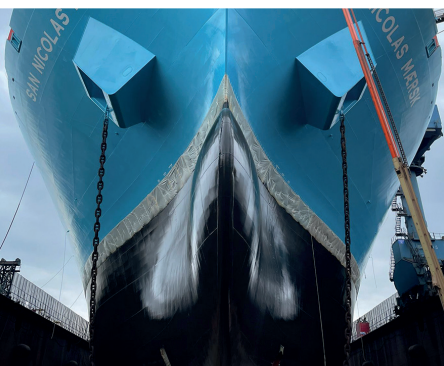
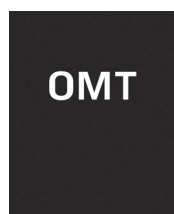


DANISH MARITIME

— AND THE DANISH MARITIME INDUSTRY



AMONG OUR MEMBERS ARE:





THE DANISH MARITIME INDUSTRY

– THE DANISH MARITIME INDUSTRY IS AMONG THE MOST SUSTAINABLE IN THE WORLD

Every day, millions of tons of goods and people are transported around the world by ship, and every day Danish climate- and environmentally friendly maritime solutions make a significant difference in global shipping

Global shipping and world trade need to become more sustainable and in Denmark we also work at further developing our strong maritime traditions. As a global business we are on a both exciting and demanding journey, which thanks to constant technology development day by day brings us to an even more climate and environmentally friendly, modern, and efficient world fleet.

Danish Maritime works to ensure that our industry can both grow and keep a strong position in the global markets. In this context, innovation power and highly specialised skills are crucial. Our customers are shipping companies and shipyards all over the world who want Danish energy efficient, quality products with a high level of service. As customers, they depend on our maritime industry to deliver new innovative technological solutions.

The common goal in the maritime industry is a higher level of sustainability – hand in hand with high efficiency and reliability in world trade as well as in passenger transport and many other types of activity at sea.

In Denmark we are also part of the defence industry, where the maritime industry plays a decisive role for the Royal Danish Navy and contributes to ensuring safety and stability in Danish waters and the security of supply to Denmark. Building naval vessels require a very high level of competence, and the Danish maritime industry is currently upgrading the Danish naval fleet.



DANISH MARITIME

Danish Maritime is the industry association for Danish ship designers, shipyards, maritime equipment manufacturers, maritime service providers and sustainable recycling of ships. Founded in 1919, the association has for more than **one hundred years represented** the Danish maritime industry on local national, European, and global level.

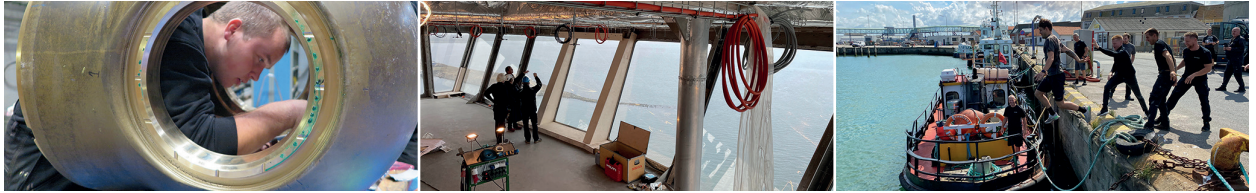
As the unifying representative for our member companies, we ensure **influence and visibility** towards decisionmakers, and we work for the **best possible conditions** for doing maritime business on a level playing field around the world.

As an association we can look back at an **impressive development** of Denmark's most innovative industry, whose products are nowadays found on board almost any ocean-going ship in the world. Many of the **climate-friendly and energy efficient ships, maritime solutions and designs** come from Denmark – and we, as an industry association, are joining our members on this exiting journey.

For our member companies Danish Maritime offers **networking, knowledge exchange and advise**. We support **research, development, and innovation** as a basis for the innovative and sustainable maritime solutions of the future. We also have a focus on **education and recruitment** of the necessary highly qualified workforce.

**THE DANISH MARITIME INDUSTRY
IS AMONG THE MOST SUSTAINABLE
IN THE WORLD**





DANISH MARITIME

— A MODERN BUSINESS ASSOCIATION BASED ON PROUD TRADITIONS

Danish Maritime represents our member companies in many different fora both nationally, at European level and internationally and we are in continuous dialogue with a wide range of stakeholders and business partners. Our overall goal is to make a positive, sustainable difference globally and to ensure a level playing field.

