2016 – RESEARCH AND ANALYSIS: GREEK FLEET STATISTICS
2ND PART OF 2016 PETROFIN RESEARCH ©

CONTENTS OF PETROFIN RESEARCH © – PART 2

RESULTS AT A GLANCE

I. The overall number of Greek vessels has gone up to 5230 from 4909.

II. Tonnage has again climbed up by 33,679,552 tons DWT to 361,934,047, an increase of 10.26% compared to last year's increase of 7.52%.

III. Age for all vessels keeps falling and now stands at 12.19, compared to 12.73 in 2015, 13.26 in 2014, 14.05 in 2013 and 14.7 in 2012.

IV. Using a 20,000 DWT cut-off, the average age of the Greek fleet has fallen to 8.39, from 8.71 in 2015, 9.14 years in 2014 and 9.83 in 2013.

V. The dry bulk fleet (vessels over 20,000 tons DWT) has gained 111 more vessels, its age is down to 8.13 years, its tonnage is up by 7.2m tons DWT and is run by the same number of companies.

VI. The large Container fleet (vessels over 20,000 tons DWT) has also become marginally younger, 9.34 years old from 9.38 years in 2015, despite the fact that this sector traditionally shows a slow rate of renewal. This year, it has grown substantially and has gained a further 7.7m tons DWT to 25.3m tons DWT and the number of vessels is up from 274 in 2015 to 381 in 2016. The companies that run these vessels are up by 1 to 32.

VII. The large Tanker fleet (vessels over 20,000 tons DWT) shows a marked increase in tonnage by 14.6m tons DWT to 131.6m tons DWT, compared to last year's small increase of only 220,751 tons DWT. The number of vessels is also significantly up by 43 to 851. This sector's companies are down by 3 and age wise there was a marginal drop to 9.35 years average from 9.49 years last year.

VIII. The most important expansion is shown by the LPG sector. The fleet has almost doubled and its age has dropped from 11.5 to 4.19. This amazing development becomes even more marked when we observe the over 20,000 tons DWT LPG statistics: Vessels up from 26 to 66, tonnage up by 150% and age down from 13.69 years of age to 4.33.

IX. The LNG fleet is showing an internal reshuffle, where the same number of vessels are now bigger by 12.5%.

X. The Greek fleet continues to expand in size but an ever more consolidated manner, as the number of Greek companies are reducing (see 1st part of Petrofin Research©).

SECTION A: VITAL STATISTICS OF THE ENTIRE GREEK FLEET

ENTIRE GREEK FLEET

Freights remain low, vessel prices are low and bank lending is restricted to the very few. The Greek fleet is, however, expanding, in terms of numbers, age and size. Confidence in shipping is still evident and strategic considerations are at work to render owners ready when the market recovers. The data obtained from our research is indicative of a very active market, a positive outlook for the future and continuous emphasis towards larger and younger vessels.

The overall number of Greek vessels continues to increase.

TABLE 1

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	**2016**
Number of vessels in the Greek-based, Greek-owned fleet	4110	4142	4085	4184	3970	4164	4346	4545	4763	4655	4714	4577	4573	4707	4909	5230
Change from previous year		32	-57	99	-214	194	182	199	218	-108	59	-137	-4	134	202	321

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The fleet's DWT continues to grow and is stands at 361,934,047 tons DWT.

These vessels are managed by 638 companies, down from 648 in 2015. (1st Part of Petrofin Research ©). In Table 2 we note the main developments.

TABLE 2

YEAR	DWT	AVERAGE AGE	AVERAGE VESSEL DWT
2001	150,978,565	21.41	36,734
2002	166,931,748	20.58	40,302
2003	171,448,133	20.51	41,970
2004	184,288,917	20.12	44,046
2005	176,411,750	19.9	44,436
2006	194,486,455	19.14	46,707
2007	208,001,159	18.7	47,860
2008	222,368,331	18.4	48,926
2009	237,288,216	17.6	49,820
2010	242,802,092	16.4	52,160
2011	256,174,041	15.92	54,343
2012	263,635,420	14.7	57,600
2013	281,467,983	14.055	61,550
2014	303,579,176	13.252	64,495
2015	328,254,495	12.729	66,868
2016	361,934,047	12.186	69,203

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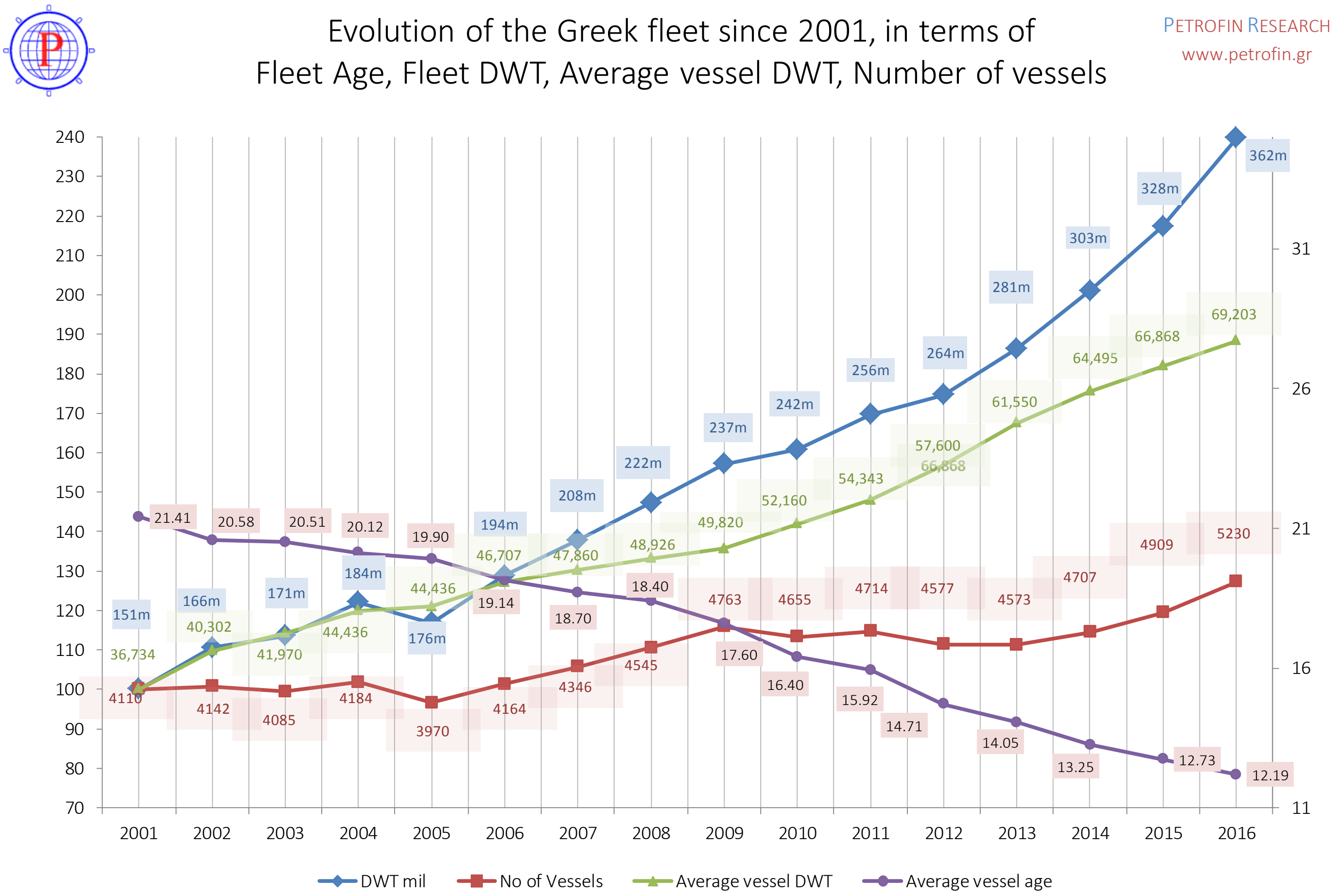
GRAPH 1



December 2016

DWT, Average Vessel DWT, and Number of Greek vessels figures are shown on an index scale using year 2001 as 100. The actual figures are also marked for each year.

