Innovative answers to your questions

“COMPETITIVE POSITION AND FUTURE OPPORTUNITIES OF THE EUROPEAN MARINE SUPPLIES INDUSTRY”

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Executive Summary
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It is the objective of this study to give a detailed overview of the marine supplies industry in all Member States of the EU covering basic economic and company characteristics, including available products and services. It evaluates the competitive market position of the European marine supplies industry and identifies opportunities for strengthening its sustainable competitiveness. The study ends with some initial recommendations for implementation with the help of supporting policy instruments.

The main sections of the study are:

1. A description of the marine supplies industry, its end-use markets, types of companies, structure and supply chains and a categorization and benchmarking of suppliers
2. A statistical “top down” and retrospective analysis averaging 2006-2010 data in order to determine the size of the marine supplies industry on the basis of statistical production values of the global shipbuilding and boatbuilding industries. The results are presented in national portfolios for the EU Member States, Norway and Turkey, and additionally the figures have been aggregated into portfolios for EU-28 and EU-28 plus Norway and Turkey.
3. A discussion of developments in the industry in the last years including a brief discussion of changes in the different markets, brief discussion on M&A activities, market consolidation and, globalization by means of examples of globally active leading players from Europe and by analysing the trends in certification and type approvals
4. A “bottom-up” market projection until 2017 by identification and combination of basic economic drivers, market outlooks and forecasts. First, the study estimates the size of the marine supplies market on the basis of shipbuilding forecast models for the period 2013-2017, differentiated by different marine supply trades on the basis of reference cost models for different shiptypes. This market projection is complemented by indicative identification of market sizes for marine supplies for ship repair and conversion, retrofitting of ships, naval ships, offshore units (as far as not covered by the shipbuilding forecast) and boatbuilding. Chances and risks for European suppliers in the various market sectors are discussed.
5. The study ends with a discussion on the position and future potential of the European marine supplies industry including a SWOT analysis and some recommendations.

Main results

Marine supplies industry is heterogeneous in many respects, such as:

- Diversified markets (shipbuilding, shiprepair, naval shipbuilding, boatbuilding, offshore oil & gas, offshore wind, underwater etc.),
- generalists or firms focussed on one market; different in size (big, medium sized and many small companies), global market leaders versus regional workbenches, and
- A broad and varied customer base (shipyards, shipping companies, governments, private owners, offshore majors, research institutions).

Marine suppliers deliver materials, systems, equipment, act as service providers in engineering and consulting or are integrated as subcontractors in pre-product manufacturing and assembly. The industry provides a very wide range of supplies for more than 20 different ship-types of a broad spectrum of sizes, from small research vessels via large bulker and container vessels to giant cruise ships with more than 500.000 m³ volume and on top all offshore systems. The industry provides equipment and services from a single bolt to the biggest engines in the world and jobs from simple cleaning to high sophisticated scientific engineering. All that makes it difficult to identify the marine supplies industry as one entity,
well-structured and working according to predefined patterns. Nowadays, customer orientation, a broad product portfolio and organisational flexibility is the key to success. The study proposes different approaches to structure the industry in order to define it better and to allow measuring economic parameters and employment. This provides the basis for the subsequent calculations of the production volumes in a retrospective view and market volumes in the perspective view.

On the basis of the limited statistical data available in combination with data from associations, extrapolations and interpolations it has been possible to determine the main economic data on the industry as an average over the period 2006 to 2010. The average annual world demand for marine supplies was in the range of 149 billion EUR. The Asian frontrunners China and Korea are by far the biggest national markets, followed by Japan, USA, Singapore, Norway, Italy, India, Germany and Brazil. European marine supplies industry served this global demand with an average production value of 52.5 billion EUR (EU-28) of which about 33% went into export outside of EU-28, and 61.8 billion EUR production value (EU-28 plus Norway and Turkey). The overall production volume represents a market share of the world market in the range of 35% for EU-28, respectively 41.5% for EU-28 plus Norway and Turkey. It is worth to be noted that these market shares take into account production values in Europe and not necessarily production values of European based companies which are generated at overseas production sites.

