745 for 2018 from \$7,688 in 2017, remaining relatively stable, despite the fact that the U.S. dollar weakened by approximately 4.6% over the course of 2018, impacting negatively the cost of stores, spares and services purchased in Europe. These increases were partially offset by reduced average daily vessel expenditure on insurances and lubricants as a result of cost-effective ship management by the technical managers.

Depreciation and Amortization

Depreciation and amortization charges totaled \$146.8 million in 2018 compared to \$139.0 million in 2017, a 5.6% increase.

Depreciation amounted to \$137.0 million in 2018 compared to \$131.9 million during 2017, an increase of \$5.1 million, or 3.9%. The increase is due to the delivery of seven vessels to the fleet during 2017, which were fully operational throughout 2018 and is partially offset by the sale of VLCC vessel *Millennium*.

We amortize the cost of dry-dockings related to classification society surveys over the period to the next dry-docking, and this amortization is included as part of the normal costs we incur in connection with the operation of our vessels. During 2018, amortization of deferred dry-docking costs was \$9.8 million compared to \$7.1 million in 2017. The specific increase relates mainly due to the dry-dock of the two DP2 shuttle tankers *Rio 2016* and *Brasil 2014*, which required higher costs than conventional tankers.

General and administrative expenses

Management fees, including those paid to third-party managers, totaled \$21.8 million during 2018, compared to \$21.0 million in 2017, a 3.6% increase due to the increase of the average number of vessels for the year ended December 31, 2018 compared to 2017.

The Company pays Tsakos Energy Management fixed fees per vessel under a management agreement. The fee includes remuneration for services that cover both the management of the individual vessels and of the

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enterprise as a whole. According to the management agreement, there may be an adjustment to the fees based on certain criteria within the agreement, if both parties agree. There was no increase in management fees payable to the management company in 2018. During 2018, all the vessels in the fleet were managed by TCM, apart from the LNG carriers *Neo Energy* and *Maria Energy*, the VLCCs *Ulysses*, *Hercules I*, *Millennium*, the suezmax *Eurochampion 2004* and the aframax *Maria Princess* and *Sapporo Princess*, which were managed by third-party managers. Monthly management fees for operating conventional vessels are \$27,500 per month, since January 1, 2012. The monthly fee relating to vessels chartered-in or chartered-out on a bare-boat basis or for vessels under construction is \$20,400. Management fees for the LNG carriers *Neo Energy* and *Maria Energy* are \$36,877 per month, of which \$10,000 is payable to the management company and \$26,877 to the third-party manager. Management fees for the DP2 suezmax shuttle tankers are \$35,000 per month. Management fees for *Eurochampion 2004*, *Maria Princess*, *Sapporo Princess* and VLCCs *Hercules I* and *Ulysses* are \$27,500 per month, of which \$14,503 is payable to a third-party manager. Management fees paid relating to vessels under construction are capitalized as part of the vessels' costs.

Office general and administrative expenses consist primarily of professional fees, investor relations, office supplies, advertising costs, directors liability insurance, directors' fees and reimbursement of our directors' and officers' travel-related expenses. Office general and administrative expenses in 2018 totaled \$5.1 million compared to \$4.2 million in 2017, a 19.1% increase mainly due to increased consultant fees and new projects cost.

Total general and administrative expenses plus management fees paid to Tsakos Energy Management, any management incentive award, any special awards (described below) and stock compensation expense, all together represent the overhead of the Company. On a per vessel basis, daily overhead costs remained at \$1,152 for each of the years ended December 31, 2018 and 2017 respectively.

In October 2018, the Board of Directors approved an award of \$0.2 million to the management company based on various performance criteria and taking into account cash availability and market volatility. A separate award of \$0.8 million was made in 2018 to Tsakos Energy Management in relation to services provided towards a public offering in 2018, which was included as a deduction of additional paid in capital in the accompanying Consolidated Financial Statements. In June 2017, the management company was awarded with \$0.6 million based on a decision made by the Board of Directors. An award of \$0.6 million was also made in 2017 to Tsakos Energy Management in relation to services provided towards a public offering in 2017, which was included as a deduction of additional paid in capital in the accompanying Consolidated Financial Statements.

In 2018, the Company did not grant any stock compensation awards. In 2017, it was decided by the Board of Directors that a stock compensation award of 110,000 restricted stock units should be awarded to non-executive directors to vest immediately, the cost of which is based on the share price of the stock on the date that the directors were notified. The total cost was \$0.5 million, which is included in General and administrative expenses.

Loss on sale of vessels

In April 2018, the VLCC *Millennium* was sold for net proceeds of \$17.1 million, resulting in a net loss of \$0.4 million. Two vessels, the suezmaxes *Eurochampion 2004* and *Euronike* (both built in 2005), were sold in the fourth quarter of 2017, both to the same third party as part of sale and leaseback arrangements. The combined sales price was \$65.2 million. Net proceeds after a seller's credit of \$13.0 million and costs amounted to \$51.6 million. After a prepayment of related loans totaling \$36.0 million, there was \$15.6 million of cash available to the Company. There was a combined loss on the sale of the vessels totaling \$3.9 million. The two vessels have been chartered back to the Company on a five-year bare-boat charter at the end of which the seller's credit will be returned to the Company or earlier if the vessels are sold within five years.

Table of Contents**Vessel impairment charge**

During 2018, vessel values did not increase from those of 2017. As a result, 59 of our vessels had carrying values in excess of market values. Our fleet is for the most part young, with an average age of 8.2 years as of December 31, 2018 and in all these cases, except for two handysize vessels, two panamaxs, one suezmax and one advance for an under construction vessel (later abandoned), the remaining vessels are expected to generate considerably more cash during their remaining expected lives than their carrying values as at December 31, 2018. The Company's cash flow tests per vessel for assessing whether an impairment charge was required indicated that an impairment charge of \$66.0 million was required as at December 31, 2018, based on Level 2 inputs of the fair value hierarchy, as determined by management taking into consideration valuations from independent marine valuers. An impairment loss of \$8.9 million was also recorded in 2017 for two vessels. There was no indication that an impairment charge was required for the vessels in the fleet at December 31, 2016.

Operating (loss) income

For 2018, loss from vessel operations was \$28.1 million compared to income of \$63.5 million in 2017, a decrease of 144.3%.

Interest and finance costs, net

	2018	2017
	U.S.\$ million	U.S.\$ million
Loan interest expense	71.4	59.8
Interest rate swap cash settlements hedging	0.9	2.5
Less: Interest capitalized	(0.3)	(0.4)
Interest expense, net	72.0	61.9
Interest rate swap cash receipts hedging	(0.5)	(3.7)
Bunkers non-hedging instruments cash settlements	(9.9)	(2.3)
Change in fair value of non-hedging instruments	10.8	(3.4)
Amortization of loan expenses	4.0	4.2
Bank loan charges	0.4	0.1
Net total	76.8	56.8

Interest and finance costs, net, were \$76.8 million for 2018 compared to \$56.8 million for 2017, a 35.1% increase. Loan interest, excluding payment of swap interest, increased to \$71.4 million from \$59.8 million, a 19.3% increase mainly due to the upward trend of LIBOR throughout the year and partly due to the increased level of average debt during the course of the year, which fluctuated during the year depending on the timing of refinancing and repayments, although outstanding debt in total fell by \$156 million in 2018.

Cash settlements on both hedging and non-hedging interest rate swaps, based on the difference between fixed payments and variable six and three-month LIBOR, was \$0.4 million in 2018 compared to \$1.2 million in 2017. The decrease in interest rate cash settlements from \$2.5 million in 2017 to \$0.9 million in 2018, is mainly due to less effective swaps between the two years. In 2018 and 2017, interest rate swap cash receipts were \$0.5 million from the early termination of two swap agreements and \$3.7 million from the early termination of four swap agreements, respectively.

The average loan financing cost in 2018, including the impact of all interest rate swap cash settlements, was 4.3% compared to 3.4% for 2017. Capitalized interest, which is based on expenditures incurred to date on vessels under construction, was \$0.3 million in 2018, compared to \$0.4 million in 2017.

At December 31, 2018, the Company held one interest rate swap that did not meet hedge accounting criteria. There was no non-hedging interest rate swap as of December 31, 2017.

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During 2018, the Company entered into two call option agreements for a premium of \$1.6 million. During 2017, the Company entered into two call option agreements and paid a premium of \$0.2 million and earned \$1.2 million.

The changes in fair value of these call option agreements during 2018 and 2017, amounting to \$0.2 million (positive) and \$1.2 million (negative), respectively, have been included in Change in fair value of non-hedging instruments in the table above.

During 2016, the Company entered into three bunker swap agreements in order to hedge its exposure to bunker price fluctuations associated with the consumption of bunkers by the vessel *Ulysses*. In November 2018, the Company entered into early termination agreements of the three bunker swap agreements with expiring dates September 2019 and October 2019. Total cash received from those swaps amounted to \$1.5 million. The change in their fair value during 2018 and 2017 were \$3.3 million (negative) and \$0.8 million (positive), respectively.

In relation the bunker hedges, the Company gained in total \$9.9 million of actual cash settlements in 2018 but lost \$10.8 million in non-cash mark-to-market valuations of the hedges at December 31, 2018, due to a sudden sharp fall in oil prices in late December 2018, which began to recover in early 2019.

Amortization of loan expenses was \$4.0 million in 2018 compared to \$4.2 million in 2017. Other bank charges amounted to \$0.4 million in 2018 and \$0.1 million in 2017 due to the refinancing program.

Interest income

Interest income in 2018 amounted to \$2.5 million compared to \$1.1 million in 2017. The increase is due to higher interest rates in 2018 compared to 2017 and to larger amounts of cash held in 2018, following the raising of \$144.3 million in a preferred stock offering.

Non-controlling interest

Net loss attributable to the non-controlling interest (49%) in the subsidiary, which owns the companies owning the vessels *Maya* and *Inca* amounted to \$1.8 million in 2018 compared to \$1.6 million net income in 2017. The loss is attributed to increased expenses for dry-dockings that both vessels underwent in 2018.

Net (loss) income attributable to Tsakos Energy Navigation Limited

As a result of the foregoing, net loss attributable to Tsakos Energy Navigation Limited for 2018 was \$99.2 million, or a loss of \$1.53 per share basic and diluted, after taking into account the cumulative dividends of \$33.8 million on our preferred shares, compared to net income of \$7.6 million, or a loss of \$0.19 per share basic and diluted, after taking into account the cumulative dividends of \$23.8 million on our preferred shares for 2017.

Year ended December 31, 2017 versus year ended December 31, 2016**Voyage revenues**

Voyage revenues earned in 2017 and 2016 per charter category were as follows:

	2017		2016	
	U.S. \$ million	% of total	U.S. \$ million	% of total
Time charter-bareboat	3.8	1%	5.5	1%
Time charter-fixed rate	222.1	42%	166.8	35%
Time charter-variable rate (profit share)	106.7	20%	76.0	16%
Voyage charter-contract of affreightment	38.5	7%	29.8	6%
Voyage charter-spot market	158.1	30%	203.7	42%
Total voyage revenue	529.2	100%	481.8	100%

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Revenue from vessels amounted to \$529.2 million during the year ended December 31, 2017 compared to \$481.8 million during 2016, a 9.8% increase. There was an average of 62.6 vessels operating in 2017 compared to an average of 52.6 vessels in 2016, the increase relates to the acquisition and delivery of ten vessels between October 2016 and October 2017. In January 2017, a subsidiary of the Company took delivery of the VLCC *Hercules I* and in March 2017 another subsidiary of the Company took delivery of the DP2 suezmax shuttle tanker *Lisboa*. Between February and October 2017, subsidiaries of the Company took delivery of the remaining five aframax crude carriers built for charter to Statoil, namely *Marathon TS*, *Sola TS*, *Oslo TS*, *Stavanger TS* and *Bergen TS*. In the fourth quarter of 2016, the Company acquired the aframax crude carriers *Leontios H* and *Parthenon TS* and the LNG carrier *Maria Energy*. Based on the total days that the vessels were actually employed as a percentage of the days that we owned the vessels, the fleet enjoyed 96.7% employment in 2017 compared to 96.5% in 2016, the lost time being mainly due to the twelve dry-dockings performed during the year, while in 2016 there were eleven dry-dockings.

Market conditions for tankers continued to remain weak in 2017, with rates declining to their lowest level in several years. The decline was mostly due to soft rates encountered in the spot market as a result of increased supply of vessels in the market, production and export cuts by leading suppliers (notably OPEC countries), high crude and product inventories, and a reduction of refinery output.

The average time charter equivalent rate per vessel achieved for the year 2017 was \$18,931 per day, down 7.3% from \$20,412 per day in 2016. Our aframax tankers, which were trading mostly on spot charters during the year, suffered an average fall of 12% in average time charter equivalent rates from the previous year. Approximately 70% of the fleet was operating on time-charter. The revenue generated from these vessels was enough to cover all the operating expenses, commissions, finance costs and overhead costs of the whole fleet. Our suezmax tankers, which were trading mostly on spot and on time charters with profit sharing arrangements, earned an average time charter equivalent rate 22% lower than in 2016.

Average daily TCE rates earned for the years ended December 31, 2017, and 2016 were:

	Year ended December 31,	
	2017	2016
	U.S. \$	U.S. \$
LNG carrier	23,641	23,810
VLCC	26,490	28,564
Suezmax	19,296	24,818
DP2 shuttle	49,654	49,137
Aframax	18,818	21,425
Panamax	15,932	15,269
Handymax	14,223	15,029
Handysize	10,909	11,885

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TCE is calculated by taking voyage revenue less voyage expenses divided by the number of operating days. Time charter equivalent revenue and TCE rate are not measures of financial performance under U.S. GAAP and may not be comparable to similarly titled measures of other companies. However, TCE is a standard shipping industry performance measure used primarily to compare period-to-period changes in shipping performance despite changes in the mix of charter types (i.e. spot voyage charters, time charters and bare-boat charters) under which the vessels may be employed between the periods. The following table reflects the calculation of our TCE rates for the periods presented (amount in thousands of U.S. dollars, except for TCE rate, which is expressed in U.S. dollars, and operating days):

	Year ended December 31,	
	2017	2016
Voyage revenues	\$ 529,182	\$ 481,790
Less: Voyage expenses	(113,403)	(106,403)
Add: Representative operating expenses for Bareboat charter (\$10,000 daily)	2,500	3,660
Time charter equivalent revenues	\$ 418,279	\$ 379,047
Divided by: net earnings (operating) days	22,095	18,570
Average TCE per vessel per day	\$ 18,931	\$ 20,412

Voyage expenses

	Total voyage expenses per category			Average daily voyage expenses per vessel		
	Year ended December 31,		% increase/ (decrease)	Year ended December 31,		% increase/ (decrease)
	2017	2016		2017	2016	
	U.S.\$ million	U.S.\$ million		U.S.\$	U.S.\$	
Bunkering expenses	56.2	47.3	18.8%	8,483	6,098	39.1%
Port and other expenses	37.2	40.1	(7.3)%	5,606	5,165	8.5%
Commissions	20.0	19.0	5.3%	3,018	2,447	23.3%
Total voyage expenses	113.4	106.4	6.6%	17,107	13,710	24.8%
Days on spot and Contract of Affreightment (COA) employment				6,629	7,761	(14.6)%

Voyage expenses include port charges, agents' fees, canal dues and bunker (fuel) costs relating to spot charters or contracts of affreightment. These voyage expenses are borne by the Company unless the vessel is on time-charter or operating in a pool, in which case they are borne by the charterer or by the pool operators. Commissions are borne by the Company for all types of charter. Voyage expenses were \$113.4 million during 2017 compared to \$106.4 million in 2016, a 6.6% increase. The total operating days on spot charters and contracts of affreightment totaled 6,629 days in 2017, and in 2016 at 7,761 days, a 14.6% reduction.

Voyage expenses are highly dependent on the voyage patterns followed and size of vessels employed on spot charter or contract of affreightment. Bunkering purchases typically make the largest part of voyage expenses and therefore the usual volatility and price swings of crude oil in any given year affect bunker prices and subsequently voyage expenses. Both crude oil and global bunker prices recovered during 2017 from the multi-year lows of 2016 with the price of Brent increasing on average 21.3% between the two years and the price of our bunkers increasing by 35.8% in the same period. This resulted in a 35.8% increase in the average delivered price paid by the Company for the bunkers procured globally during 2017, and an 18.8% increase in the annual bunkering expenses of the fleet. Also, during 2017, there was a decrease of 7.3% in the amount of port expenses that vessels operating on spot and COA employment bearing voyage expenses incurred, due to reduced employment of vessels on spot and COA. On a per relevant vessel basis the average daily voyage expense increased by 24.8% due mainly to the increase in price of oil.

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Commissions in 2017 totaled \$20.0 million compared to \$19.0 million in 2016, a 5.3% increase. Commissions were 3.8% of revenue from vessels in 2017 and 3.9% in 2016. The increase in total commission charges relates mainly to the increase in revenue and lower commissions payable on those new vessels which had pre-arranged charter terms.

Vessel operating expenses

	Operating expenses per category			Average daily operating expenses per vessel		
	2017	2016	% increase/ (decrease)	2017	2016	% increase/ (decrease)
	U.S.\$ million	U.S.\$ million		U.S.\$	U.S.\$	
Crew expenses	105.5	85.5	23.4%	4,663	4,528	3.0%
Insurances	16.4	14.5	13.2%	727	769	(5.5)%
Repairs and maintenance, and spares	22.2	20.1	10.6%	982	1,063	(7.6)%
Stores	10.2	8.5	20.3%	451	449	0.5%
Lubricants	7.1	6.2	14.3%	313	328	(4.5)%
Other (quality and safety, taxes, registration fees, communications)	11.4	11.1	2.7%	502	591	(14.9)%
Foreign currency losses	1.1	0.7	68.7%	50	35	40.9%
Total operating expenses	173.9	146.6	18.6%	7,688	7,763	(1)%
<i>Earnings capacity days excluding vessel on bare-boat charter</i>				<i>22,600</i>	<i>18,878</i>	

Vessel operating expenses include crew costs, insurances, repairs and maintenance, spares, stores, lubricants, quality and safety costs and other expenses such as tonnage tax, registration fees and communication costs, as well as foreign currency gains or losses. Total operating costs were \$173.9 million in 2017, compared to \$146.6 million during 2016, an increase of 18.6%, almost entirely due to the operating expenses of the new vessels acquired during the year in all cost categories, including the addition of a VLCC and DP2 suezmax shuttle tanker for most of the year, both of which incur higher operating expenses than smaller conventional tankers.

Average operating expenses per ship per day for the fleet decreased to \$7,688 for 2017 from \$7,763 in 2016, despite the fact that the U.S. dollar weakened by approximately 9% over the course of 2017, which impacted crew costs, as most of the vessel officers are paid in Euro. Average daily crew costs per vessel also increased due to foreign crew income tax, borne by the Company. The weaker U.S. dollar also negatively affected the cost of stores, spares and services purchased in Europe. These increases were offset by reduced average daily vessel expenditure on repairs, insurances, repairs and spares as a result of cost-effective ship management by the technical managers.

Depreciation and Amortization

Depreciation and amortization charges totaled \$139.0 million in 2017 compared to \$113.4 million in 2016, a 22.6% increase.

Depreciation amounted to \$131.9 million in 2017 compared to \$107.1 million during 2016, an increase of \$24.8 million, or 23.1%. The increase is due to the addition of seven vessels to the fleet in 2017 without any vessel disposals until the end of the year.

We amortize the cost of dry-dockings related to classification society surveys over the period to the next dry-docking, and this amortization is included as part of the normal costs we incur in connection with the operation of our vessels. During 2017, amortization of deferred dry-docking costs was \$7.1 million for 12

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dry-dockings compared to \$6.3 million for 11 vessels in dry-dock in 2016. The dry-dockings in 2017 included one relating to the DP2 shuttle tanker *Rio 2016*, which required higher costs than conventional tankers.

General and administrative expenses

Management fees, including those paid to third-party managers, totaled \$21 million during 2017, compared to \$17.7 million in 2016, an 18.9% increase due to the addition of seven vessels as mentioned above.

The Company pays Tsakos Energy Management fixed fees per vessel under a management agreement. The fee includes compensation for services that cover both the management of the individual vessels and of the enterprise as a whole. According to the management agreement, there is a prorated adjustment if at the beginning of the year the Euro has appreciated by 10% or more against the U.S. Dollar since January 1, 2007, and an increase each year by a percentage figure reflecting 12-month Euribor, if both parties agree. There was no increase in management fees payable to the management company in 2017. During 2017, all the vessels in the fleet have been managed by TCM, apart from the LNG carriers *Neo Energy* and *Maria Energy*, the VLCCs *Ulysses*, *Hercules I*, *Millennium*, the suezmax *Eurochampion 2004* and the aframax *Maria Princess* and *Sapporo Princess*, which have been managed by third-party managers. Monthly management fees for operating conventional vessels have been \$27,500 per month, since January 1, 2012. The monthly fee relating to vessels chartered-in or chartered-out on a bare-boat basis or for vessels under construction is \$20,400. Management fees for *Neo Energy* and *Maria Energy* were \$36,350 in 2017 and 2016, of which \$10,000 was payable to the management company and \$26,350 to the third-party manager. Management fees for the DP2 suezmax shuttle tankers were \$35,000 per month. Management fees for *Eurochampion 2004*, *Maria Princess*, *Sapporo Princess* and VLCCs *Hercules I* and *Ulysses* were \$27,500 per month, of which \$14,219 was payable to a third-party manager. Management fees paid relating to vessels under construction are capitalized as part of the vessels' costs.

Office general and administrative expenses consist primarily of professional fees, investor relations, office supplies, advertising costs, directors liability insurance, directors' fees and reimbursement of our directors' and officers' travel-related expenses. Office general and administrative expenses in 2017 totaled \$4.2 million compared to \$4.9 million in 2016, a 12.6% decrease mainly due to reduced legal fees, a decrease in promotional activity, and a reduction in overall directors' fees.

Total general and administrative expenses plus management fees paid to Tsakos Energy Management, the management incentive award, any special awards, (described below) and stock compensation expense, all together represent the overhead of the Company. On a per vessel basis, daily overhead costs were \$1,152 in 2017 compared to \$1,331 in 2016, a 13.4% decrease being mainly due to a reduced management incentive award as described below.

In June 2017, the Board of Directors decided to reward the management company with an award of \$0.6 million based on various performance criteria and taking into account cash availability and market volatility. The award is accounted for on a straight-line basis within the year it is determined. A separate award of \$0.6 million was granted in 2017 to Tsakos Energy Management in relation to services provided towards a public offering in 2017, which was included as a deduction of additional paid in capital in the accompanying Consolidated Financial Statements. In 2016, the award based on various criteria, amounted to \$2.6 million determined, paid and accounted for within 2016. In 2015, a specific award relating to the performance in 2014 amounting to \$1.1 million was accounted for. An award of \$0.4 million was also granted to Tsakos Energy Management in relation to services provided towards public offerings during 2015, which was included as a deduction of additional paid in capital in the accompanying Consolidated Financial Statements.

In addition, in 2017, it was decided by the Board of Directors that a stock compensation award of 110,000 restricted stock units should be awarded to non-executive directors to vest immediately, the cost of which is based on the share price of the stock on the date that the directors were notified. The total cost was \$0.5 million,

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which is included in General and administrative expenses. A similar award, amounting to 87,500 restricted stock units was made in 2016, with a cost of \$0.5 million. There was no similar award during 2015.

Loss on sale of vessels

Two vessels, the suezmaxes *Eurochampion 2004* and *Euronike* (both built 2005), were sold in the fourth quarter of 2017 to the same third party as part of sale and leaseback arrangements. The combined sales price was \$65.2 million. Net proceeds after a seller's credit of \$13.0 million and costs amounted to \$51.6 million. After a prepayment of related loans totaling \$36.0 million, there was \$15.6 million of cash available to the Company. There was a combined loss on the sale of the vessels totaling \$3.9 million. The two vessels have been chartered back to the Company on a five-year bare-boat charter at the end of which the seller's credit will be returned to the Company or earlier if the vessels are sold within five years. There were no vessel sales during 2016. In July 2015, the suezmax tanker *Triathlon* and product carrier *Delphi* were sold for combined net proceeds of \$42.8 million, resulting in a combined net gain of \$2.1 million and freeing cash totaling \$19.6 million after the prepayment of related loans.

Vessel impairment charge

During 2017, vessel values failed to increase from those of 2016. As a result, 60 of our vessels had carrying values in excess of market values. Apart from one VLCC, the remainder of our fleet is for the most part young, with an average age of 7.7 years as of December 31, 2017 and in all these cases, except for one suezmax crude carrier, the vessels are expected to generate considerably more cash during their remaining expected lives than their carrying values as at December 31, 2017. The Company's cash flow tests per vessel for assessing whether an impairment charge was required indicated that an impairment charge of \$4.8 million was required for the suezmax crude carrier *Silia T* as at December 31, 2017, based on Level 2 inputs of the fair value hierarchy, as determined by management taking into consideration valuations from independent marine valuers. An impairment loss of \$4.1 million was also recorded in 2017 for the vessel *Millennium* as the result of the vessel's classification as held for sale as of December 31, 2017. There was no indication that an impairment charge was required for the vessels in the fleet at December 31, 2016 and 2015.

Operating income

For 2017, income from vessel operations was \$63.5 million compared to \$89.8 million in 2016, a decrease of 29.3%.

Interest and finance costs, net

	2017 U.S.\$ million	2016 U.S.\$ million
Loan interest expense	59.8	37.8
Interest rate swap cash settlements - hedging	2.5	3.6
Less: Interest capitalized	(0.4)	(4.0)
Interest expense, net	61.9	37.4
Interest rate swap cash receipts - hedging	(3.7)	
Interest rate swap cash settlements - non-hedging		1.1
Bunkers non-hedging instruments cash settlements	(2.3)	0.1
Change in fair value of non-hedging bunker instruments	(3.4)	(3.6)
Change in fair value of non-hedging interest rate swaps		(1.0)
Amortization of loan expenses	4.2	1.8
Bank loan charges	0.1	0.1
Net total	56.8	35.9

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Interest and finance costs, net, were \$56.8 million for 2017 compared to \$35.9 million for 2016, a 58.4% increase. Loan interest, excluding payment of swap interest, increased to \$59.8 million from \$37.8 million, a 58.2% increase partly due to the increase in outstanding principal amount of loans by over 16.8% as a result of the financing of the newbuildings.

Cash settlements on both hedging and non-hedging interest rate swaps, based on the difference between fixed payments and variable six and three-month LIBOR, was \$1.2 million positive in 2017 compared to \$4.7 million negative in 2016. The decrease is mainly attributed to early termination of four interest rate swaps in early 2017, which resulted in cash receipts of \$3.7 million.

The average loan financing cost in 2017, including the impact of all interest rate swap cash settlements, was 3.4% compared to 2.7% for 2016. Capitalized interest, which is based on expenditures incurred to date on vessels under construction, was \$0.4 million in 2017, compared to \$4.0 million in 2016, the decrease being due to completion of the fifteen vessel newbuilding program in 2017.

In 2016, the Company held one interest rate swap that did not meet hedge accounting criteria. The specific swap expired on April 10, 2016. There was no non-hedging interest rate swap as of December 31, 2017.

During 2017, the Company entered into two call option agreements and paid a premium of \$0.2 million and earned \$1.2 million for those options and earned \$1.3 million from nine bunker swap agreements which were entered into during the year. During 2016, the Company entered two bunker call options and paid a premium of \$0.3 million and earned \$0.2 million.

The changes in fair value of these bunker call options during 2017 and 2016, amounting to \$1.2 million (negative) and \$1.1 million (positive), respectively, have been included in Change in fair value of non-hedging bunker instruments in the table above.

During 2016, the Company entered into three bunker swap agreements in order to hedge its exposure to bunker price fluctuations associated with the consumption of bunkers by vessel *Ulysses*. The changes in fair value during 2017 and 2016 amounting to \$0.8 million (positive) and \$2.5 million (positive) of these financial instruments have been included in Change in fair value of non-hedging bunker instruments in the table above. During 2017, the Company entered into nine bunker swap agreements. The changes in fair value of those swaps amounted to \$3.8 million (positive).

Amortization of loan expenses was \$4.2 million in 2017 compared to \$1.8 million in 2016 due to the new financing obtained for the new building program. Other bank charges amounted to \$0.1 million in both 2017 and 2016.

Interest income

Interest income in 2017 amounted to \$1.1 million compared to \$0.6 million in 2016. The increase is due to higher interest rates in 2017 compared to 2016 and to larger amounts of cash held in the earlier part of 2017, following the raising of \$115.0 million in a preferred stock offering.