SECTION B: FOCUSING ON THE LARGER VESSELS

In order to concentrate on the real strength of Greek shipping, we use two cut-off DWT points, one of vessels over 10,000 tons DWT and the other of vessels over 20,000 tons DWT. This way, the Greek fleet is stripped of a large number of usually overage very small vessels of relatively little impact that operate mostly locally. Hence, we concentrate on the global aspect of the Greek fleet.

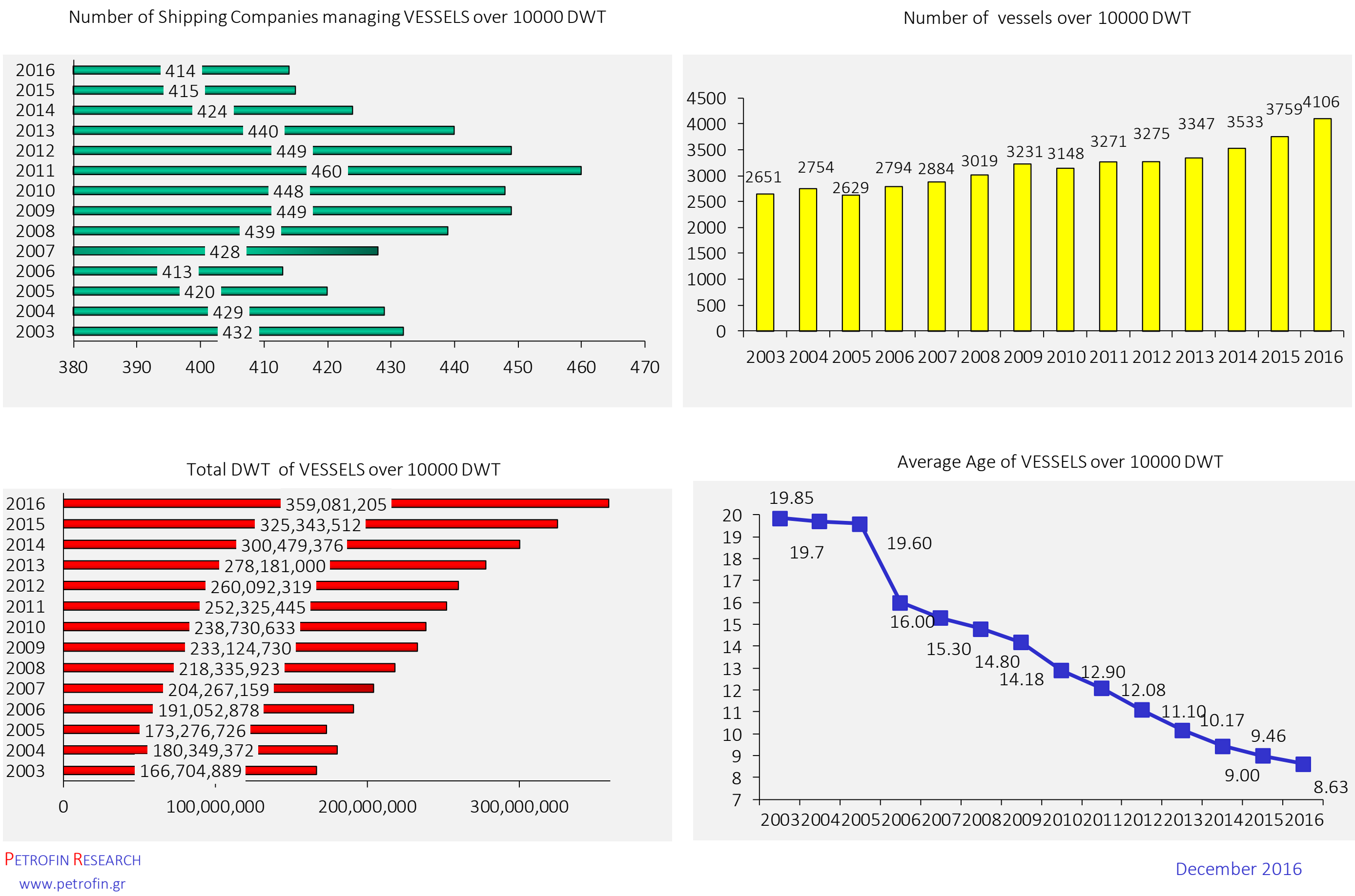
VESSELS OF OVER 10,000 TONS DWT

COMPARISONS BETWEEN 2003 AND 2016

Graph 2 below shows the fluctuation in the number of companies that manage vessels over 10,000 tons DWT, the number of ALL these vessels over 10,000 tons DWT, their age and their DWT. ('ALL vessels' means everything of commercial purpose that floats and is under Greek control):

GRAPH 2

Vital Statistics of the GREEK FLEET
VESSELS over 10,000 DWT – 2016



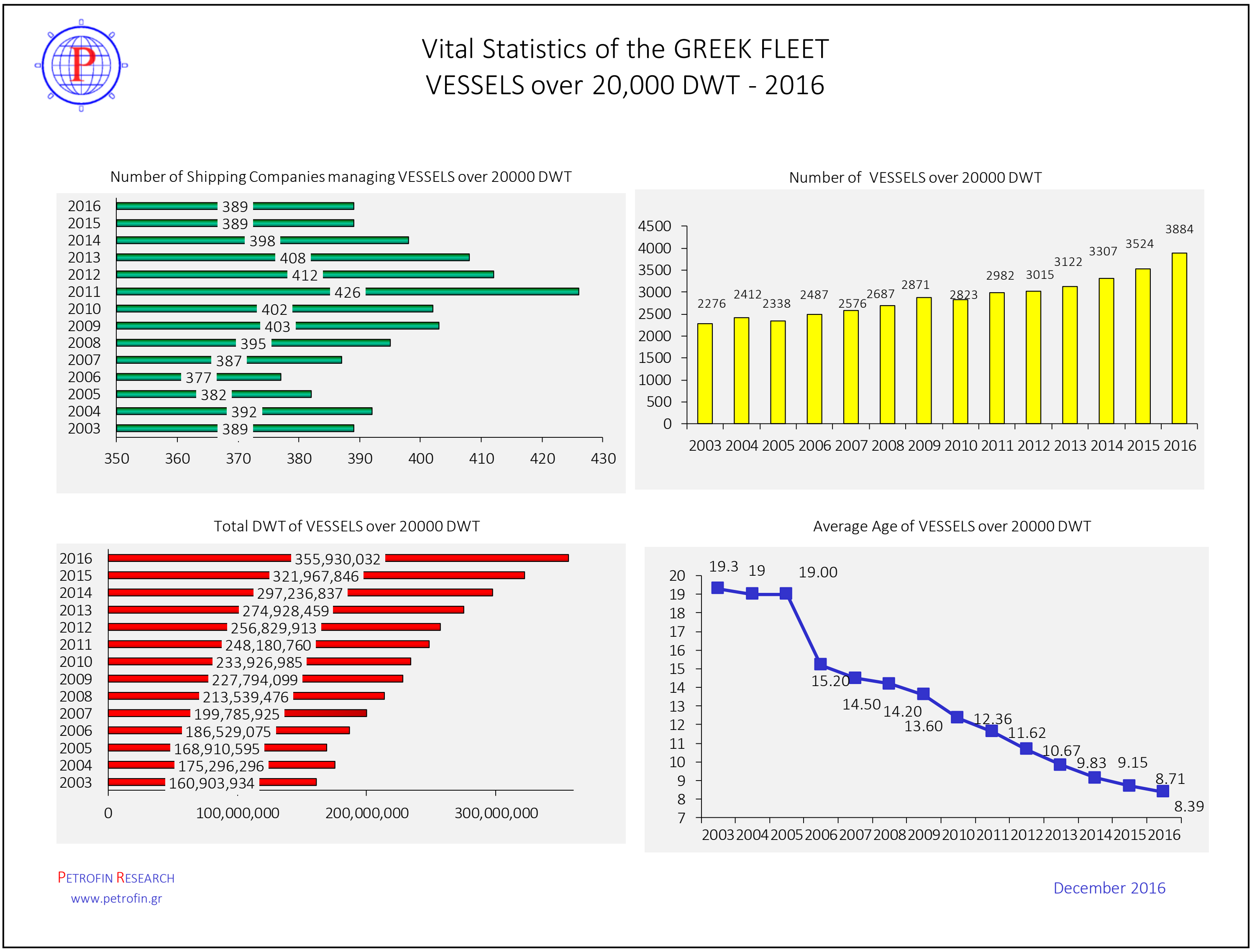
- The total number of companies that run these vessels is essentially the same (415 from 414 last year). This year, the increase in vessels over 10,000 tons DWT is significant in number of units (347 this year, compared to 226 in 2015 and 186 in 2014). The increase in DWT, however, is even more significant: 33.7m tons DWT (24.9m DWT in 2015) were added in 2016, bringing the total to 359,081,205 tons DWT, representing 99.21% of the Greek fleet, compared to 99.1% in 2015, 98.97% in 2014 and 98.83% in 2013.
- The rise in tonnage continues its unimpeded climb since 2005.
- The average vessel DWT is now 87,453, compared to 86,551 in 2015, 85,049 tons DWT in 2014, 83,113 tons DWT in 2013, 79,417 tons DWT in 2012, 77,140 in 2011, 75,836 in 2010.
- The Greek fleet's age continues to improve. The influx of newbuildings and purchases of younger vessels has brought the age fleet down to 8.633 from 8.998 in 2015, 9.45 in 2014, 10.17 in 2013, 11.1 years in 2012, 12.08 in 2011 and 12.9 years in 2010.

