



BunkerLogix



Flexible LNG bunkering value chain in the Spanish Mediterranean Coast

Market Report – July 2014

Prepared by DBK, S.A.





Study goals and methodology

The purpose of this study is to characterize the present and future demand for Liquefied Natural Gas (LNG) as a fuel for vessels sailing within the Mediterranean and calling in the ports of Barcelona, Valencia, Cartagena and Algeciras.

The following aspects in particular are analysed:

- Fleet specifications: average age, sizes, fuels used, main types of vessels.
- Operation of regular routes, percentages of transit in emission control areas (ECAs).
- Plans for retiring vessels and building new ones.
- Forecasts for the conversion of the fleet to LNG or for the ordering of vessels with an LNG engine.
- Fuels that will mostly be replaced.
- Expected discounts on LNG compared to the fuels currently being used.
- Bunkering frequencies at the different ports.
- Average time spent in ports.
- Average consumptions per vessel.



Study goals and methodology

The methodology applied to the development of this study has involved the following stages:

- Preparation of a semi-structured questionnaire lasting around 20 minutes, which served as the basis for the fieldwork;
- Holding of 35 telephone interviews with senior managers from the corresponding shipping companies and international charterers operating through the ports of Barcelona, Valencia, Cartagena and Algeciras, with an overall estimated universe of 80 companies. The fieldwork has been undertaken between February and May 2014;
- Continuous liaising and progress meetings with the people involved in the BunkerLogix project responsible for the study;
- Quality control, verification and cross-checking of the data gathered through the interviews;
- Drafting of the final report after analysing, structuring and integrating the information obtained from the interviews.

All stages of the study have been undertaken by DBK, S.A., the leading Spanish company specialised in the development of studies on businesses and competitive analysis.



Presentation of the results

The results are structured in the following chapters:

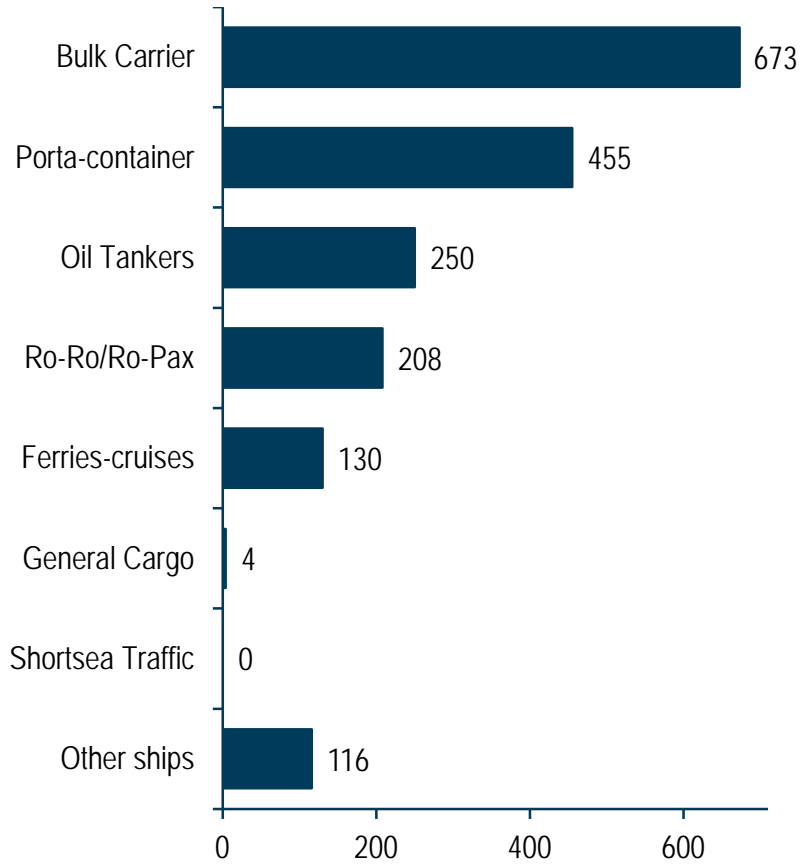
- Fleet characterization
- Routes
- Bunkering ports
- Bunkering details
- Plans to retire / order ships
- Plans to convert / order LNG ships

The base featured under each chart specifies the number of companies that have provided the corresponding data, with the total fleet of those companies provided in brackets.



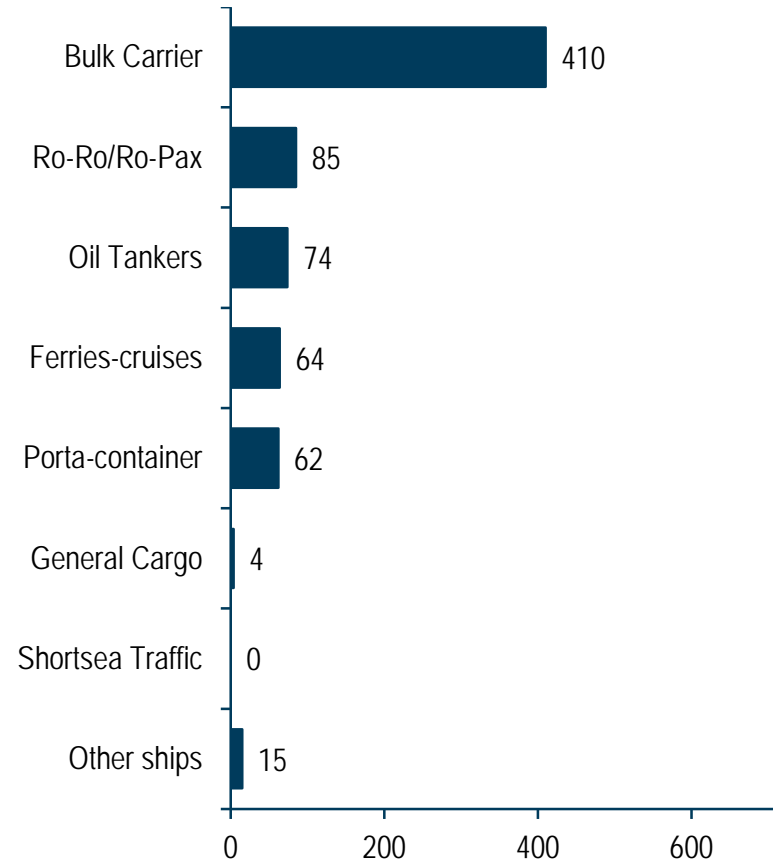
Fleet characterization – Type of ships

Total ships (number)