Non-controlling interest

Net income attributable to the non-controlling interest (49%) in the subsidiary, which owns the companies owning the vessels *Maya* and *Inca* amounted to \$1.6 million in 2017 and \$0.7 million in 2016. The increase is due to the more favorable time-charters entered into by the vessels during the course of 2017.

Net income attributable to Tsakos Energy Navigation Limited

As a result of the foregoing, net income attributable to Tsakos Energy Navigation Limited for 2017 was \$7.6 million, or a loss of \$0.19 per share basic and diluted, after taking into account the cumulative dividend of

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\$23.8 million on our preferred shares, versus net income of \$55.8 million, or \$0.47 per share basic and diluted, after taking into account the cumulative dividend of \$15.9 million on our preferred shares for 2016.

Liquidity and Capital Resources

Our liquidity requirements relate to servicing our debt, funding the equity portion of investments in vessels, funding working capital and controlling fluctuations in cash flow. In addition, our newbuilding commitments, other expected capital expenditures on dry-dockings and vessel improvements and/or acquisitions, which in total equaled \$32.2 million in 2018 and \$305.9 million in 2017, will again require us to expend cash in 2019. Net cash flow generated by operations is our main source of liquidity. Apart from the possibility of raising further funds through the capital markets, additional sources of cash include proceeds from asset sales and borrowings, although all borrowing arrangements to date have related to the acquisition of specific vessels.

We believe, given our current cash holdings and the number of vessels we have on time charter, that if market conditions remain relatively stable throughout 2019, our financial resources, including the cash expected to be generated within the year, will be sufficient to meet our liquidity and working capital needs for the next twelve months, taking into account our existing capital commitments and debt service requirements. If market conditions worsen significantly, then our cash resources may decline to a level that may put at risk our ability to service timely our debt and capital expenditure commitments. To avoid such an eventuality, management would expect to be able to raise extra capital through the alternative sources described above.

Working capital (non-restricted net current assets) amounted to a positive \$44.2 million at December 31, 2018 compared to a negative \$50.5 million at December 31, 2017. The surplus is mainly attributed to higher cash balances and reduced outstanding debt under loan facilities. Of our \$1.6 billion of debt as of December 31, 2018, \$163.9 million principal installments are scheduled to be repaid in 2019.

Current assets increased to \$317.5 million at December 31, 2018 from \$304.4 million at December 31, 2017, mainly due to increased cash. Non-restricted cash balances were \$204.8 million as of December 31, 2018 compared to \$189.8 million as of December 31, 2017. Accounts receivable increased to \$35.4 million as of December 31, 2018 from \$27.4 million at the end of 2017. Current liabilities decreased to \$254.3 million at December 31, 2018, from \$338.9 million at December 31, 2017. Payables and unearned revenue decreased by \$9.4 million and by \$7.6 million, respectively, in 2018 compared to 2017.

Net cash provided by operating activities was \$73.9 million in 2018 and \$170.8 million in 2017. Expenditures for dry-dockings are deducted from cash generated by operating activities. Total expenditures during 2018 on dry-dockings amounted to \$14.9 million compared to \$12.5 million in 2017. In 2018, dry-docking was performed on the aframax tankers *Maria Princess* and *Nippon Princess*, on the suezmax tanker *Eurovision*, on the panamax tankers *Maya*, *Inca*, *Andes*, *Socrates* and *Selecao*, and on the DP2 suezmax shuttle tanker *Brasil 2014*, nine vessels in total.

Net cash used in investing activities in 2018 amounted to \$0.2 million compared to \$241.8 million in 2017. During 2018, \$16.2 million was paid for the two vessels under construction and \$1.2 million for improvement on existing vessels, while \$17.1 million was received as net proceeds from the sale of VLCC *Millennium*. In 2017, \$293.4 million was paid for the acquisition of the VLCC *Hercules I*, the DP2 suezmax tanker *Lisboa*, and the aframax tankers *Marathon TS*, *Sola TS*, *Oslo TS*, *Stavanger TS*, *Bergen TS* and \$51.6 million was received as proceeds on the sale of the two suezmaxes *Eurochampion 2004* and *Euronike*.

At December 31, 2018, the Company had two vessels under construction with total remaining payments committed of \$57.0 million for 2019 and \$31.2 million for 2020. In the first quarter of 2019, the Company entered into contracts for the construction of two additional vessels for a total of \$138.4 million, of which \$28.7 million is scheduled to be paid in 2019 and \$109.7 million is scheduled to be paid in 2020. In December 2017, the suezmax tankers *Eurochampion 2004* and *Euronike* were sold to a third party for proceeds of \$65.2 million,

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of which \$13.0 million will be paid to us at the end of five years, subject to certain conditions. The vessels are chartered back by us for a period of five years. The sale generated a net loss of \$3.9 million and released cash of \$15.6 million after the prepayment of related loans.

Net cash used in financing activities in 2018 amounted to \$55.9 million compared to \$75.9 million provided by financing activities in 2017. Proceeds from new bank loans in 2018 amounted to \$352.9 million compared to \$397.1 million in 2017. Repayments of debt amounted to \$508.8 million in 2018, which included \$171.7 million balloon repayments on the maturity of certain loans, \$147.9 million prepayments on certain refinanced loans and \$10.2 million on repayment of the loan related to the sale of the vessel *Millennium*.

In 2018, dividends of \$0.05 per common share were paid in May, August and December 2018. Total dividend payments to common shareholders in 2018 amounted to \$13.1 million, compared to \$17.1 million in 2017. The dividend policy of the Company is to pay a dividend on a quarterly basis. However, the payment and the amount are subject to the discretion of our Board of Directors and depend on available cash balances, anticipated cash needs, our results of operations, our financial condition, and any loan agreement restrictions binding us or our subsidiaries, as well as other relevant factors.

Dividends of \$0.50 per share for the 8.00% Series B Preferred Shares, were paid each on January 30, April 30, July 30 and October 30, 2018, totaling in aggregate \$4.0 million, and on January 30, 2019, \$1.0 million.

Dividends of \$0.5547 per share for the 8.875% Series C Preferred Shares were paid each on January 30, April 30, July 30 and October 30, 2018, totaling in aggregate \$4.4 million and on January 30, 2019, \$1.1 million.

Dividends of \$0.5469 per share for the 8.75% Series D Preferred Shares, were paid on February 28, May 29, August 28 and November 28, 2018, totaling in aggregate \$7.5 million, and on February 28, 2019,

\$1.9 million.

Dividends of \$0.5781 per share for the 9.25% Series E Preferred Shares were paid on February 28, May 29, August 28 and November 28, 2018, totaling in aggregate \$10.6 million, and on February 28, 2019, \$2.7 million.

Preferred share dividends on the Series B and C Preferred Shares will be payable quarterly in arrears on the 30th day of January, April, July and October of each year, when, as and if declared by the Company's Board of Directors. Preferred share dividends on Series D and Series E Preferred Shares are payable quarterly in arrears on the 28th day of February, May, August and November of each year, when, as and if declared by the Company's board of directors. As of December 31, 2018, the Company was in full compliance with all the covenants contained within the terms of its Series B and C Preferred Shares.

On July 10, 2018, the Company completed an offering of 6,000,000 of its Series F Cumulative Redeemable Perpetual Preferred Shares, par value \$1.00 per share, liquidation preference \$25.00 per share, raising \$144.3 million, net of underwriter's discount and other expenses. Dividends on the Series F Preferred Shares are cumulative from the date of original issue and will be payable quarterly in arrears on the 30th day of January, April, July and October of each year, commencing October 30, 2018, when, as and if declared by our board of directors. Dividends will be payable from cash available for dividends at a rate equal to 9.50% per annum of the stated liquidation preference prior to July 30, 2028 and from and including July 30, 2028, at a floating rate equal to three-month LIBOR plus spread of 6.54% per annum of the stated liquidation preference. On October 30, 2018, the Company paid dividends of \$0.80486 per share each or \$4.8 million in total and on January 30, 2019 paid dividends of \$3.6 million on its 9.50% Series F Preferred Shares.

On April 5, 2017, the Company completed an offering of 4,600,000 of its Series E Cumulative Redeemable Perpetual Preferred Shares. Dividends on the Series E Preferred Shares are cumulative from the date of original issue and will be payable quarterly in arrears on the 28th day of February, May, August and November of each year, commencing May 28, 2017, in an amount of \$0.578125 per share during the fixed rate period from original issuance to, but excluding, May 28, 2027, when, as and if declared by our Board of Directors.

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In 2018, the Company sold 1,019,069 common shares from its treasury stock and issued 265,993 common shares for net proceeds of \$4.5 million.

From time to time and depending upon market conditions, we may consider various capital raising alternatives to finance the strategic growth and diversification of our fleet. Any such capital raising transactions may be at the Tsakos Energy Navigation Limited or subsidiary level, to which interests in certain vessels in our fleet and rights to receive related cash flows would be transferred, as well as other capital raising alternatives available to us at that particular time.

Investment in Fleet and Related Expenses

We operate in a capital-intensive industry requiring extensive investment in revenue-producing assets. We continue to have an active fleet development program resulting in a fleet of modern and young vessels with an average age of 8.5 years at April 2, 2019. We raise the funds for such investments in newbuildings mainly from borrowings and partly out of internally generated funds and equity issuance transactions. Newbuilding contracts generally provide for multiple staged payments of 10%, with the balance of the vessel purchase price paid upon delivery. In the case of newbuildings, pre-delivery financing is arranged to finance part of the installment payments to the shipbuilding yard and delivery finance is arranged for the last installment to the yard on delivery of the vessels. Otherwise, for the equity portion of an investment in a newbuilding or a second-hand vessel, we generally pay from our own cash approximately 20% to 30% of the contract price. Repayment of the debt incurred to purchase the vessel is made from vessel operating cash flow, typically over five to seven years, compared to the vessel's asset life of approximately 25 years (LNG carriers 40 years).

Debt

As is customary in our industry, we anticipate financing the majority of our commitments on vessel newbuildings with bank debt. Generally, we raise 70% to 80% of the vessel purchase price with bank debt for a period of between usually between five and seven years. For vessels for which we have secured long-term charters with first-class charterers, we would expect to raise up to 80% of the vessel purchase price with bank debt. Our existing credit facilities require us and certain of our subsidiaries to comply with certain operating and financial covenant restrictions. See Note 6 Long Term Debt to our audited consolidated financial statements included elsewhere in this report.

Table of Contents**Summary of Loan Movements Throughout 2018 (in millions of U.S. dollars):**

Loan	Vessel	Balance at January 1, 2018	New Loans	Prepaid	Repaid	Balance at December 31, 2018
Credit facility	<i>Arctic, Antarctic</i>	31,594		30,158	1,436	
Credit facility	<i>Artemis, Afrodite, Ariadne, Ajax, Apollon, Aris, Proteas, Promitheas, Propontis</i>	151,010			151,010	
Credit facility	<i>Neo Energy</i>	67,500			5,000	62,500
10-year term loan	<i>Maria Princess, Nippon Princess</i>	38,670			38,670	
10-year term loan	<i>Ise Princess</i>	17,876		15,642	2,234	
12-year term loan	<i>Sapporo Princess</i>	21,250			2,500	18,750
10-year term loan	<i>Uraga Princess</i>	19,500			2,600	16,900
10-year term loan	<i>Selini</i>	21,399			3,218	18,181
9-year term loan	<i>Salamina</i>	23,900			2,600	21,300
10-year term loan	<i>Spyros K</i>	27,200			3,200	24,000
9-year term loan	<i>Dimitris P</i>	29,191			3,243	25,948
8-year term loan	<i>Rio 2016</i>	67,467	12,475		6,270	73,672
8-year term loan	<i>Brasil 2014</i>	66,658		63,187	3,471	
7-year term loan	<i>Sakura Princess</i>	11,955		10,335	1,620	
7-year term loan	<i>Eurovision</i>	33,600			2,800	30,800
6-year term loan	<i>Elias Tsakos, Thomas Zafiras, Leontios H, Sola TS, Parthenon TS</i>	181,197			12,077	169,120
6-year term loan	<i>Euro</i>	31,200		28,600	2,600	
7-year term loan	<i>Oslo TS</i>	39,059			2,682	36,377
6-year term loan	<i>Marathon TS, Bergen TS</i>	77,594			4,669	72,925
6-year term loan	<i>Stavanger TS</i>	39,954			2,497	37,457
5-year term loan	<i>Sunray</i>	33,235			1,955	31,280
7-year term loan	<i>Sunrise</i>	32,991			2,199	30,792
7-year term loan	<i>Pentathlon</i>	32,646			3,627	29,019
5-year term loan	<i>Silia T, Andes, Didimon, Byzantion, Bosporos</i>	67,255			10,347	56,908
6-year term loan	<i>Socrates, Selecao</i>	36,973			4,622	32,351
7-year term loan	<i>Decathlon</i>	40,000			3,200	36,800
12-year term loan	<i>Maria Energy, Ulysses, Hercules I</i>	273,935			21,502	252,433
2&5-year term loan	<i>Millennium</i>	12,806			12,806	
5-year term loan	<i>Amphitrite, Arion, Andromeda</i>	27,088			5,092	21,996
4-year term loan	<i>Mare Success</i>	14,500			3,625	10,875
7 ¹ / ₂ -year term loan	<i>Lisboa</i>	85,000			5,667	79,333
4-year term loan	<i>Izumo Princess, Asahi Princess Archangel, Aegeas, Alaska, World Harmony, Chantal</i>	108,879			16,565	92,314
6-year term loan	<i>Brasil 2014</i>		80,000		3,745	76,255
5-year term loan	<i>Arctic, Antarctic, Afrodite, Apollon, Artemis, Ariadne, Aris, Ajax, Proteas, Promitheas, Propontis</i>		162,575		11,561	151,014
5-year term loan	<i>Sakura Princess, Euro</i>		44,000			44,000
5-year term loan	<i>Maria Princess, Nippon Princess, Ise Princess</i>		48,650			48,650
8-year term loan	<i>Hull 5033</i>		5,172			5,172
Total		1,763,082	352,872	147,922	360,910	1,607,122

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The above revolving credit facilities and term bank loans are secured by first priority mortgages on all vessels owned by our subsidiaries, by assignments of earnings and insurances of the respectively mortgaged vessels, and by corporate guarantees of the relevant ship-owning subsidiaries.

As a result of such financing activities, long-term debt decreased in 2018 by a net amount of \$156.0 million compared to a net decrease of \$2.5 million in 2017. The debt to capital (equity plus debt) ratio was 51.6% at December 31, 2018, or net of cash, 47.9%, and 53.9% at December 31, 2017 or, net of cash, 50.9%.

We have paid all of our scheduled loan installments and related loan and swap interest consistently without delay or omission. As a percentage of total liabilities against total assets at fair value, our consolidated leverage (a non-GAAP measure) as computed in accordance with our loan agreements at December 31, 2018 was 62.3%, below the original loan covenant maximum of 70%, which is applicable to all the above loans on a fleet and total liabilities basis. All the loan agreements also include a requirement for the value of the vessel or vessels secured against the related loan to be at least 120% (in three cases 110% and in five other cases the ratio is based on a formula which takes into account vessels on time charters) of the outstanding associated debt at all times. The Company continues to be fully compliant with its scheduled debt service requirements, repaying capital and paying interest promptly in accordance with respective bank agreements without fail. Our existing credit facilities require us and certain of our subsidiaries to comply with certain operating and financial covenant restrictions. See Note 6 Long Term Debt to our audited consolidated financial statements included elsewhere in this report. As at December 31, 2018, the Company and its wholly and majority owned subsidiaries were compliant with the financial covenants in its twenty-nine loan agreements totaling \$1.61 billion, apart from the value-to-loan requirement in three of its loan agreements, due to a fall in vessel values arising from world fleet overcapacity, soft tanker markets and restricted capital available to potential vessel buyers. At December 31, 2018 we were compliant with the leverage ratio covenant contained in all of our bank loans. We do not expect to pay down the Company's loans in 2019 beyond the amounts that we have already classified as current liabilities. Upon an event of default, all the loan agreements, which are secured by mortgages on our vessels, include the right of lenders to accelerate repayments. All our loan agreements and our interest rate swap agreements also contain a cross-default provision that may be triggered by a default under one of our other loans. A cross-default provision means that a notice of default on one loan would result in a default on other agreements. Interest is usually payable at a variable rate, based on six-month LIBOR plus a margin. Interest rate swap instruments currently cover approximately 18% of the outstanding debt as of March 31, 2018. We review our hedging position relating to interest on a continuous basis and have regular discussions with banks with regards to terms for potential new instruments to hedge our interest.

Off-Balance Sheet Arrangements

None.

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Long-Term Contractual Obligations as of December 31, 2018 (in millions of U.S. dollars) were:

	Total	Less than 1 year (2019)	1-3 years (2020-2021)	3-5 years (2022-2023)	More than 5 years (after January 1, 2024)
Contractual Obligations					
Long-term debt obligations (excluding interest)	1,607.1	163.9	497.3	564.0	381.9
Vessel operating lease	43.0	10.8	21.7	10.5	
Interest on long-term debt obligations (including interest rate swap payments)(1)	257.2	68.9	106.1	59.2	23.0
Purchase Obligations (newbuildings)(2)	88.2	57.0	31.2		
Management Fees payable to Tsakos Energy Management (based on existing fleet plus contracted future deliveries as at December 31, 2018)	194.3	20.6	41.5	41.5	90.7
Total	2,189.8	321.2	697.8	675.2	495.6

- (1) The amounts shown above for interest obligations include contractual fixed interest obligations and interest obligations for floating rate debt as at December 31, 2018 based on the amortization schedule for such debt and the average interest rate as described in Item 11. Quantitative and Qualitative Disclosures about Market Risk. Derivative contracts and their implied average fixed rates are also included in the calculations.
- (2) The amounts shown above for purchase obligations (newbuildings) include amounts payable based on contracts agreed with shipbuilding yards for two vessels under construction.

Item 6. Directors, Senior Management and Employees

The following table sets forth, as of March 31, 2019, information for each of our directors and senior managers.

Name	Age	Positions	Year First Elected
Efstratios Georgios Arapoglou	67	Chairman of the Board	2010
Nikolas P. Tsakos	55	President and Chief Executive Officer, Director	1993
Michael G. Jolliffe	69	Vice Chairman of the Board, Director	1993
George V. Saroglou	54	Vice President, Chief Operating Officer, Director	2001
Paul Durham	68	Chief Financial Officer and Chief Accounting Officer	
Vasileios Papageorgiou	72	Chief Marine Officer	
Nicholas F. Tommasino	61	Director	2017
Aristides A.N. Patrinos	71	Director	2006
Efthimios E. Mitropoulos	79	Director	2012
Maria Vassalou	53	Director	2016
Denis Petropoulos	62	Director	2018

Certain biographical information regarding each of these individuals is set forth below.

EFSTRATIOS GEORGIOS ARAPOGLOU**CHAIRMAN OF THE BOARD**

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Mr. Arapoglou is a consultant with an earlier career in International Capital Markets and Corporate & Investment banking and later in managing, restructuring and advising publicly listed Financial Institutions and

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Corporates, primarily in SE Europe and the Middle East. Most recent executive assignments include: Managing Director and Global Head of the Banks and Securities Industry for Citigroup; Chairman and CEO of the National Bank of Greece; Chairman of the Hellenic Banks Association; CEO of Commercial Banking at EFG-Hermes Holding SAE. He is currently holding the following non-executive board positions: Chairman of Titan Cement SA; Independent board member of EFG-Hermes Holding SAE; Board member of Credit Libanais SAL and Board member of Bank Alfalah Ltd., representing the International Finance Corporation (IFC). He is a member of the International Board of Advisors of Tufts University, Boston, MA, a member of the Business Advisory Council for the International MBA program at the Athens University of Economics and Business and is a Trustee of the Athens Partnership, an NGO registered in the U.S. for the support of charity projects for the city of Athens. He has degrees in Mathematics, Engineering and Management from Greek and British Universities.

NIKOLAS P. TSAKOS, Dr.

FOUNDER, PRESIDENT AND CHIEF EXECUTIVE OFFICER

Mr. Nikolas P. Tsakos is the Founder and Chief Executive Officer of Tsakos Energy Navigation (TEN), a pioneering shipping company, established 25 years ago and quoted on the New York Stock Exchange. He comes from a traditional Chios seafaring family and has extensive seagoing experience, having also served as an Officer in the Greek Navy. Mr. Tsakos served as Chairman of INTERTANKO from 2014 to 2018 and was the former President of HELMEPA. He also sits on the boards of a number of other organisations and associations. Mr Tsakos graduated in 1985 from Columbia University in New York with a degree in Economics and Political Science and obtained a Master's Degree in Shipping, Trade and Finance from London's City University Business School in 1987. In 2011, he was awarded an honorary doctorate from the City University Business School, for his pioneering work in the equity financial markets relating to shipping companies. He is married and has 3 children.

MICHAEL G. JOLLIFFE

CO-FOUNDER AND VICE CHAIRMAN

Mr. Jolliffe has been joint Managing Director and then Vice Chairman of our Board since 1993. He is a director of a number of companies in shipping, agency representation, shipbroking capital services and mining. Mr. Jolliffe is Chief Executive Officer of Tsakos Containers Navigation LLC, a shipping company set up in joint venture between the Tsakos and Jolliffe families and Warwick Capital Partners, a London based fund manager. He is also Chairman of the Wighams Group owning companies involved in shipbroking, agency representation and capital markets businesses. Mr. Jolliffe is a director of ColdHarbour Marine, a company manufacturing equipment for the marine industry. He is also Chairman of StealthGas Inc., a shipping company which is quoted on the Nasdaq Stock Exchange and which owns 50 LPG carriers, three product carriers and one crude oil tanker. Mr. Jolliffe is also a Trustee of HoneyPot Children's Charity.

GEORGE V. SAROGLOU

CHIEF OPERATING OFFICER AND VICE PRESIDENT

Mr. Saroglou has been Chief Operating Officer of the Company since 1996. Mr. Saroglou worked for a private Greek information technology systems integrator from 1987 until 1994. From 1995 to 1996 he was employed in the Trading Department of the Tsakos Group. He graduated from McGill University in Canada in 1987 with a Bachelor's Degree in Science (Mathematics). Mr. Saroglou is the cousin of Mr. Tsakos.

PAUL DURHAM

CHIEF FINANCIAL OFFICER AND CHIEF ACCOUNTING OFFICER

Mr. Durham joined Tsakos in 1999 and has served as our Chief Financial Officer and Chief Accounting Officer since 2000. Mr. Durham is a Fellow of the Institute of Chartered Accountants in England & Wales. From 1989 through 1998, Mr. Durham was employed in Athens with the Latsis Group, a shipping, refinery and

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banking enterprise, becoming Financial Director of Shipping in 1995. From 1983 to 1989, Mr. Durham was employed by RJR Nabisco Corporation, serving as audit manager for Europe, Asia and Africa until 1986 and then as financial controller of one of their United Kingdom food divisions. Mr. Durham worked with public accounting firms Ernst & Young (London and Paris) from 1972 to 1979 and Deloitte & Touche (Chicago and Athens) from 1979 to 1983. Mr. Durham is a graduate in Economics from the University of Exeter, England.

VASILEIOS PAPAGEORGIU

CHIEF MARINE OFFICER

Mr. Papageorgiou is our Chief Marine Officer. He monitors our fleet's technical and operational performance. In addition, he heads the newbuilding section and technically led the recent successful large scale fleet expansion and renewal plan. For the past 15 years Mr Papageorgiou has overseen the construction of more than 104 vessels of diverse type and range, amongst them DP Shuttle tankers and LNG vessels. He has an extended technical academic background, holding Bachelor of Science degrees in Naval Architecture and Marine Engineering and Master of Science degrees in Internal Combustion Engines and Management and Economics. Mr. Papageorgiou initiated his career 50 years ago, being employed for a period of 5 years in the Greek ship and repair yards of Skaramanga, Perama and Elefsis, being engaged in the supervision of ship repairs and newbuildings. In 1976 and for a period of 4 years he worked for Chalkis Shipyard and Carras Shipping Co attending repairs and newbuildings in Japan and Yugoslavia. In 1980, Mr. Papageorgiou joined Lloyd's Register of Shipping initially as a junior Ship and Engine Surveyor in the Far East area (Korea, Japan, China, Hong Kong, Philippines). He was the first surveyor of Greek nationality of Lloyd's Register supervising the construction of newbuildings in Asia. Soon he was promoted to Principal Surveyor, thereafter to Senior Principal Surveyor, a position held for the first time by an Engineer of Greek nationality. Successively, in 1990, Lloyd's Register appointed him in the post of area Managing Director for the wider region of Greece, Balkans and Middle East, again a position held for the first time by a Greek citizen. Mr. Papageorgiou is an active participant in a wide range of technical committees.

ARISTIDES A.N. PATRINOS, Ph.D

DIRECTOR

Dr. Patrinos is the Chief Scientist and Director for Research of the Novim Group, a think tank based in Santa Barbara, California, USA. He is also a Distinguished Industry Professor of Mechanical and Biomolecular Engineering at New York University (currently on leave). Since 2006 he is also affiliated with Synthetic Genomics Inc. (SGI) serving as President (2006-2011), Senior Vice President for Corporate Affairs (2011-2012) and currently as a Programs and Policy Advisor. SGI is a US-based privately held company dedicated to developing and commercializing synthetic biology instruments, clean and renewable fuels and chemicals, sustainable food products; and novel medical applications such as synthetic vaccines and other biologics. Dr. Patrinos also serves on the board of directors of Liberty Biosecurity LLC (since December 2016), a USA-based private DNA sequencing and analysis company focused on biodefense and other applications; and on the board of directors of Data Cubed, Inc. (since June 2016) a NYC-based private company focused on healthcare, big data, and human decision-making. Dr. Patrinos also consults for Oak Ridge National Laboratory, the translational medicine program of the University of Pittsburgh, and the Research Council of the State University of New York. From 1976 to 2006, Dr. Patrinos served in the U.S. Department of Energy (DOE) and several of the DOE National Laboratories and engaged in several facets of energy production and use and led key research programs in biology and the environment. He played a leading role in the Human Genome Project and has been a central architect of the genomics revolution. He is a member of many scientific societies and is a recipient of numerous awards and distinctions including three U.S. Presidential Rank Awards, and two Secretary of Energy Gold Medals. He holds a Diploma in Mechanical and Electrical Engineering from the National Technical University of Athens (Metsovion) and a Ph.D. in Mechanical Engineering and Astronautical Sciences from Northwestern University. During 2016, Dr. Patrinos was Senior Adviser to USA Department of Energy Secretary Ernest Moniz. Since January 2018 he is a consultant to the Nuclear Thread Initiative, a foundation based in Washington, DC, dedicated to the prevention of nuclear and bioterror threats.

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EFTHIMIOS E. MITROPOULOS, KCMG

DIRECTOR

Mr. Mitropoulos is Secretary-General Emeritus of the International Maritime Organization (IMO), the United Nations specialized agency responsible for the regulation of international shipping from the safety, security and environmental protection points of view. After 23 years of service at IMO (ten of which as Director of the Maritime Safety Division), he was elected Secretary-General in 2003 and re-elected in 2007 for a total of the maximum time permitted of eight years. As a graduate of both Merchant and Naval Academies of Greece, he spent time at sea as a navigation officer and twenty years as a commissioned Hellenic Coast Guard officer, retiring as a rear admiral, having represented Greece at IMO and various other international forums dealing with shipping matters over a twelve year period and having spent two years as Harbour Master of Corfu. Between 2004 and 2012, he was Chancellor of the World Maritime University, Malmö, Sweden and Chairman of the Governing Board of the International Maritime Law Institute in Malta. He is the author of several books on shipping, including texts on tankers, modern types of merchant ships, safety of navigation and shipping economics and policy. He is Chairman of the Board of the Maria Tsakos Public Benefit Foundation International Centre for Maritime Research and Tradition and Patron of two international maritime organizations. He is a member of several shipping societies in Greece and in the United Kingdom and a recipient of many awards and distinctions from Governments, international organizations and universities. He is an honorary citizen of Galaxidi, Greece and Malmö, Sweden.