VESSELS OF OVER 20,000 TONS DWT

COMPARISONS BETWEEN 2003 AND 2016

Graph 3 below shows the fluctuation in the number of companies that manage vessels over 20,000 tons DWT, the number of ALL these vessels, their age and their DWT. ('ALL vessels' means everything that floats for commercial activities and is under Greek control):

GRAPH 3



- Similar results for the over 20,000 tons DWT. The situation is very similar to the over 10,000 DWT vessels.
- The number of companies is the same as last year. Their vessels are up by 360, compared to 217 in 2015, 107 in 2014 and the increase of 34m tons DWT brings the sector's tonnage to 356m tons DWT or 98.34% of the Greek fleet.
- The average DWT of each vessel is 91,640, compared to 91,364 in 2015, 89,881 in 2014.
- The average age has reduced again, significantly, to 8.31, down from 8.7 in 2015.

SECTION C: ANALYSES BY TYPE OF VESSEL

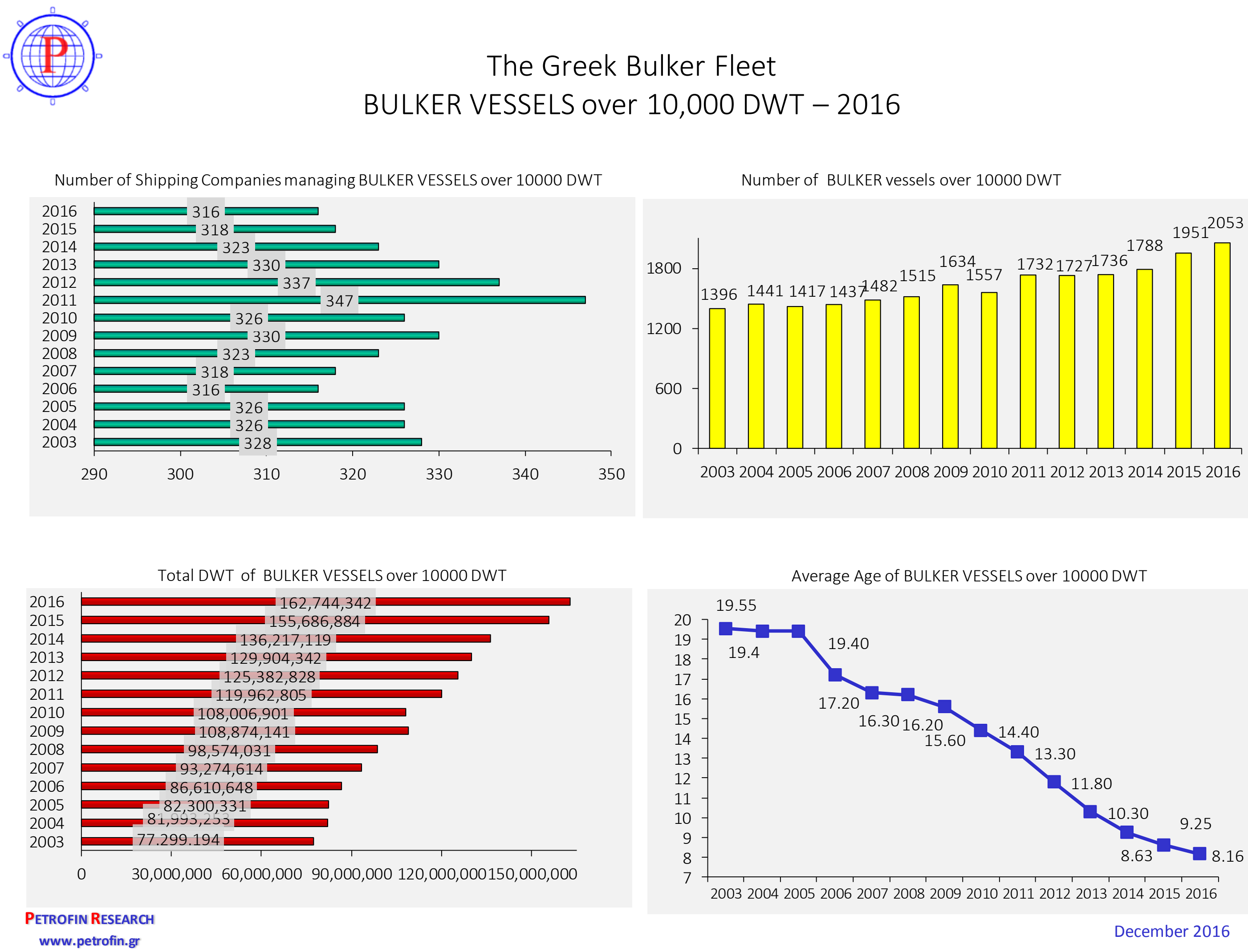
THE GREEK BULKER FLEET OF VESSELS OVER 10,000 TONS DWT EACH

COMPARISONS BETWEEN 2003 AND 2016

The graph below shows that the number of companies has gone down by 2, continuing last year's trend. Bulk carriers over 10,000 tons DWT have gone up, however, by 102 vessels, a smaller increase from the 163 vessels in 2015.

The age keeps falling, and it is now well below the 9-year threshold, at 8.16 down from 8.63 years in 2015, 9.25 in 2014, 10.3 in 2013, 11.8 in 2012, reflecting the peaking of deliveries of newbuildings and the now well established trend towards younger vessels.