BASE: 35 COMPANIES (1.836 ships in total)

Ships transiting the Mediterranean regularly (number)

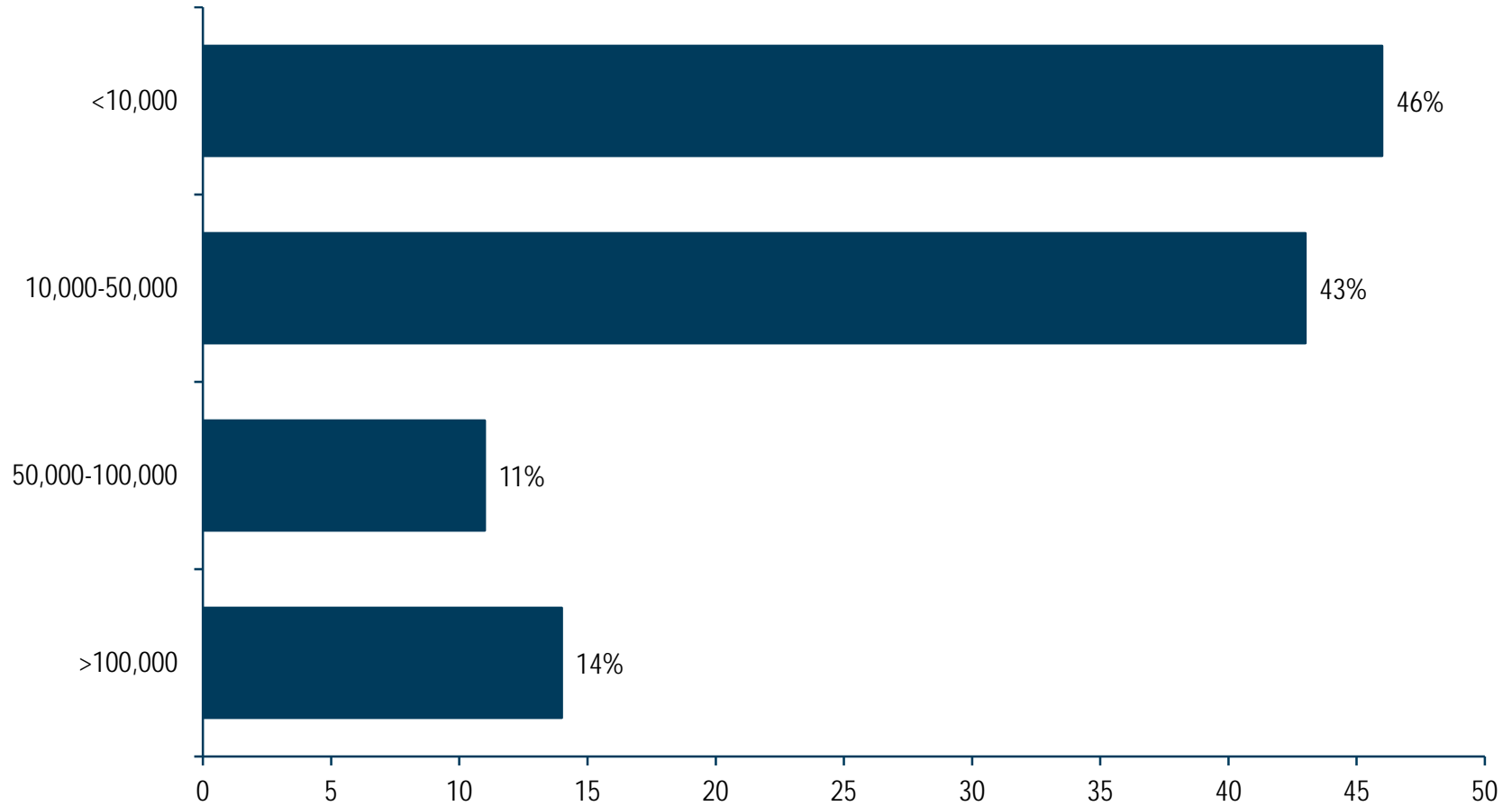


BASE: 35 COMPANIES (1.836 ships in total)



Fleet characterization – Size

Average fleet size (DWT) (%)