MARIA VASSALOU Ph.D

DIRECTOR

Maria Vassalou is a Partner at Perella Weinberg Partners and heads the Global Macro business. Prior to joining Perella Weinberg Partners in 2013, Dr. Vassalou was Head of Asset Allocation at MIO Partners, a subsidiary of McKinsey & Company. She was previously a Global Macro Portfolio Manager at SAC Capital Advisors, LP. Dr. Vassalou joined SAC in 2008 from Soros Fund Management where she was responsible for global quantitative research, as well as the development and management of global quantitative trading strategies. Prior to her career in asset management, Dr. Vassalou was an Associate Professor of Finance at Columbia Business School which she joined in 1995. Dr. Vassalou is a Past President of the European Finance Association and was the Chair of the 2008 European Finance Association Meetings. A Research Affiliate of the Centre for Economic Policy Research (CEPR) in London for many years, Dr. Vassalou is on the Advisory Board of the Chartered Financial Analysts Institute and she is a past member of the Academic Advisory Board of the Vienna-based Guttmann Center of Competence in Portfolio Management. Dr. Vassalou received a Bachelor of Arts in Economics from the University of Athens and she holds a Ph.D. in Financial Economics from London Business School.

NICHOLAS F. TOMMASINO

DIRECTOR

Mr. Tommasino is a retired partner of Deloitte LLP, a global professional services firm focusing on Audit, Tax, Advisory and Consulting services (D&T). With more than 38 years of experience, including 27 as a Partner until his retirement in 2016, he served global clients in a variety of industries including Transportation, Telecommunications, Pharmaceuticals, Agribusiness and Hospitality. He provided services across a wide range of areas including audit, mergers and acquisitions, U.S. listings, including foreign private issuers, and regulatory and risk areas. He held a number of leadership roles from leading the New York Audit and Advisory practice to the Northeast Practice to the entire East Sector culminating in his assuming the role of Chairman and CEO of Deloitte and Touche LLP (D&T) where he was responsible for all aspects of a multi-billion dollar, fourteen thousand personnel, professional services firm. He directed the Development and Implementation of Strategy, Operations, Talent, Quality, Governance and Cultural Cultivation at D&T. He was a Board member of D&T (including Chairman) and chaired the D&T Executive Committee. He serves as a Trustee and Vice President of the Madison Square Boys and Girls Club. He was an associate adjunct professor at Columbia University. He graduated Summa Cum Laude with a BS in accounting from Manhattan College.

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DENIS PETROPOULOS

DIRECTOR

Denis Petropoulos has worked in competitive ship broking for over 35 years and has presented on a broad base of shipping related topics at many major international industry conferences. His knowledge of the energy industry and in particular its shipping requirements for crude oils, products, chemicals, LPG and LNG extends to all the supply and refinery centres around the world. He presently sits on INTERTANKO's Associate Members Committee and on the council of the Baltic Exchange in London. Denis Petropoulos left H.Clarksons in 1985 to open Braemar Tankers, which in 2001 evolved into Braemar Shipping Services PLC, as it is known today, where he sat on the board as Executive Director. In 2011 he opened Braemar's shipbroking office in Singapore and remained there until 2017 heading up the company's expanding operations in the Asia-Australia. He came off the Braemar Shipping Services PLC board in 2015 and remains a shareholder.

Board of Directors

Our business is managed under the direction of the Board, in accordance with the Companies Act 1981 of Bermuda, as amended (the Companies Act) and our Memorandum of Association and Bye-laws. Members of the Board are kept informed of our business through: discussions with the Chairman of the Board, the President and Chief Executive Officer and other members of our management team; the review of materials provided to directors; and, participation in meetings of the Board and its committees. In accordance with our Bye-laws, the Board has specified that the number of directors will be set at no less than five nor more than fifteen. At December 31, 2018 we had nine directors on our Board. At its May 25, 2018 meeting, the Board of Directors approved the appointment of Mr. Petropoulos as an additional Director and as member in the Corporate Governance, Nominating and Compensation Committee. Under our Bye-laws, one third (or the number nearest one third) of the Board (with the exception of any executive director) retires by rotation each year. The Bye-laws require that the one third of the directors to retire by rotation be those who have been in office longest since their last appointment or re-appointment. The Bye-laws specify that where the directors to retire have been in office for an equal length of time, those to retire are to be determined by lot (unless they agree otherwise among themselves).

During the fiscal year ended December 31, 2018, the full Board held four meetings, of which three were in person and one by teleconference. Each director attended all of the meetings of the Board and all of the meetings of committees of which such director was a member in 2018, except for one director, who attended at least 75% of such meetings.

Independence of Directors

The foundation for the Company's corporate governance is the Board's policy that a majority of the members of the Board should be independent. With the exception of the two Executive Directors (Messrs. Tsakos and Saroglou) and one Non-executive Director (Mr. Jolliffe), the Board believes that each of the other incumbent directors (Messrs. Tommasino, Arapoglou, Mitropoulos and Petropoulos and Drs. Patrinos and Vassalou) is independent under the standards established by the New York Stock Exchange (the NYSE) because none has a material relationship with the Company directly or indirectly or any relationship that would interfere with the exercise of their independent judgment as directors of the Company.

The Board made its determination of independence in accordance with its Corporate Governance Guidelines, which specify standards and a process for evaluating director independence. The Guidelines provide that:

A director cannot be independent if he or she fails to meet the objective requirements as to independence under the NYSE listing standards.

If a director meets the objective NYSE standards, he or she will be deemed independent, absent unusual circumstances, if in the current year and the past three years the director has had no related-party

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transaction or relationship with the Company or an interlocking relationship with another entity triggering disclosure under SEC rules.

If a director who meets the objective NYSE independence requirements either has had a disclosable transaction or relationship or the Corporate Governance, Nominating and Compensation Committee requests that the Board consider any other circumstances in determining the director's independence, the Board will make a determination of the director's independence.

To promote open discussion among the independent directors, those directors met three times in 2018 in regularly scheduled executive sessions without participation of the Company's management and will continue to do so in 2019. Dr. Patrinos serves as the Presiding Director for purposes of these meetings.

Documents Establishing Our Corporate Governance

The Board and the Company's management have engaged in an ongoing review of our corporate governance practices in order to oversee our compliance with the applicable corporate governance rules of the NYSE and the SEC.

The Company has adopted a number of key documents that are the foundation of its corporate governance, including:

a Code of Business Conduct and Ethics for Directors, Officers and Employees;

a Corporate Governance, Nominating and Compensation Committee Charter; and

an Audit Committee Charter.

These documents and other important information on our governance, including the Board's Corporate Governance Guidelines, are posted in the Investor Relations section of the Tsakos Energy Navigation Limited website, and may be viewed at <http://www.tenn.gr>. We will also provide any of these documents in hard copy upon the written request of a shareholder. Shareholders may direct their requests to the attention of Investor Relations, c/o George Saroglou or Paul Durham, Tsakos Energy Navigation Limited, 367 Syngrou Avenue, 175 64 P. Faliro, Athens, Greece.

The Board has a long-standing commitment to sound and effective corporate governance practices. The Board's Corporate Governance Guidelines address a number of important governance issues such as:

Selection and monitoring of the performance of the Company's senior management;

Succession planning for the Company's senior management;

Qualifications for membership on the Board;

Functioning of the Board, including the requirement for meetings of the independent directors; and

Standards and procedures for determining the independence of directors.

The Board believes that the Corporate Governance Guidelines and other governance documents meet current requirements and reflect a very high standard of corporate governance.

Committees of the Board

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The Board has established an Audit Committee, a Corporate Governance, Nominating and Compensation Committee, a Business Development and Capital Markets Committee and an Operational, Safety and Environmental (OSE) Committee.

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Audit Committee

The current members of the Audit Committee are Messrs. Tommasino and Arapoglou and Dr. Vassalou, each of whom is an independent director. Mr. Tommasino is the Chairman of the committee. The Audit Committee is governed by a written charter, which is approved and adopted annually by the Board. The Board has determined that the continuing members of the Audit Committee meet the applicable independence requirements, and that all continuing members of the Audit Committee meet the requirement of being financially literate. The Audit Committee held four meetings during the fiscal year ended December 31, 2018. The Audit Committee is appointed by the Board and is responsible for, among other matters:

engaging the Company's external and internal auditors;

approving in advance all audit and non-audit services provided by the auditors;

approving all fees paid to the auditors;

reviewing the qualification and independence of the Company's external auditors;

discussing compliance with accounting standards and any proposals which the external auditors have made regarding the Company's accounting standards with the external auditors;

overseeing the Company's financial reporting and internal control functions;

overseeing the Company's whistleblower's process and protection;

overseeing general compliance with related regulatory requirements;

overseeing the executive management's identification and assessment of risks that the Company faces and the establishment of a risk management structure capable of addressing and mitigating those risks;

overseeing the division of risk-related responsibilities among each of the Board committees as clearly as possible and performing a gap analysis to confirm that the oversight of any risk is not missed;

in conjunction with the full Board, approving the Company-wide risk management program; and

assessing whether the Company's technical and commercial managers have effective procedures for managing risks.

The Board of Directors has determined that each of Messrs. Tommasino, Arapoglou, and Dr. Vassalou, whose biographical details are included herein, qualifies as an audit committee financial expert under current SEC regulations and each is independent in accordance with SEC rules and the listing standards of the NYSE.

Corporate Governance, Nominating and Compensation Committee

The current members of the Corporate Governance, Nominating and Compensation Committee are Messrs. Arapoglou, Mitropoulos, Tommasino and Petropoulos and Drs. Patrinos and Vassalou, each of whom is an independent director. Dr. Patrinos is the Chairman of the committee. The Corporate Governance, Nominating and Compensation Committee is appointed by the Board and is responsible for:

developing and recommending to the Board corporate governance guidelines applicable to the company and keeping such guidelines under review;

overseeing the evaluation of Board and management;

arranging for an annual performance evaluation of the committee and producing an annual report to the Board;

reviewing regularly the Board structure, size and composition and making recommendations to the Board with regard to any adjustments that are deemed necessary;

identifying and nominating candidates for the approval of the Board to fill Board vacancies as and when they arise;

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implementing plans for succession, making recommendations to the Board for the continuation in service of an executive director and recommending directors who are retiring by rotation to be put forward for re-election;

determining the compensation of the non-executive directors, determining and administering the Company's long term incentive plans, including any equity based plans and grants under them; and

producing an annual report on executive compensation as required by the SEC to be included in the Company's annual proxy statement or annual report.

During 2018, there were three meetings of the Corporate Governance, Nominating and Compensation Committee.

Business Development and Capital Markets Committee

The current members of the Business Development and Capital Markets Committee are Messrs. Arapoglou, Jolliffe, Saroglou and Tsakos and Dr. Vassalou. Mr. Jolliffe is Chairman of the committee. The Business Development and Capital Markets Committee was established in 2014 for the purpose of overseeing the financial policies and activities of the Company and its subsidiaries relating to the Company's capital structure and capital raising activities. The committee reviews and approves presentations to, and communications with, shareholders, financial analysts, and potential investors and oversees the establishment and maintenance of the Company's relations with investment banks and financial institutions, as well as the development and expansion of the Company's business, including the evaluation of strategic growth opportunities.

Operational, Safety and Environmental Committee

The current members of the Operational, Safety and Environmental Committee are Messrs. Jolliffe, Mitropoulos Papageorgiou and Dr. Patrinos. Mr. Mitropoulos is Chairman of the committee. The primary role of the OSE Committee is to draw the attention of the Board and the Company's management to issues of concern regarding the safety of crew and vessels and the impact of the maritime industry on the environment, to provide an update on related legislation and technological innovations, and more specifically highlight areas in which the Company itself may play a more active role in being in the forefront of adopting operational procedures and technologies that will ensure maximum safety for crew and vessels and contribute to a better environment.

Board Compensation

We pay no cash compensation to our directors who are executive officers. For the year ended December 31, 2018, the aggregate cash compensation of all of the members of the Board was \$630,000 per the following annual fee schedule which was approved by the shareholders of the Company on May 25, 2018:

Service on the Board \$60,000

Service on the Audit Committee \$20,000

Service on the Business Development and Capital Markets Committee \$10,000

Service on the Operational, Safety and Environmental Committee \$10,000

Service as Chairman of the Corporate Governance, Nominating and Compensation Committee \$10,000

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Service as Chairman of the Operational, Safety and Environmental Committee \$10,000

Service as Chairman of the Audit Committee \$30,000

Service as Chairman of the Business Development and Capital Markets Committee \$30,000

Service as Chairman of the Board \$40,000

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No fees are paid for service on the Corporate Governance, and Nominating and Compensation Committee.

We do not provide benefits for directors upon termination of their service with us.

Management Company

Tsakos Energy Management, under its management agreement with us, provides overall executive and commercial management of our affairs in exchange for a monthly management fee. See Management and Other Fees in Item 7 for more information on the management agreement and the management fees we paid for the fiscal year ended December 31, 2018.

Management Compensation

Messrs. Tsakos, Saroglou, Durham and Papageorgiou serve as President and Chief Executive Officer, Vice President and Chief Operating Officer, Chief Financial Officer and Chief Accounting Officer, and Chief Marine Officer, respectively. Such individuals are employees of Tsakos Energy Management, except for Mr. Papageorgiou who is an employee of Tsakos Shipping, and, except for the equity compensation discussed below and the compensation paid to Mr. Papageorgiou for service on the OSE Committee, are not directly compensated by the Company. Although he is not a member of the Board, our Chief Marine Officer, Mr. Papageorgiou serves on the Operational, Safety and Environmental Committee and receives the same \$10,000 per annum cash compensation for service on such committee as is paid to non-executive members of the Board serving thereon.

From 2010 to 2014 the Corporate Governance, Nominating and Compensation Committee did not establish a performance incentive program for Tsakos Energy Management. In May 2015, a management incentive award program based on various performance criteria was approved by the Board of Directors. In October 2018, June 2017 and May 2016, the Board of Directors decided to reward the management company with an award of \$0.2 million, \$0.6 million and \$2.6 million, respectively, based on various performance criteria, and taking into account cash availability and market volatility. The award is accounted for on a straight-line basis within the year it is determined. In addition, an amount of \$0.8 million and \$0.6 million was awarded to Tsakos Energy Management relating to services provided towards an equity offering during 2018 and 2017, respectively.

Employees

Tsakos Energy Navigation Limited has no salaried employees. All crew members are employed by the owning-company of the vessel on which they serve, except where the vessel may be on a bareboat charter-out, or where the vessels or the crewing thereof, are under third-party management arranged by our technical managers. All vessel owning-companies are subsidiaries of Tsakos Energy Navigation Limited. Approximately 1,900 officers and crew members served on board the vessels we own and were managed by our technical managers as of December 31, 2018.

Share Ownership

The common shares beneficially owned by our directors and senior managers and/or companies affiliated with these individuals are disclosed in Item 7. Major Shareholders and Related Party Transactions below.

Stock Compensation Plan

At the 2012 Annual Meeting of Shareholders, our shareholders approved a share-based incentive plan (the 2012 Plan). This plan permits us to grant share options or other share based awards to our directors and officers, to the officers of the vessels in the fleet, and to the directors, officers and employees of our manager, Tsakos Energy Management, and our commercial manager, Tsakos Shipping.

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The purpose of the 2012 Plan is to provide a means to attract, retain, motivate and reward the persons whose performance of administrative, commercial, management, technical and maritime services are important for the Company by increasing their ownership in our Company. Awards under the 2012 Plan may include options to purchase our common shares, restricted share awards, other share-based awards (including share appreciation rights granted separately or in tandem with other awards) or a combination thereof.

The 2012 Plan is administered by our Corporate Governance, Nominating and Compensation Committee. Such committee has the authority, among other things, to: (i) select the present or prospective directors, officers, consultants and other personnel entitled to receive awards under the 2012 Plan; (ii) determine the form of awards, or combinations of awards; (iii) determine the number of shares covered by an award; and (iv) determine the terms and conditions of any awards granted under the 2012 Plan, including any restrictions or limitations on transfer, any vesting schedules or the acceleration of vesting schedules and any forfeiture provision or waiver of the same. The 2012 Plan authorizes the issuance of up to 1,000,000 Common Shares in the form of restricted stock units (RSUs) or options. In 2017, 110,000 RSUs were issued to the non-executive directors of the Company, which vested immediately. In 2016, 87,500 RSUs were also issued to the non-executive directors of the Company, which vested immediately. In 2018, no RSUs or other awards were issued. As of December 31, 2018, there were no outstanding (non-vested) RSUs.

Total stock compensation expense recognized for the year ended December 31, 2018 was \$nil, for the year ended December 31, 2017 was \$0.5 million and for the year ended December 31, 2016 was \$0.5 million.

Item 7. Major Shareholders and Related Party Transactions

It is our policy that transactions with related parties are entered into on terms no less favorable to us than would exist if these transactions were entered into with unrelated third parties on an arm's length basis. Tsakos Energy Management has undertaken to ensure that all transactions with related parties are reported to the board of directors. Under the management agreement, any such transaction or series of transactions involving payments in excess of \$100,000 and which is not in the ordinary course of business requires the prior consent of the board of directors. Transactions not involving payments in excess of \$100,000 may be reported quarterly to the board of directors.

To help minimize any conflict between our interests and the interests of other companies affiliated with the Tsakos family and the owners of other vessels managed by such companies if an opportunity to purchase a tanker which is 10 years of age or younger is referred to or developed by Tsakos Shipping, Tsakos Shipping will notify us of this opportunity and allow us a 10 business day period within which to decide whether or not to accept the opportunity before offering it to any of its affiliates or other clients.

The following table sets forth the amounts charged by related parties for services rendered (in thousands of U.S. dollars):

	2018	2017	2016
Tsakos Shipping and Trading S.A. (commissions)	6,580	6,532	5,989
Tsakos Energy Management Limited (management fees)	20,169	19,480	16,935
Tsakos Columbia Shipmanagement S.A. (special charges)	2,389	1,518	2,136
Argosy Insurance Company Limited (insurance premiums)	9,799	10,199	9,036
AirMania Travel S.A. (travel services)	5,345	5,404	4,866
Total expenses with related parties	44,282	43,133	38,962

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Management Affiliations

Nikolas P. Tsakos, our president, chief executive officer and one of our directors, is an officer, director and the sole shareholder of Tsakos Energy Management. He is also the son of the founder of Tsakos Shipping.

George V. Saroglou, our chief operating officer and one of our directors, is a cousin of Nikolas P. Tsakos.

Management and Other Fees

We prepay or reimburse our technical manager at cost for all vessel operating expenses payable by them in their capacity as technical manager of the fleet. At December 31, 2018, outstanding advances to TCM amounted to \$20.9 million and there was an amount due to Tsakos Shipping of \$0.5 million. At December 31, 2017, outstanding advances to TCM amounted to \$14.2 million and there was an amount due to Tsakos Shipping of \$0.3 million. In 2018, an additional amount of \$2.4 million was paid in fees directly by the Company to TCM for additional services it provided or arranged in relation to information technology, application of corporate governance procedures required by the Company and seafarers training

From the management fee we pay Tsakos Energy Management, Tsakos Energy Management in turn pays a management fee to TCM for its services as technical manager of the fleet. Under the terms of our management agreement with Tsakos Energy Management, we paid Tsakos Energy Management total management fees of \$20.2 million in 2018. An additional amount of \$2.4 million for 2018 and \$1.5 million for 2017 was paid in fees directly by the Company to TCM, for extra services provided or arranged by TCM in relation to application of corporate governance procedures required by the Company and seafarers training. In 2018, 2017 and 2016, we granted Tsakos Energy Management an incentive award of \$0.20 million, \$0.6 million and \$2.6 million, respectively.

Management Agreement

Our management agreement with Tsakos Energy Management was amended and restated on March 8, 2007 and has a term of ten years that renews annually. Tsakos Energy Management may terminate the management agreement at any time upon not less than one year's notice. In addition, either party may terminate the management agreement under certain circumstances, including the following:

certain events of bankruptcy or liquidation involving either party;

a material breach by either party; or

a failure by Tsakos Energy Management, for a continuous period of two months, materially to perform its duties because of certain events of force majeure.

Moreover, following a change in control of us, which would occur if at least one director were elected to our Board without having been recommended by our existing Board, Tsakos Energy Management may terminate the agreement on 10 business days' notice. If Tsakos Energy Management terminates the agreement for this reason, then we would immediately be obligated to pay Tsakos Energy Management the present discounted value of all of the payments that would have otherwise been due under the management agreement up until June 30 of the tenth year following the date of termination plus the average of the incentive awards previously paid to Tsakos Energy Management multiplied by ten. Under these terms, therefore, a termination as of December 31, 2018 would have resulted in a payment of approximately \$161.8 million. Under the terms of the Management Agreement between the Company and Tsakos Energy Management, the Company may terminate the agreement only under specific circumstances, such as breach of contract by the manager and change of control in the shareholding of the manager without the prior approval of the Company's Board of Directors

Under the management agreement, we pay monthly fees for Tsakos Energy Management's management of the vessels in the fleet. These fees are based on the number of ships in the fleet. The per-ship charges begin to

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accrue for a vessel at the point that a newbuilding contract is acquired, which may be 18 to 24 months before the vessel begins to earn revenue. For 2019, monthly fees for operating conventional vessels continues to be \$27,500 per owned vessel and \$20,400 for chartered-in vessels and vessels bareboat chartered out. Monthly management fees for the DP2 shuttle tankers continue to be \$35,000 per vessel. Monthly management fees for the suezmax *Eurochampion 2004*, the aframax *Maria Princess*, *Sapporo Princess* and the VLCCs *Ulysses and Hercules*, were \$27,500 of which \$14,503 was payable to a third party manager. The monthly fee for the LNG carriers is \$36,877 of which \$10,000 is payable to Tsakos Energy Management and \$26,877 to a third party manager. We paid Tsakos Energy Management aggregate management fees of \$20.2 million in 2018, \$19.5 million in 2017 and \$16.9 million in 2016.

Chartering Commissions, Sale and Purchase Commissions and Vessel New-delivery Fees

We pay a chartering commission to Tsakos Shipping equal to 1.25% on all freights, hires and demurrages involving our vessels. Tsakos Shipping may also charge a brokerage commission on the sale of a vessel. In 2018, the Company sold the VLCC tanker *Millennium* and for this service, Tsakos Shipping charged a brokerage commission of \$0.1 million which was 0.5% of the sale price of the vessel. In November 2015, the Company chartered the VLCC *Millennium* to a client company of Tsakos Shipping for a daily rate of \$15,000 which ended in September 2017. We have been charged by Tsakos Shipping chartering and brokerage commissions aggregating \$6.6 million in 2018.

Tsakos Shipping may also charge a fee of \$0.2 million (or such other sum as may be agreed) on delivery of each newbuilding vessel in payment for the cost of design and supervision of the newbuilding by Tsakos Shipping. This amount is added to the cost of the vessels concerned and is amortized over their remaining lives. In 2017, \$3.1 million in aggregate was charged for supervision fees on fifteen vessels which were delivered between May 2016 and October 2017. In 2018 and 2016, no such fee was charged.

Captive Insurance Policies

We pay Argosy Insurance Company, an affiliate of Tsakos family interests, premiums to provide hull and machinery, increased value and loss of hire insurance for our vessels. In 2018, we were charged an aggregate of \$9.8 million by Argosy for insurance premiums.

Travel Services

We use AirMania Travel S.A., an affiliate of Tsakos family interests, for travel services primarily to transport our crews to and from our vessels. In 2018, we were charged an aggregate of \$5.3 million by AirMania for travel services.

Major Shareholders

The following table sets forth certain information regarding the beneficial ownership of our outstanding common shares as of April 2, 2019 held by:

each person or entity that we know beneficially owns 5% or more of our common shares; and

all our directors and officers as a group.

Beneficial ownership is determined in accordance with the rules of the SEC. In general, a person who has or shares voting power or investment power with respect to securities is treated as a beneficial owner of those securities. Beneficial ownership does not necessarily imply that the named person has the economic or other benefits of ownership. Under SEC rules, shares subject to options, warrants or rights currently exercisable or exercisable within 60 days are considered as beneficially owned by the person holding those options, warrants or rights. The applicable percentage of ownership of each shareholder is based on 87,604,645 Common Shares outstanding on April 2, 2019.

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Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Outstanding Common Shares
Tsakos Holdings Foundation(1)	15,815,021	18.05%
Redmont Trading Corp.(1)	3,690,007	4.21%
First Tsakos Investments Inc.(1)	12,125,014	13.84%
Kelley Enterprises Inc.(1)	7,600,007	8.68%
Marsland Holdings Limited(1)	4,525,007	5.17%
Kopernik Global Investors, LLC (3)	7,763,996	8.86%
Sea Consolidation S.A. of Panama(2)	6,200,000	7.08%
Methoni Shipping Company Limited (2)	5,050,000	5.76%
Intermed Champion S.A. of Panama(2)	2,730,000	3.12%
All officers and directors as a group (11 persons)(4)	622,077	0.71%

- (1) First Tsakos Investments Inc. (First Tsakos) is the sole holder of the outstanding capital stock of Kelley Enterprises Inc. (Kelley) and Marsland Holdings Limited (Marsland) and may be deemed to have shared voting and dispositive power of the common shares reported by Kelley and Marsland. Tsakos Holdings Foundation (Tsakos Holdings) is the sole holder of outstanding capital stock of First Tsakos and Redmont Trading Corp. (Redmont) and may be deemed to have shared voting and dispositive power of the common shares reported by Kelley, Marsland and Redmont. According to a Schedule 13D/A filed on April 12, 2018 by Tsakos Holdings, First Tsakos, Kelley, Marsland and Redmont, Tsakos Holdings is a Liechtenstein foundation whose beneficiaries include persons and entities affiliated with the Tsakos family, charitable institutions and other unaffiliated persons and entities. The council which controls Tsakos Holdings consists of five members, two of whom are members of the Tsakos family. Under the rules of the SEC, beneficial ownership includes the power to directly or indirectly vote or dispose of securities or to share such power. It does not necessarily imply economic ownership of the securities. Members of the Tsakos family are among the five council members of Tsakos Holdings and accordingly may be deemed to share voting and/or dispositive power with respect to the shares owned by Tsakos Holdings and may be deemed the beneficial owners of such shares.
- (2) According to the Schedule 13D/A filed on April 12, 2018 by Sea Consolidation S.A. of Panama (Sea Consolidation), Intermed Champion S.A. of Panama (Intermed), Methoni Shipping Company Limited (Methoni), Panayotis Tsakos and Nikolas Tsakos, Sea Consolidation, Intermed, Methoni and Nikolas Tsakos beneficially owned 6,200,000, 2,730,000, 5,050,000 and 14,184,000 common shares, respectively. According to the Schedule 13D/A, each of Panayotis Tsakos and Nikolas Tsakos, our president and chief executive officer, shares voting and dispositive control over the common shares held by each of Sea Consolidation, Intermed and Methoni and may be deemed to indirectly beneficially own such common shares. Panayotis Tsakos is the father of Nikolas Tsakos.
- (3) Based solely upon the Amendment No. 1 to the Schedule 13G filed by Kopernik Global Investors, LLC on February 13, 2019.
- (4) Does not include shares owned by Tsakos Holdings, First Tsakos, Kelley, Marsland, Redmont Trading Corp., Sea Consolidation, Intermed or Methoni.

Entities affiliated with Panayotis Tsakos and Nikolas Tsakos own 15,635, or 0.8%, of our outstanding Series B Preferred Shares, 137,694, or 6.9%, of our outstanding Series C Preferred Shares, 290,818, or 8.5%, of our outstanding Series D Preferred Shares, 100,400, or 2.2%, of our outstanding Series E Preferred Shares, and 190,000, or 3.2%, of our outstanding Series F Preferred Shares as of April 2, 2019. Entities affiliated with Nikolas Tsakos own 140,000, or 7.0%, of our outstanding Series B Preferred Shares, 140,000, or 7.0%, of our outstanding Series C Preferred Shares, and 35,000, or 0.8%, of our outstanding Series E Preferred Shares as of April 2, 2019. Methoni owns 2,694, or 0.1%, of our outstanding Series B Preferred Shares, and 2,000, or 0.1%, of our outstanding Series C Preferred Shares, as of April 2, 2019. Kelley owns 700, or less than 0.1%, of our outstanding Series D Preferred Shares as of April 2, 2019. Marsland owns 1,200, or less than 0.1%, of our outstanding Series D Preferred Shares as of April 2, 2019.

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To our knowledge, none of the entities in the above table own any other shares, and none of our other officers or directors own 1% or more, of our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares as of April 2, 2019.

As of April 2, 2019, we had 22 holders of record of our common shares. These shareholders of record include CEDEFEST which, as nominee for the Depository Trust Company, is the record holder of 87,444,445 common shares representing approximately 99.82% of our outstanding common shares. CEDEFEST is the nominee of banks and brokers which hold shares on behalf of their customers, the beneficial owners of the shares, who may or may not be resident in the United States. However, apart from the shareholders indicated in the footnotes (1) and (2) above and certain of the directors and officers, we believe that the majority of the remaining shareholders are resident in the United States. The Company is not aware of any arrangements the operation of which may at a subsequent date result in a change of control of the Company.