GRAPH 4



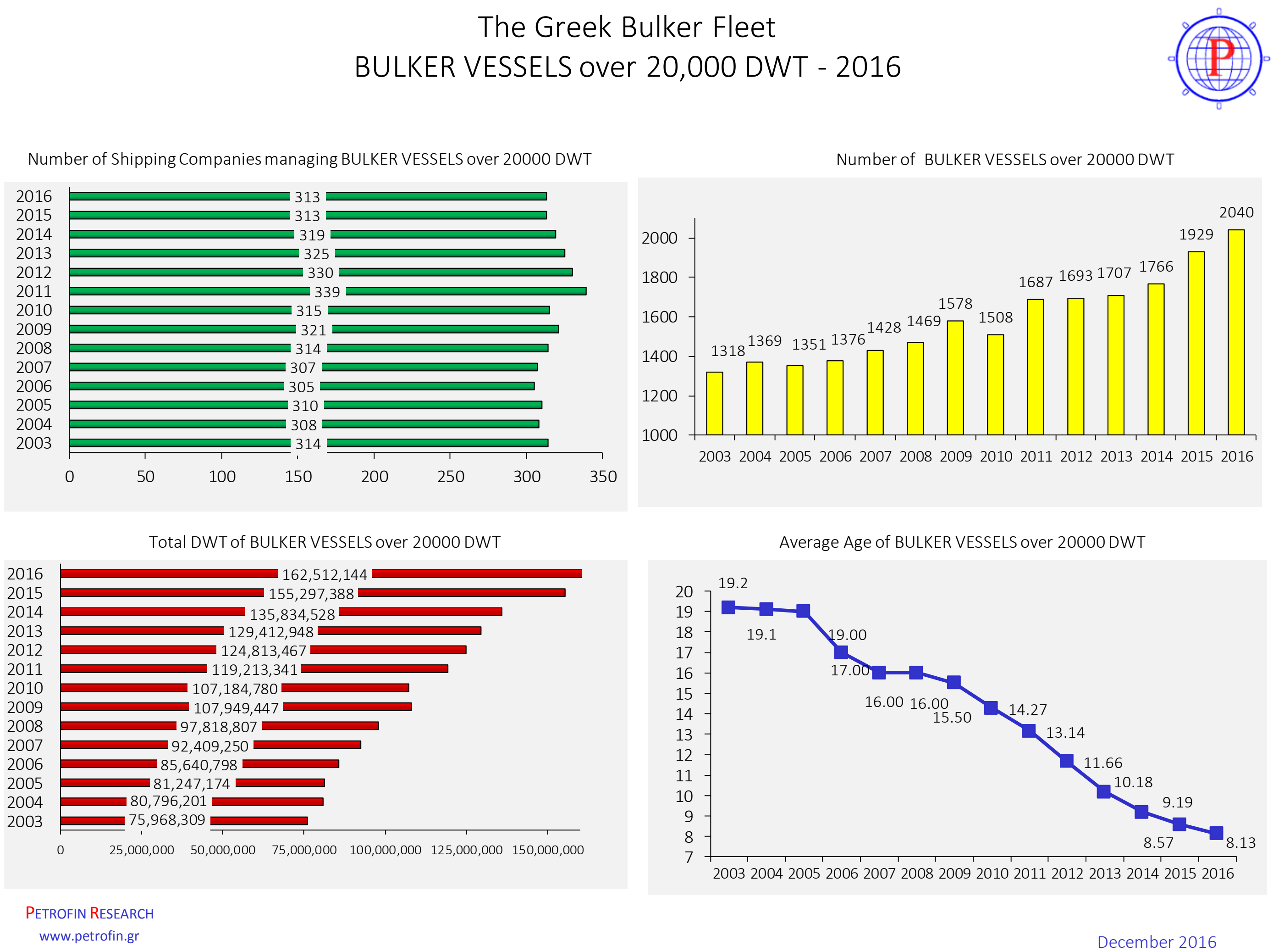
THE GREEK BULKER FLEET OF VESSELS OVER 20,000 TONS DWT EACH

COMPARISONS BETWEEN 2003 AND 2016

Similar trends here also. Company numbers have remained the same. The bigger bulkers continue to rise, by 111, this year, compared to 163 in 2015, 59 in 2014, a rise of 14 in 2013, 6 in 2012 and 179 units in 2011. The difference between 10,000 DWT bulkers and 20,000 DWT is down to only 13, compared to 22 vessels in 2015, 22 vessels in 2014, 29 vessels in 2013, 34 vessels in 2012 and 45 in 2011. So the bulk of the fleet is indeed bigger bulkers. Average vessel size is slightly down to 79,663 tons DWT from 80,507 tons DWT representing the purchase spree of the last year.

Furthermore, tonnage is up by 7.2m tons DWT, not such a large increase as last year's 19.46m tons DWT (6.4m tons DWT in 2014, 4.6m tons DWT in 2013, in 2012 the increase was 5.6m tons DWT, and in 2011 12m tons DWT). Age has dropped significantly to 8.13, compared to 8.57 in 2015, 9.2 in 2014, 10.2 in 2013, 11.66 years in 2012 and 13.14 years in 2011.

GRAPH 5

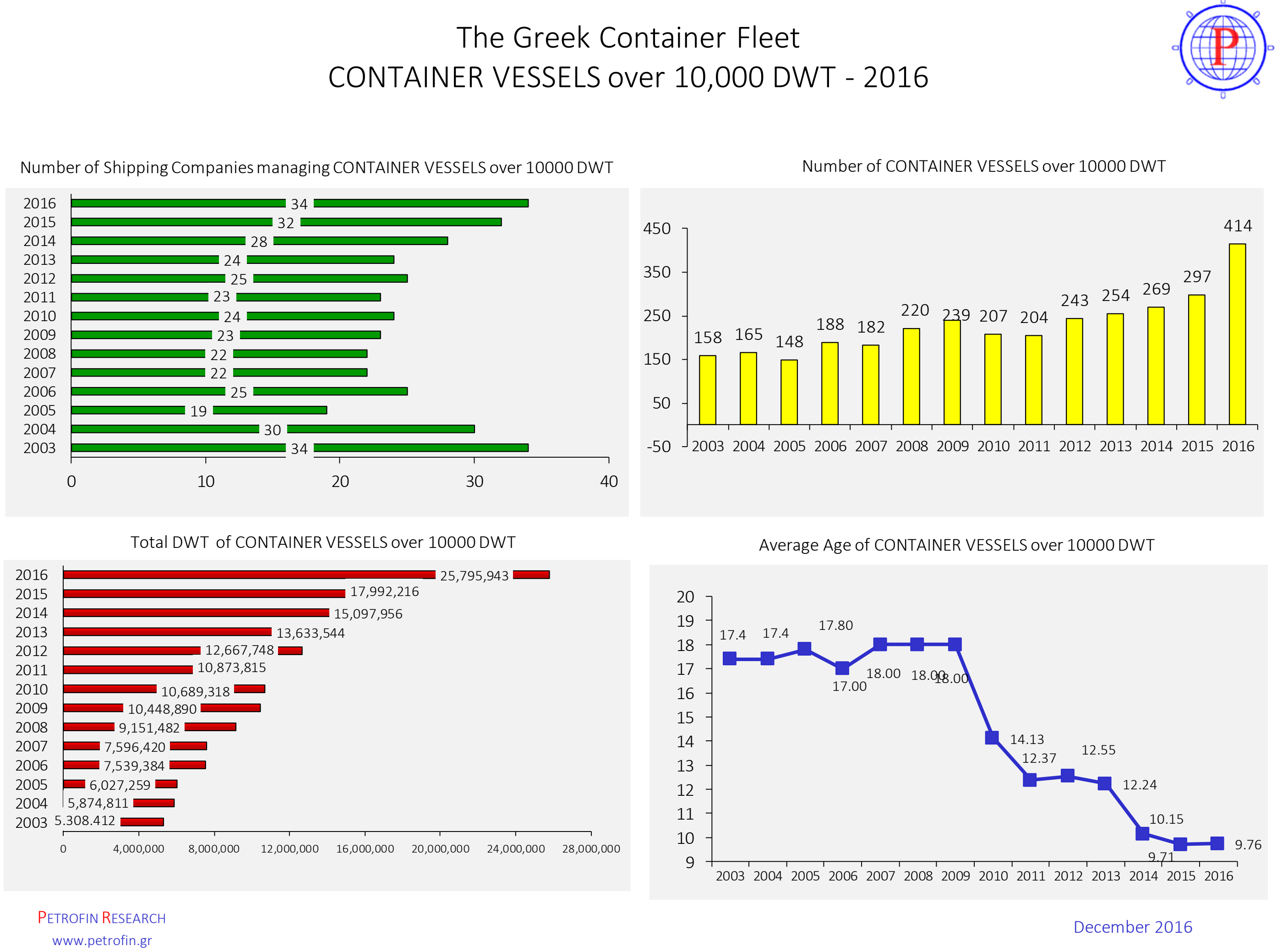


THE GREEK CONTAINER FLEET OF VESSELS OVER 10,000 DWT EACH

COMPARISONS BETWEEN 2003 AND 2016

The container sector has always been a volatile market. This year they show a major climb from 297 to 414 vessels. Companies are up by 2 and tonnage is up 7.8 tons DWT.