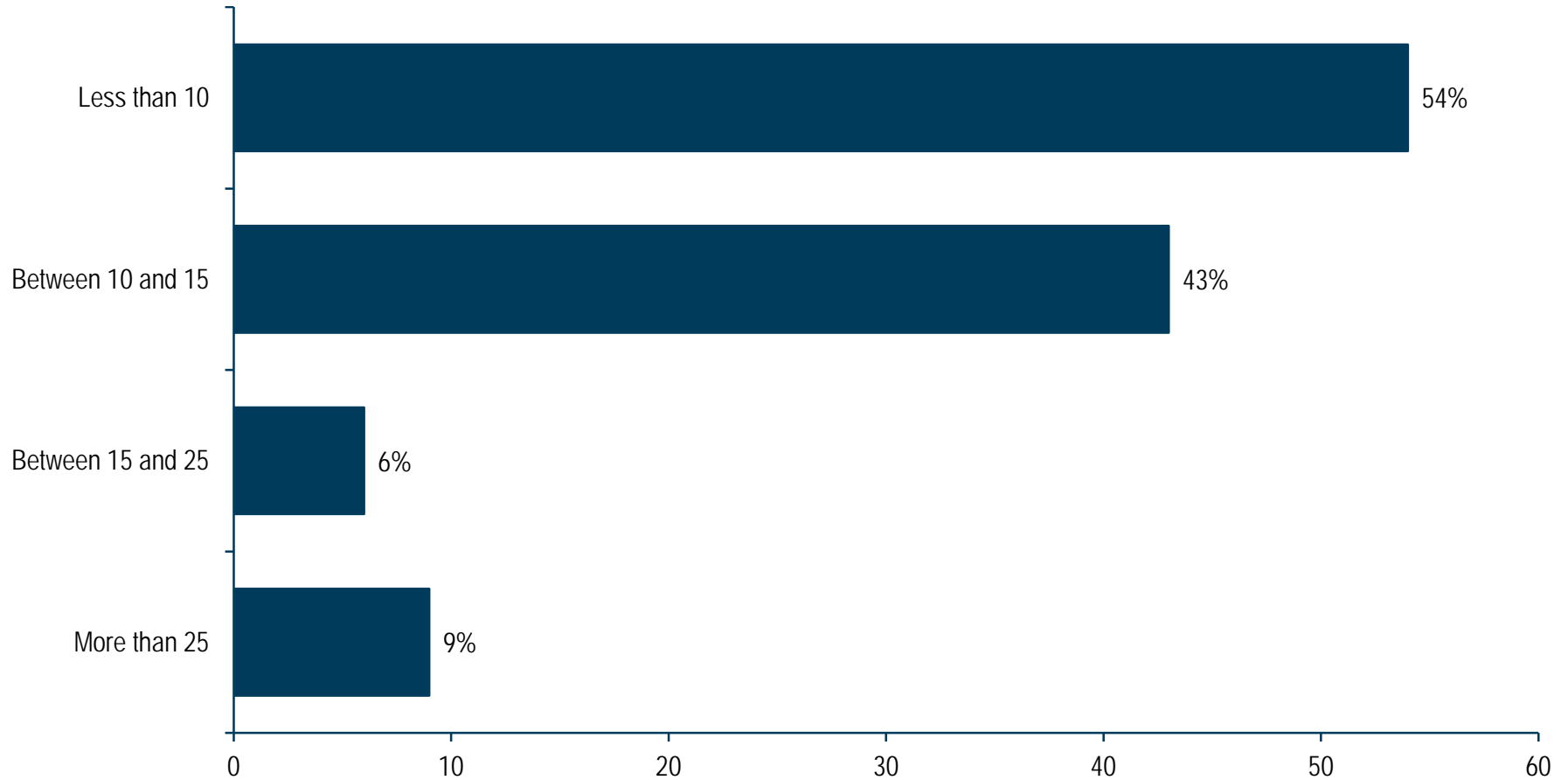


BASE: 35 COMPANIES (1.836 ships in total)

Note: multiple response; DWT: dead weight tons

Fleet characterization – Age

Average fleet age (years) (%)

