

JANUARY 2018



THE DANISH GOVERNMENT

# Maritime Denmark

**A global, maritime power hub**

The Ministry of Industry, Business and Financial Affairs



# Preface

Maritime Denmark is one of Denmark's largest export industries. This key position as a value creator and growth engine in the Danish economy did not emerge by itself. It is the result of an enduring ability to continuously evolve and set the agenda in a global maritime market in constant change. An ability rooted in Denmark's proud traditions as a maritime nation, where the sea has always been a way out into the world, rather than a barrier.

Our strong, global maritime position is based on a solid business acumen, strong competences and the ability to cooperate across Maritime Denmark, as well as competitive framework conditions. Therefore, Denmark is among the world's leading shipping nations, the world's 6th largest in terms of operating tonnage and the 13th largest in terms of owned tonnage. This strong position means that Denmark figures prominently on the maritime world map, which has a knock-on effect on the rest of Maritime Denmark and helps pave the way for an increased demand for Danish maritime products and services. Among other things, this has been crucial to the Danish maritime equipment industry also establishing itself as one of the leading in Europe.

Denmark is a pioneer in environment, safety and energy, and the transport sector must continue to help reduce our carbon footprint. However, our maritime stronghold has come under pressure in recent years, as the global division of labour is changing, and new technologies have kicked off a development which, in the coming years, will replace traditional, offline business and operating models with new dynamic, online models.

These changes hit the maritime sector in the wake of several years of economic slowdown, characterised by excess capacity, low freight rates and growing protectionism. Among other things,

this development has prompted an elimination race with consolidation into fewer and stronger actors.

In other words, Maritime Denmark is at a cross-road. Historically, the Danish maritime sector has been at the forefront in terms of implementing new technology. For example, Denmark was among the first countries where ships moved from steam engines to internal combustion engines. Now once again, the maritime world faces new breakthrough technologies and, once again, Denmark must be among the first maritime nations to make the full leap into the digital age.

Major trends in the market are digitisation and energy efficiency. In recent years, this has been particularly evident as regards the ships, which are evolving from analogue units to system-integrated transport platforms with a continuous digital connection to land, from where fuel consumption, routes, emissions, etc., can be monitored and controlled. This will fundamentally change the interaction and dynamics between ship/land, ship/authority and ship/ship.

Meanwhile, new automated technologies hold the potential to accelerate the transformation of the global transport and logistics network. 3D printers, robots, autonomous technology and green power production are beginning to transform the way products are manufactured, transported and consumed, as these technologies make moving manufacturing closer to consumers a cost-effective measure. Consumers, who are no longer found exclusively in North America and Europe, but also in Asia, South America and other places where the middle class is growing.

In addition to new business and operating models and the advent of new technology, demographic changes, new sustainable production and consumption patterns, such as circular economies

and sharing economies, as well as new global players such as Internet giants Alibaba and Amazon will also affect the global maritime sector. Overall, the development means new transport patterns, of which we are only beginning to see the outline.

The Government's stated ambition is that Maritime Denmark must continue to be a growth engine in the economy.

Based on recommendations from the Maritime Strategy Team, the Government wishes to unite Maritime Denmark in a collaborative effort to seize and capitalise on the growth opportunities which the development brings with it.

The Government's vision towards 2025 is to make Denmark a global maritime power hub. Maritime Denmark is to rank among the elite in the development and application of automated and digital technologies, and must also be known for this. Therefore, Denmark must establish and market itself as an internationally recognised test centre, where research and development go hand-in-hand with the development of products, services and systems.

Thus, this growth plan focuses on the prerequisites which are to give Maritime Denmark a leading position when the framework governing the maritime digital economy must be drawn up and new maritime business and operating models developed going towards 2025; in short, when the standards for "The New Blue Normal" are set.

Future growth will not happen by itself, and it is therefore important that public and private actors stand together regarding the vision of a global maritime power hub, anchored in Maritime Denmark's global activities.

**Brian Mikkelsen**  
**The Minister of Industry, Business and**  
**Financial Affairs**

## **The Government wants the vision to have the following direction:**

- Maritime Denmark
  - A power hub for digitisation
- Maritime Denmark
  - A power hub with attractive framework conditions
- Maritime Denmark
  - A power hub of knowledge and know-how
- Maritime Denmark
  - A power hub with a global outlook and attractiveness

# Maritime Denmark – A power hub for digitisation

The extensive technological development and the increasing degree of digitisation in all areas of society also leaves its distinctive mark on the evolution of the maritime sector, where the digital avalanche and technological advances hold the potential to break well-known business models, change market dynamics, and also create new business areas.