GRAPH 6



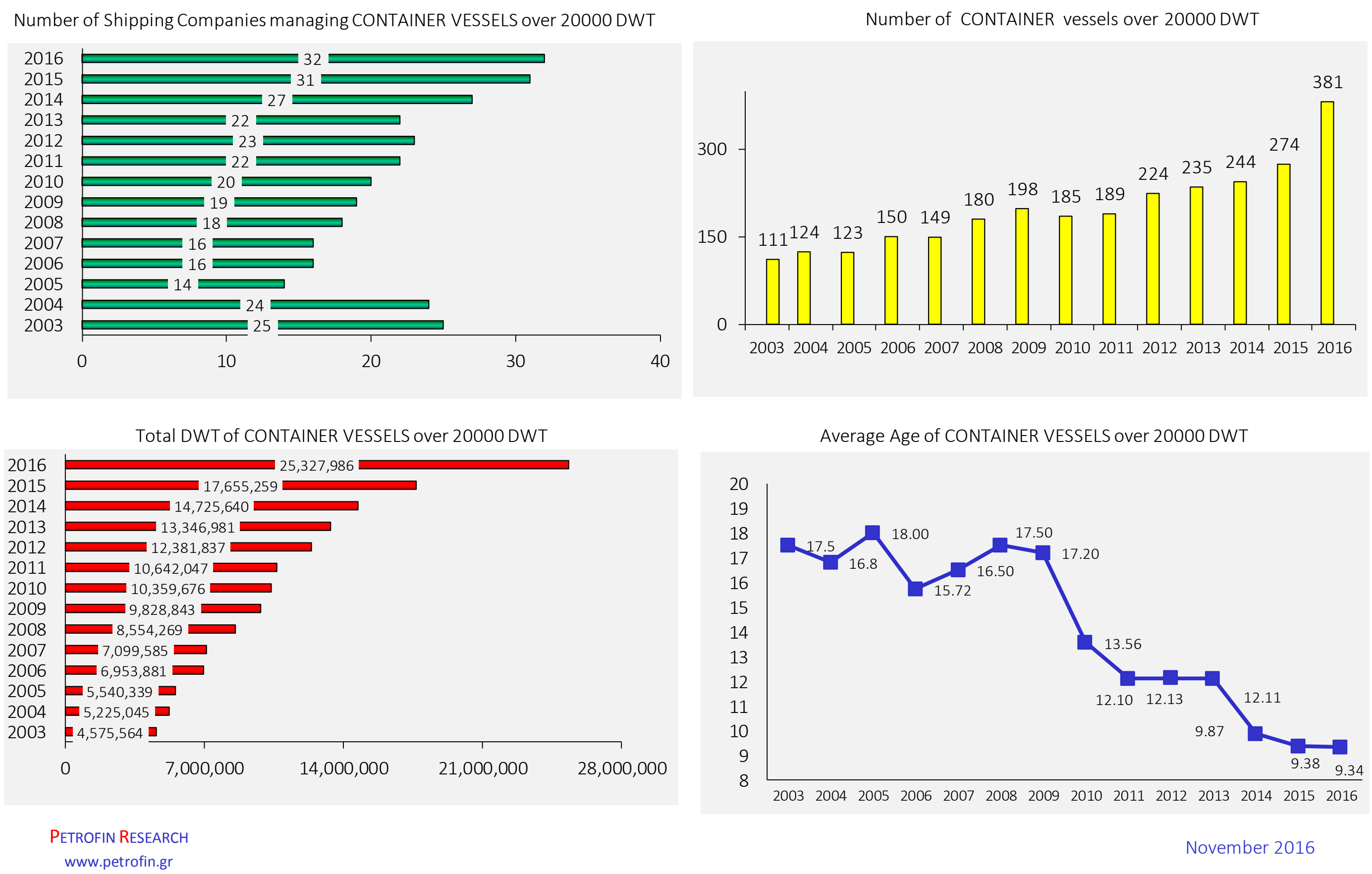
THE GREEK CONTAINER FLEET OF VESSELS OVER 20,000 TONS DWT EACH

COMPARISONS BETWEEN 2003 AND 2016

The number of vessels added is 107, which shows that only 10 are between 10,000 and 20,000 tons DWT. 7.7m tons DWT have been added and the age here is lower than last year's. Average vessel size is now 66,478, from 64,435 tons DWT in 2015, 60,351tons DWT in 2014 and 56,796 DWT in 2013.