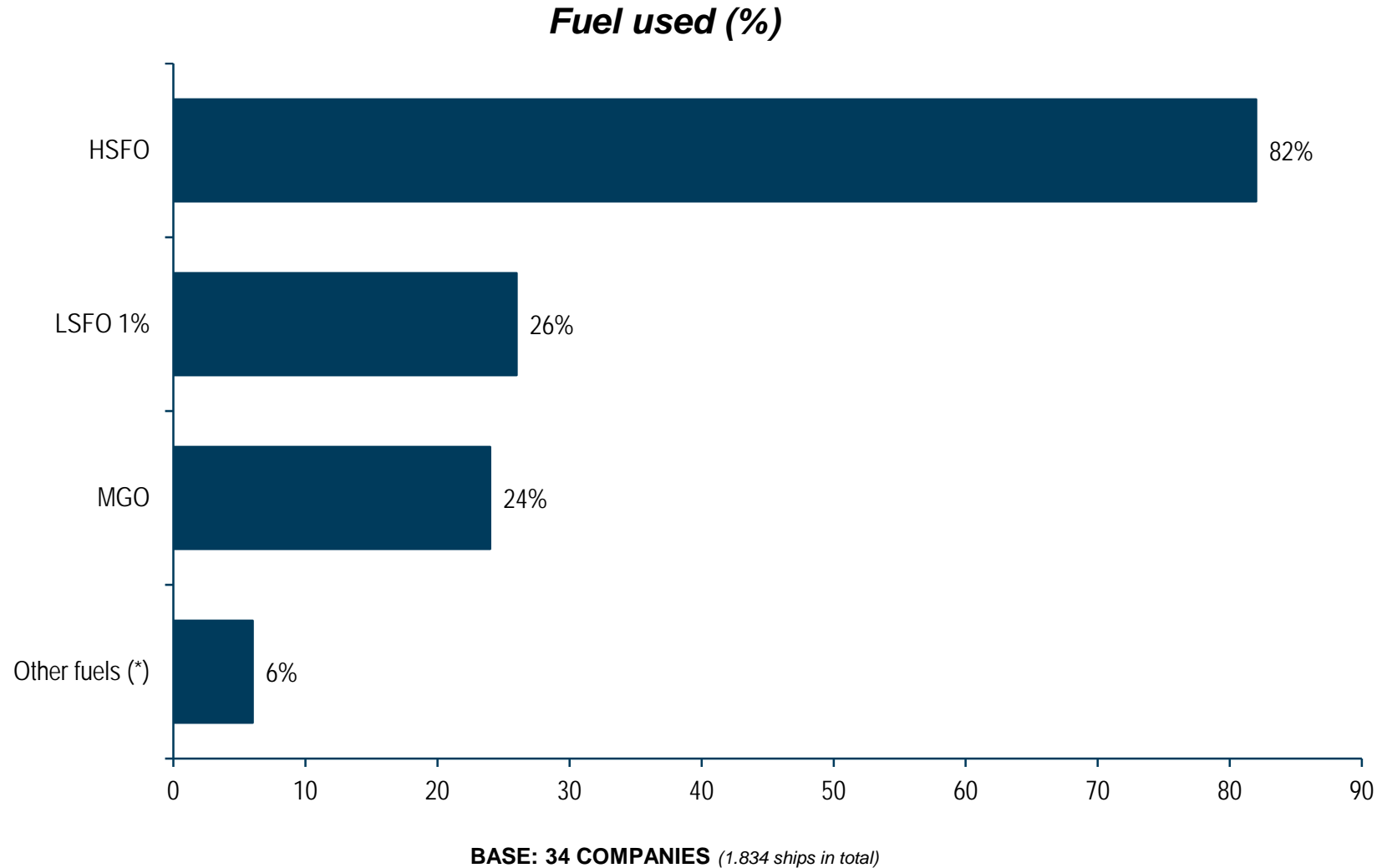


BASE: 35 COMPANIES (1.836 ships in total)

Note: multiple response



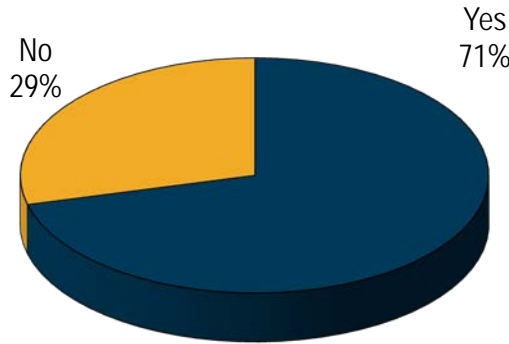
Fleet characterization – Type of fuel consumed



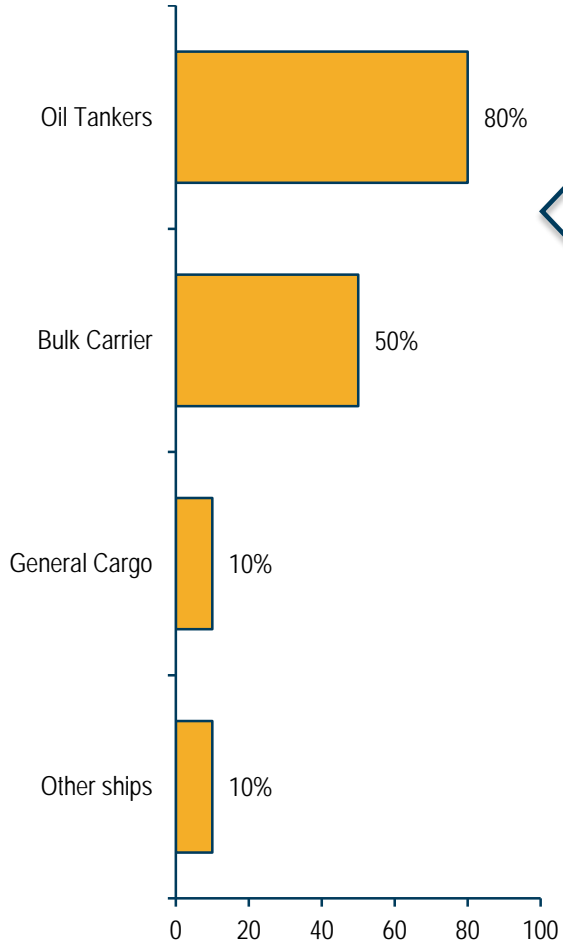
Note: multiple response; (*) GO or not specified

Routes

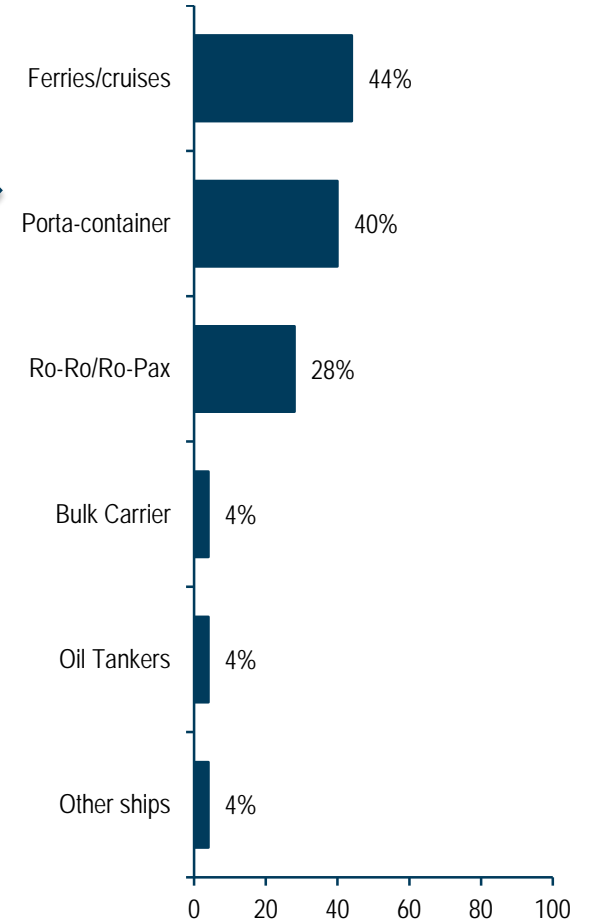
Regular routes operated (%)