Item 8. Financial Information

See Item 18. Financial Statements below.

Significant Changes. No significant change has occurred since the date of the annual financial statements included in this Annual Report on Form 20-F.

Legal Proceedings. We are involved in litigation from time to time in the ordinary course of business. In our opinion, the litigation in which we are involved as of April 2, 2019, individually or in the aggregate, is not material to us.

Dividend Policy. While we cannot assure you that we will do so, and subject to the limitations discussed below, we intend to pay quarterly cash dividends on our common shares. The Board of Directors will give consideration each April to the declaration of a supplementary dividend.

On May 10, 2013, we issued 2,000,000 8% Series B Cumulative Redeemable Perpetual Preferred Shares. The holders of those shares are entitled to a quarterly dividend of \$0.50 per share payable quarterly in arrears on the 30th day of January, April, July and October each year when, as and if declared by our Board of Directors. If the Series B Preferred Shares are not redeemed in whole by July 30, 2019, the dividend rate on the Series B Preferred Shares would increase.

On September 30, 2013, we issued 2,000,000 8.875% Series C Cumulative Redeemable Perpetual Preferred Shares. The holders of those shares are entitled to a quarterly dividend of \$0.55469 per share payable quarterly in arrears on the 30th day of January, April, July and October each year when, as and if declared by our Board of Directors. If the Series C Preferred Shares are not redeemed in whole by October 30, 2020, the dividend rate on the Series C Preferred Shares would increase.

On April 22, 2015, we issued 3,400,000 8.75% Series D Cumulative Redeemable Perpetual Preferred Shares. The holders of those shares are entitled to a quarterly dividend of \$0.546875 per share payable quarterly in arrears on the 28th day of February, May, August and November each year when, as and if declared by our Board of Directors.

On April 5, 2017, we issued 4,600,000 Series E Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares. Dividends on the Series E Preferred Shares are cumulative from the date of original issue and will be payable quarterly in arrears on the 28th day of February, May, August and November of each year, commencing May 28, 2017, when, as and if declared by our Board of Directors. Dividends will be payable from cash available for dividends (i) from and including the original issue date to, but excluding, May 28, 2027 at a fixed rate equal to 9.25% per annum of the stated liquidation preference and (ii) from and including May 28, 2027, at a floating rate equal to three-month LIBOR plus a spread of 6.881% per annum of the stated liquidation preference. The quarterly dividend to which holders of the Series E Preferred Shares will be entitled during the fixed rate period will be \$0.578125 per share, when, as and if declared by our Board of Directors.

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On June 28 and July 10, 2018, respectively, we issued 5,400,000 and 600,000 Series F Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares. Dividends on the Series F Preferred Shares are cumulative from the date of original issue and will be payable quarterly in arrears on the 30th day of January, April, July and October of each year, commencing October 30, 2018, when, as and if declared by our Board of Directors. Dividends will be payable from cash available for dividends (i) from and including the original issue date to, but excluding, July 30, 2028 at a fixed rate equal to 9.50% per annum of the stated liquidation preference and (ii) from and including July 30, 2028, at a floating rate equal to three-month LIBOR plus a spread of 6.54% per annum of the stated liquidation preference. The quarterly dividend to which holders of the Series F Preferred Shares will be entitled during the fixed rate period will be \$0.59375 per share, when, as and if declared by our Board of Directors.

There can be no assurance that we will pay dividends or as to the amount of any dividend. The payment and the amount will be subject to the discretion of our board of directors and will depend, among other things, on available cash balances, anticipated cash needs, our results of operations, our financial condition, and any loan agreement restrictions binding us or our subsidiaries, as well as other relevant factors. For example, if we earned a capital gain on the sale of a vessel or newbuilding contract, we could determine to reinvest that gain instead of using it to pay dividends. Depending on our operating performance for that year, this could result in no dividend at all despite the existence of net income, or a dividend that represents a lower percentage of our net income. Of course, any payment of cash dividends could slow our ability to renew and expand our fleet.

Because we are holding a company with no material assets other than the stock of our subsidiaries, our ability to pay dividends will depend on the earnings and cash flow of our subsidiaries and their ability to pay dividends to us.

Under the terms of certain of our existing credit facilities, we are permitted to declare or pay a cash dividend in any year as long as we are not in default under such credit facilities and an event of default would not occur as a result of the payment of such dividends. In addition, cash dividends can be paid only to the extent permitted by Bermuda law. See Item 10. Additional Information Description of Share Capital Bermuda Law Dividends. See Item 3. Key Information Risks Related to our Common and Preferred Shares We may not be able to pay cash dividends on our common shares or preferred shares as intended if market conditions change.

Item 9. The Offer and Listing

Our common shares are listed on the New York Stock Exchange and the Bermuda Stock Exchange. Following a decision of our Board of Directors, our common shares were de-listed from Oslo Børs on March 18, 2005. Our common shares are not actively traded on the Bermuda Stock Exchange.

Trading on the New York Stock Exchange

Since our initial public offering in the United States in March of 2002, our common shares have been listed on the New York Stock Exchange under the ticker symbol TNP.

Since May 2013, our Series B Preferred Shares have been listed on the New York Stock Exchange under the ticker symbol TNP-PB.

Since October 2013, our Series C Preferred Shares have been listed on the New York Stock Exchange under the ticker symbol TNP PR C.

Since April 2015, our Series D Preferred Shares have been listed on the New York Stock Exchange under the ticker symbol TNP PR D.

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Since April 6, 2017, our Series E Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares have been listed on the New York Stock Exchange under the ticker symbol TNP PR E .

Since July 3, 2018, our Series F Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares have been listed on the New York Stock Exchange under the ticker symbol TNP PR F .

Item 10. Additional Information**DESCRIPTION OF SHARE CAPITAL**

Our authorized share capital consists of 175,000,000 common shares, par value \$1.00 per share, and 25,000,000 blank check preferred shares, \$1.00 par value per share. 2,300,000 shares have been designated 8.00% Series B Cumulative Redeemable Perpetual Preferred Shares as described below under Series B Preferred Shares, 2,300,000 shares have been designated 8.875% Series C Cumulative Redeemable Perpetual Preferred Shares as described below under Series C Preferred Shares, 3,910,000 shares have been designated 8.75% Series D Cumulative Redeemable Perpetual Preferred Shares as described below under Series D Preferred Shares, 4,600,000 shares have been designated Series E Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares as described below under Series E Preferred Shares and 6,210,000 shares have been designated Series F Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares as described below under Series F Preferred Shares. As of April 2, 2019, there were outstanding: 87,604,645 common shares, 2,000,000 8.00% Series B Cumulative Redeemable Perpetual Preferred Shares, 2,000,000 8.875% Series C Cumulative Redeemable Preferred Shares, 3,424,803 8.75% Series D Cumulative Redeemable Perpetual Preferred Shares, 4,600,000 9.25% Series E Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares and 6,000,000 9.50% Series F Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares.

Common Shares

The holders of common shares are entitled to receive dividends out of assets legally available for that purpose at times and in amounts as our board of directors may from time to time determine. Each shareholder is entitled to one vote for each common share held on all matters submitted to a vote of shareholders. Cumulative voting for the election of directors is not provided for in our Memorandum of Association or Bye-laws, which means that the holders of a majority of the common shares voted can elect all of the directors then standing for election. Our Bye-laws provide for a staggered board of directors, with one-third of our non-executive directors being selected each year. The common shares are not entitled to preemptive rights and are not subject to conversion or redemption. Upon the occurrence of a liquidation, dissolution or winding-up, the holders of common shares would be entitled to share ratably in the distribution of all of our assets remaining available for distribution after satisfaction of all our liabilities.

Preferred Shares

Under our Bye-laws, our board of directors has the authority to issue preferred shares in one or more series, and to establish the terms and preferences of the shares of each series, up to the number of preferred shares authorized under our constitutive documents as described above. Holders of each series of preferred shares will be entitled to receive cash dividends, when, as and if declared by our board of directors out of funds legally available for dividends. Such distributions will be made before any distribution is made on any securities ranking junior in relation to preferred shares in liquidation, including common shares.

Series B Preferred Shares

We have 2,000,000 of our 8.00% Series B Cumulative Redeemable Perpetual Preferred Shares outstanding as of April 2, 2019, which were issued on May 10, 2013. The initial liquidation preference of the Series B

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Preferred Shares is \$25.00 per share, subject to adjustment. The shares are redeemable by us at any time on or after July 30, 2018. The shares carry an annual dividend rate of 8.00% per \$25.00 of liquidation preference per share, subject to increase if (i) we fail to comply with certain covenants, (ii) we experience certain defaults under any of our credit facilities, (iii) four quarterly dividends payable on the Series B Preferred Shares are in arrears or (iv) the Series B Preferred Shares are not redeemed in whole by July 30, 2019. The Series B Preferred Shares represent perpetual equity interests in us and, unlike our indebtedness, do not give rise to a claim for payment of a principal amount at a particular date. As such, the Series B Preferred Shares rank junior to all of our indebtedness and other liabilities with respect to assets available to satisfy claims against us. Upon any liquidation or dissolution of us, holders of the Series B Preferred Shares and any pari passu securities will generally be entitled to receive, on a pro rata basis, the liquidation preference of the Series B Preferred Shares, or, in the case of pari passu securities, the liquidation preference of such series of pari passu securities, plus an amount equal to accumulated and unpaid dividends ratably with any pari passu securities, after satisfaction of all liabilities to our creditors and holders of securities senior to the Series B Preferred Shares, but before any distribution is made to or set aside for the holders of junior shares, including our common shares. The Series B Preferred Shares rank pari passu with the Series C Preferred Shares, the Series D Preferred Shares, the Series E Preferred Shares and the Series F Preferred Shares. The Series B Preferred Shares are not convertible into common shares or other of our securities, do not have exchange rights and are not entitled to any preemptive or similar rights.

Series C Preferred Shares

We have 2,000,000 of our 8.875% Series C Cumulative Redeemable Perpetual Preferred Shares outstanding as of April 2, 2019, which were issued on September 30, 2013. The initial liquidation preference of the Series C Preferred Shares is \$25.00 per share, subject to adjustment. The shares are redeemable by us at any time on or after October 30, 2018. The shares carry an annual dividend rate of 8.875% per \$25.00 of liquidation preference per share, subject to increase if (i) we fail to comply with certain covenants, (ii) we experience certain defaults under any of our credit facilities, (iii) four quarterly dividends payable on the Series C Preferred Shares are in arrears, or (iv) the Series C Preferred Shares are not redeemed in whole by October 30, 2020. The Series C Preferred Shares represent perpetual equity interests in us and, unlike our indebtedness, do not give rise to a claim for payment of a principal amount at a particular date. As such, the Series C Preferred Shares rank junior to all of our indebtedness and other liabilities with respect to assets available to satisfy claims against us. Upon any liquidation or dissolution of us, holders of the Series C Preferred Shares and any pari passu securities will generally be entitled to receive, on a pro rata basis, the liquidation preference of the Series C Preferred Shares, or, in the case of pari passu securities, the liquidation preference of such series of pari passu securities, plus an amount equal to accumulated and unpaid dividends ratably with any pari passu securities, after satisfaction of all liabilities to our creditors and holders of securities senior to the Series C Preferred Shares, but before any distribution is made to or set aside for the holders of junior shares, including our common shares. The Series C Preferred Shares rank pari passu with the Series B Preferred Shares, the Series D Preferred Shares, the Series E Preferred Shares and the Series F Preferred Shares. The Series C Preferred Shares are not convertible into common shares or other of our securities, do not have exchange rights and their holders are not entitled to any preemptive or similar rights.

Series D Preferred Shares

We have 3,424,803 of our 8.75% Series D Cumulative Redeemable Perpetual Preferred Shares outstanding as of April 2, 2019, which were issued on April 29, 2015 and in the first quarter of 2017. The initial liquidation preference of the Series D Preferred Shares is \$25.00 per share, subject to adjustment. The shares are redeemable by us at any time on or after April 29, 2020. The shares carry an annual dividend rate of 8.75% per \$25.00 of liquidation preference per share. The Series D Preferred Shares represent perpetual equity interests in us and, unlike our indebtedness, do not give rise to a claim for payment of a principal amount at a particular date. As such, the Series D Preferred Shares rank junior to all of our indebtedness and other liabilities with respect to assets available to satisfy claims against us. Upon any liquidation or dissolution of us, holders of the Series D

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Preferred Shares and any pari passu securities will generally be entitled to receive, on a pro rata basis, the liquidation preference of the Series D Preferred Shares, or, in the case of pari passu securities, the liquidation preference of such series of pari passu securities, plus an amount equal to accumulated and unpaid dividends ratably with any pari passu securities, after satisfaction of all liabilities to our creditors and holders of securities senior to the Series D Preferred Shares, but before any distribution is made to or set aside for the holders of junior shares, including our common shares. The Series D Preferred Shares rank pari passu with the Series B Preferred Shares, Series C Preferred Shares, the Series E Preferred Shares and the Series F Preferred Shares. The Series D Preferred Shares are not convertible into common shares or other of our securities, do not have exchange rights and their holders are not entitled to any preemptive or similar rights.

Series E Preferred Shares

We had 4,600,000 of our 9.25% Series E Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares outstanding as of April 2, 2019, which were issued on April 5, 2017. The initial liquidation preference of the Series E Preferred Shares is \$25.00 per share, subject to adjustment. The shares are redeemable by us at any time on or after May 28, 2027. Dividends on the Series E Preferred Shares are cumulative from the date of original issue and will be payable quarterly in arrears on the 28th day of February, May, August and November of each year, commencing May 28, 2017, when, as and if declared by our board of directors. Dividends will be payable from cash available for dividends (i) from and including the original issue date to, but excluding, May 28, 2027 at a fixed rate equal to 9.25% per annum of the stated liquidation preference and (ii) from and including May 28, 2027, at a floating rate equal to three-month LIBOR plus a spread of 6.881% per annum of the stated liquidation preference. The Series E Preferred Shares represent perpetual equity interests in us and, unlike our indebtedness, do not give rise to a claim for payment of a principal amount at a particular date. As such, the Series E Preferred Shares rank junior to all of our indebtedness and other liabilities with respect to assets available to satisfy claims against us. Upon any liquidation or dissolution of us, holders of the Series E Preferred Shares and any pari passu securities will generally be entitled to receive, on a pro rata basis, the liquidation preference of the Series E Preferred Shares, or, in the case of pari passu securities, the liquidation preference of such series of pari passu securities, plus an amount equal to accumulated and unpaid dividends ratably with any pari passu securities, after satisfaction of all liabilities to our creditors and holders of securities senior to the Series E Preferred Shares, but before any distribution is made to or set aside for the holders of junior shares, including our common shares. The Series E Preferred Shares rank pari passu with the Series B Preferred Shares, Series C Preferred Shares, the Series D Preferred Shares and the Series F Preferred Shares. The Series E Preferred Shares are not convertible into common shares or other of our securities, do not have exchange rights and their holders are not entitled to any preemptive or similar rights.

Series F Preferred Shares

We had 6,000,000 of our 9.50% Series F Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares outstanding as of April 2, 2019, which were issued on June 28, 2018. The initial liquidation preference of the Series F Preferred Shares is \$25.00 per share, subject to adjustment. The shares are redeemable by us at any time on or after July 30, 2028. Dividends on the Series F Preferred Shares are cumulative from the date of original issue and will be payable quarterly in arrears on the 30th day of January, April, July and October of each year, commencing October 30, 2018, when, as and if declared by our board of directors. Dividends will be payable from cash available for dividends (i) from and including the original issue date to, but excluding, July 30, 2028 at a fixed rate equal to 9.50% per annum of the stated liquidation preference and (ii) from and including July 30, 2028, at a floating rate equal to three-month LIBOR plus a spread of 6.54% per annum of the stated liquidation preference. The Series F Preferred Shares represent perpetual equity interests in us and, unlike our indebtedness, do not give rise to a claim for payment of a principal amount at a particular date. As such, the Series F Preferred Shares rank junior to all of our indebtedness and other liabilities with respect to assets available to satisfy claims against us. Upon any liquidation or dissolution of us, holders of the Series F Preferred Shares and any pari passu securities will generally be entitled to receive, on a pro rata basis, the liquidation preference of the Series F Preferred Shares, or, in the case of pari passu securities, the liquidation preference of

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such series of pari passu securities, plus an amount equal to accumulated and unpaid dividends ratably with any pari passu securities, after satisfaction of all liabilities to our creditors and holders of securities senior to the Series F Preferred Shares, but before any distribution is made to or set aside for the holders of junior shares, including our common shares. The Series F Preferred Shares rank pari passu with the Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares and Series E Preferred. The Series F Preferred Shares are not convertible into common shares or other of our securities, do not have exchange rights and their holders are not entitled to any preemptive or similar rights.

Bermuda Law

We are an exempted company organized under the Companies Act 1981 of Bermuda, as amended (the Companies Act 1981 of Bermuda). Bermuda law and our Memorandum of Association and Bye-laws govern the rights of our shareholders. Our objects and purposes are set forth in paragraph 6 and the Schedule to our Memorandum of Association. Our objects and purposes include to act and to perform all the functions of a holding company in all its branches and to coordinate the policy and administration of any subsidiary company or companies wherever incorporated or carrying on business or of any group of companies of which we or any subsidiary of ours is a member or which are in any manner controlled directly or indirectly by us. The Companies Act 1981 of Bermuda differs in some material respects from laws generally applicable to United States corporations and their shareholders. The following is a summary of the material provisions of Bermuda law and our organizational documents. You should read the more detailed provisions of our Memorandum of Association and Bye-laws for provisions that may be important to you. You can obtain copies of these documents by following the directions outlined in Available Information.

Dividends. Under Bermuda law, a company may not pay dividends that are declared from time to time by its board of directors or make a distribution out of contributed surplus if there are reasonable grounds for believing that the company is, or would after the payment be, unable to pay its liabilities as they become due or that the realizable value of its assets would then be less than its liabilities.

Voting rights. Under Bermuda law, except as otherwise provided in the Companies Act 1981 of Bermuda or our Bye-laws, questions brought before a general meeting of shareholders are decided by a majority vote of common shareholders present at the meeting. Our Bye-laws provide that, subject to the provisions of the Companies Act 1981 of Bermuda, any question proposed for the consideration of the shareholders will be decided in a general meeting by a simple majority of the votes cast, on a show of hands, with each shareholder present (and each person holding proxies for any shareholder) entitled to one vote for each common share held by the common shareholder, except for special situations where a shareholder has lost the right to vote because he has failed to comply with the terms of a notice requiring him to provide information to the company pursuant to the Bye-laws, or his voting rights have been partly suspended under the Bye-laws as a consequence of becoming an interested person. In addition, a super-majority vote of not less than seventy-five percent (75%) of the votes cast at the meeting is required to effect any action related to the variation of class rights and a vote of not less than eighty percent (80%) of the votes cast at the meeting is required to effect any of the following actions: removal of directors, approval of business combinations with certain interested persons and for any alteration to the provisions of the Bye-laws relating to the staggered board, removal of directors and business combinations.

The Series B, Series C, Series D, Series E and Series F Preferred Shares have no voting rights except as set forth below or as otherwise provided by Bermuda law. In the event that six quarterly dividends, whether consecutive or not, payable on Series B, Series C, Series D, Series E or Series F Preferred Shares are in arrears, the holders of Series B, Series C, Series D, Series E and/or Series F Preferred Shares, as the case may be, will have the right, voting separately as a class together with holders of any other parity securities upon which like voting rights have been conferred and are exercisable, at the next meeting of shareholders called for the election of directors, to elect one member of our board of directors, and the size of our board of directors will be increased as needed to accommodate such change (unless the size of our board of directors already has been

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increased by reason of the election of a director by holders of parity securities upon which like voting rights have been conferred and with which the Series B, Series C, Series D, Series E or Series F Preferred Shares, respectively, voted as a class for the election of such director). The right of such holders of Series B, Series C, Series D, Series E or Series F Preferred Shares, as the case may be, to elect a member of our board of directors will continue until such time as all dividends accumulated and in arrears on the Series B, Series C, Series D, Series E or Series F Preferred Shares, as the case may be, have been paid in full, at which time such right will terminate, subject to revesting in the event of each and every subsequent failure to pay six quarterly dividends as described above. Upon any termination of the right of the holders of the Series B, Series C, Series D, Series E and Series F Preferred Shares and any other parity securities to vote as a class for directors, the term of office of all directors then in office elected by such holders voting as a class will terminate immediately. Any directors elected by the holders of the Series B, Series C, Series D, Series E and Series F Preferred Shares and any other parity securities shall each be entitled to one vote per director on any matter before our board of directors.

Unless we have received the affirmative vote or consent of the holders of at least two-thirds of the issued and outstanding Series B, Series C, Series D, Series E and Series F Preferred Shares, respectively, each voting as a single class, we may not:

adopt any amendment to the Memorandum of Association that adversely alters the preferences, powers or rights of Series B, Series C, Series D, Series E and Series F Preferred Shares in any material respect;

issue any securities ranking *pari passu* with the Series B, Series C, Series D, Series E and Series F Preferred Shares if the cumulative dividends payable on outstanding Series B, Series C, Series D, Series E or Series F Preferred Shares, as applicable, are in arrears; or

create or issue any equity securities ranking senior to the Series B, Series C, Series D, Series E and Series F Preferred Shares.

On any matter described above in which the holders of the Series B, Series C, Series D, Series E and Series F Preferred Shares, respectively, are entitled to vote as a class, such holders will be entitled to one vote per share. The Series B, Series C, Series D, Series E and Series F Preferred Shares held by us or any of our subsidiaries or affiliates will not be entitled to vote.

Rights in liquidation. Under Bermuda law, in the event of liquidation or winding up of a company, after satisfaction in full of all claims of creditors and subject to the preferential rights accorded to any series of preferred shares, the proceeds of the liquidation or winding up are distributed ratably among the holders of the company's common shares.

Meetings of shareholders. Bermuda law provides that a special general meeting may be called by the board of directors and must be called upon the request of shareholders holding not less than 10% of the paid-up capital of the company carrying the right to vote. Bermuda law also requires that shareholders be given at least five (5) days' advance notice of a general meeting but the accidental omission to give notice to, or the non-receipt of such notice by, any person does not invalidate the proceedings at a meeting. Under our Bye-laws, we must give each shareholder at least ten (10) days' notice and no more than fifty (50) days' notice of the annual general meeting and of any special general meeting.

Under Bermuda law, the number of shareholders constituting a quorum at any general meeting of shareholders is determined by the Bye-laws of a company. Our Bye-laws provide that the presence in person or by proxy of two shareholders constitutes a quorum; but if we have only one shareholder, one shareholder present in person or by proxy shall constitute the necessary quorum.

Access to books and records and dissemination of information. Members of the general public have the right to inspect the public documents of a company available at the office of the Registrar of Companies in Bermuda. These documents include a company's Certificate of Incorporation, its Memorandum of Association (including

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its objects and powers) and any alteration to its Memorandum of Association. The shareholders have the additional right to inspect the Bye-laws of the company, minutes of general meetings and the company's audited financial statements, which must be presented at the annual general meeting. The register of shareholders of a company is also open to inspection by shareholders without charge and by members of the general public without charge. A company is required to maintain its share register in Bermuda but may, subject to the provisions of Bermuda law, establish a branch register outside Bermuda. We maintain a share register in Hamilton, Bermuda. A company is required to keep at its registered office a register of its directors and officers that is open for inspection for not less than two (2) hours each day by members of the public without charge. Bermuda law does not, however, provide a general right for shareholders to inspect or obtain copies of any other corporate records.

Election or removal of directors. Under Bermuda law and our Bye-laws, directors are elected or appointed at the annual general meeting and serve until re-elected or re-appointed or until their successors are elected or appointed, unless they are earlier removed or resign. Our Bye-laws provide for a staggered board of directors, with one-third of the directors selected each year.

Under Bermuda law and our Bye-laws, a director may be removed at a special general meeting of shareholders specifically called for that purpose, provided the director is served with at least 14 days' notice. The director has a right to be heard at that meeting. Any vacancy created by the removal of a director at a special general meeting may be filled at that meeting by the election of another director in his or her place or, in the absence of any such election, by the board of directors.

Amendment of Memorandum of Association. Bermuda law provides that the Memorandum of Association of a company may be amended by a resolution passed at a general meeting of shareholders of which due notice has been given. Generally, our Bye-laws may be amended by the directors with the approval of a majority being not less than 75% of the votes of the shareholders in a general meeting. However, a super-majority vote is required for certain resolutions relating to the variation of class rights, the removal of directors, the approval of business combinations with certain interested persons and for any alteration to the provisions of the Bye-laws relating to the staggered board, removal of directors and business combinations.

Under Bermuda law, the holders of an aggregate of no less than 20% in par value of a company's issued share capital or any class of issued share capital have the right to apply to the Bermuda Court for an annulment of any amendment of the Memorandum of Association adopted by shareholders at any general meeting, other than an amendment which alters or reduces a company's share capital as provided in the Companies Act 1981 of Bermuda. Where such an application is made, the amendment becomes effective only to the extent that it is confirmed by the Bermuda Court. An application for the annulment of an amendment of the Memorandum of Association must be made within 21 days after the date on which the resolution altering the company's memorandum is passed and may be made on behalf of the persons entitled to make the application by one or more of their number as they may appoint in writing for the purpose. Persons voting in favor of the amendment may make no such application.

Appraisal rights and shareholder suits. Under Bermuda law, in the event of an amalgamation or merger involving a Bermuda company, a shareholder who is not satisfied that fair value has been paid for his shares may apply to the Bermuda Court to appraise the fair value of his or her shares. The amalgamation or merger of a company with another company requires the amalgamation or merger agreement to be approved by the board of directors and, except where the amalgamation or merger is between a holding company and one or more of its wholly owned subsidiaries or between two or more wholly owned subsidiaries, by meetings of the holders of shares of each company and of each class of such shares.

Class actions and derivative actions are generally not available to shareholders under Bermuda law. The Bermuda Court, however, would ordinarily be expected to permit a shareholder to commence an action in the name of a company to remedy a wrong done to the company where the act complained of is alleged to be beyond the corporate power of the company or is illegal or would result in the violation of the company's Memorandum

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of Association or Bye-laws. Further consideration would be given by the Bermuda Court to acts that are alleged to constitute a fraud against the minority shareholders or, for instance, where an act requires the approval of a greater percentage of the company's shareholders than that which actually approved it.

When the affairs of a company are being conducted in a manner oppressive or prejudicial to the interests of some part of the shareholders, one or more shareholders may apply to the Bermuda Court for an order regulating the company's conduct of affairs in the future or compelling the purchase of the shares by any shareholder, by other shareholders or by the company.

Anti-takeover effects of provisions of our charter documents

Several provisions of our Bye-laws may have anti-takeover effects. These provisions are intended to avoid costly takeover battles, lessen our vulnerability to a hostile change of control and enhance the ability of our board of directors to maximize shareholder value in connection with any unsolicited offer to acquire us. However, these anti-takeover provisions, which are summarized below, could also discourage, delay or prevent (1) the merger or acquisition of our company by means of a tender offer, a proxy contest or otherwise, that a shareholder may consider in our best interest and (2) the removal of incumbent officers and directors.

Classified board of directors.

Our Bye-laws provide for a classified board of directors with one-third of our directors being selected each year. This classified board provision could discourage a third party from making a tender offer for our shares or attempting to obtain control of our company. It could also delay shareholders who do not agree with the policies of the board of directors from removing a majority of the board of directors for two years.

Transactions involving certain business combinations.