GRAPH 7

The Greek Container Fleet
CONTAINER VESSELS over 20,000 DWT - 2016

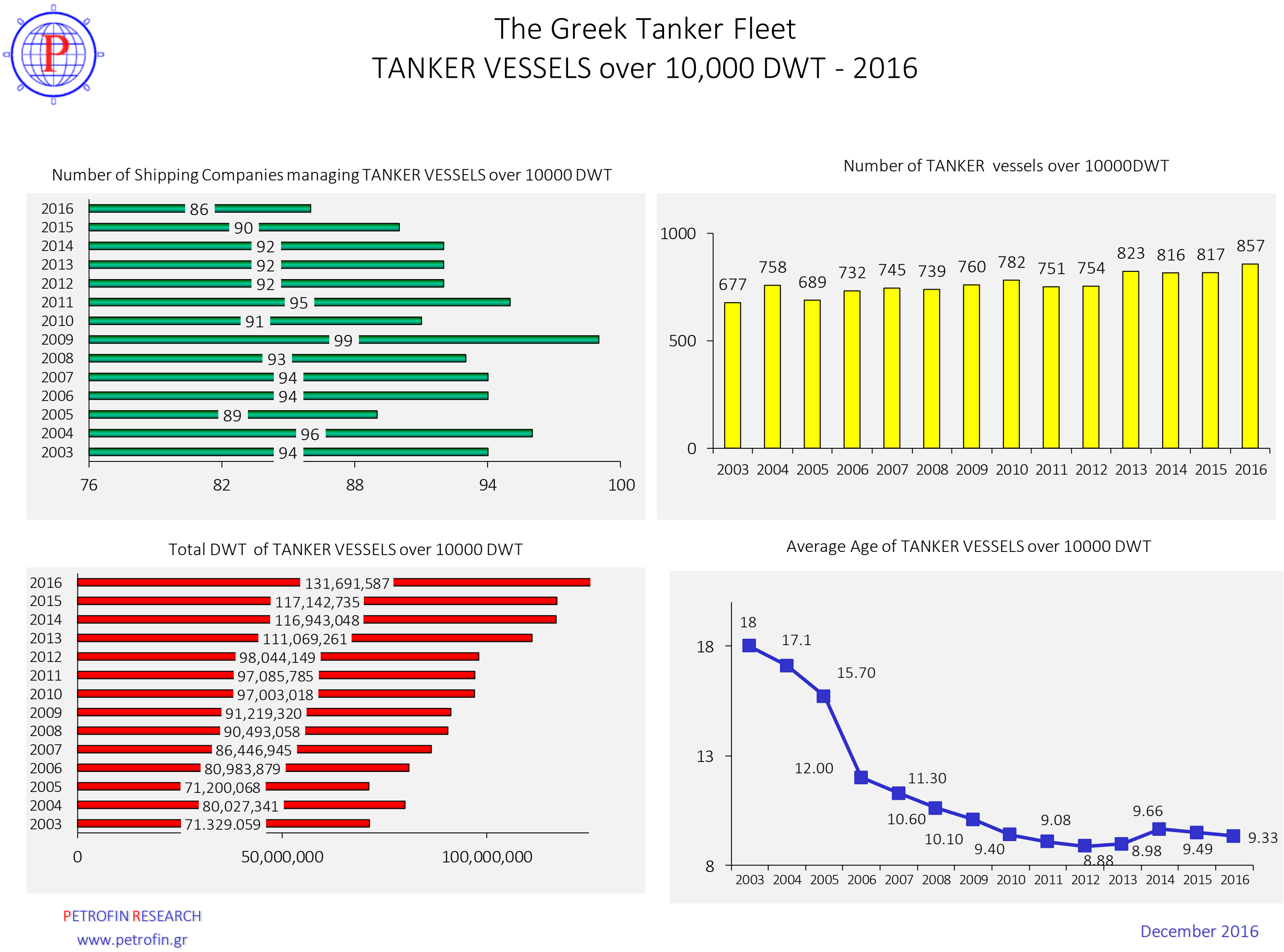


The Greek Tanker fleet of vessels over 10,000 dwt each

Comparisons between 2003 and 2016

The number of tanker companies has gone down by 4. Tonnage is up again but this time by an impressive 14.54m tons DWT compared to only 199,687 tons DWT in 2015 and now the tanker sector represents 36.39% of the Greek fleet, compared to 35.7% in 2015. Age is slightly down to 9.33 from 9.485 in 2015 and the average unit has got larger, at 153,666 tons DWT, from 143,382 tons DWT in 2015. It should be noted here, that there is a marked tendency not to specify the type of tanker (product, chemical, etc.) in the databases used, so the general category of tanker may not be quite sufficient to show the evolution of the sector. This is something we try to take into consideration in our research.

Graph 8



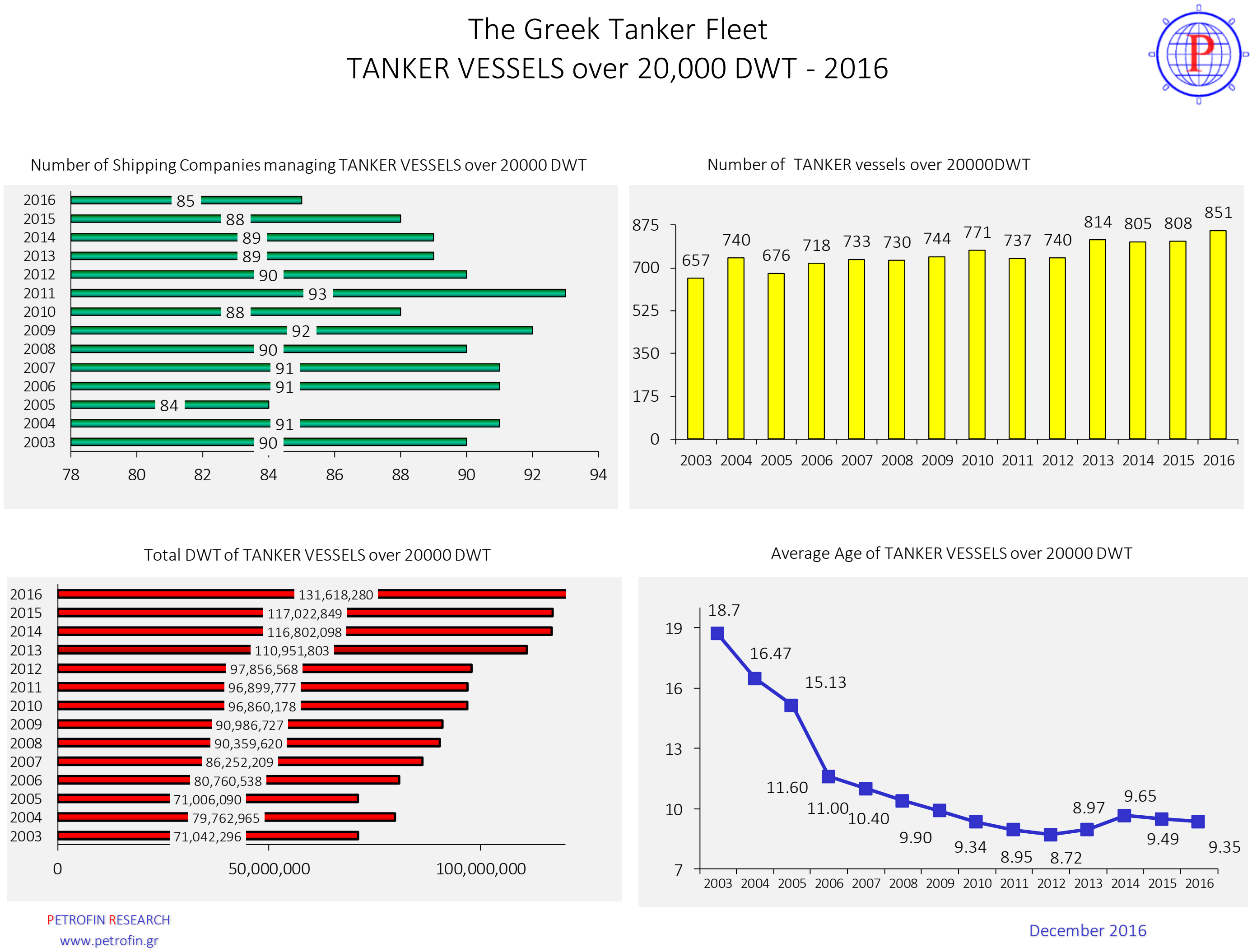
THE GREEK TANKER FLEET OF VESSELS OVER 20,000 TONS DWT EACH

COMPARISONS BETWEEN 2003 AND 2016

Units in this category have gone by 43. The companies that run them are minus 3 since last year. Tonnage is up by 14.6m tons DWT, compared to only 220,751 tons DWT in 2015.

The sector occupies now 36.37% of the Greek fleet, from 35.65% in 2015, 39.4%, 37.12% in 2012, 37.82% in 2011 and 39.9% in 2010. The same observation, that tankers are increasingly being reported according to their specific type, applies to this sector too.