The maritime industry is very dependent on the universal international agreements, requirements and other defining contexts and Danish Maritime persistently seeks influence on all political levels on behalf of the industry.

In the International Maritime Organization (IMO), for instance, where it is very important to participate actively when international rules, requirements and provisions are determined. This to make sure that new demands reflect our high ambition and what we are technologically capable of delivering. And at European level, where we work both independently and by means of our membership of The Shipyards' & Maritime Equipment Association of Europe (SEA Europe).

The work of the maritime industry involves many different fields such as transport, climate, environment, energy, employment, infrastructure, education, and research. So, making sure that there is a good political understanding of the industry's importance and needs requires a broad effort across all subjects.

As an industry association, we are proud to represent an innovative and dynamic growing industry. Danish shipyards, maritime equipment manufacturers and service suppliers hold a solid position on the global market, and we represent the entire Danish maritime industry with a steadily growing number of members. As the entire shipping industry is moving in a more sustainable and digital direction, new business areas and the need for new skills arise.



This is also reflected among our members. The Danish suppliers of ships, maritime equipment, service, ship design and sustainable scrapping are very diverse – from more traditional crafts to high-tech research and development – and from start-up entrepreneurs to international companies.

The companies' products and technological competences have impacts all around the globe, and therefore it is crucially important that politicians understand the huge

potential that lies in strengthening and supporting the maritime industry. Our approximately 160 members have a common ambition to push the global shipping industry in a greener direction and take a common responsibility for a more sustainable future.



NETWORKING

— ACROSS BORDERS

Danish Maritime has a wide range of network and business relationships in both Denmark and throughout the world. The main task is to ensure as good conditions for our members and the maritime industry as possible.

Many decisions that affect the maritime industry go through many stages before being implemented. As an industry association, we work to ensure that political decisions are well prepared and correspond to the abilities, wishes and needs of the maritime industry. We contribute with professional insight and team up with other organisations and sectors when we have mutual interests – for instance regarding education and employment where the desire for more technically qualified employees is a common challenge.

Apart from the continuous political input, we also work to advance industry standards, where the goal is to make it easier to choose products according to quality.

Another important task is the export of Danish solutions. We contribute to promoting exports in several ways. For instance, by collaborating with the Danish embassies, but also by removing obstacles for trade and by working for favourable loans and good financing options. This is essential to ensure research, development, and innovation as well as for specific export initiatives.



MEET ONE OF THE MOST

INNOVATIVE MARITIME INDUSTRIES

- IN THE WORLD



1



SHIP DESIGN & TECHNOLOGY DEVELOPMENT

In these years, ship design and technology development are undergoing a transformation that reflects the need to move from fossil fuels to new forms of propulsion and increased energy efficiency. With the entire world as a market, the goal is solutions that benefit both Denmark and the rest of the world.

The Danish ship designers, equipment manufacturers, maritime service providers and shipyards are therefore developing various state-of-the-art ships in these years, corresponding to the needs and ambitions in the future. Both in relation to the large ocean-going ships and in relation to the diverse range of other ship types. Both functionality and sustainability are essential, and examples include:

New container ships, where the tank system and the engine are redesigned, because new types of fuel take up more space and have a different combustion process.

New multifunctional naval vessels, which will strengthen the Royal Danish Navy and at the same time can be used for other purposes, e.g., environmental tasks.

New wind turbine installation vessels, which make setting up and maintenance of offshore wind farms more efficient.

New fast workboats, which can now also operate on batteries.

New state-of-the-art, energy-efficient fishing vessels with on-board fish-processing factories.

New electric ferries, which can make short distance routes much more climate- and environmentally friendly all over the world.

2



SHIPBUILDING & TECHNOLOGY SUPPLIERS

Today, building ships is a mixture of strong traditional craftsmanship skills and high tech. Depending on the type of ship, there can be between 1,000 and 2,500 companies that supply equipment, components, and services to a single ship, and therefore work is also carried out in many different fields at the Danish shipyards.

In the process of building a new vessel, many demands are considered. It must be dependable for many years. It must be ready for new fuel types or perhaps for dual fuel. It must be energy efficient, which is becoming increasingly important. And it must be a well-functioning and safe workplace.

Different types of ships have different needs – both internally and externally – and the Danish shipyards' order books range widely. From small fiberglass workboats to large steel built in aluminium or composite.