Major global companies such as Amazon and Alibaba have already expanded their business and moved into the transport and logistics industry. E-commerce logistics have created new business opportunities, such as partnerships between suppliers and market actors, as is seen, for example, in the partnerships between several large shipping companies and Alibaba's "OneTouch" platform. A.P. Moller Maersk and American IBM are about to establish a digital platform through which the shipping industry can share data and thus simplify

the transport of goods. However, the global changes in consumer behaviour, with increased demands for individual and customised solutions delivered in real time, pose a challenge to established companies, which must safeguard and develop their business.

These macroeconomic changes have kicked off a development which means that ships are currently shifting from being analogue units to being digitised transport platforms. This means greater integration and interconnection of various digital systems and, as a result, new workflows which will change the interaction and dynamics of the sector, for example, between ship and land-based offices, contact between ship and authorities, as well as ship-to-ship communication. This development should be seen in the context of the ongoing technological revolution, where new digital technologies, such as 3D printers and advanced automation

solutions, make it possible to move the production of products closer to consumers, thus changing the global transport and logistics chain as we know it today.

The technological and digital development thus holds the potential to transform existing markets and industries. Companies which fail to keep up with developments will be overtaken, while those that remain at the forefront and are adaptable will be better poised to think innovatively, efficiently and to find new business models, thus contributing to the establishment of the rules for the future global maritime sector.

Therefore, it is vital that Denmark is able to handle the challenges which the development brings with it, and it is vital that Denmark remains at the forefront of developments, so that we may take advantage of the ensuing growth opportunities.

Therefore, the Government will support Denmark's ability to ride the wave of innovation-driven growth, while remaining visible on the world map in terms of technology and digitisation.

The unique Danish marine geography, with many different types of waters and coastal landscapes around the Danish Commonwealth, offers an opportunity to make Denmark a global test laboratory for new technologies on land, at sea and in the air, new forms of production and renewable energy production, as well as new maritime digital systems and workflows. The Government's ambition is to make Denmark an internationally recognised pioneer in the testing of digital and autonomous technologies, maritime environment and climate solutions and offshore energy and food production towards 2025. A great potential is seen in autonomous technology in particular, and Denmark should be a frontrunner in new business models based on autonomous technology.

Testing and any actual offshore production in the future must take place on a sustainable basis and take into account other maritime activities. The national maritime spatial plan will support the coordination which – taking a broadly based approach to qualified knowledge and future scenarios – will create a balanced framework for the future utilisation of Danish waters.

In addition, the Government's forthcoming Plan for Growth in the Danish Maritime Sector will show the way for how Denmark maintains its position as a digital frontrunner. Among other things, a public administration in the digital world elite must be maintained.

With the coming Plan for Growth in the Danish Maritime Sector and the Strategy for Denmark's Digital Growth, the Government will work for the technological opportunities to be put to the best possible use, among other things, allowing companies to access relevant data where it has not previously been possible. This makes it easier for companies and entrepreneurs to identify market potentials and create new business models.

In addition, the Government will establish a partnership for the digitisation of Maritime Denmark, which is to work with digital innovation, disruption and new business models and establish Denmark as a leading marine test centre for new technologies. A partnership may consist of a number of actors who between them possess the specialised knowledge, competences, resources and tools to help provide the Danish Maritime Authority with recommendations about ways to strengthen the use of new advanced technologies and digital solutions.

An increasingly connected world across networks, sectors and borders brings with it cyber risks, which increases the need for identification and establishment of authoritative data, meaning

verified and accepted data, as a shield against “fake data”. The maritime sector is part of the critical societal structure, and Danish companies and authorities are valuable targets for foreign actors who want information and access to specific sectors in the Danish society, just as the growing use of automated technologies and artificial intelligence requires special mechanisms for IT control. Therefore, there is a need for cyber security to become a natural element of the future digitisation and automation of Maritime Denmark. In 2016, the EU adopted a Directive on a high, common level of security in networks and information systems (the NIS directive) in the critical sectors of society, including the transport sector. The Government will work to ensure that the handling of cyber security within the maritime area takes place in accordance with the recommendations of the NIS directive, other EU regulations and IMO Resolutions on common principles for risk management. Initiatives in the maritime field will also be handled in coordination with other government initiatives, such as the forthcoming Plan for Growth in the Danish Maritime Sector and the Strategy for Denmark’s Digital Growth and the Cyber Security Strategy.