The five major EU-28 marine supplies production countries, i.e. Germany, UK, Italy, Netherlands and France represent about 75% of the total marine supplies production volume. By the same time these countries represent major export countries with more than 67% of the overall EU-28 export production (about 88% by including Denmark and Finland as additional major export countries for marine supplies).

For the period 2006 to 2010 EU-28 marine supplies industry’ 1st tier enterprises employed in average about 257,000 persons in ~23,500 companies. Including 2nd tier suppliers the total employment for marine supplies in EU-28 sums up to about 390,000 persons. Including Norway and Turkey the overall employment calculates to 451,000 persons (1st+2nd tier) working in about 30,000 companies. The figures include a high share (more than 70%) of very small companies with 1-9 employees. Without these very small companies, the number of enterprises in EU-28 is about 6,900 (8,380 including Norway and Turkey). These statistically calculated figures have been benchmarked with a company count of companies possessing an approval certificate with a classification society or another official certification instance. With 5,905 companies from EU-28 (6,553 including Norway and Turkey) this company count is in the same range and proves the validity of the statistical analysis made. By the same time it gives a clear indication that these companies are suppliers of marine equipment or systems in the narrower sense. Germany is leading the company count on the basis of type approvals, closely followed by Italy, United States, South Korea and Japan. Other major European countries in this count are UK, France, Norway and the Netherlands.

Looking at the developments in the years 2008-2011, it needs to be seen that according to the statistical figures the purchasing volume of shipbuilding, boatbuilding and repair in total has dropped from 2008 as the peak year to 2011 by 27% to about the level existing before the financial crisis in the year 2005. Following that the marine supplies production volume for EU-28 in 2011 is calculated to 43.8 billion EUR (including export production) providing employment for about 342,000 persons.

However, the economic development did not affect maritime businesses in the European countries in the same way. Some countries suffered more than others with annual negative growth rates between 4% and 25% for the period 2008-2011. As positive exemptions, UK and the Netherlands even managed to maintain their shipbuilding/boatbuilding production

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1 Shipbuilding, boatbuilding, repair of boats and ships add another 375,000 employees (as average figure for 2006-2010)
and related purchasing power on a stable level or even show some growth. This seems to be caused by the fact that both countries have almost no orderbook on larger merchant ships, but are concentrating on offshore, naval ships, smaller vessels and special ships (dredgers, yachts). The statistical figures in general also show for the end of the period that negative growth has been stopped for some countries or even developed some positive trends.

With regard to the marine supplies industry it can be said that local or regional marine suppliers which are working in the vicinity of the shipyards and are dependent on this limited demand are 1:1 hit by the decline of the business. Other marine suppliers which are acting globally and serve different markets with numerous products are likely less hit by the crisis. Potentially they have even been able to compensate some of the decline in the shipbuilding sector by serving the strong markets in offshore oil & gas and also offshore wind. The study provides a list of about 125 major companies with headquarters in Europe, which likely fall into this category of “good survivors” of the crisis. These companies with globally distributed production sites represent a joint annual sales volume of 41-43 billion EUR which allows them to serve ~40% of the world market with their product portfolio alone. More than 30 of these companies have been described with their marine product portfolio and international company development in more detailed in an annex.

Having a look into the closer future, the study provides a market outlook for seven marine supplies markets. For the shipbuilding market a comprehensive analysis has been carried out in order to identify the expected market volume for 21 different shiptypes (including offshore ships), even distinguishing different size classes or subtypes. Cost structures of the different shiptypes have been used to calculate the different market volumes for 10 different supply trades (external services, steel, ducts and pipes, paintings and coatings, equipment ship operation, equipment cargo handling, equipment accommodation, equipment propulsion and power generation, equipment for auxiliary systems and electrical plants, electronics, automation).