The Danish production of equipment and components ranges widely. From main and auxiliary engines, propellers, and other parts of the propulsion system to antifouling coating, exhaust cleaning, ballast water systems, pumps, and navigation equipment, to fitting everything above deck. Thousands of items. Thousands of functions. In large numbers designed, developed, and manufactured in Denmark.



3



PERFORMANCE OPTIMIZATION, MAINTENANCE & SERVICE

Typically, a ship will be in use for 25 years, and therefore upgrading the existing world fleet is a very big task. In addition to regular repairs and maintenance, operational optimisation regarding energy efficiency also plays a significant role in these years. Many ships have already sailed for decades, and until they must be replaced, they can be retrofitted to become energy efficient and green.

One of the low-hanging fruits is to install an onshore power supply so that the ship can switch off the engines at berth. This is often both an economic advantage and an obvious climate and environmental advantage, which eliminates both emissions, noise, and vibration.

In addition, Danish companies are at the forefront of developing technologies that improve energy efficiency on board. Fuels are – regardless of type – expensive. This will also apply to new fuel types, which at the same time have a lower calorific value. So, the lower the consumption the better.

But beyond that, it is our shared green ambitions that lead the way. And it pays to optimise the ship! For example, CO₂

emissions can be reduced by up to 10 percent by making better use of the ship's engine's excess heat, up to 7 percent with route optimisation, up to 10 percent with better coating and up to 8 percent with propeller optimisation.

So, there is a very large potential for energy efficiency improvements by means of retrofit on many ships, and Danish maritime providers offer a range of pioneering climate-friendly maritime, innovative solutions and high-quality service.