The Government will continue its work on the international scene to promote the agenda of digitisation. The Government will continue to work for an EU-harmonised ship reporting platform which can reduce the industry’s administrative burdens. In addition, in the global perspective, Denmark must work to influence the international digital agenda in relation to establishing general acceptance of the use of digital solutions. An open, global approach to technology-neutral regulation is crucial for Denmark to gain competitive advantage from new breakthroughs in areas such as artificial intelligence, drones, robotics and autonomous ships. Therefore, Denmark may benefit from working to influence and drive forward the work of digitisation-ready legislation internationally. A more digital economy means that data will be an important resource. In Maritime Denmark, marine geographic data holds a large, economic potential for growth. The utilisation opportunities are many, and they support both existing and new business models. A number of public authorities collect and process marine data and produce marine data

products. This data is typically not harmonised, and there may be limited access or user fees, for example, for nautical charts and depth data. Based on the ongoing work with The Marine Spatial Data Infrastructure (MSDI), the Government will create frameworks for better utilisation of relevant, released data, including, for example, vessel position data and increased availability of relevant national and pan-European data which may contribute to maritime innovation and growth. The Marine Spatial Data Infrastructure makes it possible to compile geographic information across authorities who hold an interest and perform tasks in the marine sector. In this context, efforts must be made to determine the framework for the use of a common data standard in Denmark.

The increased accessibility of public data and traditional business models’ challenges in a rapidly changing market, create an increased need for new thinking. If Denmark is to be at the forefront of digital trends and new technologies, it requires not only strong research and knowledge environments, but also entrepreneurs able to translate and incorporate new knowledge and demand in the maritime industry, and be able to compile several different data sets into specific new products or services which may give Maritime Denmark a competitive edge.

With its business and entrepreneurial proposal from November 2017, the Government has launched a number of initiatives to make it easier for entrepreneurs to obtain the necessary risk and patient capital to turn good ideas into specific products and go from sole proprietorships to growth companies. While these initiatives will benefit the maritime entrepreneurial environment, the Government also wishes to initiate dialogue with the industry and other relevant parties to identify other opportunities to strengthen and support maritime entrepreneurs.

As a maritime nation, Denmark’s competitiveness will increasingly be about our ability to be a pioneer in innovation and digitisation. This requires us to have the courage to lead. The Government will work to ensure that Maritime Denmark still has the necessary competitive environment and favourable terms, so that the Danish maritime sector may commercialise new technology and meet future demands in the digital economy.

# The Government will:



- turn Denmark into a leading laboratory for testing of new maritime technologies, digital systems, production and operating modes, as well as energy production.
- specifically make Denmark a frontrunner in the development, testing and use of autonomous maritime technology, including as an accelerator in new business models.
- work to ensure that technological opportunities are taken advantage of in the best possible way, for example, in the Danish register of ships.
- establish an advisory partnership for the digitisation of Maritime Denmark.
- work to manage maritime cyber security challenges, including strengthening the maritime ICT infrastructure based on common EU and IMO standards and principles.
- work to establish a common European ship reporting platform, so that ships arriving in EU ports experience reduced administrative burdens.
- support that the future maritime spatial plan creates a balanced framework for the future use of marine resources and the development of new maritime business opportunities.
- work for the increased utilisation of released maritime data and additional availability of relevant maritime data, on the basis of publicly available data to promote maritime innovation and business.
- work jointly with the industry to strengthen the maritime entrepreneurial environment.

# Maritime Denmark – A power hub with attractive framework conditions

Denmark is in direct competition with other countries to retain businesses and workplaces and attract new investment and activities. A growing number of countries, including emerging economies, view the maritime area as a major growth driver.

Therefore, the Government maintains a strong focus on industry conditions. If Denmark is to remain a strong maritime nation and an attractive location to place one's business, the Danish framework conditions must be in line with other comparable shipping nations, so that Danish companies can compete on equal terms with foreign partners.

In this context, it is important that, in its interaction with Danish authorities, the industry is presented with Danish rules and decisions which are perceived as transparent and predictable in connection with, for example, investment in and establishment of businesses.

Denmark has a good basis for developing the Danish maritime sector, and this must be done with an eye on developments in comparable countries. In a highly competitive global market, other shipping nations continuously evaluate their regulation to ensure that it supports the countries' continued attractiveness as a base for maritime activities. Therefore, the Government will continuously evaluate Danish regulation, so that Danish companies are offered competitive terms.