BASE: 35 COMPANIES



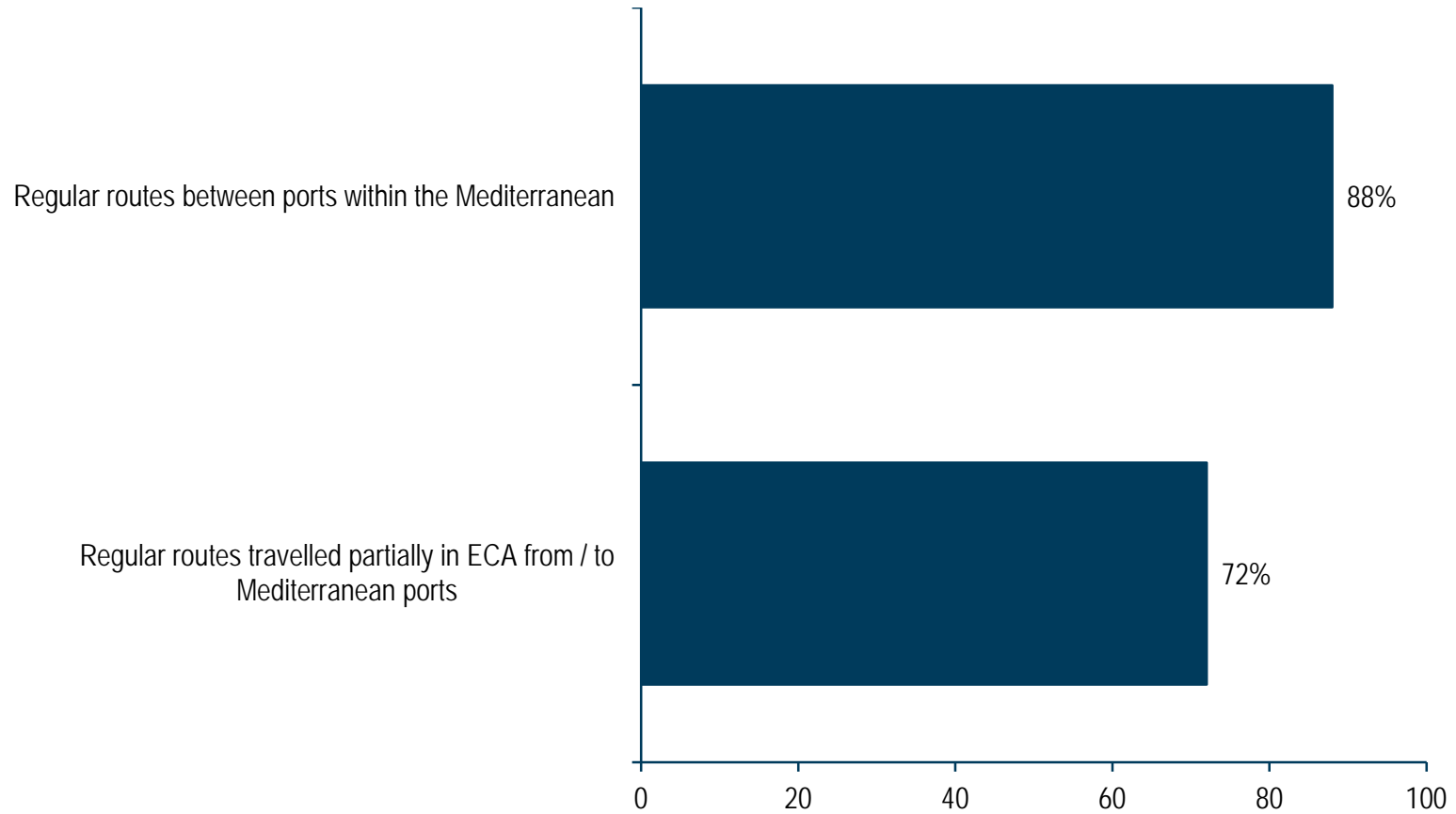
BASE: 10 COMPANIES (889 ships in total)



BASE: 25 COMPANIES (947 ships in total)

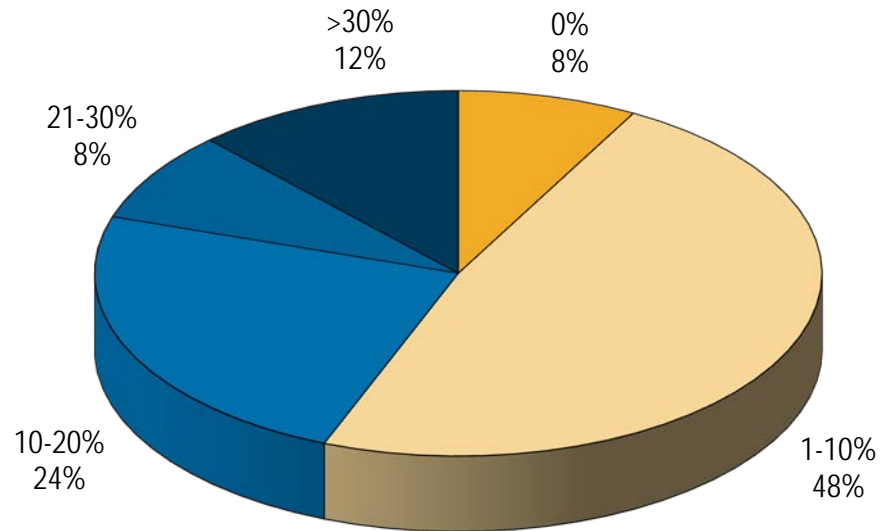
Note: multiple response

Type of regular routes operated (%)



BASE: 25 COMPANIES (947 ships in total)