4



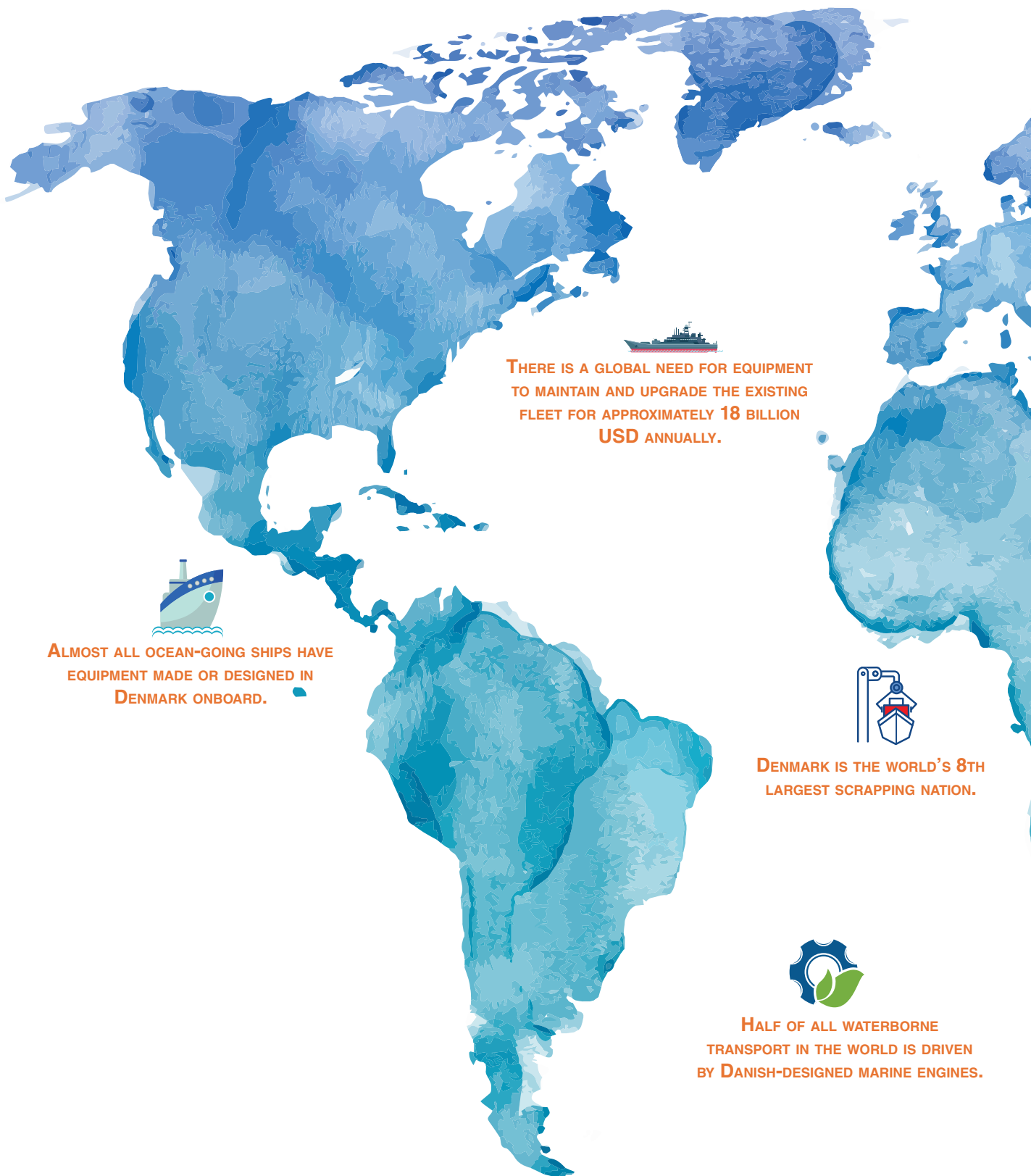
SCRAPPING & RECYCLING

The day a ship is scrapped, its new life actually begins, because many parts of a ship can and should be recycled. Among Danish Maritime's members are also specialists in sustainable scrapping, where the work takes place in an environmentally responsible way and where as many materials and parts as possible are reused.

It makes a lot of sense to recycle parts and materials as there is a large market for second-hand parts worldwide. There is thus an economic advantage, but there is also the fundamentally positive value in recycling items that have already required raw materials, resources, and energy to produce.

THE DANISH MARITIME INDUSTRY

— HAS THE ENTIRE WORLD AS ITS MARKED



THERE IS A GLOBAL NEED FOR EQUIPMENT
TO MAINTAIN AND UPGRADE THE EXISTING
FLEET FOR APPROXIMATELY **18 BILLION**
USD ANNUALLY.



ALMOST ALL OCEAN-GOING SHIPS HAVE
EQUIPMENT MADE OR DESIGNED IN
DENMARK ONBOARD.



DENMARK IS THE WORLD'S **8TH**
LARGEST SCRAPPING NATION.



HALF OF ALL WATERBORNE
TRANSPORT IN THE WORLD IS DRIVEN
BY **DANISH-DESIGNED** MARINE ENGINES.



THE WORLD'S FIRST **100** PERCENT
ELECTRICAL FERRY WAS PRODUCED
IN **DENMARK**.



DENMARK IS THE WORLD'S **12TH** LARGEST
SHIP REPAIR NATION.



DENMARK IS THE **7TH** LARGEST MARITIME
INDUSTRY IN THE WORLD MEASURED BY
PRODUCTION VALUE FOR EXPORT.



THE TECHNOLOGICAL DEVELOPMENT

— WHEN LOOKING AHEAD

The green transition is the all-dominant agenda in the maritime industry these days. Both in terms of climate and greenhouse gases and in terms of environmental challenges with particle pollution, invasive species in ballast water, etc.

In addition, there are also many other exciting technological developments going on in the industry, for instance autonomous vessels, drone technologies, digitalization, functionality on board and safety.

But if we zoom in on the climate debate, the starting point is that shipping must contribute to reducing global warming, and this requires several actions:

Firstly, new forms of propulsion and fuels – as well as new technologies to make them usable in a ship's engine. Without the necessary associated technology, climate and environmentally friendly fuels are useless.

Secondly, a targeted focus on energy efficiency and all the measures that can contribute to fuel-efficient sailing. Energy efficiency is crucial both to new ships and to the existing fleet, which can achieve significant improvements with an upgrade. Both economically and climate and environment-wise.

Propulsion in the future

Different types of ships can benefit from different types of fuel and forms of propulsion. This depends both on the type of ship, on the routes and on how often the ship calls at port. Dual fuel engines might also be an option for vessels operating on either green or traditional fuels during a transition period, or where the ship sails on electricity close to the coast and on liquid fuel at sea.

Soon, sustainable electricity will help producing hydrogen-based electro-fuels (Power to X). Our members have the technology required to utilize the new sustainable fuels (X to Power). A point of attention is that certain work vessels require extra energy for heavy processes, and for those reasons we are looking into a wide range of different designs, engine types and other ship-borne technologies.



Absolutely crucial for the success of the green transition of shipping is that we get access to sufficient quantities of sustainable fuels. This requires a huge amount of renewable energy, because of the considerable energy loss when converting renewable electrical energy into liquid fuels.