As a result, the marine supplies market out of the shipbuilding orderbook/forecast for the period 2013-2017 sums up to 252 billion USD (50,4 billion USD/a) with an estimated share of 70% for systems and components, 24% for materials and 6% for external services. This volume is substantially lower than in the previous period. More than 50% of that demand is coming from China and Korea, followed by EU-28, Japan, rest of Asia and the rest of the world with about equal shares of 12%. From the systems side the dominant trades are propulsion and power generation with about 45 billion USD, followed by cargo systems (35 billion USD), steel and auxiliary systems (both 30 billion USD) and accommodation with 21 billion USD. Interestingly Korea shows the highest single demand for cargo systems, caused by the huge orderbook on offshore production and drilling vessels with extremely costly processing plants. Europe on the other hand shows the highest demand on accommodation systems, caused by the strong orderbook for cruise ships and super yachts.

In order to get a complete picture on all marine supplies markets the study has examined the markets beyond merchant shipbuilding on the basis of desk research and/or own calculations. As a result the total annual market volume for marine supplies in the period 2013-2017 is suggested to 135.2 billion USD/a (102 billion EUR/a). The biggest single market for marine supplies in this projection is created by the ship newbuilding market for merchant ships, representing about 37% of the total market volume. This includes supplies for offshore markets for vessels (floaters) serving oil and gas and as well offshore wind industry. The second biggest market for marine supplies is represented by naval shipbuilding, including repair, maintenance and overhaul for these ships. This is representing a market share of ~25%. In third position we value supplies for shiprepair and maintenance of the merchant fleet with an estimated share of ~14%, respectively ~16% including special market demand for retrofitting caused by new environmental regulations. The remaining demand for marine supplies is coming from boatbuilding (~9%), offshore oil and gas (fixed installations) (~6%) and offshore wind (~7%).
The data for the forecasting period build on a shipbuilding market forecast represent a significant lower market volume, but also a different shiptype portfolio. This forecast shiptype portfolio is of higher specific value, which creates demand/forecast figures for marine supplies where the proportional market value is increasing in relation to the shipyards. Boatbuilding as private consumer market has declined as well, but is presently levelling out and shows again potential for growth. The naval market has also seen some decline due to the pressure on public households, but on a global scale can be seen as a reliable market with again potential to grow. The offshore markets for oil and gas and as well for offshore wind are an actual driver of the market prosperity with forecasts for substantial capital expenditures in the following years. This is also cushioning the pressure on the marine markets in due to compensating demands especially on the supply side. The development for these offshore markets are on the one hand depending on the energy demand and price development in the context of GDP growth (for oil and gas) and on the political commitment to change the energy mix in favour of renewable energies (offshore wind and others). The same applies to the special market of retrofitting of the existing fleet, which very much build on the timely implementation of new environmental legislation. This will have an impact on either an increasing demand for conversion of existing ships or early scrapping and newbuilding activities. Although the authors feel confident with the order of magnitude of the given market projections, it should be noted that some of the maritime market forecasts used as information source for projections of marine supplies demand appear to be quite optimistic. However, there are other substantial marine markets of substantial size, which have not been considered in the course of this study, but which may merit consideration, e.g. offshore subsea markets, harbour technologies, shipyard technologies, surveillance. These markets are often served by the same enterprises which produce marine supplies.

It needs to be noted that compared to the statistical evaluation for the global annual demand in period 2006-2010, the world market marine supplies forecast for 2013-2017 suggests a market size which is about 30% lower than the average size of the industry in the period 2006 to 2010. The downsizing of the overall marine market is continuing since 2008. For European shipyards and boatyards this resulted in a decline of the ship and boat production volume and related purchasing volumes, which are as well in the range of 30%, presently down to the level existing in 2005. However, it may be expected that the industry has already seen the bottom of the market decline and is adapted to the market expectations for the following years.