Average journey travelled in ECA within all routes (%)

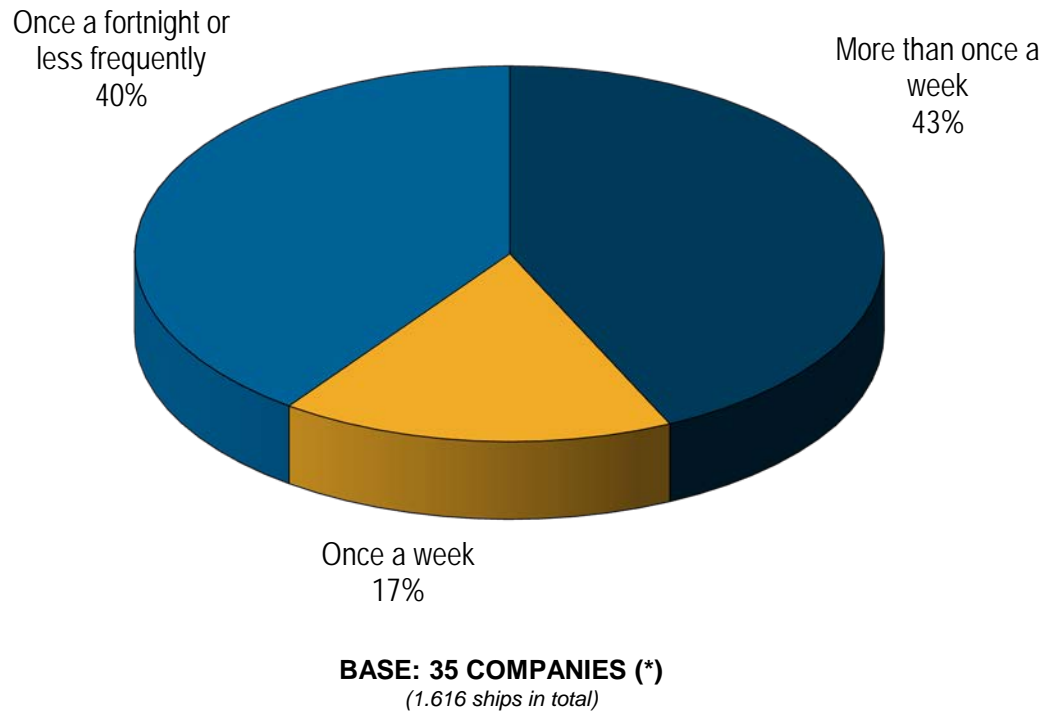


BASE: 25 COMPANIES
(1.517 ships in total)

Average journey travelled in ECA within all routes by ship type (%)

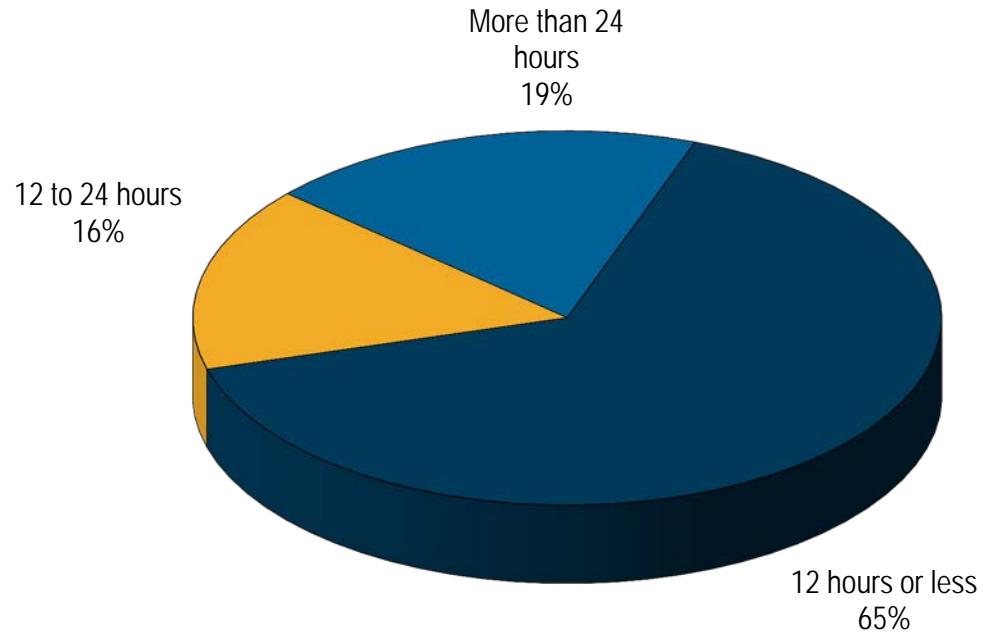
Ship type	0%	<10%	10-20%	21-30%	>30%	Base (companies)
Bulk Carrier	0%	83%	0%	17%	0%	6
Ferries-cruises	33%	0%	34%	0%	33%	3
General Cargo	100%	0%	0%	0%	0%	1
Oil Tankers	11%	56%	22%	0%	11%	9
Porta-container	12%	38%	25%	0%	25%	8
Ro-Ro/Ro-Pax	34%	22%	22%	11%	11%	9
Other ships	50%	50%	0%	0%	0%	4

Bunkering frequency in Spanish ports per ship (%)



(*) three companies are counted more than once, since they gave different answers depending on the bunkering port.