Denmark's position as a global flag state is crucial to the weight and influence which Denmark carries in the forums where international agreements and regulations are negotiated. Therefore, the Danish International Ship Register's (DIS) attractiveness is a material competition parameter to be safeguarded and strengthened, so that Denmark can attract companies and ships and thus maintain the clout to affect and determine the global maritime agenda.

With its business and entrepreneurial proposal “Together for tomorrow’s businesses”, which also contains distinctive blue fingerprints, the Government has taken the first steps.

The Government will expand the seafarers taxation scheme (the DIS taxation) to include the special vessels which service the offshore industry, effective from 1 January 2019. This is a clear signal that Maritime Denmark must have competitive framework conditions. The expansion will make it more attractive for offshore shipping companies to sail under the Danish flag, so that the Danish service competences within oil, gas and offshore are maintained and expanded.

The Government will also support Denmark’s position as a leading flag state through continued growth in the Danish International Register of Shipping (DIS). The Government will therefore abolish the registration fee for registration of merchant ships. The abolition of this fee is intended to ensure that the Danish flag will remain a competitive quality flag when companies are to choose their flag in the future.

At the same time, the Government will seek to strengthen the Danish maritime industry, so that it may remain a market leader in the production of advanced and energy-efficient solutions for both Danish and foreign ships and maritime businesses worldwide. The technical maritime staff – service engineers – who install and maintain technical systems and equipment on board the ships play a key role in Danish companies’ knowledge retrieval and thus the user-driven development of new products.

The maritime service engineers are subject to specific working conditions, which require them to often sail on board the ships and perform their services while the ship is in operation. Therefore, the Government will seek EU Commission approval

of a special tax scheme in the form of a maritime engineer scheme or a similar system, which is within the EU’s rules for state subsidies.

The Government will also work to ensure that the Danish legislation is in line with the maritime regulation in comparable countries, offering Danish companies the best possible environment for doing business. Going towards 2025, the Government will conduct service and neighbour checks of rules and legislation in a number of key areas and help ensure that the Danish implementation of international regulation does not impose unnecessary barriers which help erode Danish companies’ competitiveness. For example, this applies in relation to digitisation-ready and technology-neutral regulation and enforcement of international environmental requirements.

Denmark has a global position of strength in green, energy-efficient and environmentally friendly solutions, which the Government aims to support through, among other things, the Environmental Technological Development and Demonstration Program (MUDP). Under MUDP, public subsidies for the testing, development and demonstration of new environmental technology solutions are provided, which aim to solve prioritised environmental challenges, while growth and employment is supported. Grants can be given to companies, research institutions, etc. Over the years, grants have been given to a number of projects in shipping, for example, on air pollution and ballast water.

In order to best exploit this position of strength in the global market, it requires an active effort in international forums to ensure technology-neutral regulation. A regulation, which can also be enforced effectively. Unless everyone complies with the rules, it may result in a loss of competitiveness for Danish shipping.

The maritime companies' growth and development depend on access to risk and patient capital. However, many businesses in Maritime Denmark experience difficulties in raising the necessary capital. Therefore, the Government will launch a study of the maritime industry's specific financing and capital challenges, including neighbour checks of credit and financing schemes in Denmark's neighbouring countries. Furthermore, the Government's business and entrepreneurial agreement contains a number of initiatives, including an investor deduction, which will facilitate companies' access to capital, also benefiting small and medium-sized maritime companies.

The Government has established a Committee which, in 2018, will offer their suggestions for a more efficient business support system. The aim is to simplify the business support system, making it easier and more manageable to use for entrepreneurs and businesses and so that efforts are organised in accordance with the challenges and needs of businesses. In this way, the maximum possible growth for the money must be achieved.

As significant clients, the government, regions and municipalities may help create new markets for innovative technology and digital solutions. The opportunities to continually prioritise, among others, innovation, environment and climate solutions in public procurement, for example, by using innovation partnerships, should be examined.

The island ferries are purchased, operated and maintained by municipalities. The introduction of a standard ferry is expected to harmonise island ferries with a consequent potential for efficiency gains for municipalities as regards both acquisition and operating costs. In addition, the standard ferry concept may support the development of Danish positions of strength in maritime energy efficiency and climate and environmental solutions, thus strengthening the Danish maritime industry – including through possible exports. In order to

realise this potential, the Government will work to promote the development of a standard concept for ferries for island service. This work will be anchored in the Ferry Secretariat.

The Government's North Sea Agreement has created a stable framework for the future oil and gas extraction in Danish waters. Large parts of the current offshore infrastructure face replacement. The market for decommissioning in the North Sea alone is estimated at DKK 400-500bn, of which a large part of the decommissioning will take place in the 2019-2026 period. In connection with the current and forthcoming modernisation of Danish offshore installations, it is necessary to examine the industry's framework conditions to ensure that the terms are competitive and match those of comparable countries.