**SWOT analysis**

Because of the strong diversity of the industry and its markets it has been very difficult to perform a SWOT analysis which is valid for all players. Furthermore, European countries do not provide the same framework conditions in terms of cost basis, finance, academic and educational system etc. All this leads to the situation that some arguments are valid in a reverse sense for different European countries and companies. However, strong market position and technological leadership are identified as major strengths at least for globally active European marine supply companies. They build their position on a strong infrastructure and co-operative partners, skill of their employees and close relationship with their customer base. The declining European shipbuilding markets, the cost level in Europe and the heterogeneous structure of the industry with many SMEs are identified as major weaknesses which hinder in some cases attempts to follow the markets by globalisation strategies. The industry identifies good opportunities in new emerging markets in order to make ships safer, better performing and environmental friendly and in new emerging markets in offshore oil & gas and offshore wind. There is optimism that on the basis of advanced skills technological leadership for systems and components serving these markets can be built, maintained and further developed. Major threats are seen in the attempt of overseas countries to close their markets and to approach high tech market segments by accelerated strategic expansion in conjunction with increasing export activities also to the European market.
Recommendations

The study shows that the European marine supplies industry plays a strong role in the very heterogeneous global marine markets. Nevertheless, the heterogeneous structure of the industry with a comparatively high number of companies including many SMEs does not make it easy to create harmonised and focussed strategies. Furthermore strategies of individual single companies, especially global players with a tendency to relocate production to Asia, may deviate from a strategy applied by European policy in order to support competitiveness of marine suppliers and finally to create growth and employment in Europe. In order to address these latter objectives, we come to the following recommendations for the suppliers and subcontractors themselves, but also jointly with key customer industries (shipyards, shipping companies, offshore operators) and policy makers.

Improve Market Access - Maintenance and/or development of global market shares -
For globally acting suppliers with competitive systems and components in their supply portfolio the global market counts. Nevertheless, European markets provide suppliers with a base-load for their products. Furthermore they are also serving most of the different marine markets and therefore are not necessarily depending on newbuilding of ships only. In order to maintain and improve their market position it is essential to ensure international market access and to keep close contacts with the final customers, e.g. shipping companies, offshore firms, governmental purchasing instances etc. In order to cope with this important aspect three recommendations are given

- It would be beneficial if technically oriented joint groups (suppliers, shipyards, shipping companies, offshore operators) could be formed at European level. Maybe the marine supplies system groups as defined in the report can give a first orientation for that. These groups should discuss innovation needs, impacts of present and future regulation and operational needs in engineering, production and after sales services. This kind of co-operation could strengthen the market position of European suppliers, improve the relation between the stakeholders in the value chain and trigger future activities including contributions to the research agenda.

- It is recommended to think about opportunities for joint European initiatives to strengthen extra EU-28 export activities and to facilitate access to new emerging markets, especially offshore. The added value of such initiatives in comparison to the value of activities from national associations should be discussed and evaluated. Initially activities could focus on Brazil, the Gulf countries (Middle East) and India and discussions could address the difficult aspect of local content.

- A third recommendation can build on the first two by strengthening the ability of European suppliers to offer competence and products with regard to entire ship and offshore systems. Some major market stakeholders already are doing this for some system groups and by integrating components in their own companies by intensive M&A actions (e.g. in propulsion systems). The possibility to support consortia of maritime suppliers to integrate products and services towards systems solutions in form of co-operations should be considered. In analogy to the “smile curve” it must be clearly a European objective to build, maintain and consolidate high value adding functions in the context of ship systems; i.e. research, engineering, branding, sales and after sales services. In other words, support system building by strengthening of supplier co-operation and management and as well new business models for joint sales and after sales activities. This may also include joint initiatives towards highly efficient and flexible production value chains in Europe in order to counterfeit exodus of production to low cost countries.