Average time spent in Spanish ports (%)

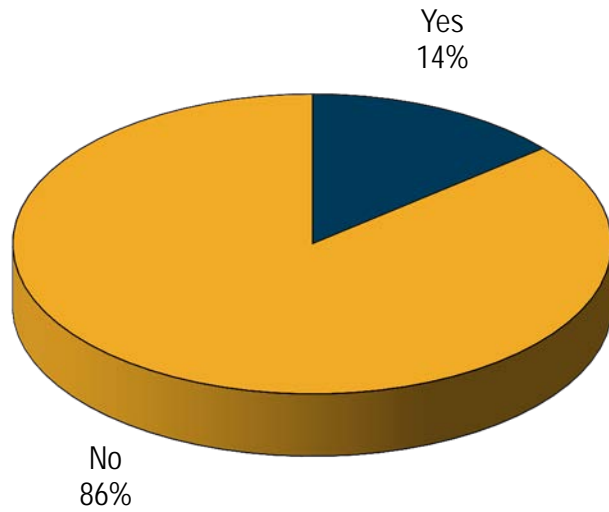


BASE: 31 COMPANIES
(1.740 ships in total)

Plans to retire / order ships

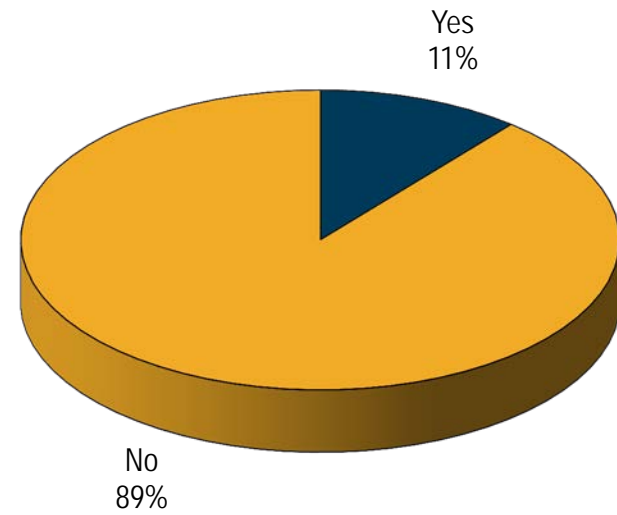
Plans to retire ships (% of companies)

2014-2015



BASE: 35 COMPANIES
(1.836 ships in total)

2016-2020

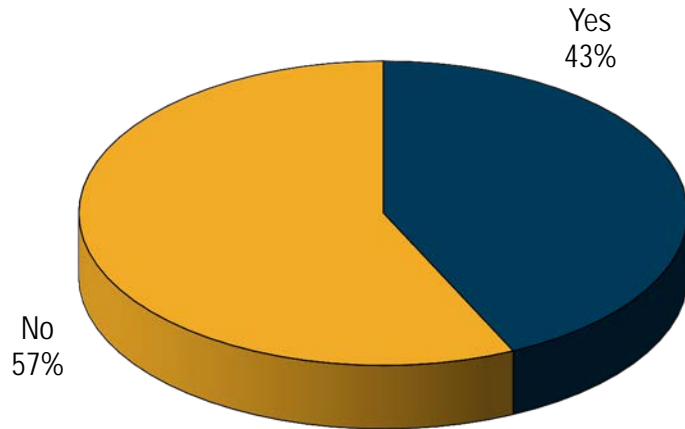


BASE: 35 COMPANIES
(1.836 ships in total)

Plans to retire / order ships

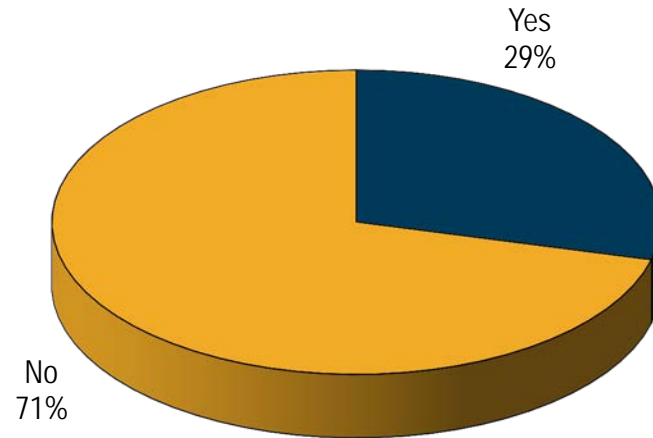
Plans to order new built (% of companies)

2014-2015



BASE: 35 COMPANIES
(1.836 ships in total)

2016-2020

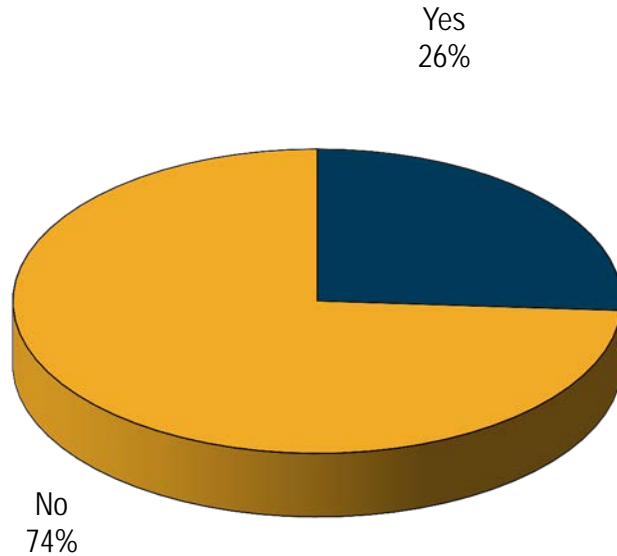


BASE: 35 COMPANIES
(1.836 ships in total)