Our Bye-laws prohibit the consummation of any business combination involving us and any interested person, unless the transaction is approved by a vote of a majority of 80% of those present and voting at a general meeting of our shareholders, unless:

the ratio of (i) the aggregate amount of cash and the fair market value of other consideration to be received per share in the business combination by holders of shares other than the interested person involved in the business combination, to (ii) the market price per share, immediately prior to the announcement of the proposed business combination, is at least as great as the ratio of (iii) the highest per share price, which the interested person has theretofore paid in acquiring any share prior to the business combination, to (iv) the market price per share immediately prior to the initial acquisition by the interested person of any shares;

the aggregate amount of the cash and the fair market value of other consideration to be received per share in the business combination by holders of shares other than the interested person involved in the business combination (i) is not less than the highest per share price paid by the interested person in acquiring any shares, and (ii) is not less than the consolidated earnings per share of our company for our four full consecutive fiscal quarters immediately preceding the record date for solicitation of votes on the business combination multiplied by the then price/earnings multiple (if any) of the interested person as customarily computed and reported in the financial community;

the consideration (if any) to be received in the business combination by holders of shares other than the interested person involved shall, except to the extent that a shareholder agrees otherwise as to all or part of the shares which the shareholder owns, be in the same form and of the same kind as the consideration paid by the interested person in acquiring shares already owned by it;

after the interested person became an interested person and prior to the consummation of the business combination: (i) such interested person shall have taken steps to ensure that the board includes at all times

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representation by continuing directors proportionate in number to the ratio that the number of shares carrying voting rights in our company from time to time owned by shareholders who are not interested persons bears to all shares carrying voting rights in our company outstanding at the time in question (with a continuing director to occupy any resulting fractional position among the directors); (ii) the interested person shall not have acquired from us or any of our subsidiaries, directly or indirectly, any shares (except (x) upon conversion of convertible securities acquired by it prior to becoming an interested person, or (y) as a result of a pro rata share dividend, share split or division or subdivision of shares, or (z) in a transaction consummated on or after June 7, 2001 and which satisfied all requirements of our Bye-laws); (iii) the interested person shall not have acquired any additional shares, or rights over shares, carrying voting rights or securities convertible into or exchangeable for shares, or rights over shares, carrying voting rights except as a part of the transaction which resulted in the interested person becoming an interested person; and (iv) the interested person shall not have (x) received the benefit, directly or indirectly (except proportionately as a shareholder), of any loans, advances, guarantees, pledges or other financial assistance or tax credits provided by us or any subsidiary of ours, or (y) made any major change in our business or equity capital structure or entered into any contract, arrangement or understanding with us except any change, contract, arrangement or understanding as may have been approved by the favorable vote of not less than a majority of the continuing directors; and

a proxy statement complying with the requirements of the U.S. Securities Exchange Act of 1934, as amended, shall have been mailed to all holders of shares carrying voting rights for the purpose of soliciting approval by the shareholders of the business combination. The proxy statement shall contain at the front thereof, in a prominent place, any recommendations as to the advisability (or inadvisability) of the business combination which the continuing directors, or any of them, may have furnished in writing and, if deemed advisable by a majority of the continuing directors, an opinion of a reputable investment banking firm as to the adequacy (or inadequacy) of the terms of the business combination from the point of view of the holders of shares carrying voting rights other than any interested person (the investment banking firm to be selected by a majority of the continuing directors, to be furnished with all information it reasonably requests, and to be paid a reasonable fee for its services upon receipt by us of the opinion).

For purposes of this provision, a **business combination** includes mergers, consolidations, exchanges, asset sales, leases and other transactions resulting in a financial benefit to the interested shareholder and an **interested person** is any person or entity that beneficially owns 15% or more of our voting shares and any person or entity affiliated with or controlling or controlled by that person or entity. **Continuing directors** means directors who have been elected before June 7, 2001 or designated as continuing directors by the majority of the then continuing directors.

Consequences of becoming an interested person.

Our Bye-laws provide that, at any time a person acquires or becomes the beneficial owner of 15% or more of our voting shares, which we refer to as the **threshold**, then the person will not be entitled to exercise voting rights for the number of common shares in excess of the threshold he holds or beneficially owns. This disability applies to any general meeting of our company as to which the record date or scheduled meeting date falls within a period of five years from the date such person acquired beneficial ownership of a number of common shares in excess of the threshold.

The above restrictions do not apply to us, our subsidiaries or to:

any person who on June 7, 2001 was the holder or beneficial owner of a number of shares carrying voting rights that exceeded the threshold and who continues at all times after June 7, 2001 to hold shares in excess of the threshold; and

any person whose acquisition of a number of shares exceeding the threshold has been approved by (1) a majority of 80% of those present and voting at a general meeting or (2) by a resolution adopted by the

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continuing directors, followed by a resolution adopted by a shareholder vote in excess of 50% of the voting shares not owned by such interested person.

Transfer agent and registrar. Computershare Trust Company N.A. serves as transfer agent and registrar for our common shares and our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares.

New York Stock Exchange listing. Our common shares are listed on the New York Stock Exchange under the ticker symbol TNP. Our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares are listed on the New York Stock Exchange under the trading symbols TNP-PB , TNP-PC , TNP-PD , TNP-PE and TNP-PF , respectively.

Material Contracts

See description of Management Agreement under Item 4. Information on the Company Management Contract Executive and Commercial Management. Such description is not intended to be complete and reference is made to the contract itself, which is an exhibit to this Annual Report on Form 20-F.

Exchange Controls

Under Bermuda law, there are currently no restrictions on the export or import of capital, including foreign exchange controls, or restrictions that affect the remittance of dividends, interest or other payments to nonresident holders of our common shares. On July 22, 2015, Greece implemented capital controls restricting the transfer of funds out of Greece, which restricted our use of the limited amount of cash we held in Greece at that date for the remittances overseas. Cash deposited in Greek banks after that date is not restricted for remittances overseas.

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TAX CONSIDERATIONS

Taxation of Tsakos Energy Navigation Limited

We believe that none of our income will be subject to tax in Bermuda, which currently has no corporate income tax, or by other countries in which we conduct activities or in which our customers are located, excluding the United States. However, this belief is based upon the anticipated nature and conduct of our business which may change, and upon our understanding of our position under the tax laws of the various countries in which we have assets or conduct activities, which position is subject to review and possible challenge by taxing authorities and to possible changes in law, which may have retroactive effect. The extent to which certain taxing jurisdictions may require us to pay tax or to make payments in lieu of tax cannot be determined in advance. In addition, payments due to us from our customers may be subject to withholding tax or other tax claims in amounts that exceed the taxation that we might have anticipated based upon our current and anticipated business practices and the current tax regime.

Bermuda tax considerations

Under current Bermuda law, we are not subject to tax on income or capital gains. Furthermore, we have obtained from the Minister of Finance of Bermuda, under the Exempted Undertakings Tax Protection Act 1966 of Bermuda, as amended (the Exempted Undertakings Act), assurance that, in the event that Bermuda enacts any legislation imposing tax computed on profits or income or computed on any capital asset, gain or appreciation, or any tax in the nature of estate duty or inheritance tax, then the imposition of such tax will not be applicable to us or to any of our operations, or to the share capital of Tsakos Energy Navigation Limited, until March 31, 2035. This assurance does not, however, prevent the imposition of property taxes on any company owning real property or leasehold interests in Bermuda or on any person ordinarily resident in Bermuda. We pay an annual government fee on our authorized share capital and share premium, which for 2019 is \$19,615.

Under current Bermuda law, shareholders not ordinarily resident in Bermuda will not be subject to any income, withholding or other taxes or stamp or other duties upon the issue, transfer or sale of common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares or on any payments made on common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares.

United States federal income tax considerations

The following summary of United States federal income tax matters is based on the Internal Revenue Code, judicial decisions, administrative pronouncements, and existing and proposed regulations issued by the United States department of the treasury, all of which are subject to change, possibly with retroactive effect. This discussion does not address any United States local or state taxes.

The following is a summary of the material United States federal income tax considerations that apply to (1) our operations and the operations of our vessel-operating subsidiaries and (2) the acquisition, ownership and disposition of common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares by a shareholder that is a United States holder. This summary is based upon our beliefs and expectations concerning our past, current and anticipated activities, income and assets and those of our subsidiaries, the direct, indirect and constructive ownership of our shares and the trading and quotation of our shares. Should any such beliefs or expectations prove to be incorrect, the conclusions described herein could be adversely affected. For purposes of this discussion, a United States holder is a beneficial owner of common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares who or which is:

An individual citizen or resident of the United States;

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A corporation, or other entity taxable as a corporation for United States federal income tax purposes, created or organized in or under the laws of the United States or any of its political subdivisions; or

An estate or trust the income of which is subject to United States federal income taxation regardless of its source.

This summary deals only with common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares that are held as capital assets by a United States holder, and does not address tax considerations applicable to United States holders that may be subject to special tax rules, such as:

Dealers or traders in securities or currencies;

Financial institutions;

Insurance companies;

Tax-exempt entities;

United States holders that hold common shares as a part of a straddle or conversion transaction or other arrangement involving more than one position;

United States holders that own, or are deemed for United States tax purposes to own, ten percent or more of the total combined voting power of all classes of our voting stock;

A person subject to United States federal alternative minimum tax;

A partnership or other entity classified as a partnership for United States federal income tax purposes;

United States holders that have a principal place of business or tax home outside the United States; or

United States holders whose functional currency is not the United States dollar.

The discussion below is based upon the provisions of the Internal Revenue Code and regulations, administrative pronouncements and judicial decisions as of the date of this Annual Report; any such authority may be repealed, revoked or modified, perhaps with retroactive effect, so as to result in United States federal income tax consequences different from those discussed below.

Because United States tax consequences may differ from one holder to the next, the discussion set out below does not purport to describe all of the tax considerations that may be relevant to you and your particular situation. Accordingly, you are advised to consult your own tax advisor as to the United States federal, state, local and other tax consequences of investing in the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares.

Taxation of our operations

In General

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Unless exempt from United States federal income taxation under the rules discussed below, a foreign corporation is subject to United States federal income taxation in respect of any income that is derived from the use of vessels, from the hiring or leasing of vessels for use on a time, voyage or bareboat charter basis, from the participation in a pool, partnership, strategic alliance, joint operating agreement, code sharing arrangements or other joint venture it directly or indirectly owns or participates in that generates such income, or from the performance of services directly related to those uses, which we refer to as shipping income, to the extent that the shipping income is derived from sources within the United States. For these purposes, 50% of shipping income that is attributable to transportation that begins or ends, but that does not both begin and end, in the United States constitutes income from sources within the United States, which we refer to as U.S.-source shipping income.

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Shipping income attributable to transportation that both begins and ends in the United States is considered to be 100% from sources within the United States. We do not expect that we or any of our subsidiaries will engage in transportation that produces income which is considered to be 100% from sources within the United States.

Shipping income attributable to transportation exclusively between non-United States ports will be considered to be 100% derived from sources outside the United States. Shipping income derived from sources outside the United States will not be subject to any United States federal income tax.

In the absence of exemption from tax under Section 883, our gross U.S.-source shipping income would be subject to a 4% tax imposed without allowance for deductions as described below.

Exemption of Operating Income from United States Federal Income Taxation

Under Section 883, we and our subsidiaries will be exempt from United States federal income taxation on our U.S.-source shipping income if:

We and the relevant subsidiary are each organized in a foreign country (the country of organization) that grants an equivalent exemption to corporations organized in the United States; and either

More than 50% of the value of our stock is owned, directly or indirectly, by qualified stockholders, individuals who are (i) residents of our country of organization or of another foreign country that grants an equivalent exemption to corporations organized in the United States and (ii) satisfy certain documentation requirements, which we refer to as the 50% Ownership Test, or

Our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares, are primarily and regularly traded on an established securities market in our country of organization, in another country that grants an equivalent exemption to United States corporations, or in the United States, which we refer to as the Publicly-Traded Test.

We believe that each of Bermuda, Greece, Liberia, Malta, the Marshall Islands and Panama, the jurisdictions where we and our ship-owning subsidiaries are incorporated, grants an equivalent exemption to United States corporations. Therefore, we believe that we and each of our subsidiaries will be exempt from United States federal income taxation with respect to our U.S.-source shipping income if we satisfy either the 50% Ownership Test or the Publicly-Traded Test.

Due to the widely-held nature of our stock, we will have difficulty satisfying the 50% Ownership Test. Our ability to satisfy the Publicly-Traded Test is discussed below.

The regulations provide, in pertinent part, that stock of a foreign corporation will be considered to be primarily traded on one or more established securities markets in a country if the number of shares of each class of stock that are traded during any taxable year on all established securities markets in that country exceeds the number of shares in each such class that are traded during that year on established securities markets in any other single country. Our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares, which were our sole classes of our issued and outstanding shares in 2018, were primarily traded on an established securities market in the United States (the New York Stock Exchange) in 2018 and we expect that will continue to be the case in subsequent years.

Under the regulations, our stock will be considered to be regularly traded on an established securities market if one or more classes of our stock representing more than 50% of our outstanding shares, by total combined voting power of all classes of stock entitled to vote and total value, is listed on the market, which we refer to as the listing requirement. Since our common shares, Series B Preferred Shares, Series C Preferred

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Shares, Series D Preferred Shares and Series E Preferred Shares, which are our sole classes of issued and outstanding shares, were listed on the New York Stock Exchange throughout 2018, and Series F Preferred Shares were listed on the New York Stock Exchange following their issuance in June 2018, we satisfied the listing requirement for 2018. We expect that we will continue to do so, with respect to our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares for subsequent years.

It is further required that with respect to each class of stock relied upon to meet the listing requirement (i) such class of the stock is traded on the market, other than in minimal quantities, on at least 60 days during the taxable year or 1/6 of the days in a short taxable year; and (ii) the aggregate number of shares of such class of stock traded on such market is at least 10% of the average number of shares of such class of stock outstanding during such year or as appropriately adjusted in the case of a short taxable year. We believe our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares satisfied the trading frequency and trading volume tests for 2018 and will also do so in subsequent years. For so long as the aggregate value of our common shares exceeds the aggregate value of our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares, if our common shares meet the trading frequency and trading volume tests, our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares do not need to meet these tests (and, if the aggregate value of our common shares and any of our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares meet the trading frequency and trading volume tests, the other series of our preferred shares would not need to meet these tests). Even if these tests were not satisfied, with respect to any of our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares, the regulations provide that the trading frequency and trading volume tests will be deemed satisfied by a class of stock if, as we believe was the case with our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares in 2018 and we expect to be the case with our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares in subsequent years, such class of stock is traded on an established market in the United States and such class of stock is regularly quoted by dealers making a market in such stock.

Notwithstanding the foregoing, the regulations provide, in pertinent part, that our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares will not be considered to be regularly traded on an established securities market for any taxable year in which 50% or more of our outstanding common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares are owned, actually or constructively under specified stock attribution rules, on more than half the days during the taxable year by persons who each own 5% or more of our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares, which we refer to as the 5 Percent Override Rule. For so long as the aggregate value of our common shares exceeds the aggregate value of our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares, if our common shares meet the regularly traded test, our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares do not need to meet this test.

For purposes of being able to determine the persons who own 5% or more of our stock, or 5% Stockholders, the regulations permit us to rely on Schedule 13G and Schedule 13D filings with the SEC to identify persons who have a 5% or more beneficial interest in our common shares or, if our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares are then entitled to vote, our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares. The regulations further provide that an investment company which is registered under the Investment Company Act of 1940, as amended, will not be treated as a

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5% Stockholder for such purposes. Until such time, if any, as the Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares are entitled to vote, because Schedule 13G and Schedule 13D filings are only required for voting stock, it could be difficult to determine 5% Stockholders of our Series B shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares. In the event the 5 Percent Override Rule is triggered, the regulations provide that the 5 Percent Override Rule will nevertheless not apply if we can establish, in accordance with specified ownership certification procedures, that a sufficient portion of the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares within the closely-held block are owned, actually or under applicable constructive ownership rules, by qualified shareholders for purposes of Section 883 to preclude the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares in the closely-held block that are not so owned from constituting 50% or more of the our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares for more than half the number of days during the taxable year.

We do not believe that we were subject to the 5 Percent Override Rule for 2018. Therefore, we believe that we satisfied the Publicly-Traded Test for 2018. However, there is no assurance that we will continue to satisfy the Publicly-Traded Test. If we were to be subject to the 5 Percent Override Rule for any tax year, then our ability and that of our subsidiaries to qualify for the benefits of Section 883 would depend upon our ability to establish, in accordance with specified ownership certification procedures, that a sufficient portion of the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares within the closely-held block are owned, actually or under applicable constructive ownership rules, by qualified shareholders for purposes of Section 883, to preclude the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares in the closely-held block that are not so owned from constituting 50% or more of the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares for more than half the number of days during the tax year. Since there can be no assurance that we would be able to establish these requirements, there can be no assurance that we or our subsidiaries will qualify for the benefits of Section 883 for any subsequent tax year.

Taxation in Absence of Exemption

To the extent the benefits of Section 883 are unavailable, our U.S.-source shipping income, to the extent not considered to be effectively connected with the conduct of a United States trade or business, as described below, would be subject to a 4% tax imposed by Section 887 of the Internal Revenue Code on a gross basis, without the benefit of deductions. Since under the sourcing rules described above, we do not expect that more than 50% of our shipping income would be treated as being derived from United States sources, the maximum effective rate of United States federal income tax on our shipping income would never exceed 2% under the 4% gross basis tax regime.

To the extent the benefits of the Section 883 exemption are unavailable and our U.S.-source shipping income or that of any of our subsidiaries is considered to be effectively connected with the conduct of a United States trade or business, as described below, any such effectively connected U.S.-source shipping income, net of applicable deductions, would be subject to the United States federal corporate income tax currently imposed at rates of up to 21%. In addition, we or our subsidiaries may be subject to the 30% branch profits taxes on earnings effectively connected with the conduct of such trade or business, as determined after allowance for certain adjustments, and on certain interest paid or deemed paid attributable to the conduct of its United States trade or business.

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U.S.-source shipping income would be considered effectively connected with the conduct of a United States trade or business only if:

We or one of our subsidiaries has, or is considered to have, a fixed place of business in the United States involved in the earning of shipping income; and

(i) in the case of shipping income other than that derived from bareboat charters, substantially all of our or such subsidiary's U.S.-source shipping income is attributable to regularly scheduled transportation, such as the operation of a vessel that follows a published schedule with repeated sailings at regular intervals between the same points for voyages that begin or end in the United States and (ii) in the case of shipping income from bareboat charters, substantially all of our or such subsidiary's income from bareboat charters is attributable to a fixed place of business in the U.S.

We do not intend that we or any of our subsidiaries will have any vessel operating to the United States on a regularly scheduled basis. Based on the foregoing and on the expected mode of our shipping operations and other activities, we believe that none of the U.S.-source shipping income of us or our subsidiaries will be effectively connected with the conduct of a United States trade or business.

United States Taxation of Gain on Sale of Vessels

Regardless of whether we or our subsidiaries qualify for exemption under Section 883, we and our subsidiaries will not be subject to United States federal income taxation with respect to gain realized on a sale of a vessel, provided the sale is considered to occur outside of the United States under United States federal income tax principles. In general, a sale of a vessel will be considered to occur outside of the United States for this purpose if title to the vessel, and risk of loss with respect to the vessel, pass to the buyer outside of the United States. It is expected that any sale of a vessel by us or our subsidiaries will be considered to occur outside of the United States.

United States Holders

Distributions

Subject to the discussion below under *Passive Foreign Investment Company Considerations*, distributions that we make with respect to the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares, other than distributions in liquidation and distributions in redemption of stock that are treated as exchanges, will be taxed to United States holders as dividend income to the extent that the distributions do not exceed our current and accumulated earnings and profits (as determined for United States federal income tax purposes). Distributions, if any, in excess of our current and accumulated earnings and profits will constitute a nontaxable return of capital to a United States holder and will be applied against and reduce the United States holder's tax basis in its common shares. To the extent that distributions in excess of our current and accumulated earnings and profits exceed the tax basis of the United States holder in its common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares, the excess generally will be treated as capital gain.

Qualifying dividends received by individuals are eligible for taxation at capital gains rates (currently 20% for individuals not eligible for a lower rate). We are a non-United States corporation for U.S. federal income tax purposes. Dividends paid by a non-United States corporation are eligible to be treated as qualifying dividends only if (i) the non-United States corporation is incorporated in a possession of the United States, (ii) the non-United States corporation is eligible for the benefits of a comprehensive income tax treaty with the United States or (iii) the stock with respect to which the dividends are paid is readily tradable on an established securities market in the United States. We will not satisfy either of the conditions described in clauses (i) and (ii) of the preceding sentence. We expect that distributions on our common shares, Series B Preferred Shares,

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Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares that are treated as dividends will qualify as dividends on stock that is readily tradable on an established securities market in the United States so long as our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares are traded on the New York Stock Exchange. In addition, dividends paid by a non-United States corporation will not be treated as qualifying dividends if the non-United States corporation is a passive foreign investment company (a PFIC) for the taxable year of the dividend or the prior taxable year. Our potential treatment as a PFIC is discussed below under the heading Passive Foreign Investment Company Considerations. A dividend will also not be treated as a qualifying dividend to the extent that (i) the shareholder does not satisfy a holding period requirement that generally requires that the shareholder hold the shares on which the dividend is paid for more than 60 days during the 121-day period that begins on the date which is sixty days before the date on which the shares become ex-dividend with respect to such dividend, (ii) the shareholder is under an obligation to make related payments with respect to substantially similar or related property or (iii) such dividend is taken into account as investment income under Section 163(d)(4)(B) of the Internal Revenue Code. Legislation has been previously proposed in the United States Congress which, if enacted in its proposed form, would likely cause dividends on our shares to be ineligible for the preferential tax rates described above. There can be no assurance regarding whether, or in what form, such legislation will be enacted.

Special rules may apply to any extraordinary dividend, generally a dividend in an amount which is equal to or in excess of ten percent (in the case of our common shares) or five percent (in the case of our Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares) of a shareholder's adjusted basis (or fair market value in certain circumstances) in such shares paid by us. In addition, extraordinary dividends include dividends received within a one year period that, in the aggregate, equal or exceed 20% of a shareholder's adjusted tax basis (or fair market value in certain circumstances). If we pay an extraordinary dividend on our common shares and such dividend is treated as qualified dividend income, then any loss derived by a U.S. individual holder from the sale or exchange of such common shares will be treated as long-term capital loss to the extent of such dividend.

Because we are not a United States corporation, a United States holder that is a corporation (or a United States entity taxable as a corporation) will not be entitled to claim a dividends received deduction with respect to any distributions paid by us.

Dividend income derived with respect to the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares and Series F Preferred Shares generally will constitute portfolio income for purposes of the limitation on the use of passive activity losses, and, therefore, generally may not be offset by passive activity losses, and, unless treated as qualifying dividends as described above, investment income for purposes of the limitation on the deduction of investment interest expense. Dividends that we pay will not be eligible for the dividends received deduction generally allowed to United States corporations under Section 243 of the Internal Revenue Code.

For foreign tax credit purposes, if at least 50 percent of our stock by voting power or by value is owned, directly, indirectly or by attribution, by United States persons, then, subject to the limitation described below, a portion of the dividends that we pay in each taxable year will be treated as U.S.-source income, depending in general upon the ratio for that taxable year of our U.S.-source earnings and profits to our total earnings and profits. The remaining portion of our dividends (or all of our dividends, if we do not meet the 50 percent test described above) will be treated as foreign-source income and generally will be treated as passive category income or, in the case of certain types of United States holders, general category income for purposes of computing allowable foreign tax credits for United States federal income tax purposes. However, if, in any taxable year, we have earnings and profits and less than ten percent of those earnings and profits are from United States sources, then, in general, dividends that we pay from our earnings and profits for that taxable year will be treated entirely as foreign-source income. Where a United States holder that is an individual receives a dividend on our shares that is a qualifying dividend (as described in the second preceding paragraph), special rules will

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apply that will limit the portion of such dividend that will be included in such individual's foreign source taxable income and overall taxable income for purposes of calculating such individual's foreign tax credit limitation.

Sale or exchange

Subject to the discussion below under *Passive Foreign Investment Company Considerations*, upon a sale or exchange of common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares to a person other than us or certain entities related to us, a United States holder will recognize gain or loss in an amount equal to the difference between the amount realized on the sale or exchange and the United States holder's adjusted tax basis in the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares. Any gain or loss recognized will be capital gain or loss and will be long-term capital gain or loss if the United States holder has held the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares for more than one year.

Gain or loss realized by a United States holder on the sale or exchange of common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares generally will be treated as U.S.-source gain or loss for United States foreign tax credit purposes. A United States holder's ability to deduct capital losses against ordinary income is subject to certain limitations.

Passive Foreign Investment Company Considerations

PFIC classification. Special and adverse United States tax rules apply to a United States holder that holds an interest in a PFIC. In general, a PFIC is any foreign corporation, if (1) 75 percent or more of the gross income of the corporation for the taxable year is passive income (the PFIC income test) or (2) the average percentage of assets held by the corporation during the taxable year that produce passive income or that are held for the production of passive income is at least 50 percent (the PFIC asset test). In applying the PFIC income test and the PFIC asset test, a corporation that owns, directly or indirectly, at least 25 percent by value of the stock of a second corporation must take into account its proportionate share of the second corporation's income and assets. Income we earn, or are deemed to earn, in connection with the performance of services will not constitute passive income. By contrast, rental income will generally constitute passive income (unless we are treated under certain special rules as deriving our rental income in the active conduct of a trade or business).

If a corporation is classified as a PFIC for any year during which a United States person is a shareholder, then the corporation generally will continue to be treated as a PFIC with respect to that shareholder in all succeeding years, regardless of whether the corporation continues to meet the PFIC income test or the PFIC asset test, subject to elections to recognize gain that may be available to the shareholder.

There are legal uncertainties involved in determining whether the income derived from time chartering activities constitutes rental income or income derived from the performance of services. In *Tidewater Inc. v. United States*, 565 F.2d 299 (5th Cir. 2009), the United States Court of Appeals for the Fifth Circuit held that income derived from certain time chartering activities should be treated as rental income rather than services income for purposes of a foreign sales corporation provision of the Code. In a published guidance, however, the Internal Revenue Service (the IRS) states that it disagrees with the holding in *Tidewater*, and specifies that time charters should be treated as service contracts. On this basis, we do not believe that we were treated as a PFIC for our most recent taxable year or that we will be treated as a PFIC for any subsequent taxable year. This conclusion is based in part upon our beliefs regarding our past assets and income and our current projections and expectations as to our future business activity, including, in particular, our expectation that the proportion of our income derived from bareboat charters will not materially increase. However, we have not sought, and we do not expect to seek, an IRS ruling on this matter. As a result, the IRS or a court could disagree with our position. No assurance can be given that this result will not occur. In addition, although we intend to conduct our affairs in a

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manner to avoid, to the extent possible, being classified as a PFIC with respect to any taxable year, we cannot assure you that the nature of our operations will not change in the future, or that we can avoid PFIC status in the future.

Consequences of PFIC Status. As discussed below, if we were to be treated as a PFIC for any taxable year, a United States holder generally would be subject to one of three different U.S. income tax regimes, depending on whether or not the United States holder makes certain elections. Additionally, the United States holder would be required to file an annual information report with the IRS.

Taxation of United States Holders that Make No Election. If we are treated as a PFIC for any taxable year during which a United States holder holds our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares, then, subject to the discussion of the qualified electing fund (QEF) and mark-to-market rules below, the United States holder will be subject to a special and adverse tax regime in respect of (1) gains realized on the sale or other disposition of our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares and (2) distributions on our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares to the extent that those distributions are treated as excess distributions. An excess distribution generally includes dividends or other distributions received from a PFIC in any taxable year of a United States holder to the extent that the amount of those distributions exceeds 125 percent of the average distributions made by the PFIC during a specified base period (or, if shorter, the United States holder's holding period for the shares). A United States holder that is subject to the PFIC rules (1) will be required to allocate excess distributions received in respect of our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares and gain realized on the sale of common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares to each day during the United States holder's holding period for the common shares, (2) will be required to include in income as ordinary income the portion of the excess distribution or gain that is allocated to the current taxable year and to certain pre-PFIC years, and (3) will be taxable at the highest rate of taxation applicable to ordinary income for the prior years, other than pre-PFIC years, to which the excess distribution or gain is allocable, without regard to the United States holder's other items of income and loss for such prior taxable years (deferred tax). The deferred tax for each prior year will be increased by an interest charge for the period from the due date for tax returns for the prior year to the due date for tax returns for the year of the excess distribution or gain, computed at the rates that apply to underpayments of tax. Pledges of PFIC shares will be treated as dispositions for purposes of the foregoing rules. In addition, a United States holder who acquires common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares from a decedent generally will not receive a stepped-up basis in the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares. Instead, the United States holder will have a tax basis in the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares equal to the lower of the fair market value of the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares and the decedent's basis.

If we are treated as a PFIC for any taxable year during which a United States holder holds our common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares and one of our subsidiaries also qualifies as a PFIC for such year, then such United States holder may also be subject to the PFIC rules with respect to its indirect interest in such subsidiary. No mark-to-market election will be available with respect to the indirect interest in the shares of such subsidiary and we currently do not intend to comply with reporting requirements necessary to permit the making of QEF elections in such circumstances.