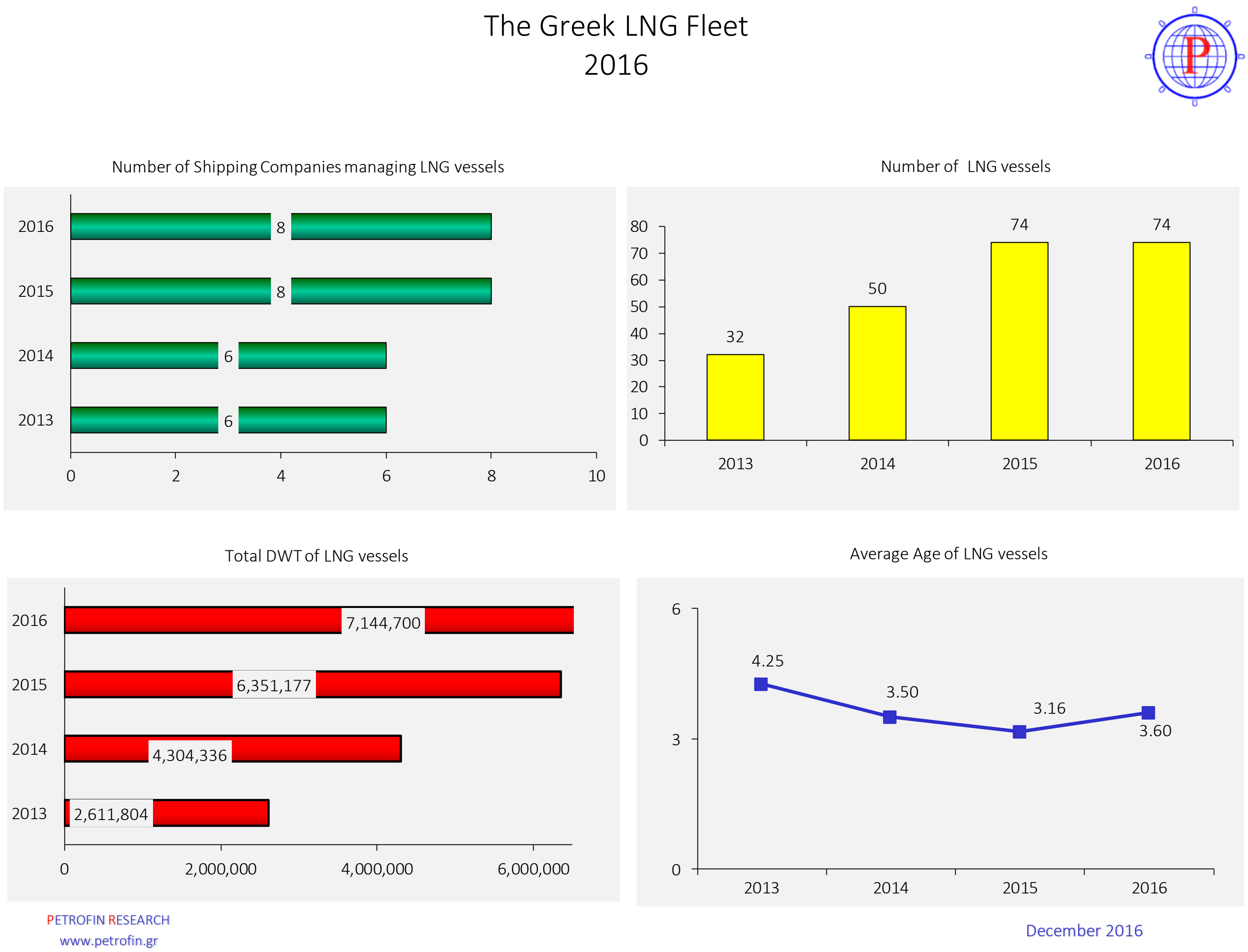
GRAPH 9



THE GREEK LNG FLEET

The LNG market has not moved a lot except in the size of vessels. Companies and number of vessels are the same, but tonnage is up by 793,523 tons DWT showing a lot of S&P activity.

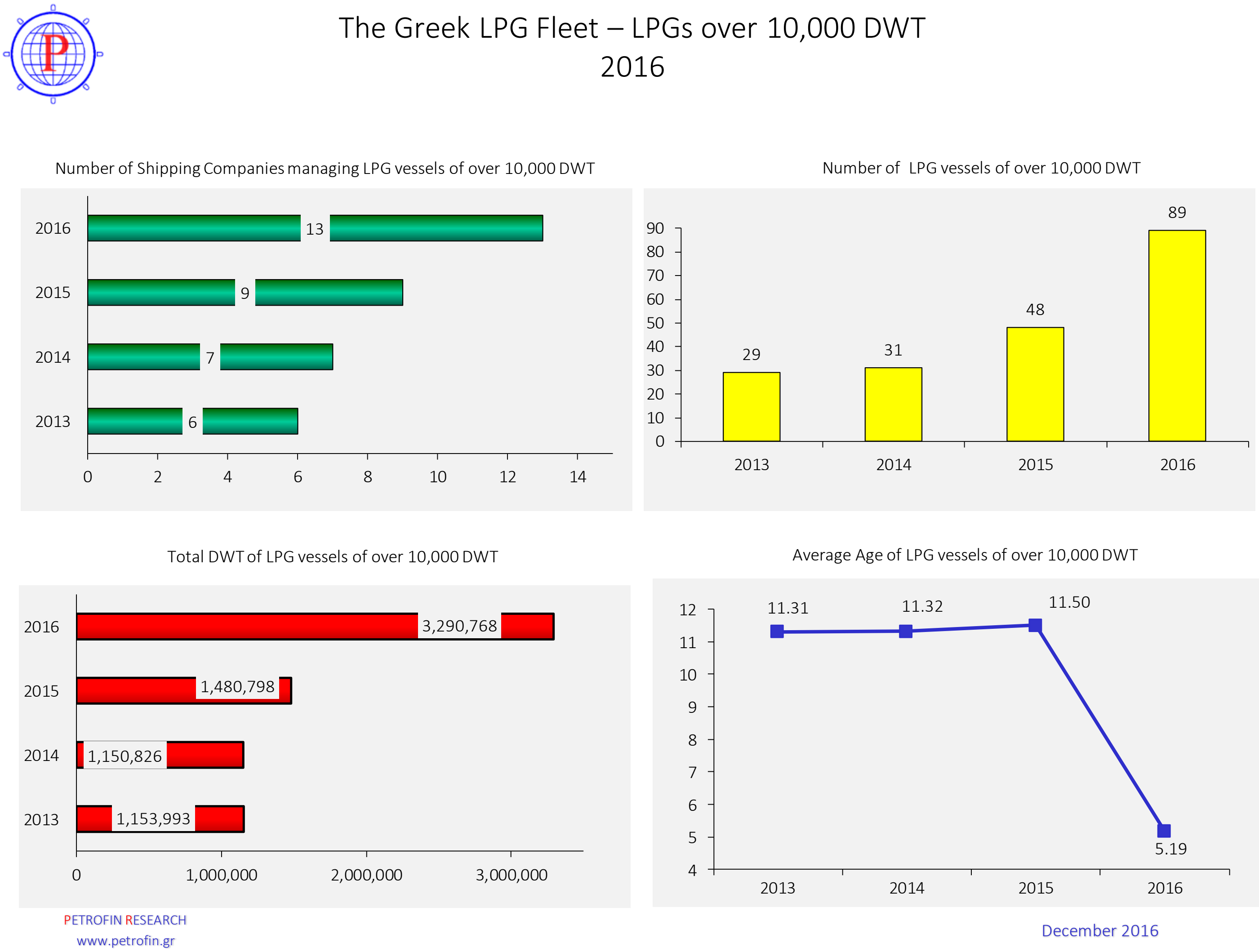
GRAPH 10



The Greek LPG fleet of vessels over 10,000 DWT each

This is the sector that has shown the most dramatic changes in 2016. The companies that run them are up by 4, but the fleet has almost doubled and so has tonnage. What is very significant is the sharp drop in average age from 11.5 to 5 years.