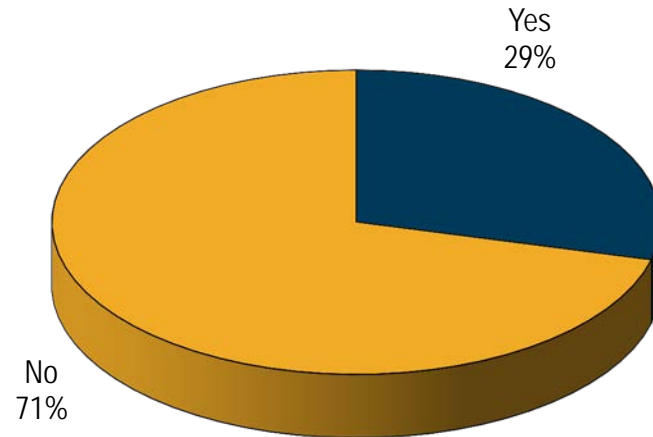
Plans to convert / order LNG ships

Plans to convert or order LNG ships in the medium-long term (% of companies)



BASE: 35 COMPANIES
(1.836 ships in total)

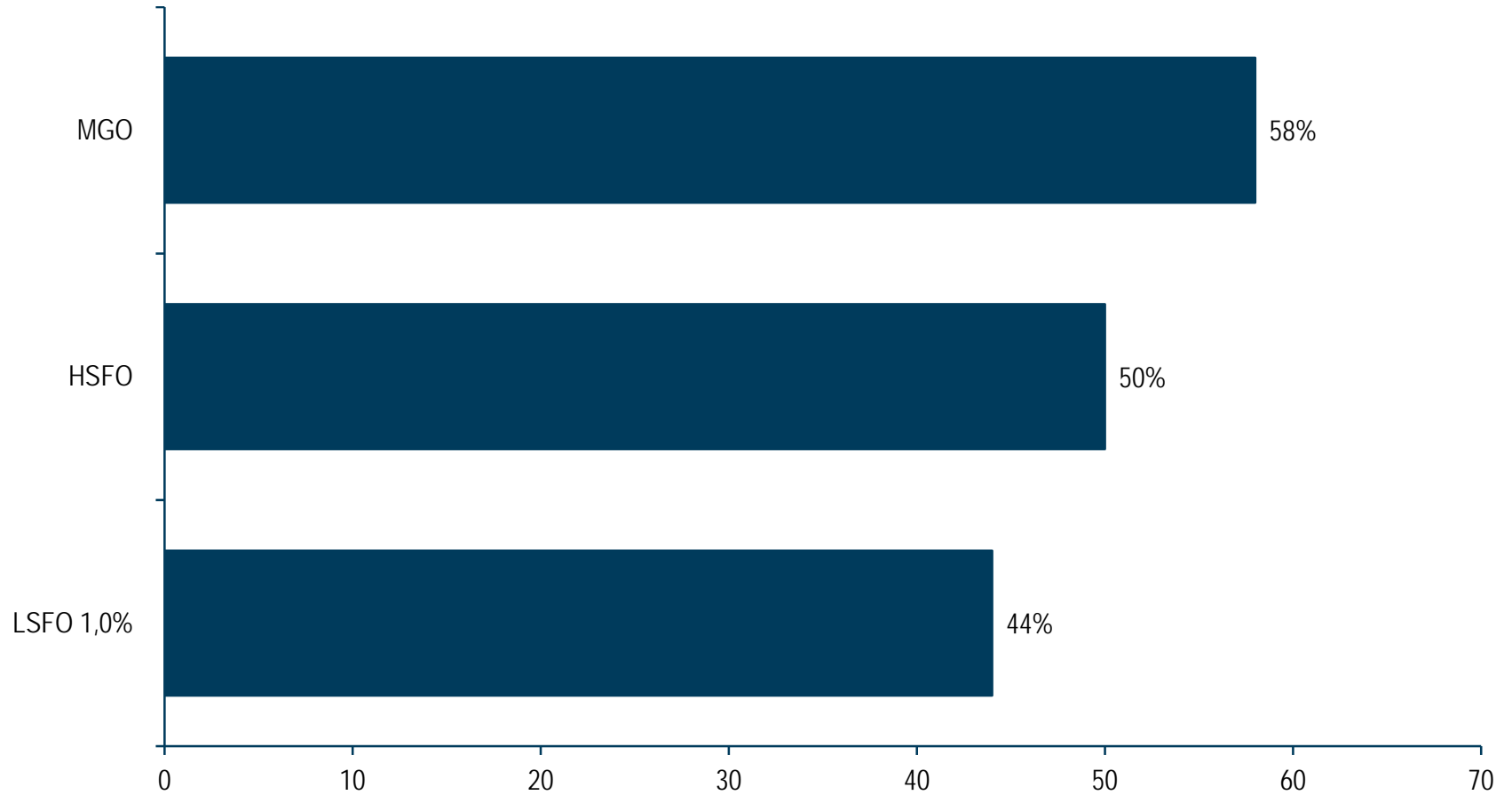
Plans to convert or order LNG ships in the medium-long term if there was security of supply (% of companies)



BASE: 35 COMPANIES
(1.836 ships in total)

Plans to convert / order LNG ships

Type of fuel more likely to be substituted (%)



BASE: 9 COMPANIES (*) (383 ships in total)

Note: multiple response; (*) with plans to convert or order LNG ships in the medium-long term



Conclusions

- There was a high response rate to the questionnaire, with 35 participants, both freight and shipping companies, representing over 40% of the universe analyzed;
- The sample of shipping companies is therefore highly representative, having established a solid basis for the analysis of the present and future demand for LNG;
- Also of note is the extent of information provided by the collaborating companies, allowing the elaboration of consistent aggregate results and of great quality;
- 29% of the companies analysed report their willingness to convert or order LNG-powered vessels in the medium to long-term, if there was security of supply;
- 26% of the companies analysed and within the companies mentioned before, have strong intentions to convert or order LNG-powered vessels in the medium to long-term;