Taxation of United States Holders that Make a QEF Election. In some circumstances, a United States holder may avoid the unfavorable consequences of the PFIC rules by making a QEF election with respect to us. A QEF

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election effectively would require an electing United States holder to include in income currently its pro rata share of our ordinary earnings and net capital gain. However, a United States holder cannot make a QEF election with respect to us unless we comply with certain reporting requirements and we currently do not intend to provide the required information.

Taxation of United States Holders that Make a Mark-to-Market Election. A United States holder that holds marketable stock in a PFIC may, in lieu of making a QEF election, avoid some of the unfavorable consequences of the PFIC rules by electing to mark the PFIC stock to market as of the close of each taxable year. The common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares will be treated as marketable stock for a calendar year if the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares are traded on the New York Stock Exchange, in other than de minimis quantities, on at least 15 days during each calendar quarter of the year. A United States holder that makes the mark-to-market election generally will be required to include in income each year as ordinary income an amount equal to the increase in value of the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares for that year, regardless of whether the United States holder actually sells the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares. The United States holder generally will be allowed a deduction for the decrease in value of the common shares, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares for the taxable year, to the extent of the amount of gain previously included in income under the mark-to-market rules, reduced by prior deductions under the mark-to-market rules. Any gain from the actual sale of the PFIC stock will be treated as ordinary income, and any loss will be treated as ordinary loss to the extent of net mark-to-market gains previously included in income and not reversed by prior deductions.

Other PFIC Elections. If a United States holder held our stock during a period when we were treated as a PFIC, but the United States holder did not have a QEF election in effect with respect to us, then in the event that we failed to qualify as a PFIC for a subsequent taxable year, the United States holder could elect to cease to be subject to the rules described above with respect to those shares by making a deemed sale or, in certain circumstances, a deemed dividend election with respect to our stock. If the United States holder makes a deemed sale election, the United States holder will be treated, for purposes of applying the rules described above under the heading consequences of PFIC status, as having disposed of our stock for its fair market value on the last day of the last taxable year for which we qualified as a PFIC (the termination date). The United States holder would increase his, her or its basis in such common stock by the amount of the gain on the deemed sale described in the preceding sentence. Following a deemed sale election, the United States holder would not be treated, for purposes of the PFIC rules, as having owned the common stock during a period prior to the termination date when we qualified as a PFIC.

If we were treated as a controlled foreign corporation for United States federal income tax purposes for the taxable year that included the termination date, then a United States holder could make a deemed dividend election with respect to our common stock, Series B Preferred Shares, Series C Preferred Shares, Series D Preferred Shares, Series E Preferred Shares or Series F Preferred Shares. If a deemed dividend election is made, the United States holder is required to include in income as a dividend his, her or its pro rata share (based on all of our stock held by the United States holder, directly or under applicable attribution rules, on the termination date) of our post-1986 earnings and profits as of the close of the taxable year that includes the termination date (taking only earnings and profits accumulated in taxable years in which we were a PFIC into account). The deemed dividend described in the preceding sentence is treated as an excess distribution for purposes of the rules described above under the heading consequences of PFIC status. The United States holder would increase his, her or its basis in our stock by the amount of the deemed dividend. Following a deemed dividend election, the United States holder would not be treated, for purposes of the PFIC rules, as having owned the stock during a period prior to the termination date when we qualified as a PFIC. For purposes of determining whether the deemed dividend election is available, we generally will be treated as a controlled foreign corporation for a

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taxable year when, at any time during that year, United States persons, each of whom owns, directly or under applicable attribution rules, shares having 10% or more of the total voting power of our stock, in the aggregate own, directly or under applicable attribution rules, shares representing more than 50% of the voting power or value of our shares.

A deemed sale or deemed dividend election must be made on the United States holder's original or amended return for the shareholder's taxable year that includes the termination date and, if made on an amended return, such amended return must be filed not later than the date that is three years after the due date of the original return for such taxable year. Special rules apply where a person is treated, for purposes of the PFIC rules, as indirectly owning our shares.

You are urged to consult your own tax advisor regarding our possible classification as a PFIC, as well as the potential tax consequences arising from the ownership and disposition, directly or indirectly, of interests in a PFIC.

Unearned Income Medicare Contribution Tax

Certain United States holders that are individuals, estates or trusts are required to pay an additional 3.8% tax on, among other things, dividends on and capital gains from the sale or other disposition of stock. You are encouraged to consult your own tax advisors regarding the effect, if any, of this tax on the ownership and disposition of our shares.

Additional Disclosure Requirement

U.S. individuals that hold certain specified foreign financial assets with value in excess of reporting thresholds of \$50,000 or more (which include shares in a foreign corporation) are subject to U.S. return disclosure requirements (and related penalties for failure to disclose). Such U.S. individuals are required to file IRS Form 8938, listing these assets, with their U.S. Federal income tax returns. You are encouraged to consult your own tax advisors concerning the filing of IRS Form 8938.

Information reporting and backup withholding

Payments of dividends and sales proceeds that are made within the United States or through certain U.S.-related financial intermediaries generally are subject to information reporting and backup withholding unless (i) you are a corporation or other exempt recipient or (ii) in the case of backup withholding, you provide a correct taxpayer identification number and certify that you are not subject to backup withholding.

The amount of any backup withholding from a payment to you will be allowed as a credit against your United States federal income tax liability and may entitle you to a refund, provided that the required information is furnished to the Internal Revenue Service.

Available Information

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended. In accordance with these requirements, we file reports and other information as a foreign private issuer with the SEC. The SEC maintains an Internet site (<http://www.sec.gov>) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. You may access the reports and other information we file with the SEC on this SEC Internet site without charge.

Item 11. Quantitative and Qualitative Disclosures About Market Risk

Our risk management policy. Our policy is to continuously monitor our exposure to business risks, including the impact of changes in interest rates, currency rates, and bunker prices on earnings and cash flows. We intend

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to assess these risks and, when appropriate, enter into derivative contracts with creditworthy counter parties to minimize our exposure to these risks. As part of our efforts to manage our risk, we have in the past entered into derivative contracts for both hedging and, periodically, trading purposes.

Each of the committees of the Board of Directors is responsible for the management of risk within their given areas. In particular, the committees are expected to:

continuously review and assess all activities that may generate exposure to risk and ensure we are taking appropriate measures;

ensure that our policies and procedures for evaluating and managing risks are effective and do not significantly increase overall risk;
and

assess the effectiveness of derivative contracts and recommend, if necessary, the early termination of any contract.

Our risk management policy provides for the following procedures:

All recommendations to enter into a derivative contract must originate either from qualified officers or directors of the company or from equivalent specialized officers of our commercial manager;

All recommendations to enter into a derivative contract must be reviewed by a combined team of officers and advice is taken, as applicable, from third-party sources (e.g., our bankers, other banks, bunker brokers, insurers, etc.);

Any recommendation must be formalized into a specific proposal which defines the risks to be managed, the action to be implemented, and the benefits and potential risks of the proposed derivative contract, which proposal shall be presented to the Risk Committee; and

All derivative contracts must be approved by the Risk Committee and be within the overall limits set by the board of directors.

The Audit Committee is responsible for:

overseeing the division of risk-related responsibilities among each of the Board committees as clearly as possible and performing a gap analysis to confirm that the oversight of any risk is not missed;

in conjunction with the full Board, approving the Company-wide risk management program; and

assessing whether the Company's technical and commercial managers have effective procedures for managing risks.

Interest rate risk

The Company is exposed to market risk from changes in interest rates, which could impact its results of operations, financial condition and cash flow. The Company manages its ratio of fixed to floating rate debt with the objective of achieving a mix that reflects management's interest rate

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outlook. As of March 31, 2019 we had a notional amount of \$256 million in hedging swaps and \$27.3 million in non-hedging swaps. The annualized impact resulting from a 0.25% point increase in interest rates based on the notional amount at December 31, 2018 would be an increase of approximately \$0.2 million in earnings and cash flow. An increase of 0.25% in interest rates will increase our loan interest rate payments by \$4 million based on the outstanding amounts as of December 31, 2018 and the loans scheduled for amortization as of that date.

The table below provides information about our financial instruments at December 31, 2018, which are sensitive to changes in interest rates, including our debt and interest rate swaps. For debt obligations, the table presents principal cash flows and related weighted average interest rates by expected maturity dates. Weighted-average variable rates are based on the implied forward rates in the yield curves at the reporting date. For interest rate swaps, the table presents notional amounts and weighted-average interest rates by expected contractual maturity dates. Notional amounts are used to calculate the contractual payments to be exchanged under the contracts.

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	Balance as of Dec. 31, 2018	Expected Maturities ⁽¹⁾					Thereafter
		2019	2020	2021	2022	2023	
(In millions of U.S. dollars, except percentages)							
Long-Term Debt:							
Variable Rate Debt ⁽²⁾	1,607.10	163.9	211.2	286.1	242.5	321.5	381.9
Weighted Average Interest Rate	4.52%	4.77%	4.57%	4.47%	4.51%	4.31%	4.52%
Interest Rate Swaps (or Derivatives):	1,607.10	163.9	211.2	286.1	242.5	321.5	381.9
Interest rate swaps variable to fixed Notional Amount at December 31, 2018	284.7	5.1	39.2	24	24	47.5	144.9
Average Pay Rate	2.79%	2.79%	3.12%	3.11%	3.11%	3.16%	3.16%
Average Receive Rate	2.03%	2.71%	2.49%	2.42%	2.45%	2.56%	2.66%

(1) These are the expected maturities based on the balances as of December 31, 2018.

(2) Interest Payments on US Dollar-denominated debt and interest rate swaps are based on LIBOR.

Bunker price risk

The Company regularly enters into bunker swap agreements in order to hedge its exposure to bunker price fluctuations associated with the consumption of bunkers by its spot trading vessels. During 2018, the Company entered into nineteen swap agreements and two call options with an exercise date in 2019 and through 2020. During 2017, the Company entered into two call option agreements and paid a premium of \$0.2 million. We estimate that for every \$1.00 increase in the price of bunker fuel per metric ton, there would have been an annualized decrease of earnings and cash flow by \$0.2 million based on our bunker consumption of 2018.

Foreign exchange rate fluctuation

The currency the international tanker industry is primarily using is the U.S. dollar. Virtually all of our revenues are in U.S. dollars and the majority of our operating costs are incurred in U.S. dollars. We incur certain operating expenses in foreign currencies, the most significant of which are in Euros. During fiscal 2018, approximately 23% of the total of our vessel and voyage costs and overhead expenditures were denominated in Euro. Based on 2018 Euro expenditure, therefore, we estimate that for every 1% change in the Euro/U.S. dollar rate there would be a 0.3% impact on vessel operating expenses and minimal impact on other cost categories apart from dry-docking which would depend on the location of the selected yard. However, we have the ability to shift our purchase of goods and services from one country to another and, thus, from one currency to another in order to mitigate the effects of exchange rate fluctuations. We have a policy of continuously monitoring and managing our foreign exchange exposure. On occasion, we do directly purchase amounts of Euro with U.S. dollars, but to date, we have not engaged in any foreign currency hedging transactions, as we do not believe we have had material risk exposure to foreign currency fluctuations.

Inflation

Although inflation has had a moderate impact on operating expenses, dry-docking expenses and corporate overhead, our management does not consider inflation to be a significant risk to direct costs in the current and foreseeable economic environment. However, if inflation becomes a significant factor in the world economy, inflationary pressures could result in increased operating and financing costs.

Item 12. Description of Securities Other than Equity Securities

Not Applicable.

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PART II

Item 13. Defaults, Dividend Arrearages and Delinquencies

Not Applicable.

Item 14. Material Modifications to the Rights of Security Holders and Use of Proceeds

None.

Item 15. Controls and Procedures

A. Evaluation of Disclosure Controls and Procedures

The Company's management, with the participation of the Company's chief executive officer and chief financial officer, evaluated the effectiveness of the Company's disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the Exchange Act), as of the end of the period covered by this Annual Report. Based on that evaluation, the chief executive officer and the chief financial officer concluded that the Company's disclosure controls and procedures as of the end of the period covered by this Annual Report were designed and were functioning effectively to provide reasonable assurance that the information required to be disclosed by the Company in reports filed under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and is accumulated and communicated to the Company's management, including our chief executive officer and chief financial officer and principal financial officers, or persons performing similar functions, as appropriate, to allow timely decisions regarding required disclosure.

The Company believes that a system of controls, no matter how well designed and operated, cannot provide absolute assurance that the objectives of the controls are met, and no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within a company have been detected.

B. Management's Annual Report on Internal Control Over Financial Reporting

The management of Tsakos Energy Navigation Limited and its subsidiaries, according to Rule 13a-15(f) of the Securities Exchange Act, is responsible for the establishment and maintenance of adequate internal controls over financial reporting for the Company. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the Company's financial statements for external reporting purposes in accordance with U.S. generally accepted accounting principles. However, in any system of internal control there are inherent limitations and consequently internal control over financial reporting may not absolutely prevent or detect misstatements.

The Company's system of internal control over financial reporting includes policies and procedures that:

- (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company;
- (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and
- (iii)

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provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the financial statements.

Because of the inherent limitations of internal controls over financial reporting, misstatements may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal

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control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management has performed an assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2018, based on the criteria established within *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework).

Based on its assessment, management has determined that the Company's internal control over financial reporting as of December 31, 2018, was effective.

C. Attestation Report of Independent Registered Public Accounting Firm

Ernst & Young (Hellas) Certified Auditors Accountants S.A., or Ernst & Young (Hellas), which has audited the consolidated financial statements of the Company for the year ended December 31, 2018, has also audited the effectiveness of the Company's internal control over financial reporting as stated in their audit report which is incorporated into Item 18 of this Form 20-F from page F-3 hereof.

D. Change in Internal Control over Financial Reporting

No change in the Company's internal control over financial reporting occurred during the Company's most recent fiscal year that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 16A. Audit Committee Financial Expert

The Board of Directors of the Company has determined that Nicholas Tommasino, Efstratios Georgios Arapoglou and Dr. Maria Vassalou, whose biographical details are included in Item 6 of this Annual Report, each qualifies as an audit committee financial expert as defined under current SEC regulations and each satisfies the accounting or related financial management expertise standard of the New York Stock Exchange.

Item 16B. Code of Ethics

The Company has adopted a code of ethics that applies to its directors, officers and employees. A copy of our code of ethics is posted in the Investor Relations section of the Tsakos Energy Navigation Limited website, and may be viewed at <http://www.tenn.gr>. We will also provide a hard copy of our code of ethics free of charge upon written request of a shareholder. Shareholders may direct their requests to the attention of Investor Relations, c/o George Saroglou or Paul Durham, Tsakos Energy Navigation Limited, 367 Syngrou Avenue, 175 64 P. Faliro, Athens, Greece.

Item 16C. Principal Accountant Fees and Services

Ernst & Young (Hellas) has audited our annual financial statements acting as our Independent Registered Public Accounting Firm for the fiscal years ended December 31, 2018 and 2017.

Audit Fees

The audit fees include the aggregate fees billed for professional services rendered for the audit of our 2018 and 2017 annual financial statements and for related services that are reasonably related to the performance of the audit or services that are normally provided by the auditor in connection with regulatory filings or engagements for those financial years (including comfort letters, review of the 20-F, consents and other services related to SEC requirements).

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The total amount billed and accrued for the Ernst & Young Audit services performed in 2018 and 2017 (in Euros) was 680,000 and 735,000 respectively.

Audit-Related Fees

Ernst & Young did not provide any other services that would be classified in this category during 2018 or 2017.

Tax Fees

Ernst & Young did not provide any other services that would be classified in this category during 2018 or 2017.

All Other Fees

Ernst & Young did not provide any other services that would be classified in this category during 2018 or 2017.

Pre-approval Policies and Procedures

The Audit Committee Charter sets forth the Company's policy regarding retention of the independent auditors, requiring the Audit Committee to review and approve in advance the retention of the independent auditors for the performance of all audit and lawfully permitted non-audit services and the fees related thereto. The Chairman of the Audit Committee or in the absence of the Chairman, any member of the Audit Committee designated by the Chairman, has authority to approve in advance any lawfully permitted non-audit services and fees. The Audit Committee is authorized to establish other policies and procedures for the pre-approval of such services and fees. Where non-audit services and fees are approved under delegated authority, the action must be reported to the full Audit Committee at its next regularly scheduled meeting.

Item 16D. Exemptions from the Listing Standards for Audit Committees

Not Applicable.

Item 16E. Purchases of Equity Securities by the Issuer and Affiliated Purchasers

On December 8, 2015, the Company announced the resumption of the share repurchase program for its common and/or its preferred shares previously authorized by its Board of Directors in 2011. The Company had still available up to \$20.0 million from its previously authorized program and, on July 14, 2016, the Company announced the Board's authorization of up to an additional \$20 million in common and/or preferred share repurchases. In 2016, the Company acquired as treasury stock 3,705,286 common shares for a total amount of \$20.7 million and did not purchase any preferred shares. No repurchases were made by the Company under this program in 2018 and 2017. All purchases by the Company have been made on the open market within the safe harbor provisions of Regulation 10b-18 under the Exchange Act. Shares may be purchased from time to time in open market or privately negotiated transactions, which may include derivative transactions, at times and prices that are considered to be appropriate by the Company and the program may be discontinued at any time. Purchases under the program currently have been suspended.

Item 16F. Change in Registrant's Certifying Accountant

Not Applicable.

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Item 16G. Corporate Governance

Pursuant to certain exceptions for foreign private issuers, we are not required to comply with certain of the corporate governance practices followed by U.S. companies under the New York Stock Exchange listing standards. However, during 2018 there were no significant differences between our corporate governance practices and the New York Stock Exchange standards applicable to listed U.S. companies.

Item 16H. Mine Safety Disclosure

Not Applicable.

Table of Contents**PART III****Item 17. Financial Statements**

Not Applicable.

Item 18. Financial Statements

The following financial statements together with the reports of our independent registered public accounting firm, beginning on page F-1, are filed as part of this annual report.

Item 19. Exhibits

The following Exhibits are filed as part of this Annual Report. Certain exhibits have been previously filed with the SEC pursuant to the Securities Exchange Act of 1934, as amended (Commission File Number 001-31236).

Number	Description
1.1	Memorandum of Association of Tsakos Energy Navigation Limited(P) (filed as Exhibit 3.1 to the Company's Registration Statement on Form F-1 (File No. 333-82326) filed with the SEC and hereby incorporated by reference to such Registration Statement)
1.2	<u>Memorandum of Increase of Share Capital (filed as Exhibit 3.1 to the Company's 6-K filed with the SEC on June 10, 2014, and hereby incorporated by reference)</u>
1.3	<u>Bye-laws of Tsakos Energy Navigation Limited (filed as Exhibit 3.1 to the Company's Form 6-K filed with the SEC on May 26, 2016, and hereby incorporated by reference)</u>
2.1	<u>Certificate of Designation of the 8.00% Series B Cumulative Redeemable Perpetual Preferred Shares (filed as Exhibit 3.3 to the Company's Form 8-A filed with the SEC on May 9, 2013, and hereby incorporated by reference)</u>
2.2	<u>Amendment No. 1 to Certificate of Designation of the 8.00% Series B Cumulative Redeemable Perpetual Preferred Shares (filed as Exhibit 3.3.1 to the Company's Form 8-A/A filed with the SEC on October 26, 2015, and hereby incorporated by reference)</u>
2.3	<u>Certificate of Designation of the 8.875% Series C Cumulative Redeemable Perpetual Preferred Shares (filed as Exhibit 3.3 to the Company's Form 8-A filed with the SEC on September 30, 2013, and hereby incorporated by reference)</u>
2.4	<u>Amendment No. 1 to Certificate of Designation of the 8.875% Series C Cumulative Redeemable Perpetual Preferred Shares (filed as Exhibit 3.3.1 to the Company's Form 8-A/A filed with the SEC on October 26, 2015, and hereby incorporated by reference)</u>
2.5	<u>Certificate of Designation of the 8.75% Series D Cumulative Redeemable Perpetual Preferred Shares (filed as Exhibit 3.3 to the Company's Form 8-A filed with the SEC on April 24, 2015, and hereby incorporated by reference)</u>
2.6	<u>Certificate of Designation of the 9.25% Series E Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares (filed as Exhibit 3.3 to the Company's Form 8-A filed with the SEC on April 4, 2017, and hereby incorporated by reference)</u>
2.7	<u>Certificate of Designation of the 9.50% Series F Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Shares (filed as Exhibit 3.3 to the Company's Form 8-A filed with the SEC on June 27, 2018 and hereby incorporated by reference)</u>
4.1	<u>Tsakos Energy Navigation Limited 2012 Incentive Plan (filed as Exhibit 4.2 to the Company's Annual Report on Form 20-F filed with the SEC on April 29, 2013 and hereby incorporated by reference)</u>

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Number	Description
4.2	<u>Amended and Restated Management Agreement between Tsakos Energy Navigation Limited and Tsakos Energy Management Limited effective January 1, 2007 (filed as Exhibit 4.4 to the Company's 20-F filed with the SEC on May 15, 2007, hereby incorporated by reference to such Annual Report)</u>
8	<u>List of subsidiaries of Tsakos Energy Navigation Limited (filed herewith)</u>
11	<u>Code of Ethics (filed as Exhibit 11 to the Company's Annual Report on Form 20-F filed with the SEC on June 29, 2004 and hereby incorporated by reference to such Annual Report)</u>
12.1	<u>Certification of Chief Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended (filed herewith)</u>
12.2	<u>Certification of Chief Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as amended (filed herewith)</u>
13.1	<u>Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith)</u>
13.2	<u>Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (filed herewith)</u>
15.1	<u>Consent of Independent Registered Public Accounting Firm (filed herewith)</u>
15.2	<u>Consent of Howe Robinson Partners (UK) Ltd. (filed herewith)</u>
101.INS	XBRL Instance Document (filed herewith)
101.SCH	XBRL Taxonomy Extension Schema (filed herewith)
101.CAL	XBRL Taxonomy Extension Calculation Linkbase (filed herewith)
101.DEF	XBRL Taxonomy Extension Definition Linkbase (filed herewith)
101.LAB	XBRL Taxonomy Extension Label Linkbase (filed herewith)
101.PRE	XBRL Taxonomy Extension Presentation Linkbase (filed herewith)

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SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

TSAKOS ENERGY NAVIGATION LIMITED

/s/ Nikolas P. Tsakos

Name: Nikolas P. Tsakos

Title: President and Chief Executive Officer

Date: April 12, 2019

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TSAKOS ENERGY NAVIGATION LIMITED AND SUBSIDIARIES

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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of

TSAKOS ENERGY NAVIGATION LIMITED

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of TSAKOS ENERGY NAVIGATION LIMITED and subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of comprehensive (loss) / income, other comprehensive (loss) / income, stockholders' equity, and cash flows, for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated April 12, 2019, expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the US federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young (Hellas) Certified Auditors Accountants S.A.

We have served as the Company's auditor since 2002.

Athens, Greece

April 12, 2019

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Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of

TSAKOS ENERGY NAVIGATION LIMITED

Opinion on Internal Control over Financial Reporting

We have audited TSAKOS ENERGY NAVIGATION LIMITED and subsidiaries' internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, TSAKOS ENERGY NAVIGATION LIMITED and subsidiaries (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2018 and 2017, the related consolidated statements of comprehensive (loss) / income, other comprehensive (loss) / income, stockholders' equity, and cash flows, for each of the three years in the period ended December 31, 2018, and the related notes and our report dated April 12, 2019, expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young (Hellas) Certified Auditors Accountants S.A.

Athens, Greece

April 12, 2019

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Table of Contents**TSAKOS ENERGY NAVIGATION LIMITED AND SUBSIDIARIES****CONSOLIDATED BALANCE SHEETS**

DECEMBER 31, 2018 AND 2017

(Expressed in thousands of U.S. Dollars except share and per share data)

	2018	2017
<u>ASSETS</u>		
CURRENT ASSETS:		
Cash and cash equivalents	\$ 204,763	\$ 189,763
Restricted cash	15,763	12,910
Accounts receivable, net	35,351	27,364
Capitalized voyage expenses	617	
Due from related parties (Note 2)	20,923	14,210
Advances and other	18,407	19,061
Vessels held for sale (Note 1(k))		17,500
Inventories	20,388	16,293
Prepaid insurance and other	1,073	1,577
Current portion of financial instruments Fair value (Note 14)	217	5,715
Total current assets	317,502	304,393
INVESTMENTS (Note 3)	1,000	1,000
FINANCIAL INSTRUMENTS FAIR VALUE, net of current portion (Note 14)	133	1,430
LONG TERM RECEIVABLE (Note 4)	13,000	13,000
FIXED ASSETS (Note 4)		
Advances for vessels under construction	16,161	1,650
Vessels	3,813,987	3,953,599
Accumulated depreciation	(984,540)	(925,195)
Vessels Net Book Value	2,829,447	3,028,404
Total fixed assets	2,845,608	3,030,054
DEFERRED CHARGES, net (Note 5)	27,815	23,759
Total assets	\$ 3,205,058	\$ 3,373,636
<u>LIABILITIES AND STOCKHOLDERS EQUITY</u>		
CURRENT LIABILITIES:		
Current portion of long-term debt (Note 6)	\$ 160,584	\$ 225,883
Payables	37,532	46,916
Due to related parties (Note 2)	4,366	7,442
Accrued liabilities	45,765	43,693
Unearned revenue	6,007	13,611
Current portion of financial instruments Fair value (Note 14)	48	1,378
Total current liabilities	254,302	338,923
LONG-TERM DEBT, net of current portion (Note 6)	1,435,017	1,525,986
FINANCIAL INSTRUMENTS FAIR VALUE, net of current portion (Note 14)	8,962	589

STOCKHOLDERS EQUITY

Preferred shares, \$ 1.00 par value; 25,000,000 shares authorized and 2,000,000 Series B Preferred Shares and 2,000,000 Series C Preferred Shares, 3,424,803 Series D Preferred Shares, 4,600,000 Series E Preferred Shares and 6,000,000 Series F Preferred Shares issued and outstanding at December 31, 2018 and 25,000,000 shares authorized and 2,000,000 Series B Preferred Shares, 2,000,000 Series C Preferred Shares and 3,424,803 Series D Preferred Shares, 4,600,000 Series E Preferred Shares issued and outstanding at December 31, 2017.	18,025	12,025
Common shares, \$ 1.00 par value; 175,000,000 shares authorized at December 31, 2018 and December 31, 2017; 87,604,645 shares issued and outstanding at December 31, 2018 and 87,338,652 shares issued and 86,319,583 shares outstanding at December 31, 2017.	87,605	87,339
Additional paid-in capital	996,833	857,998
Cost of treasury stock		(5,736)
Accumulated other comprehensive loss	(8,660)	(5,305)
Retained earnings	400,933	547,937
Total Tsakos Energy Navigation Limited stockholders equity	1,494,736	1,494,258
Noncontrolling Interest	12,041	13,880
Total stockholders equity	1,506,777	1,508,138
Total liabilities and stockholders equity	\$ 3,205,058	\$ 3,373,636

The accompanying notes are an integral part of these consolidated financial statements.

Table of Contents**TSAKOS ENERGY NAVIGATION LIMITED AND SUBSIDIARIES**

CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME

FOR THE YEARS ENDED DECEMBER 31, 2018, 2017 AND 2016

(Expressed in thousands of U.S. Dollars except share and per share data)

	2018	2017	2016
VOYAGE REVENUES:	\$ 529,879	\$ 529,182	\$ 481,790
EXPENSES:			
Voyage expenses	125,350	113,403	106,403
Charter hire expense	10,822	311	
Vessel operating expenses	181,693	173,864	146,546
Depreciation and amortization	146,798	139,020	113,420
General and administrative expenses	27,032	26,324	25,611
Loss on sale of vessels	364	3,860	
Vessels impairment charge	65,965	8,922	
Total expenses	558,024	465,704	391,980
Operating (loss) income	(28,145)	63,478	89,810
OTHER INCOME (EXPENSES):			
Interest and finance costs, net (Note 7)	(76,809)	(56,839)	(35,873)
Interest income	2,507	1,082	623
Other, net	1,405	1,464	1,935
Total other expenses, net	(72,897)	(54,293)	(33,315)
Net (loss) income	(101,042)	9,185	56,495
Less: Net loss (income) attributable to the noncontrolling interest	1,839	(1,573)	(712)
Net (loss) income attributable to Tsakos Energy Navigation Limited	\$ (99,203)	\$ 7,612	\$ 55,783
Effect of preferred dividends	(33,763)	(23,776)	(15,875)
Net (loss) income attributable to common stockholders of Tsakos Energy Navigation Limited	(132,966)	(16,164)	39,908
(Loss) Earnings per share, basic and diluted attributable to Tsakos Energy Navigation Limited common stockholders	\$ (1.53)	\$ (0.19)	\$ 0.47
Weighted average number of shares, basic and diluted	87,111,636	84,713,572	84,905,078

The accompanying notes are an integral part of these consolidated financial statements.