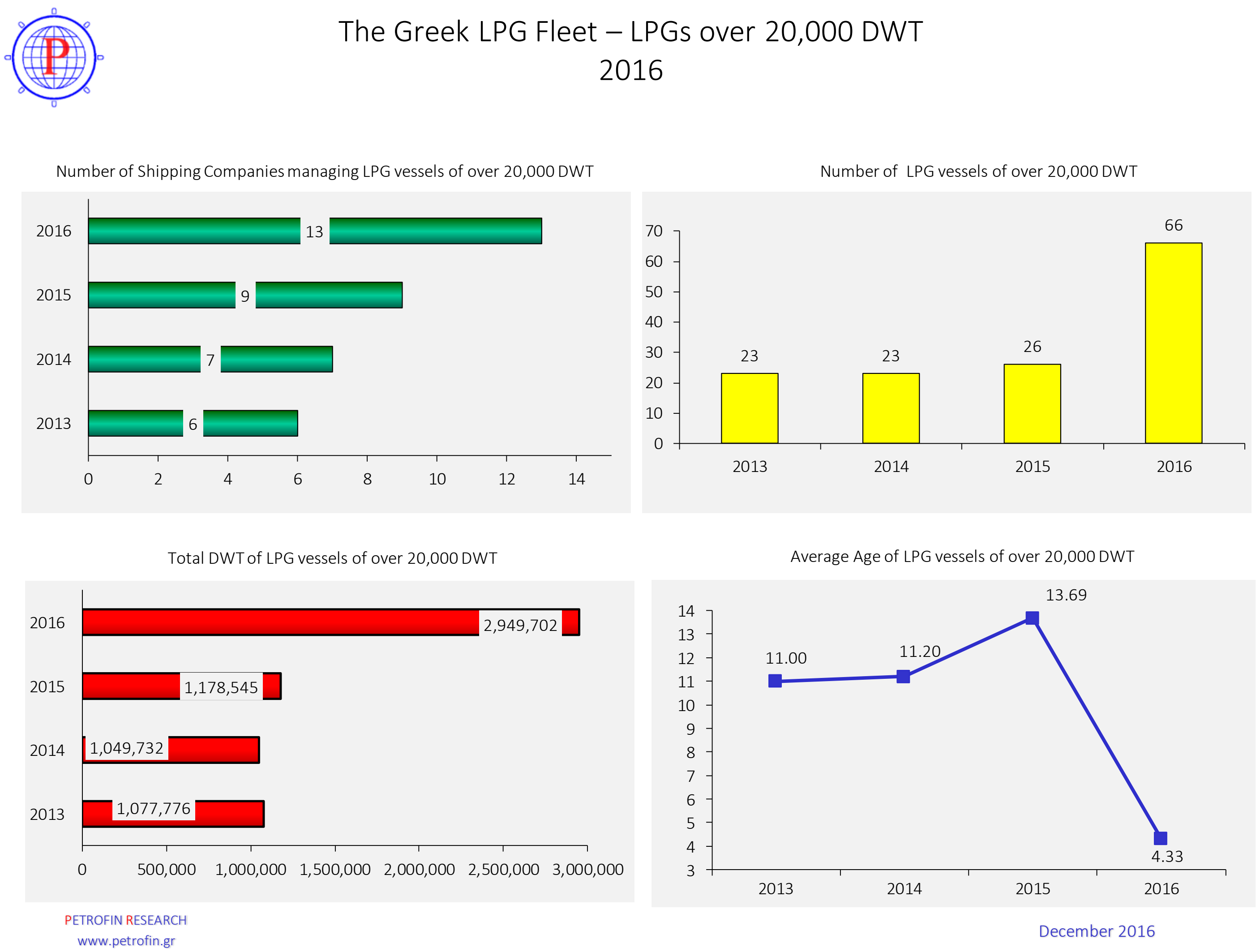
Graph 11



THE GREEK LPG FLEET OF VESSELS OVER 20,000 DWT EACH

For the over 20,000 ton LPGs we have a more staggering change, where vessels jumped from 26 to 66 and tonnage up by 150%. This sector's volatility is marked by a complete turnaround of last' year's increase in average vessel age of 13.69 to a sharp drop down to 4.3 years of age. This is a sector that needs to be followed closely, as it is obvious that it reacts promptly to market demands and also has plans for the future.

GRAPH 12



COMMENTARY

GREEK SHIPPING POWERS FORWARD

With growth of 6.5% in vessel numbers and 10.26% in DWT terms Greek shipping continued to power forward.

This growth is even more impressive if we take into account the challenging prevailing market conditions in most sectors with the dry bulk and the container sectors faring the worst. Moreover, the associated poor cashflows and restricted lending policy by banks have contributed to the difficulties encountered by Greek shipping.

What are the reasons, therefore, that may explain the large rise in both vessel numbers and fleet DWT?

Some explanations can be found in the following:

1. Many Greek owners had committed newbuilding orders which were delivered even though there have been significant delivery delays as a result of revised agreements with the shipyards.
2. In comparison to newbuilding prices, second hand vessels represented a better buying opportunity and Greek owners switched their attention to purchasing modern second hand vessels.
3. A number of Greek owners remain committed to building their eco fleets and to snap up any newbuilding resale opportunities.
4. Especially for dry bulk owners, there is a widespread belief that the worst is over and acquiring modern vessels represents an opportunity.
5. Private equity funds have begun once again to conclude Joint Ventures with Greek owners especially in the dry bulk sector.
6. Greek owners have increasingly made use of their cash reserves to purchase vessels on a cash basis.

There has also been continuous improvement in the average age of the Greek fleet. Using a 20,000 DWT cut-off, the average age has fallen to 8.39 years.

In particular, the dry bulk fleet of over 20,000 tons DWT vessels has shown a similar reduction in the average age to 8.13 years with 111 more vessels and a tonnage increase of 7.2m DWT, although the under of Greek owning companies has remained the same.

The same pattern has emerged for the tanker fleet (vessels over 20,000 tons DWT) with an average age reduction of 9.35 years and an increase of 43 vessels and 14.6m DWT with, however, 3 fewer companies.

Surprisingly, the container sector which is expecting extremely adverse market condition has also participated in an increase of its fleet (of vessels over 20,000 tons DWT) by 107 vessels, a gain of 7.7m DWT and an age reduction to 9.34 years involving 32 companies (up 1 since last year).

As one may observe, there is a clear trend whereby the fleets are getting larger but the number of companies is remaining virtually the same. In all three sectors there is strong evidence of economies of scale at work whilst the age momentum continuously supports younger vessels. Indeed it is remarkable that for the Greek fleet the total number of owners with 20,000 DWT plus vessel fleets is the same at 389 in 2016 as it was in 2003, although the total deadweight has more than doubled from 160.9m in 2003 to 355.9m DWT in 2016. The age drop over the 13 year period has been remarkable from 19.2 years to 8.63 years, which underlines the quality revolution that has taken place in Greek shipping over the period. Similar patterns are demonstrated across the other main sectors as can be observed from the records. The Greek LNG fleet has remained pretty static over the period.

However, the same cannot be said for the LPG fleet, which has become the star performer across all sectors with the number of companies operating fleets of over 20,000 DWT growing from 6 to 13, the total fleet DWT has nearly tripled from 1.078m DWT to 2.950m DWT over the last 4 years. The number of vessels has risen from 23 to 66 and even more remarkably the average age of the LPG fleet has fallen from 13.69 to 4.33 years.

Overall, Greek owners have continued to commit huge sums to grow and modernize their fleets. Thus far and since the shipping industry's continuous crisis since 2008, the massive investment has not paid off, as most sectors remain fundamentally weak. However, it is too early to opine as to the overall future investment performance of Greek shipping and whether Greek owners shall be able to maintain the current growth momentum. Nevertheless, their track record has shown that Greek owners timed purchases and disposals well and remain true intuitive entrepreneurs.

METHODOLOGY – SOURCES - RESEARCH CRITERIA

In this 2nd part of Petrofin research, the Greek Fleet Statistics, we analyse the composition of the Greek fleet, in terms of vessel size, vessel type and vessel age.

Our sources are the Greek Shipping Directory (2016), printed and on-line database, Newsfront Greek Shipping Intelligence, as well as Clarkson's World Fleet Register, Clarkson's Shipping Intelligence Weekly and numerous market sources.

Research Criteria:

a. All Greek-owned / Greek-based vessels, of whichever flag are taken into account.
b. The Greek-based / Greek-owned fleet is analysed and presented initially as a whole, in terms of Numbers of Vessels, Age of Vessels and DWT.
c. Then a cut-off DWT is used of 10,000DWT to measure the number of companies that run vessels above this tonnage. This is done for the whole fleet, then for Bulkers, Tankers, LNGs and LPGs. This cut-off eliminates the vast number of very small and usually over-aged vessels that unduly influence the Greek fleet analysis.
d. A further cut-off DWT point of 20,000DWT is used for the whole fleet, the Bulkers, the Tankers and the Containers. This shows the effect that a higher cut-off has on the fleet and its main sectors.
e. Newbuildings are only taken into account if they have a scheduled delivery year of up to and inclusive of 2017. This results in a more accurate assessment of today's fleet closer to reality. In the current economic climate, a very substantial number of newbuilding orders may be susceptible to cancellations, postponements and re-sales, and may thus distort the current picture of the size of Greek companies, the age of their fleets and of vessels actually trading or about to be delivered to Greek-based / Greek-owned companies.
f. Under the "Tanker" term we have included only crude oil Tankers, ULCCs and VLCCs and not other types of tankers. Bulk carriers include bulkers only and not general cargo vessels. Container vessels are pure cellular vessels. Consequently, this 2nd part of our research does not produce data for other types, such as chemical tankers, product carriers, OBOs, Container/bulkers, etc.