As logistics hubs, commercial ports are focal points for a number of maritime companies' activities, and hold a potential for local growth. The Government has set up an expert committee to make recommendations for a revision of the Harbour Act, which will contribute to, among other things, competition between public and private entities being based on fair and equal terms.

Maritime Denmark must continue to be synonymous with quality shipping. An important element here is that seafarers have proper conditions and receive good public service. The services provided to seafarers by Danish authorities in relation to social security benefits, etc. are important and must be efficient and flexible. This also applies to foreign seafarers, who must be able to receive guidance in English. The Government will therefore examine the administration of, among other things, occupational work-related injury cases and the fiscal environment for seafarers to optimise contact between the seafaring profession and public service. An inter-ministerial work group is established to support this.

# The Government will:



- in extension of the business and entrepreneurial agreement, the DIS tax scheme is expanded for sailors to include offshore special vessels to retain activity in the offshore sector and support the development here, focusing on Danish employment from 1 January 2019.
- in extension of the business and entrepreneurial agreement, abolish the registration fee for the registration of merchant ships.
- in extension of the business and entrepreneurial agreement, initiate a dialogue with the European Commission about the possibilities of a maritime engineer scheme, or similar arrangement, which strengthens maritime companies' global competitiveness.
- ensure that the maritime industry in Denmark has a competitive framework, for example, through neighbour checks.
- explore the maritime professions' possible financing and capital challenges, including implementing neighbour checks of credit and financing arrangements in Denmark's neighbouring countries.
- simplify the business support system to benefit companies.
- work to ensure that international regulation is technology-neutral and to ensure effective global implementation and enforcement of international regulations.
- support that new enforcement technology can be developed and tested in Denmark.
- make visible the possibilities for promoting, among others, innovation and environmental considerations in public procurement.
- work to promote the development of a standard concept for ferries for servicing islands. The project is expected to benefit the development of Danish positions of strength in maritime energy efficiency, as well as climate and environmental solutions, including their export potential. The work is anchored in the Ferry Secretariat.
- work for a competitive framework for decommissioning.
- based on recommendations from the Expert Committee on the harbour area, make proposals for a revision of the Harbour Act to, among other things, help to ensure that competition between public and private entities is based on fair and equal terms.
- work to ensure a well-functioning transport system for road, rail, sea and air transport and for a better interaction between modes of transport, including ways to move more freight from road to sea.
- establish an inter-ministerial work group to support the efficient and flexible case processing for seafarers.

# Maritime Denmark – A power hub of knowledge and know-how

An important foundation for Denmark's strong position as a maritime nation is the availability of skilled and competent employees in all parts of the marine ecosystem.

This has helped give Denmark a prominent place on the maritime world map, where around the world we are known to have a qualified and adaptable workforce, possessing right and contemporary competences, and able to handle both sea and land-based jobs. This is a prerequisite for both high productivity and the development of existing businesses, but is also instrumental in making Denmark an attractive place for foreign maritime companies to set up business.

Denmark has a strong maritime education structure, and in recent years maritime educational and research institutions have initiated and established good and fruitful cross-disciplinary collaborations, just as dialogue with the industry

has been strengthened. Thus, we have a solid basis to continue the development of the Danish maritime competences, but we are part of a rapidly-changing world where the competences most sought after today do not necessarily match the needs of tomorrow.

The trend towards a more digitised and high-tech labour market will, for example, mean new and different competence requirements for individual employees. Demand for this type of competences and skills will undoubtedly grow. Therefore, it is essential for Maritime Denmark that the maritime educations follow the development and are adapted to the needs of the future, if as a country we are to keep up with developments and exploit new potential business areas.

Therefore, the Government will perform a future-check of relevant programmes targeted at Maritime Denmark to identify whether the contents of

education programmes are up-to-date as regards future needs and technological developments.

The right training must be offered at the right level, so that the industry's demand for Danish seafarers can be met. Therefore, the Government will, for example, set up a pilot scheme for the training of seafarers for the national ferry service with special training modules and changed sea-going service requirements. The social partners and educational institutions play a vital role when it comes to designing the programmes of the future. Therefore, the Government will initiate dialogue with relevant parties on the internationalisation of relevant maritime educational programmes, so that students are equipped to operate in a global business. At the same time, it is important to provide the necessary critical mass in selected programmes, so that the industry is not affected by bottlenecks. Therefore, the Government will encourage dialogue between relevant parties regarding the possible need to increase the intake on particularly relevant educational programmes.