Table of Contents**TSAKOS ENERGY NAVIGATION LIMITED AND SUBSIDIARIES**

STATEMENTS OF CONSOLIDATED OTHER COMPREHENSIVE (LOSS) INCOME

FOR THE YEARS ENDED DECEMBER 31, 2018, 2017 AND 2016

(Expressed in thousands of U.S. Dollars)

	2018	2017	2016
Net (loss) income	\$ (101,042)	\$ 9,185	\$ 56,495
Other comprehensive income			
Unrealized (losses) gains from hedging financial instruments			
Unrealized (loss) gain on interest rate swaps, net	(3,355)	(992)	6,414
Comprehensive (loss) income	(104,397)	8,193	62,909
Less: comprehensive loss (income) attributable to the noncontrolling interest	1,839	(1,573)	(712)
Comprehensive (loss) income attributable to Tsakos Energy Navigation Limited	\$ (102,558)	\$ 6,620	\$ 62,197

The accompanying notes are an integral part of these consolidated financial statements.

Table of Contents**TSAKOS ENERGY NAVIGATION LIMITED AND SUBSIDIARIES**

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

FOR THE YEARS ENDED DECEMBER 31, 2018, 2017 AND 2016

(Expressed in thousands of U.S. Dollars except for share and per share data)

	Preferred Shares	Common Shares	Additional Paid-in Capital	Treasury stock		Retained Earnings	Accumulated Other Comprehensive Loss	Tsakos Energy Navigation Limited	Noncontrolling Interest	Total Stockholders' Equity
				Shares	Amount					
BALANCE December 31, 2015	\$ 7,400	\$ 87,339	\$ 752,001		\$	\$ 567,464	\$ (10,727)	\$ 1,403,477	\$ 11,595	\$ 1,415,072
Net income						55,783		55,783	712	56,495
Purchases of Treasury stock				3,705,286	(20,683)			(20,683)		(20,683)
Shares granted to non-executive directors				(87,500)	510			510		510
Cash dividends paid (\$0.08 and \$0.05 per common share)						(24,483)		(24,483)		(24,483)
Dividends paid on Series B Preferred Shares						(4,000)		(4,000)		(4,000)
Dividends paid on Series C Preferred Shares						(4,437)		(4,437)		(4,437)
Dividends paid on Series D Preferred Shares						(7,438)		(7,438)		(7,438)
Other comprehensive income							6,414	6,414		6,414
BALANCE December 31, 2016	\$ 7,400	\$ 87,339	\$ 752,001	3,617,786	\$ (20,173)	\$ 582,889	\$ (4,313)	\$ 1,405,143	\$ 12,307	\$ 1,417,450
Net income						7,612		7,612	1,573	9,185
Issuance of 9.25% Series E Preferred Shares	4,600		105,896					110,496		110,496
Sale of Series D Preferred Shares	25		508					533		533
Sale of Common Shares			(407)	(2,488,717)	13,848	(2,588)		10,853		10,853
Shares granted to non-executive directors				(110,000)	589	(102)		487		487
Cash dividends paid (\$0.05 per common share)						(17,066)		(17,066)		(17,066)
Dividends paid on Series B Preferred Shares						(4,000)		(4,000)		(4,000)
Dividends paid on Series C Preferred Shares						(4,438)		(4,438)		(4,438)
Dividends paid on Series D Preferred Shares						(7,485)		(7,485)		(7,485)
Dividends paid on Series E Preferred Shares						(6,885)		(6,885)		(6,885)
Other comprehensive loss							(992)	(992)		(992)
BALANCE December 31, 2017	\$ 12,025	\$ 87,339	\$ 857,998	1,019,069	\$ (5,736)	\$ 547,937	\$ (5,305)	\$ 1,494,258	\$ 13,880	\$ 1,508,138
Adoption of new accounting standard						(1,311)		(1,311)		(1,311)
Net Loss						(99,203)		(99,203)	(1,839)	(101,042)
Issuance of 9.50% Series F Preferred Shares	6,000		138,280					144,280		144,280

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Sale of Common Shares	266	555	(1,019,069)	5,736	(2,046)	4,511	4,511
Cash dividends paid (\$0.05 per common share)					(13,096)	(13,096)	(13,096)
Dividends paid on Series B Preferred Shares					(4,000)	(4,000)	(4,000)
Dividends paid on Series C Preferred Shares					(4,438)	(4,438)	(4,438)
Dividends paid on Series D Preferred Shares					(7,492)	(7,492)	(7,492)
Dividends paid on Series E Preferred Shares					(10,637)	(10,637)	(10,637)
Dividends paid on Series F Preferred Shares					(4,781)	(4,781)	(4,781)
Other comprehensive loss					(3,355)	(3,355)	(3,355)

BALANCE December 31, 2018

\$ 18,025 \$ 87,605 \$ 996,833 \$ \$ 400,933 \$ (8,660) \$ 1,494,736 \$ 12,041 \$ 1,506,777

The accompanying notes are an integral part of these consolidated financial statements.

Table of Contents**TSAKOS ENERGY NAVIGATION LIMITED AND SUBSIDIARIES**

CONSOLIDATED STATEMENTS OF CASH FLOWS

FOR THE YEARS ENDED DECEMBER 31, 2018, 2017 AND 2016

(Expressed in thousands of U.S. Dollars)

	2018	2017	2016
Cash Flows from Operating Activities:			
Net (loss) income	\$ (101,042)	\$ 9,185	\$ 56,495
Adjustments to reconcile net (loss) income to net cash provided by operating activities			
Depreciation	137,023	131,873	107,089
Amortization of deferred dry-docking costs	9,775	7,147	6,331
Amortization of loan fees	3,992	4,152	1,742
Stock compensation expense		487	510
Change in fair value of derivative instruments	10,295	(3,692)	(5,232)
Loss on sale of vessels	364	3,860	
Vessels impairment charge	65,965	8,922	
Payments for dry-docking	(14,869)	(12,532)	(11,606)
(Increase) Decrease in:			
Receivables, net	(15,995)	8,573	(5,448)
Inventories	(4,095)	2,463	(4,346)
Prepaid insurance and other	504	265	(75)
Capitalized voyage expenses	20		
Increase (Decrease) in:			
Payables	(12,460)	(4,045)	23,399
Accrued liabilities	2,072	8,986	5,344
Unearned revenue	(7,604)	5,183	(3,849)
Net Cash provided by Operating Activities	73,945	170,827	170,354
Cash Flows from Investing Activities:			
Advances for vessels under construction and acquisitions	(16,161)		(109,557)
Vessel acquisitions and/or improvements	(1,154)	(293,347)	(466,518)
Proceeds from sale of vessels	17,136	51,550	
Net Cash used in Investing Activities	(179)	(241,797)	(576,075)
Cash Flows from Financing Activities:			
Proceeds from long-term debt	352,872	397,092	777,536
Financing costs	(4,300)	(3,177)	(6,420)
Payments of long-term debt	(508,832)	(400,053)	(411,587)
Sale of treasury stock, net	4,511	10,853	
Proceeds from preferred stock issuance, net	144,280	111,029	
Repurchase of Common Shares			(20,683)
Cash dividends	(44,444)	(39,874)	(40,358)
Net Cash (used in) provided by Financing Activities	(55,913)	75,870	298,488
Net increase (decrease) in cash and cash equivalents and restricted cash	17,853	4,900	(107,233)
Cash and cash equivalents and restricted cash at beginning of period	202,673	197,773	305,006

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Cash and cash equivalents and restricted cash at end of period	\$ 220,526	\$ 202,673	\$ 197,773
<i>Interest paid</i>			
Cash paid for interest, net of amounts capitalized	\$ 67,922	\$ 56,580	\$ 35,339
Reconciliation of cash and cash equivalents and restricted cash at end of period:			
Current Assets:			
Cash and cash equivalents	204,763	189,763	187,777
Restricted cash	15,763	12,910	9,996
Total Cash and cash equivalents and restricted cash	220,526	202,673	197,773

The accompanying notes are an integral part of these consolidated financial statements.

Table of Contents**TSAKOS ENERGY NAVIGATION LIMITED AND SUBSIDIARIES****NOTES TO CONSOLIDATED FINANCIAL****STATEMENTS DECEMBER 31, 2018, 2017 AND 2016****(Expressed in thousands of U.S. Dollars, except for share and per share data, unless otherwise stated)****1. Significant Accounting Policies**

(a) ***Basis of presentation and description of business:*** The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) and include the accounts of Tsakos Energy Navigation Limited (the Holding Company), and its wholly-owned and majority-owned subsidiaries (collectively, the Company). As at December 31, 2018 and 2017, the Holding Company consolidated one variable interest entity (VIE) for which it is deemed to be the primary beneficiary, i.e. it has a controlling financial interest in this entity. A VIE is an entity that in general does not have equity investors with voting rights or that has equity investors that do not provide sufficient financial resources for the entity to support its activities. A controlling financial interest in a VIE is present when a company has the power to direct the activities of a VIE that most significantly impact the entity's economic performance and absorbs a majority of an entity's expected losses, receives a majority of an entity's expected residual returns, or both. All intercompany balances and transactions have been eliminated upon consolidation.

The Company follows the provisions of Accounting Standard Codification (ASC) 220, Comprehensive Income, which requires separate presentation of certain transactions, which are recorded directly as components of stockholders' equity. The Company presents Other Comprehensive Income in a separate statement.

The Company owns and operates a fleet of crude oil and product carriers including two vessels chartered-in and two LNG carriers providing worldwide marine transportation services under long, medium or short-term charters.

New revenue recognition guidance

On January 1, 2018, the Company adopted ASC 606 Revenue from Contracts with Customers, using the modified retrospective method only to contracts that were not completed at January 1, 2018. The prior period comparative information has not been restated and continues to be reported under the accounting guidance in effect for those periods. Its adoption mainly changed the method of recognizing revenue over time for voyage charters from the discharge-to-discharge method to the loading-to-discharge method. Under the loading-to-discharge method the commencement date of each voyage charter shall be deemed to be upon the loading of the current cargo, decreasing the period of time for recognizing revenue for voyages. The effect of the adoption of the new accounting standard resulted in a cumulative adjustment of \$1,311 in the opening balance of the retained earnings for the fiscal year 2018, as a result of the change in the recognition method of revenues related to voyage charters and their fulfillment costs.

Had ASC 606 not been adopted, (i) voyage revenues would have been \$531,256 for the year ended December 31, 2018, (ii) voyage expenses would not have been materially different for the year ended December 31, 2018, (iii) trade accounts receivables would have been \$36,728 as of December 31, 2018, (iv) accrued liabilities would not have been materially different as of December 31, 2018 and (v) no capitalized voyage expenses would have been recognized as of December 31, 2018. Had ASC 606 not been adopted, our total equity would have been \$1,509,338 and our net loss would have been \$97,953, respectively, for the year ended December 31, 2018, or \$(1.12) basic and diluted loss per share (Note 1(n)).

(b) ***Statement of Cash Flows:*** In November 2016, the FASB issued ASU No. 2016-18 Statement of Cash Flows (Topic 230) Restricted Cash, which requires amounts generally described as restricted cash and restricted cash equivalents to be included with cash and cash equivalents when reconciling the

Table of Contents**TSAKOS ENERGY NAVIGATION LIMITED AND SUBSIDIARIES****NOTES TO CONSOLIDATED FINANCIAL****STATEMENTS DECEMBER 31, 2018, 2017 AND 2016 (Continued)**

(Expressed in thousands of U.S. Dollars, except for share and per share data, unless otherwise stated)

beginning-of-period and end-of-period total amounts shown on the statement of cash flows. On January 1, 2018, the Company adopted the aforementioned ASU. The only effect of the adoption of ASU No. 2016-18 was to remove from the financing activities section of the statement of cash flows and the beginning period and ending period cash balances to include restricted cash. The comparative period of the statement of cash flow has been retrospectively adjusted to reflect the adoption of ASU No. 2016-18.

- (c) **Use of Estimates:** The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts of assets and liabilities and expenses, reported in the consolidated financial statements and the accompanying notes. Although actual results could differ from those estimates, management does not believe that such differences would be material.
- (d) **Other Comprehensive Income:** The statement of other comprehensive (loss) income, presents the change in equity (net assets) during a period from transactions and other events and circumstances from non-owner sources. It includes all changes in equity during a period except those resulting from investments by shareholders and distributions to shareholders. Reclassification adjustments are presented out of accumulated other comprehensive (loss) income on the face of the statement in which the components of other comprehensive (loss) income are presented or in the notes to the financial statements. The Company follows the provisions of ASC 220 Comprehensive Income , and presents items of net income, items of other comprehensive income (OCI) and total comprehensive income in two separate and consecutive statements.
- (e) **Foreign Currency Translation:** The functional currency of the Company is the U.S. Dollar because the Company's vessels operate in international shipping markets in which the U.S. Dollar is utilized to transact most business. The accounting books of the Company are also maintained in U.S. Dollars. Transactions involving other currencies during the year are converted into U.S. Dollars using the exchange rates in effect at the time of the transactions. At the balance sheet dates, monetary assets and liabilities, which are denominated in other currencies, are translated into U.S. Dollars at the year-end exchange rates. Resulting gains or losses are reflected within Operating expenses in the accompanying Consolidated Statements of Comprehensive (Loss) Income.
- (f) **Cash, Cash Equivalents and Restricted Cash:** The Company classifies highly liquid investments such as time deposits and certificates of deposit and their equivalents with original maturities of three months or less as cash and cash equivalents. Cash deposits with certain banks that may only be used for special purposes (including loan repayments) are classified as Restricted cash.
- (g) **Accounts Receivable, Net:** Accounts receivable, net at each balance sheet date includes estimated recoveries from charterers for hire, freight and demurrage billings and revenue earned but not yet billed, net of an allowance for doubtful accounts (nil as of December 31, 2018 and 2017). Accounts receivable are recorded when the right to consideration becomes unconditional. The Company's management at each balance sheet date reviews all outstanding invoices and provides allowances for receivables deemed uncollectible primarily based on the aging of such balances and any amounts in dispute.
- (h) **Inventories:** Inventories consist of bunkers, lubricants, victualling and stores and are stated at the lower of cost or net realizable value. The cost is determined primarily by the first-in, first-out method. Net realizable value is defined as estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation. When evidence exists that the net

realizable value of inventory is lower than its cost, the difference is recognized as a loss in earnings in the period in which it occurs.

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- (i) **Fixed Assets:** Fixed assets consist of vessels. Vessels are stated at cost, less accumulated depreciation. The cost of vessels includes the contract price and pre-delivery costs incurred during the construction and delivery of newbuildings, including capitalized interest, and expenses incurred upon acquisition of second-hand vessels. Subsequent expenditures for conversions and major improvements are capitalized when they appreciably extend the life, increase the earning capacity or improve the efficiency or safety of the vessels; otherwise they are charged to expense as incurred. Expenditures for routine repairs and maintenance are expensed as incurred. Depreciation is provided on the straight-line method based on the estimated remaining economic useful lives of the vessels, less an estimated residual value based on a scrap price.
- (j) **Impairment of Vessels:** The Company reviews vessels for impairment whenever events or changes in circumstances indicate that the carrying amount of a vessel may not be recoverable. When such indicators are present, a vessel to be held and used is tested for recoverability by comparing the estimate of future undiscounted net operating cash flows expected to be generated by the use of the vessel over its remaining useful life and its eventual disposition to its carrying amount. Net operating cash flows are determined by applying various assumptions regarding the use or probability of sale of each vessel, future revenues net of commissions, operating expenses, scheduled dry-dockings, expected off-hire and scrap values, and taking into account historical revenue data and published forecasts on future world economic growth and inflation. Should the carrying value of the vessel exceed its estimated future undiscounted net operating cash flows, impairment is measured based on the excess of the carrying amount over the fair market value of the asset. The Company determines the fair value of its vessels based on management estimates and assumptions and by making use of available market data and taking into consideration third party valuations. The review of the carrying amounts in connection with the estimated recoverable amount for certain of the Company's vessels and an advance for a vessel under construction as of December 31, 2018 and 2017, indicated an impairment charge of \$65,965 and \$8,922, respectively (Note 4). No impairment charge was indicated as of December 31, 2016.
- (k) **Reporting Assets held for sale:** It is the Company's policy to dispose of vessels when suitable opportunities occur and not necessarily to keep them until the end of their useful life. Long-lived assets are classified as held for sale when all applicable criteria enumerated under ASC 360 Property, Plant, and Equipment are met and are measured at the lower of their carrying amount or fair value less cost to sell. These assets are not depreciated once they meet the criteria to be held for sale. At December 31, 2018, there were no vessels held for sale. At December 31, 2017, the Company considered that the VLCC *Millennium* met the criteria to be classified as held for sale.
- (l) **Accounting for Special Survey and Dry-docking Costs:** The Company follows the deferral method of accounting for dry-docking and special survey costs whereby actual costs incurred are reported in Deferred Charges and are amortized on a straight-line basis over the period through the date the next dry-docking is scheduled to become due (approximately every five years during the first fifteen years of vessels' life and every two and a half years within the remaining useful life of the vessels). Costs relating to routine repairs and maintenance are expensed as incurred. The unamortized portion of special survey and dry-docking costs for a vessel that is sold is included as part of the carrying amount of the vessel in determining the gain or loss on sale of the vessel.
- (m) **Loan Costs:** Costs incurred for obtaining new loans or refinancing existing loans are capitalized and included in deferred charges and amortized over the term of the respective loan, using the effective interest rate method. Any unamortized balance of costs relating to loans repaid or refinanced as debt

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extinguishments is expensed in the period the repayment or extinguishment is made. Deferred financing costs, net of accumulated amortization, is presented as a reduction of long-term debt (Note 6).

(n) Revenue from Contracts with Customers: ASC 606 outlines a single comprehensive model for entities to use in accounting for revenue from contracts with customers. The core principle of the guidance in Topic 606 is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services by applying the following steps: (1) identify the contract(s) with a customer; (2) identify the performance obligations in each contract; (3) determine the transaction price; (4) allocate the transaction price to the performance obligations in each contract; and (5) recognize revenue when (or as) the entity satisfies a performance obligation.

Incremental costs of obtaining a contract with a customer and contract's fulfillment costs should be capitalized and amortized over the voyage period, if certain criteria are met for incremental costs if only they are chargeable to the customer and for contract's fulfillment costs if each of the following criteria are met: (i) they relate directly to the contract, (ii) they generate or enhance entity's resources that shall be used in performance obligation satisfaction and (iii) are expected to be recovered.

Further, in case of incremental costs, entities may elect, in accordance with the practical expedient of ASC 340 Other assets and deferred costs, not to capitalize them in cases of amortization period (voyage period) less than one year.

Accounting for Revenue and Expenses: Voyage revenues are generated from voyage charter agreements and contracts of affreightment, time or bareboat charter agreements (including profit sharing clauses).

Voyage charters and contracts of affreightment: Charters where a contract is made in the spot market for the use of a vessel for a specific voyage for a specified freight rate per ton, regardless of time to complete. Contracts of affreightment are contracts for multiple voyage charter employments. The Company has determined that under voyage charters, the charterer has no right to control any part of the use of the vessel. Thus, the Company's voyage charters do not contain lease and are accounted for in accordance with ASC 606. More precisely, the Company satisfies its single performance obligation to transfer cargo under the contract over the voyage period. Thus, revenues from voyage charters on the spot market or under contract of affreightment are recognized ratably from commencement of cargo loading to completion of discharge of the current cargo. Voyage charter payments are due upon discharge of the cargo. Revenues from voyage charters and contracts of affreightment amounted to \$184,779 and \$196,590 for the years ended December 31, 2018 and 2017, respectively.

Demurrage revenue, which is included in voyage revenues, represents charterers' reimbursement for any potential delays exceeding the allowed lay time as per charter party agreement and is recognized as the performance obligation is satisfied.

The Company has decided to apply the optional exemption not to disclose the value of the undelivered performance obligations for contracts with an original expected length of one year or less.

Time and bareboat charters: Here a contract exists and the vessel is delivered (commencement date) to the charterer, for a fixed period of time, at rates that are generally determined in the main body of charter parties and the relevant voyage expenses burden the charterer (i.e. port dues, canal tolls, pilotages and fuel

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consumption). The charterer has the right, upon delivery of the vessel, to control the use of the vessel as it has the enforceable right to: (i) decide the (re)delivery time of the vessel; (ii) arrange the ports from which the vessel shall pass; (iii) give directions to the master of the vessel regarding vessel's operations (i.e. speed, route, bunkers purchases, etc.); (iv) sub-charter the vessel and (v) consume any income deriving from the vessel's charter. Thus, time and bareboat charter agreements are accounted for as operating leases, ratably on a straight line over the duration of the charter basis in accordance with ASC 840. Any off-hires are recognized as incurred.

Profit sharing contracts are accounted for as variable consideration and included in the transaction price to the extent that variable amounts earned beyond an agreed fixed minimum hire are determinable at the reporting date and when there is no uncertainty associated with the variable consideration. Profit-sharing revenues are calculated at an agreed percentage of the excess of the charter's average daily income over an agreed amount.

Revenue from time charter hire arrangements with an escalation clause is recognized on a straight-line basis over the charter term unless another systematic and rational basis is more representative of the time pattern in which the vessel is employed. The charterer may charter the vessel with or without owner's crew and other operating services (time and bareboat charter, respectively). Revenues from time charter hire arrangements amounted to \$345,100 and \$332,592 for the years ended December 31, 2018 and 2017 respectively.

Voyage related and vessel operating costs: Voyage expenses primarily consist of commissions (i.e. brokerage and address), port charges, canal dues and bunker (fuel) costs relating to spot charters or contract of affreightment. These voyage expenses are borne by the Company unless the vessel is on time-charter, in which case they are borne by the charterer. All voyage expenses are expensed as incurred, apart from bunker expenses which consist part of the contract fulfillment costs and are recognized as a deferred contract cost and amortized over the voyage period when the relevant criteria under ASC 340-40 are met. Unamortized deferred contract costs are included in the consolidated balance sheet under Capitalized voyage expenses. Commissions are expensed as incurred. Vessel operating costs include crew costs, insurances, repairs and maintenance, spares, stores, lubricants, quality and safety costs and other expenses such as tonnage tax, registration fees and communication costs, as well as foreign currency gains or losses. All vessel operating expenses are expensed as incurred. Under a bareboat charter, the charterer assumes responsibility for all voyage and vessel operating expenses and risk of operation. Upon adoption of ASC 842, the Company made an accounting policy election to not recognize contract fulfillment costs for time charters under ASC 340-40.

Unearned revenue: Unearned revenue represents cash received prior to the year-end for which related service has not been provided, primarily relating to charter hire paid in advance to be earned over the applicable charter period.

Customers concentration: Voyage revenues for 2018, 2017 and 2016 included revenues derived from significant charterers as follows (in percentages of total voyage revenues):

Charterer	2018	2017	2016
A	15%	14%	13%
B	10%	11%	13%
C	10%	10%	9%

(o) **Segment Reporting:** The Company does not evaluate the operating results by type of vessel or by type of charter or by type of cargo. Although operating results may be identified by type of vessel, management,

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including the chief operating decision maker, reviews operating results primarily by revenue per day and operating results of the fleet. The Company operates two liquefied natural gas (LNG) carriers which meet the quantitative thresholds used to determine reportable segments. The chief operating decision maker does not review the operating results of these vessels separately or make any decisions about resources to be allocated to these vessels or assess their performance separately; therefore, the LNG carriers do not constitute a separate reportable segment. The Company's vessels operate on many trade routes throughout the world and, therefore, the provision of geographic information is considered impracticable by management. For the above reasons, the Company has determined that it operates in one reportable segment, the worldwide maritime transportation of liquid energy related products.

(p) **Derivative Financial Instruments:** The Company regularly enters into interest rate swap contracts to manage its exposure to fluctuations of interest rates associated with its specific borrowings. Also, the Company enters into bunker swap contracts and put or call options to manage its exposure to fluctuations of bunker prices associated with the consumption of bunkers by its vessels. Interest rate and bunker price differentials paid or received under the swap agreements are recognized as part of Interest and finance costs, net. On the inception of a put or call option on bunkers an asset or liability is recognized. The subsequent changes in its fair value and realized payments or receipts upon exercise of the options are recognized in the Statement of Comprehensive (Loss) Income as part of the interest and finance costs, net. All derivatives are recognized in the consolidated financial statements at their fair value. On the inception date of the derivative contract, the Company evaluates the derivative as an accounting hedge of the variability of cash flow to be paid of a forecasted transaction (cash flow hedge). Changes in the fair value of a derivative that is qualified, designated and highly effective as a cash flow hedge are recorded in other comprehensive (loss) income until earnings are affected by the forecasted transaction. Changes in the fair value of undesignated derivative instruments and the ineffective portion of designated derivative instruments are reported in earnings in the period in which those fair value changes occur. Realized gains or losses on early termination of undesignated derivative instruments are also classified in earnings in the period of termination of the respective derivative instrument.

The Company formally documents all relationships between hedging instruments and hedged items, as well as the risk-management objective and strategy for undertaking various hedge transactions. This process includes linking all derivatives that are designated as cash flow hedges of the variable cash flows of a forecasted transaction to a specific forecasted transaction. The Company also formally assesses, both at the hedge's inception and on an ongoing basis, whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in cash flow of hedged items. When it is determined that a derivative is not highly effective as a hedge or that it has ceased to be a highly effective hedge, the Company discontinues hedge accounting prospectively. In accordance with ASC 815 Derivatives and Hedging, the Company may prospectively discontinue the hedge accounting for an existing hedge if the applicable criteria are no longer met, the derivative instrument expires, is sold, terminated or exercised or if the Company removes the designation of the respective cash flow hedge. In those circumstances, the net gain or loss remains in accumulated other comprehensive income and is reclassified into earnings in the same period or periods during which the hedged forecasted transaction affects earnings, unless the forecasted transaction is no longer probable in which case the net gain or loss is reclassified into earnings immediately.

(q) **Fair Value Measurements:** The Company follows the provisions of ASC 820, Fair Value Measurements and Disclosures which defines, and provides guidance as to the measurement of fair value. ASC 820 applies when assets or liabilities in the financial statements are to be measured at fair value. Fair value is

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defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants (Note 14).

- (r) **Accounting for Leases:** Leases of assets under which substantially all the risks and rewards of ownership are effectively retained by the lessor are classified as operating leases. Lease payments under an operating lease are recognized as an expense on a straight-line method over the lease term. In December 2017, the Company entered into sale and leaseback transactions for two of its vessels (Note 4). At December 31, 2018, and 2017 such transactions are accounted for as operating leases.
- (s) **Stock Based Compensation:** The Company has a share-based incentive plan that covers directors and officers of the Company and employees of the related companies. No stock has been awarded in 2018. When awards are granted, they are valued at fair value and compensation cost is recognized on a straight-line basis, net of estimated forfeitures, over the requisite service period of each award. The fair value of restricted stock issued to crew members, directors and officers of the Company at the grant date is equal to the closing stock price on that date and is amortized over the applicable vesting period using the straight-line method. The fair value of restricted stock issued to non-employees is equal to the closing stock price at the grant date adjusted by the closing stock price at each reporting date and is amortized over the applicable performance period (Note 8). On January 1, 2017, the Company adopted ASU No. 2016-09, Compensation - Stock Compensation: Improvements to Employee Share-Based Payment Accounting, effective for the fiscal year ending December 31, 2017 and interim periods within this fiscal year. The adoption of this guidance has had no impact on the Company's results of operations, cash flows and net assets for any period.
- (t) **Business combinations Definition of a business:** In January 2017, the FASB issued ASU No. 2017-01 Business Combinations (Topic 805) Clarifying the Definition of a Business which addresses business combination issues with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The definition of a business affects many areas of accounting including acquisitions, disposals, goodwill, and consolidation. ASU 2017-01 is effective for fiscal years beginning after December 15, 2017 including interim periods within that reporting period. The Company adopted the aforementioned ASU with no impact on its consolidated financial statements and notes disclosures.
- (u) **Going concern:** The Company evaluates whether there is substantial doubt about its ability to continue as a going concern by applying the provisions of ASU No. 2014-15. In more detail, the Company evaluates whether there are conditions or events that raise substantial doubt about the Company's ability to continue as a going concern within one year from the date the financial statements are issued. As part of such evaluation, the Company did not identify any conditions that raise substantial doubt about the entity's ability to continue as a going concern within one year from the date the financial statements are issued. As a result, there was no impact in the Company's results of operations, financial position, cash flows or disclosures.
- (v) **Treasury stock:** Treasury stock is stock that is repurchased by the issuing entity, reducing the amount of outstanding shares in the open market. When shares are repurchased, they may either be cancelled or held for reissue. If not cancelled, such shares are referred to as treasury stock. Treasury stock is essentially the same as unissued capital and reduces ordinary share capital. The cost of the acquired shares should generally be shown as a deduction from stockholders' equity. Dividends on such shares held in the entity's treasury should not be reflected as income and not shown as a reduction in equity. Gains and losses on sales of treasury stock should be accounted for as adjustments to stockholders' equity and not as part of income. Depending on whether the shares are acquired for reissuance or retirement, treasury stock is accounted for

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under the cost method or the constructive retirement method. The cost method is also used, when reporting entity management has not made decisions as to whether the reacquired shares will be retired, held indefinitely or reissued. The Company elected for the repurchase of its common shares to be accounted for under the cost method. Under this method, the treasury stock account is charged for the aggregate cost of shares reacquired.