At the same time, all the new types of fuels must be distributed globally and be available – regardless of where the route runs. Therefore, both in Denmark and in all other countries, a major task lies ahead of us.

We need to renew and expand our current energy infrastructure, which is also of immense importance for both private households and other industries.

But all of Danish maritime industry companies are ready to lift global shipping into a new era of carbon neutrality and low environmental impact as the goal. The future at sea is green and we are proud that Danish quality products are part of the solution.



DANISH MARITIME'S MEMBER COMPANIES

| | |
|-------------------------------|--|
| ABB | Daniamant |
| ABCON | Dansk Brand og sikringsteknisk Institut |
| Aerotak | Danske Patruljeskibe |
| Alfa Laval Copenhagen | Dansk Marine Center - <i>Aalborg Yacht Service</i> |
| Alfa Laval Aalborg | DASPOS |
| ALLSET Industries | DEIF |
| AR-Simply | DESMI Ocean Guard |
| Assens Skibsværft | DESMI Pumping Technology |
| ATLAS Incinerators | Eltronic FuelTech |
| B COOL | Emerson Automation Solutions - Damcos |
| Ballard Power Systems Europe | EMRI |
| Bawat | FAYARD |
| Bech-Bruun | Frese - marine |
| Blue Atlas Robotics | FLEX-FEB |
| Blue World Technologies | FlowPoint |
| Bredgaard Boats | FORCE Technology |
| BROEN | Frugal Technologies |
| Bureau Veritas | Faaborg Værft |
| C.C. Jensen | Gardit |
| Caverion | Gertsen & Olufsen |
| CleanQuote | Global Boiler Aalborg |
| C-Leanship | GOMspace |
| CLIIN Robotic | Gorrissen Federspiel |
| CN Technology | Granly Diesel |
| Coach Solutions | Green Instruments |
| Consilium Safety Danmark | Green Tech-Marine |
| Copenhagen Global | Grenaa Skibsværft |
| Copenhagen Maritime Greentech | Hafnia Law Firm |
| Copenhagen Sensor Technology | Hans Jensen Lubricators |
| Corvus Energy | Hauschildt Marine |
| Cross-Border Communicatio | Heco International |
| CUBEDIN | Hempel |
| Danelec Marine | HF Jensen |
| Danfoss IXA | Hirtshals Yard |
| Danfoss Power Electronics | Hvide Sande Shipyard - <i>Steel and Service</i> |
| Dania Ship Management | HydroPen |

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Inrotech
Insatech
Inspection Team
IRON Pump
Jobi Værft
Johnson Controls Denmark
Kairos Technology
Karstensens Skibsværft
KLINGER Danmark
KNUD E. HANSEN
KSS Klaksvíkar Sleipistöð
Kurvatur
Kvasir Technologies
Kynde & Toft
Lars Thrane
LF Vent
Lopolight
LOTEK
Lyngaa Marine
MAN Energy Solutions
MAN PrimeServ On-Site Recovery
Marine Fluid Technology
MarineSharft
Marloth Maritime
MARTEC
ME Production
MESON Danmark
MEST
MicroWISE
NAVYTECH Solutions
Necas
Nerve Smart Systems
Nordhavn Power Solutions
Nordic Yacht Service
Norisol
Norsk Analyse
Novenco Marine & Offshore
Odense Maritime Technology
Oquam
Orskov Yard
OSK DESIGN
Petersen & Sørensen Motorværksted
PJ Circular Engineering
PMC Hydraulics
Polar View
Port-Safety

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Pro-Safe
PureteQ
ReFlow Maritime
Renable
RN Grenaa
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Sealytix
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SilkOcean
SIMAC
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Stillstrom
STORMBORN DK
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STEFFCA
Sternula
Survey Association
Svanehøj Group
Svendborg Motorværksted
Søby Værft
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Thyborøn Shipyard
Thyborøn Skibs & Motor
Tsk Marine Engineering
Tuco Marine
Uni-Safe
VesOPS
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Vestkajens Maskinværksted
VIKING Life-Saving Equipment
VL Dynamics
VMS Group
Weesgaard Mechanical Support
Willis Towers Watson
Wärtsilä Danmark
Wärtsilä Lyngsø Marine
Weel & Sandvig
ZeroNorth



Bech-Bruun

GOMSPACE

aerotak

Clorius
CONTROLS
BROEN

CLIN
ROBOTICS

Consilium

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- PART OF THE GRANLY GROUP -

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MARINE GROUP

C-LEANSHIP

STEFFCA
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