The Government will also invite the labour market parties to disseminate and utilise best practices, for example, by creating rotation schemes for apprentices among the local maritime clusters based on an accumulation of experience from among maritime companies and training institutions. Finally, the Government will investigate whether there is a need for strengthened efforts in relation to continued training in the maritime field for trained maritime personnel, as well as relevant maritime training for people with other educational backgrounds who wish to join the maritime industry. The interaction between education and practice is a hallmark of maritime education. A large proportion of the employees of the shipping companies have acquired a knowledge and understanding of both school and on

board the ships, which makes them able to handle both sea and land-based jobs throughout the maritime sector. If Denmark is to remain an attractive place to conduct maritime business, it is crucial that access to competent and highly qualified staff is maintained. Therefore, managing the competence challenges which Maritime Denmark will face in the coming years is a common challenge for the Government, industry and social partners. For example, this applies in relation to making apprenticeships more contemporary. Apprenticeships becoming more flexible must be supported, for example, with the possibility of apprenticeships across shipping companies, ship types and – as an experimental scheme at first – also Danish shipping companies' vessels under foreign flags. In addition, the organisation of service at sea and apprenticeships at sea must be modernised.

The Government will also abolish the access requirement of a pre-agreement on training on the shipmaster and ship's officer training, just as the Government – in collaboration with the labour market parties – will work to introduce the State Education Fund (SU) rather than paid shipping apprenticeships for, initially, the maritime professional bachelor programmes. In return, the industry must support and coordinate that there is constantly a sufficient number of places for those who wish to complete an apprenticeship at sea. In this context, the Government wishes to acknowledge the constructive proposal for an apprenticeship guarantee, equivalent to 350 full-time equivalents, which Danish shipping companies have offered.

MaritimeDenmark's status as an attractive career choice must be strengthened. It is important that young talent is aware and informed of the opportunities in an industry which offers a global perspective, competitive salaries and a progressive and structured career path. Therefore, the Government

will continue to back Maritime Denmark's continuous recruitment campaign "WorldCareers.dk – A world of difference in The Blue Denmark".

The Danish research environments within the maritime field collaborate with businesses and authorities across a variety of forums and initiatives. The ongoing dialogue, knowledge-sharing and collaboration between research, industry and public authorities must support the quality and relevance of Danish research in the maritime field to ensure that research benefits society. The following forums and initiatives can be highlighted:

- In ShippingLab – Driving Future Maritime Innovation, where the aim is to establish a continuation of the community partnership Blue INNOship. Danish Maritime, Danish Shipping, Force Technology, Maritime Engineering DTU (Technical University of Denmark), CBS, Danish Metalworkers Union and the Danish Maritime Authority have initiated this, while the Danish Maritime Fund has committed to funding the work which is to lead to a project application for the Innovation Fund.
- In the Contact Committee for Maritime Research, universities, maritime professional bachelor's institutions, trade organisations and government agencies participate. The work concentrates on creating a broader collaboration between business, universities and schools and to develop specific project ideas. Areas of focus are environmentally friendly and energy efficient technologies and systems, efficient operation and maintenance of ships, optimisation of transport chains and logistics, as well as health, safety and the working environment in shipping. The work of the Contact Committee is expanded with an annual discussion of key maritime research topics.
- DTU (Technical University of Denmark), CBS, the University of Southern Denmark, Aalborg University and Copenhagen University, as well as maritime professional bachelor's institutions SIMAC and MARTEC, have established the joint research network Maritime Research Alliance. In Denmark, the aim is to reach companies and, internationally, a broader circle, to make universities and schools attractive partners in the maritime field. Internally, the aim is to develop and coordinate a critical mass. Maritime Research Alliance will collaborate on research, education, communication and advisory, and the interdisciplinary work will be given a high priority.

The opportunities for Danish researchers and companies in the maritime area to apply for public funding are good. Among other things, in 2018, researchers and businesses will be able to apply for funding for research into new technological opportunities and research intended to create green growth.

The two themes are included in the Ministry for Higher Education and Science's FORSK2025 catalogue, in which the research needs in areas such as goods, logistics and digitisation, as well as energy efficiency and emissions of particles, SOx, NOx and CO2 are highlighted. The Government has allocated DKK 237m for research in new technological possibilities and DKK 282m for research in green growth creation. Denmark's Innovation Fund is responsible for the implementation of the funds on the basis of the FORSK2025 catalogue and the agreement on the distribution of the 2018 research reserve.