New Accounting Pronouncements Not Yet Adopted

In February 2016, the FASB issued ASU No. 2016-02 Leases (ASC 842), as amended, which requires lessees to recognize most leases on the balance sheet. This is expected to increase both reported assets and liabilities. The new lease standard does not substantially change lessor accounting.

ASC 842 as of January 1, 2019 using the alternative optional transition method along with the package of practical expedients which does not require the Company to reassess: (1) whether any expired or existing contracts are or contain leases; (2) lease classification for any expired or existing leases; and (3) whether initial direct costs for any expired or existing leases would qualify for capitalization under ASC 842. The Company will elect the practical expedient for lessors for presentation purposes, upon adoption of ASC 842-Leases, which allows the Company to account for the lease and non-lease (primarily crew and maintenance services) component of time charter agreements as one, since as the timing and pattern of transfer of the non-lease components and associated lease component are the same, the lease components, if accounted for separately, would be classified as an operating lease, and the predominant component in its time charter agreements is the lease component.

In July 2018, the FASB issued ASU No. 2018-10, Codification Improvements to (Topic 842) Leases: ASU No. 2018-10 affects narrow aspects of the guidance issued in the amendments in Update 2016-02. The amendments in this Update related to transition, do not include amendments from issued ASU, Leases (Topic 842): Targeted Improvements, specific to a new and optional transition method to adopt the new lease requirements in Update 2016-02. That additional transition method will be issued as part of a forthcoming and separate Update that will result in additional amendments to transition paragraphs included in this Update to conform with the additional transition method.

In July 2018, the FASB issued ASU No. 2018-11, Leases (ASC 842) Targeted Improvements. The amendments in this Update: (i) provide entities with an additional (and optional) transition method to adopt the new lease requirements by allowing entities to initially apply the requirements at the adoption date and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption; and, (ii) provide lessors with a practical expedient, by class of underlying asset, to not separate non-lease components from the associated lease component and, instead, to account for those components as a single component if the non-lease components otherwise would be accounted for under the new revenue guidance (ASC 606) and both of the following are met: (a) the timing and pattern of transfer of the non-lease component(s) and associated lease component are the same, and (b) the lease component, if accounted for separately, would be classified as an operating lease. If the non-lease component or components associated with the lease component are the predominant component of the combined component, an entity is required to account for the combined component in accordance with ASC 606. Otherwise, the entity should account for the combined component as an operating lease in accordance with ASC 842. Leases between related parties, are classified in accordance with the lease classification criteria applicable to all other leases on the basis of the legally enforceable terms and conditions of the lease.

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While the Company is still assessing the impact of the disclosure requirements under ASC 842, the Company, as a lessor, is expecting that the adoption will not have a material effect on its consolidated financial statements. For the sale and leaseback transactions, for which the Company is the lessee, the adoption of ASC 842 is expected to result in the recognition of right-of-use assets and corresponding liabilities of approximately \$29 million in the Consolidated Balance Sheets. Refer to Note 4 Vessels for further information regarding the Company's sale and leaseback agreements.

In June 2016, the FASB issued ASU No. 2016-13 Financial Instruments Credit Losses (Topic 326) Measurement of Credit Losses on Financial Instruments. ASU No. 2016-13 amends guidance on reporting credit losses for assets held at amortized cost basis and available for sale debt securities. For public entities, the amendments of this Update are effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Early application is permitted. Furthermore, ***in November 2018, the FASB issued ASU 2018-19, Codification Improvements to Topic 326, Financial Instruments Credit Losses.*** The amendments clarify that receivables arising from operating leases are not within the scope of Subtopic 326-20. Instead, impairment of receivables arising from operating leases should be accounted for in accordance with Topic 842, Leases. The effective date and transition requirements for the amendments in this Update are the same as the effective dates and transition requirements in Update 2016-13, as amended by this Update. The Company is currently assessing the impact of the adoption of the new accounting standard on its consolidated financial statements and related disclosures.

In October 2018, the FASB issued ASU No. 2018-17, Consolidation (Topic 810) Targeted Improvements to Related Party Guidance for Variable Interest Entities. The Board is issuing this Update in response to stakeholders' observations that Topic 810, Consolidation, could be improved in the following areas: i) applying the variable interest entity (VIE) guidance to private companies under common control, ii) considering indirect interests held through related parties under common control for determining whether fees paid to decision makers and service providers are variable interests. The amendments in this Update improve the accounting for those areas, thereby improving general purpose financial reporting. ASU No. 2018-17 is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2019. All entities are required to apply the amendments in this Update retrospectively with a cumulative-effect adjustment to retained earnings at the beginning of the earliest period presented. Early adoption is permitted. The Company is currently assessing the impact that adopting this new accounting guidance will have on its consolidated financial statements and related disclosures.

In August 2017, the FASB issued ASU No. 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities (ASU No. 2017-12), which amends and simplifies existing guidance in order to allow companies to more accurately present the economic effects of risk management activities in the financial statements. This ASU is effective for fiscal years, and interim periods within those years, beginning after December 15, 2018. Furthermore, ***in October 2018, the FASB issued ASU 2018-16, Derivatives and Hedging (Topic 815) Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes***, which permits the use of the OIS rate based on SOFR as a U.S. benchmark interest rate for hedge accounting purposes under Topic 815 in addition to the UST, the LIBOR swap rate, the OIS rate based on the Fed Funds Effective Rate and the SIFMA Municipal Swap Rate. The amendments in this Update apply to all entities that elect to apply hedge accounting to benchmark interest rate hedges under Topic 815. For entities that have not already adopted Update 2017-12, the amendments in this Update are required to be adopted concurrently with the amendments in Update 2017-12. Early adoption is permitted in any interim period upon issuance of this Update.

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if an entity already has adopted Update 2017-12. The amendments should be adopted on a prospective basis for qualifying new or redesignated hedging relationships entered into on or after the date of adoption. The Company is currently assessing the impact of the adoption of this new accounting guidance will have on its consolidated financial statements and related disclosures.

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820) Disclosure Framework Changes to the Disclosure Requirements for Fair Value Measurement, which improves the effectiveness of fair value measurement disclosures. In particular, the amendments in this Update modify the disclosure requirements on fair value measurements in Topic 820, Fair Value Measurement, based on the concepts in FASB Concepts Statement, Conceptual Framework for Financial Reporting Chapter 8: Notes to Financial Statements, including the consideration of costs and benefits. The amendments in the Update apply to all entities that are required under existing GAAP to make disclosures about recurring and non-recurring fair value measurements. ASU 2018-13 is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2019. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. Early adoption is permitted upon issuance of this Update. An entity is permitted to early adopt any removed or modified disclosures upon issuance of this Update and delay adoption of the additional disclosures until their effective date. The Company is currently assessing the impact that adopting this new accounting guidance will have on its consolidated financial statements and related disclosures.

In June 2018, the FASB issued ASU No. 2018-07, Improvements to Nonemployee Share-Based Payment Accounting (Topic 718): ASU No. 2018-07 simplifies the accounting for share-based payments to nonemployees by aligning it with the accounting for share-based payments to employees, with certain exceptions. For public business entities, the amendments in ASU No. 2018-07 are effective for annual periods beginning after December 15, 2018, and interim periods within those annual periods. The Company is currently assessing the impact that adopting this new accounting guidance will have on its consolidated financial statements and related disclosures.

2. Transactions with Related Parties

The following amounts were charged by related parties for services rendered:

	2018	2017	2016
Tsakos Shipping and Trading S.A. (commissions)	6,580	6,532	5,989
Tsakos Energy Management Limited (management fees)	20,169	19,480	16,935
Tsakos Columbia Shipmanagement S.A. (special charges)	2,389	1,518	2,136
Argosy Insurance Company Limited (insurance premiums)	9,799	10,199	9,036
AirMania Travel S.A. (travel services)	5,345	5,404	4,866
Total expenses with related parties	44,282	43,133	38,962

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Balances due from and due to related parties are as follows:

	December 31,	
	2018	2017
Due from related parties		
Tsakos Columbia Shipmanagement S.A.	20,923	14,210
Total due from related parties	20,923	14,210
Due to related parties		
Tsakos Energy Management Limited	114	728
Tsakos Shipping and Trading S.A.	520	313
Argosy Insurance Company Limited	3,387	5,947
AirMania Travel S.A.	345	454
Total due to related parties	4,366	7,442

There was also, at December 31, 2018, an amount of \$327 (\$125 at December 31, 2017) due to Tsakos Shipping and Trading S.A. and \$nil (\$68 at December 31, 2017) due to Argosy Insurance Company Limited, included in accrued liabilities, which relate to services rendered by these related parties, but not yet invoiced.

(a) ***Tsakos Energy Management Limited (the Management Company)***: The Holding Company has a Management Agreement (Management Agreement) with the Management Company, a Liberian corporation, to provide overall executive and commercial management of its affairs for a monthly fee, which may be adjusted per the Management Agreement of March 8, 2007, effective from January 1, 2008, at the beginning of each year, in accordance with the terms of the Management Agreement, if both parties agree. In 2018, 2017 and 2016, the monthly fees for operating conventional vessels were \$27.5, and \$20.4 for vessels chartered in or chartered out on a bare-boat basis or for vessels under construction, \$35.0 for the DP2 shuttle tankers, while the monthly fees for LNG carriers amounted to \$36.9, \$36.3 and \$35.8, respectively. From the above fees, fees are also paid to third-party manager for the LNG carriers, *Maria Energy* and *Neo Energy*, the suezmax *Eurochampion 2004*, the aframax *Maria Princess* and *Sapporo Princess*, the VLCCs *Ulysses*, *Hercules I* and VLCC *Millennium* until April 11, 2018.

In addition to the Management fee, the Management Agreement provides for an incentive award to the Management Company, which is at the absolute discretion of the Holding Company's Board of Directors. In 2018, 2017 and 2016, an award of \$200, \$575 and \$2,575 respectively, was granted to the Management Company and is included in the General and Administrative expenses in the accompanying Consolidated Statement of Comprehensive (loss) income. In addition, a special award of \$750 and \$575 were paid to the Management Company in relation to capital raising offerings in 2018 and 2017, respectively. These awards relating to offerings have been included as a deduction of additional paid in capital in the accompanying consolidated financial statements.

The Holding Company and the Management Company have certain officers and directors in common. The President, who is also the Chief Executive Officer and a Director of the Holding Company, is also the sole stockholder of the Management Company. The Management Company may unilaterally terminate its Management Agreement with the Holding Company at any time upon one year's notice. In addition, if even one director is elected to the Holding Company without the recommendation of the existing Board of Directors, the Holding Company

would be obligated to pay the Management Company an amount calculated in accordance with the terms of the Management Agreement. Under the terms of the Management

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Agreement between the Holding Company and the Management Company, the Holding Company may terminate the Management Agreement only under specific circumstances, without the prior approval of the Holding Company's Board of Directors.

Estimated future management fees payable over the next ten years under the Management Agreement, exclusive of any incentive awards and based on existing vessels and known vessels scheduled for future delivery as at December 31, 2018, are:

Year	Amount
2019	20,589
2020	20,760
2021	20,760
2022	20,760
2023	20,760
2024 to 2028	90,655
	194,284

Management fees for vessels are included in the General and Administrative Expenses in the accompanying Consolidated Statements of Comprehensive (Loss) Income. Also, under the terms of the Management Agreement, the Management Company provides supervisory services for the construction of new vessels for a monthly fee of \$20.4 in 2018, 2017 and 2016. These fees in total amounted to \$245, \$590 and \$3,016 for 2018, 2017 and 2016, respectively, and are either accounted for as part of construction costs for delivered vessels or are included in Advances for vessels under construction.

(b) *Tsakos Columbia Shipmanagement S.A. (TCM)*: The Management Company appointed TCM to provide technical management to the Company's vessels from July 1, 2010. TCM is owned jointly and in equal part by related party interests and by a private German Group. TCM, with the consent of the Holding Company, may subcontract all or part of the technical management of any vessel to an alternative unrelated technical manager.

Effective July 1, 2010, the Management Company, at its own expense, pays technical management fees to TCM, and the Company bears and pays directly to TCM most of its operating expenses, including repairs and maintenance, provisioning and crewing of the Company's vessels, as well as certain charges which are capitalized or deferred, including reimbursement of the costs of TCM personnel sent overseas to supervise repairs and perform inspections on the Company's vessels.

TCM has a 25% share in a manning agency, located in the Philippines, named TCM Tsakos Maritime Philippines (TMPI), which provides crew to certain of the Company's vessels. The Company has no control or ownership directly in TCM Tsakos Maritime Philippines, nor had any direct transactions to date with the agency.

(c) *Tsakos Shipping and Trading S.A. (Tsakos Shipping)*: Tsakos Shipping provides chartering services for the Company's vessels by communicating with third party brokers to solicit research and propose charters. For this service, the Company pays Tsakos Shipping a chartering commission of approximately 1.25% on all freights, hires and demurrages. Such commissions are included in Voyage expenses

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in the accompanying Consolidated Statements of Comprehensive (Loss) Income. Tsakos Shipping also provides sale and purchase of vessels brokerage service. In 2018, the VLCC tanker *Millennium* was sold and for this service, Tsakos Shipping charged a brokerage commission of \$0.1 million which was 0.5% of the sale price of the

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TSAKOS ENERGY NAVIGATION LIMITED AND SUBSIDIARIES

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STATEMENTS DECEMBER 31, 2018, 2017 AND 2016 (Continued)

(Expressed in thousands of U.S. Dollars, except for share and per share data, unless otherwise stated)

vessel. Tsakos Shipping may also charge a fee of \$200 (or such other sum as may be agreed) on delivery of each newbuilding vessel in payment for the cost of design and supervision of the newbuilding by Tsakos Shipping. In 2018 and 2016, no such fee was charged. In 2017, \$3.1 million in aggregate was charged for supervision fees on fifteen vessels which were delivered between May 2016 and October 2017. All commissions are paid in the ordinary course of the Company's business and at terms standard to industry practice. Certain members of the Tsakos family are involved in the decision-making processes of Tsakos Shipping and of the Management Company and are also shareholders of the Holding Company.

(d) *Argosy Insurance Company Limited (Argosy)*: The Company places its hull and machinery insurance, increased value insurance, war risk insurance and certain other insurance through Argosy, a captive insurance company affiliated with Tsakos Shipping.

(e) *AirMania Travel S.A. (AirMania)*: Apart from third-party agents, the Company also uses an affiliated company, AirMania, for travel services.

3. Long-term Investments

At December 31, 2018 and 2017, the Company held 125,000 common shares at a total cost of \$1,000 in a private U.S. company which undertakes research into synthetic genomic processes which may have a beneficial environmental impact within the energy and maritime industries. Management has determined that there has been no impairment to the cost of this investment since its acquisition in 2007. A Director of the Company is a former officer and currently a shareholder and a consultant of this company. No income was received from this investment during 2018, 2017 and 2016.

4. Vessels Acquisitions

In 2018, there were no vessel acquisitions. During 2017, the Company acquired its newbuild VLCC tanker *Hercules I* for \$101,208, the newbuild aframax *Marathon TS*, *Sola TS*, *Oslo TS*, *Stavanger TS* and *Bergen TS* for \$294,494 in total and the newbuild shuttle tanker *Lisboa* for \$108,492.

Sales

On April 11, 2018, the Company sold the VLCC *Millennium*, for net proceeds of \$17,136, realizing a net loss of \$364. The loss from the sale of the vessel is separately reflected in the accompanying Consolidated Statement of Comprehensive (Loss) Income.

There were no vessel sales in 2016 or, other than the transactions described below in 2017.

Sale and Leaseback

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On December 21, 2017, the Company entered into a five-year sale and leaseback agreement for each of the two suezmaxes previously classified as Held for Sale, *Eurochampion 2004* and *Euronike*. The agreed net sale price was \$32,600 each. There was a total loss on sale of the vessels of \$3,860, which was recorded in the fourth quarter of 2017. Under these leaseback agreements, there is a seller's credit of \$6,500 each on the

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sales price that becomes immediately payable to the Company by the owners at the end of the five-year charter or upon sale of the vessels during the charter period. The leaseback agreements include three, one-year option periods, following completion of the initial five-year charters. The Company analyzed the classification of the leaseback agreements based on the primary lease classification criteria and the supplemental indicators in ASC 840, and determined that these agreements qualified as operating leases.

Charter hire expense

As at December 31, 2018, minimum commitments to be incurred by the Company under vessel operating leases by which the Company charters-in vessels were approximately \$43,022, comprised of \$10,822 (2019), \$10,852 (2020), \$10,822 (2021), and \$10,526 (2022). The Company recognizes the expense from these charters, which is included in time-charter hire expense, on a straight-line basis over the term of the charters.

Impairment

As of December 31, 2018, the Company reviewed the carrying amount in connection with the estimated recoverable amount and the probability of sale for each of its vessels and vessels under construction. This review indicated that such carrying amount was not fully recoverable for five of the Company's vessels; *Silia T*, *Byzantion*, *Bosporos*, *Selini*, *Salamina* plus an advance for a construction later abandoned. Consequently, the carrying value of these vessels and the advance for a vessel under construction, totaling \$150,465, has been written down to \$84,500, based on Level 2 inputs of the fair value hierarchy, as determined by management taking into consideration valuations from independent marine valuers (Note 14(c)). The resulting impairment charge was \$65,965 and is reflected in the accompanying Consolidated Statements of Comprehensive (Loss) Income. In 2017, there was an impairment charge of \$8,922 relating to the vessels *Silia T* and *Millennium*. In 2016, there were no impairment charges.

5. Deferred Charges

Deferred charges, consisting of dry-docking and special survey costs, net of accumulated amortization, amounted to \$27,815 and \$23,759, at December 31, 2018 and 2017, respectively. Amortization of deferred dry-docking costs is included in Depreciation and amortization in the accompanying Consolidated Statements of Comprehensive (Loss) Income.

6. Long Term Debt

Facility	2018	2017
(a) Credit Facilities	62,500	250,104
(b) Term Bank Loans	1,544,622	1,512,978
Total	1,607,122	1,763,082
Less deferred finance costs, net	(11,521)	(11,213)
Total long-term debt	1,595,601	1,751,869
Less current portion of debt	(163,870)	(228,967)
Add deferred finance costs, current portion	3,286	3,084

Total long-term portion, net of current portion and deferred finance costs	1,435,017	1,525,986
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As at December 31, 2018, the Company had one open reducing revolving credit facility, which is reduced in semi-annual installments with balloon payment due at maturity in February 2019. Interest was payable at a rate based on LIBOR plus a spread. At December 31, 2018, the interest rate on the above facility was 3.18%.

(b) Term bank loans

Term loan balances outstanding at December 31, 2018, amounted to \$1,544,622. These bank loans are payable in U.S. Dollars in semi-annual installments with balloon payments mainly due at maturity between February 2019 and January 2029. Interest rates on the outstanding loans as at December 31, 2018, are based on LIBOR plus a spread.

On February 15, 2018, the Company signed a new five-year loan for the refinancing of loans maturing between October 2018 and April 2019, relating to eleven vessels. The total new loan amounted to \$162,575 and was drawn on April 3, 2018. The new loan is repayable in ten semi-annual installments of \$11,561, commencing six months after the drawdown date, plus a balloon of \$46,965 payable together with the last installment. On April 4, 2018, the Company paid \$181,168 relating to the outstanding debt on the above eleven vessels.

On April 11, 2018, the Company repaid an amount of \$10,158 to the relevant lender on the sale of the VLCC tanker *Millennium*.

On April 27, 2018, the Company signed a supplemental agreement to the loan agreement dated January 31, 2012 for a \$12,475 top-up tranche to the existing loan for the early refinancing of the shuttle tanker *Rio 2016*. The top-up was drawn down on April 30, 2018 and is repayable in twelve equal semi-annual installments of \$3,203, plus a balloon payment of \$38,438 payable together with the last installment.

On June 7, 2018, the Company signed a new six-year loan agreement for \$80,000 relating to the early refinancing of the shuttle tanker *Brasil 2014*. The Company repaid the amount of \$66,658, which was outstanding at the refinancing date and drew down \$80,000 on the same date. The new loan is repayable in twelve semi-annual installments of \$3,745 for the first six installments and \$3,412.5 for the following six installments, commencing six months after the drawdown date, plus a balloon of \$37,055 payable together with the last installment.

On June 28, 2018, the Company signed a new term bank loan for \$48,650 relating to the refinancing of three aframax tankers, *Maria Princess*, *Nippon Princess* and *Ise Princess*, which were approaching maturity. The loan is repayable in ten semi-annual installments of \$3,041, plus a balloon payment of \$18,240 payable together with the last installment.

On December 6, 2018, the Company signed a new term bank loan for \$82,752 relating to the pre- and post-delivery financing of two aframax tankers under construction. The loan is repayable in sixteen consecutive semi-annual installments of \$2,299, commencing six months after the delivery of the vessel, plus a balloon of \$45,973 payable together with the last installment. The first drawdown of \$5,172 was made on December 10, 2018, for the payment of the second installment of one aframax to the ship building yard.

On December 18, 2018, the Company signed a new term bank loan for \$44,000 relating to the refinancing of two vessels, the suezmax tanker *Euro* and the aframax tanker *Sakura Princess* which

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matures between July and September 2020. The loan is repayable in ten semi-annual installments of \$2,350, plus a balloon payment of \$20,500 payable together with the last installment.

On December 28, 2018, the Company signed a new five-year term bank loan for \$62,500 relating to the refinancing of the LNG carrier *Neo Energy*. On January 10, 2019, the Company repaid the amount of \$62,500 which was outstanding at the refinancing date and drew down \$62,500 on the same date. The new loan is repayable in ten semi-annual installments of \$3,000, commencing six months after the drawdown date, plus a balloon of \$32,500 payable with the last installment. On January 28, 2019, the Company signed a new six-year term bank loan for \$88,150 relating to the refinancing of the debt approaching maturity of the suezmax tankers, *Spyros K* and *Dimitris P*, the aframax tanker *Uraga Princess* and the panamax tanker *Salamina*. The loan was drawn on January 30, 2019 and is repayable in twelve semi-annual installments of \$5,200, commencing six months after the drawdown date, plus a balloon of \$25,750 payable together with the last installment.

At December 31, 2018, interest on these term bank loans ranged from 3.18% to 5.21%.

The weighted-average interest rates on the above executed loans for the applicable periods were:

Year ended December 31, 2018	4.21%
Year ended December 31, 2017	3.47%
Year ended December 31, 2016	2.71%

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(Expressed in thousands of U.S. Dollars, except for share and per share data, unless otherwise stated)

Loan movements for credit facilities and term loans throughout 2018:

Loan	Origination Date	Original Amount	Balance at January 1, 2018	New Loans	Prepaid	Repaid	Balance at December 31, 2018
Credit facility	2004	179,384	31,594		30,158	1,436	
Credit facility	2006	371,010	151,010			151,010	
Credit facility	2007	120,000	67,500			5,000	62,500
10-year term loan	2007	88,350	38,670			38,670	
10-year term loan	2009	38,600	17,876		15,642	2,234	
12-year term loan	2009	40,000	21,250			2,500	18,750
10-year term loan	2010	39,000	19,500			2,600	16,900
10-year term loan	2010	43,924	21,399			3,218	18,181
9-year term loan	2010	42,100	23,900			2,600	21,300
10-year term loan	2011	48,000	27,200			3,200	24,000
9-year term loan	2011	48,650	29,191			3,243	25,948
8-year term loan	2011	73,600	67,467	12,475		6,270	73,672
8-year term loan	2012	73,600	66,658		63,187	3,471	
7-year term loan	2013	18,000	11,955		10,335	1,620	
7-year term loan	2014	42,000	33,600			2,800	30,800
6-year term loan	2014	193,239	181,197			12,077	169,120
6-year term loan	2014	39,000	31,200		28,600	2,600	
7-year term loan	2014	40,400	39,059			2,682	36,377
6-year term loan	2014	78,744	77,594			4,669	72,925
6-year term loan	2014	39,954	39,954			2,497	37,457
5-year term loan	2015	35,190	33,235			1,955	31,280
7-year term loan	2015	35,190	32,991			2,199	30,792
7-year term loan	2015	39,900	32,646			3,627	29,019
5-year term loan	2015	82,775	67,255			10,347	56,908
6-year term loan	2015	46,217	36,973			4,622	32,351
7-year term loan	2015	44,800	40,000			3,200	36,800
12-year term loan	2016	309,824	273,935			21,502	252,433
2&5-year term loan	2016	60,000	12,806			12,806	
5-year term loan	2016	33,104	27,088			5,092	21,996
4-year term loan	2016	18,125	14,500			3,625	10,875
7 ¹ / ₂ -year term loan	2017	85,000	85,000			5,667	79,333
4-year term loan	2017	122,500	108,879			16,565	92,314
6-year term loan	2018	80,000		80,000		3,745	76,255
5-year term loan	2018	180,000		162,575		11,561	151,014
5-year term loan	2018	44,000		44,000			44,000
5-year term loan	2018	48,650		48,650			48,650
8-year term loan	2018	82,752		5,172			5,172
Total			1,763,082	352,872	147,922	360,910	1,607,122

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- ¹ The above revolving credit facilities and term bank loans are secured by first priority mortgages on all vessels owned by the Company's subsidiaries, by assignments of earnings and insurances of the respectively mortgaged vessels, and by corporate guarantees of the relevant ship-owning subsidiaries.

The loan agreements include, among other covenants, covenants requiring the Company to obtain the lenders' prior consent in order to incur or issue any financial indebtedness, additional borrowings, pay dividends provided no event of default has occurred, sell vessels and assets, and change the beneficial ownership or management of the vessels. Also, the covenants require the Company to maintain a minimum liquidity, not legally restricted, of \$99,154 at December 31, 2018 and \$113,427 at December 31, 2017, a minimum consolidated leverage ratio, a minimum hull value in connection with the vessels' outstanding loans and insurance coverage of the vessels against all customary risks. Two loan agreements require the Company to maintain throughout the security period, an aggregate credit balance in a deposit account of \$2,700. Four loan agreements require a monthly pro rata transfer to retention account of any principal due but unpaid.

As at December 31, 2018, the Company and its wholly owned subsidiaries had twenty-nine loan agreements, totaling \$1,607,122. The Company fulfilled its requirements in respect of the financial covenants of all the agreements in relation to the leverage ratio and all other terms and covenants, apart from the value-to-loan requirement in three of its loan agreements, which did not require an amount to be reclassified within current liabilities at December 31, 2018.

The Company's liquidity requirements relate primarily to servicing its debt, funding the equity portion of investments in vessels and funding expected capital expenditures on dry-dockings and working capital.

The annual principal payments, including balloon payments on loan maturity, required to be made after December 31, 2018, are as follows:

Period/Year	Amount
2019	163,870
2020	211,229
2021	286,107
2022	242,538
2023	321,505
2024 and thereafter	381,873
	1,607,122

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	2018	2017	2016
Interest expense	72,191	62,343	41,451
Less: Interest capitalized	(252)	(445)	(4,015)
Interest expense, net	71,939	61,898	37,436
Interest swap cash settlements non-hedging			1,086
Interest swaps termination cash settlements	(477)	(3,685)	
Bunkers swap and call options cash settlements	(9,857)	(2,547)	(128)
Bunker call options premium			