Support emerging markets I – presently the marine industry is facing an exceptional situation of emerging or quickly evolving high-end markets for marine supplies. This is true for the offshore markets, where oil and gas exploration and production moves to deep sea and polar areas requiring new and deep sea related products. It also applies to offshore wind
markets and other ocean based renewable energies which face challenging times to develop suitable products in order to serve policies focussing on energy change. In both markets European marine suppliers have already a strong position, but need to consolidate this and develop further opportunities to serve with their products also overseas markets. Since these markets are not represented by the shipbuilding and ship supplies industry associations networking and establishment of strategic partnerships with representatives of related markets is of vital importance.

Support emerging markets II – new requirements due to environmental legislation aiming at a reduction of ship emissions create a market of significant size and will cause for a timeframe of probably 10 years, a special business cycle of ship conversions (retrofitting) and/or they will trigger ship new-buildings. At least for this period European repair/conversion shipyards and suppliers offering products in the area are recommended to team up for the development of tailored conversion solutions. This also may include engineering activities and financing packages.

Maintain excellence in innovation and technology – This is the key issue besides high product quality, long term system reliability, after sales services and cost competitiveness for the globally acting European suppliers in all marine markets. Apart from the marine knowledge, they build their products on the grounds of fundamental know-how in mechanical engineering and electrical engineering. To maintain their global position it is essential to keep this level high and to maintain a position at the forefront of innovation. It also requires good knowledge of the market (customer) needs, technological trends, co-operation with shipyards etc. This applies to all ship-types, boats and offshore products, because the product portfolio of European suppliers is not limited to niche products. However, for normal merchant ships co-operation with shipyards has fully moved to Asia and co-operation is developing there. For some special ship types including high-end NCCV, cruise ships, megayachts; etc., European yards are still the leading edge development partners. This applies as well to offshore products. However, it can be seen that also design offices and research centres are gradually moving out of Europe, following end-user markets. In order to fight this trend it is recommended to focus on European joint industry projects to drive technology and innovation in marine technologies, to continue building a European, commonly shared technology platform rather than promoting national initiatives and to create rules for better protection of IPR and to avoid unintentional know-how transfer.

Maintenance and vitalization of European maritime markets including markets in smaller European regions – This issue addresses the needs of those suppliers being more subcontractors, assembly partners or “workbenches” for subassemblies which are more dependent on regional maritime markets and in most cases SMEs. For these suppliers the existence of their marine markets in their closer vicinity is of vital importance. In other words they only survive on the basis of the orderbook and competitiveness of “their” shipyards and boatyards in Europe. It is recommended to look into the situation of subcontractors more closely and to discuss programmes to improve their role in the supply chain, to generate exit strategies towards more trans-regional businesses and to help them participating in RTD measures using special SME funding regimes.

Improve competitiveness in value chains – Apart from technological performance of products, it is more and more essential that suppliers can very competitively integrate themselves into the supply chain of their customers. This is on the one hand true for the subcontractors, which work very closely with shipyards and are involved in the planned building process. On the other hand it is also true for the system and component suppliers which are often also integrated in the building process through planned assembly and testing activities. Besides the shipbuilding or offshore value chains the value chains for shipping with regard to spare part provision is an important issue. It is essential that suppliers manage global spare part and assembly networks which allow serving the shipping industry needs very quickly. All these different value chains need specific attention and it is recommended to support suppliers in their attempt to improve these, e.g. by respective research projects.
Structural improvements in industry (associations, clusters) – The analysis of the marine supplies industry structure shows that the majority of companies and maybe half of the employment is not represented by any industry association. This is due to the fact that many companies are very small and regional companies, but also midsized companies are not necessarily member in an association. It would be beneficial if associations and regional cluster organisations would think about an attempt to get these companies somehow represented or teamed-up, e.g. for joint marketing exercises. Clusters in general should think about strengthening their structures and activities. Industry associations should be involved in order to accommodate the integration process and to interlink with typically supporting regional clusters. Good examples in Europe show that this has an impact on all maritime players. Co-operation between European clusters should be enhanced by advanced networking activities in order to remove national barriers. This may also include ‘unusual alliances’ to drive strategy and to establish links with other industries. The European structural funds may provide suitable instruments for this.