Denmark has come a long way in having excellent maritime educational programmes and relevant research initiatives, and through an enhanced focus on maritime education and research, Maritime Denmark must be supplied with strong and relevant skills targeted at the maritime businesses' needs, both today and going towards 2025. Through growth plan initiatives and by taking advantage of existing opportunities, the Danish research and educational institutions are well poised to prepare Maritime Denmark for the future.

# The Government will:



- support the training of relevance to Maritime Denmark provides skills that match the industry's needs now and in the future.
- launch a pilot scheme for the training of seafarers for the national ferry service.
- discuss the possibility of creating more, and more flexible, apprenticeships at sea with the industry, for example, based on Danish Shipping's proposal for an apprenticeship guarantee, equivalent to 350 FTEs.
- increase recruitment for professional bachelor's programmes for shipmasters and ship's officers. This entails that the requirement for a pre-agreed training agreement lapses.
- work to sharpen Maritime Denmark's profile in order to attract talent, including support for Maritime Denmark's joint recruitment campaign "WorldCareers.dk".
- support the expansion of the work in the Contact Committee for Maritime Research with an annual discussion of key maritime research topics.
- invest DKK 237m in research into new technological possibilities and DKK 282m in research into green growth creation. Denmark's Innovation Fund is responsible for the implementation of the funds on the basis of the FORSK2025 catalogue and the agreement on the distribution of the 2018 research reserve.

# Maritime Denmark – A power hub with a global outlook and attractiveness

Denmark has a strong maritime position based on Danish maritime traditions of business acumen and global vision. However, Denmark cannot depend solely on maritime traditions, if we are to remain a relevant actor in a modern global maritime sector, characterised by fierce international competition in the future.

If Denmark is to prevent rival maritime nations from overtaking us, there is a need for us to live up to our role as a strong seafaring nation on the maritime world map. Therefore, the Government wishes to strengthen Denmark's international profile and visibility as a global maritime power hub.

Denmark has the potential to not only maintain Denmark's role as a major global maritime actor, but also to expand it. Making this role visible, and consolidating it, requires a consistent and coordinated effort, but is nevertheless important if Denmark is to take full advantage of the growth potential in the Danish maritime sector.

One important prerequisite for Denmark to maintain its position as a strong maritime nation is the global free trade. Quite simply, free trade is a cornerstone for a small open economy such as Denmark, and for Maritime Denmark as a global industry. In recent years, protectionist tendencies have been on the rise in several places in the world. If new barriers arise, it is problematic for Denmark and for the Danish maritime industry. We must make every effort to combat protectionism and support and expand global free trade. Via the EU, as well as through a strengthened collaboration with leading maritime nations, Denmark must, among other things, in close collaboration with like-minded member states, therefore actively seek to maintain and strengthen the free trade agenda.

Denmark must also continue to exploit and ensure a strong voice in international maritime forums, including the UN's International Maritime

Organisation, IMO, where the course for the global maritime sector is set out in areas such as environment and climate. Here, Denmark must continue to be involved in setting the level of ambition and influence the work. A prerequisite for this is that Denmark, by competing nations, is regarded as a maritime nation which actively takes the lead and contributes to the development and setting of new standards for the global maritime sector.

Maritime Denmark must also exploit the potential of a number of emerging markets and, through bilateral cooperative relations, continue to grow and continuously explore opportunities in markets with potential, for example, through growth counselling schemes such as those known from Ghana and China.

At the same time, Denmark's international relevance as a maritime nation requires efforts aimed at strengthening the attraction of investments and strengthening the export of maritime products and services. However, Denmark is challenged by fierce international competition from other countries which also focus on maritime industries. Among maritime nations, there is intense international competition for the flagging in of ships, but also to attract maritime companies' regional and global headquarters, including in areas such as shipping, marine insurance and ship classification. In several countries, national strategies to attract maritime investments and blue growth are being drawn up.

In this highly competitive market, it is crucial that Denmark keeps up, as it may otherwise impact growth, jobs, skills and the Danish maritime voice in international forums. Therefore, we need to step up efforts to highlight the wide range of benefits and potentials we hold as a maritime nation, as Denmark is indisputably a good place to do business – also when it comes to the maritime sector.

According to the World Bank's Doing Business Report, Denmark is the world's third best country to do business in. The Danish society offers a high degree of law and order, low levels of corruption and internationally competitive framework conditions. At the same time, Maritime Denmark offers a strong maritime supply chain, strong maritime competences and a high degree of digitisation-readiness. In addition, Denmark performs well on parameters such as predictability, transparency and stability in the central framework conditions, for example, taxation rules and establishment costs. These parameters are often deemed vital to maritime investors' decisions, and it is therefore important to make Denmark's strength in these areas visible to potential investors.