Maintain the knowledge base – enhance education and training – European marine supplies industries build their capabilities on a strong academic/educational framework with well developed engineering skills, a strong general industry base and healthy competition in their markets. It is therefore strongly recommended that on the basis of existing programmes education and training in the marine disciplines are enhanced, maintained and if necessary adapted to the demand of new emerging markets and technologies. Industry and universities are requested to jointly develop adequate curricula and to offer related studies. This may also include maritime programmes to establish and support lifelong training measures and as inter European educational exchange programmes.

Strengthen the policy dialogue – The European marine supplies industry is affected by a number of policies on national, European and global level. It is essential that the framework conditions are harmonised on all levels. Even globally a common European view on environmental issues, pro/cons of available technical solutions, taxation, logistic and infrastructure might be appreciated. In order to cope with all these different dimensions of the discussion, a strong European maritime association is essential as discussion partner and lobbying group for the European and international institutions.

Increase visibility as high-tech industry and market – For many years shipbuilding had a difficult public reputation. That has improved over time and shipbuilding is now recognised as a high-tech branch. The contribution of the supplies industry in this context is to a large extent invisible. This needs to be changed and the manifold contributions of mechanical engineering industries or electrical engineering to the ship as a high tech product need to be better communicated. This in the end will also create a better awareness on the fact that marine supplies industry is not only located around the European shipbuilding centres close to the coast.

Align work on regulations and research to create innovation on time – It seems that the uncertainty if and when a market triggered by new legislation will emerge creates sometimes difficult situations for frontrunners of technological innovation. Often it is the case that these markets are not materialising within the expected timeframe, but are postponed due to political discussions. In order to better protect investments of companies it is therefore recommended improving the alignment of RTD measures with the likely development of regulation. Regulation needs to be applied in a way that safeguards a level playing field. This is also essential to minimise risks and to generate better possibilities to finance larger contracts.

In order to follow-up some of the recommendations, European marine industries should consider to further strengthen their co-operation on a European level. Many aspects given above are already addressed in the Leadership 2020 strategy and other strategic papers like the WaterBorne Research Agenda or the concept for a public private partnership under the Horizon 2020 framework focussing on the’ Vessel for the Future’. However, in these
strategies most activities seem to be more addressed from the client side of the marine supplies industry and from some key suppliers. The strategies could address a larger number of marine systems in view of the large number and variety of European suppliers as outlined in this report. It would be favourable if a larger number of suppliers could be motivated to join the European discussion. On top it needs to be said that the different marine markets are represented by different associations like SeaEurope (shipbuilding, repair, naval shipbuilding), EBI (boatbuilding), EWEA (offshore wind). Offshore Oil and Gas does not have such a European association, but act on the basis of powerful company networks. For shipbuilding and marine equipment in the narrower sense of ship systems and equipment, the new association SeaEurope has been formed in 2012. For this EMEC as the European association for marine equipment has merged with CESA (shipbuilding) and now represent the marine industry in a broader sense. However, it seems that internal structures in SeaEurope have still to be developed further in order to address marine supplies aspects. Overarching maritime co-ordination activities on European level as provided by the Maritime Industries Forum (MIF) in former years are currently not active. Similarly, it has been observed that some of the national associations are not covering the broad spectrum of the marine supplies industries either, which makes a European co-ordination even more challenging. Especially subcontractors are normally not represented by these associations and also design, engineering and consulting firms are not covered specifically. Similarly, the WaterBorne Research Agenda meets the needs of the marine supplies industry only to some degree.