It is also essential that Danish and foreign companies feel welcome in Denmark. The increased marketing efforts could advantageously refer to Invest in Denmark under the Ministry of Foreign Affairs, which serves as a gateway for easier and more flexible contact with Danish authorities for foreign companies contemplating setting up in Denmark. Through Invest in Denmark, these maritime companies can quickly get answers to questions about possibilities and framework conditions in Denmark, thus getting a clearer basis for their decision-making. Invest in Denmark's website contains extensive information concerning the establishment of businesses in Denmark, as well as contact information for an investment employee focusing on the maritime area. In parallel, the Government will continue the work from the previous growth plan to establish a dedicated authority gateway for maritime companies, and make this gateway digital.

The Government will strengthen the global marketing efforts of Maritime Denmark. This will strengthen Denmark's position on the map of

important international maritime nations, and it will create a number of synergies so that, at the global level, Denmark can be made visible as an overall attractive location for businesses and investments.

At the same time, this will support the industry's marketing efforts for Danish companies abroad. This opens up for a collaboration between private and public actors.

Therefore, the Government will take the initiative to strengthen the involvement of industry in the international marketing, and prioritise a proactive and targeted marketing, while also increasing its presence at the most important international maritime conferences and events.

Among other things, the Government will establish a network of business and knowledge persons from the marine environment, a so-called "blue ambassador" scheme, intended to strengthen the involvement of key people from the Danish maritime sector in the marketing efforts of Maritime Denmark.

There is great potential in utilising the industry's and public institutions' knowledge of international markets and exports. In particular, there is a need to support small and medium-sized enterprises' (SMEs) internationalisation. Easier access to knowledge about internationalisation and exports will help and equip SMEs to take advantage of global market opportunities. Therefore, the Government will strengthen the digital information efforts on opportunities for internationalisation, especially

for SMEs, including in relation to delegation visits to or from key export markets. At the same time, the Government will investigate the opportunities – in collaboration with the industry – to establish a "clean air vision" aiming to promote exports of Danish clean air solutions, among others, for shipping.

Danish companies must also strengthen their opportunities to showcase their products on publicly owned ships. It is important because Danish companies are often subcontractors in the marine food chain. Danish-produced marine equipment and ship design is included as components of the completed whole which the ship represents. Access to the ship itself – including the opportunity to make presentations to potential customers – is thus essential to the businesses' ongoing marketing and their export opportunities. In collaboration with Local Government Denmark (KL) and trade associations, the Government will therefore highlight the ability of businesses to use government and municipally owned ships for marketing purposes and for export promotion. The opportunity for using governmentally and municipally owned ships for marketing purposes and for export promotion must take place within the framework of the EU state subsidy rules.

Through a focus on enhanced international visibility, the attraction of investors and a strong, international voice, Maritime Denmark must be profiled as a global maritime powerhouse.

# The Government will:



- strengthen the global profile of Maritime Denmark through targeted and ambitious marketing efforts of Denmark as a global maritime powerhouse.
- prepare a comprehensive maritime marketing strategy, including the establishment of a “blue ambassador” scheme, on which the Government can draw in the marketing effort.
- continue the work to establish one authority gateway for maritime companies, as well as digitising this gateway.
- strengthen international collaboration with key maritime growth markets, including the continuation of growth advisory schemes such as those in Ghana and China, in order to improve Danish companies’ export opportunities and support global free trade.
- strengthen Danish maritime companies’ access to knowledge of internationalisation and export opportunities, including through the enhanced use of digital platforms and targeted coordination of delegation visits.
- in collaboration with KL and relevant business organisations, focus on the opportunities to use publicly owned ships as demonstration platforms and display windows in connection with, for example, export promotion and marketing.



2017/18:18

January 2018

The Ministry of Industry, Business and Financial Affairs  
Slotsholmsgade 10-12  
1216 Copenhagen K  
Tel. : +45 33 92 33 50  
E-mail: em@em.dk

ISBN 978-87-93635-23-4 (pdf version)

Design, cover: e-Types

Design: e-Types

Photo: Opla

The publication can be downloaded at  
[www.em.dk](http://www.em.dk)

The Ministry of Industry, Business and  
Financial Affairs  
Slotsholmsgade 10-12  
1216 Copenhagen K  
Tel. : +45 33 92 33 50