NORWEGIAN MINISTRY
OF TRADE AND INDUSTRY

The Norwegian Maritime Strategy 2007

Steady as she goes

The Government`s strategy for environmentally friendly growth in maritime industry

FOREWORD

Norway is a small country with 4.7 million inhabitants tucked into the northern corner of Europe. We are a country that has to a high degree based our welfare on trade with other countries. It is a long time since we recognised the fact that we cannot compete on low wages, and that we have to be competitive in other ways. In short, the products we offer must be first class, and our level of expertise rate amongst the best.

As Minister of Trade and Industry I am convinced that the way forward must be to create comprehensive environments in areas in which Norway has the necessary qualifications and wherewithal to be the best. In the Soria Moria Declaration, the social-liberal government stated that it is both important and the correct course of action to focus particularly on business and industrial areas where Norway already excels. This is an ambition that is a clear indicator of the difference between the current and the previous government. We will concentrate on areas in which we are in the lead internationally or have the necessary skills, expertise and know how to be so. The maritime industries are one such area.

The markets open to Norwegian maritime industry are experiencing a trend of global growth. We are however not alone in wishing to harvest benefits from these developing markets, there are a number of countries pursuing their share of the current growth.

Several countries in Europe and Asia are developing ambitious strategies aimed at boosting their maritime industries and attracting attention from the international maritime environment. If we are to succeed in the international arena, we must increase and fine-tune our efforts.

The high level of skills and expertises that has been developed in Norwegian maritime industries provides us with every possibility of enjoying continued and increasing success in the future. This is particularly true in the area of environment. International shipping is facing major environmental challenges. The development of maritime activities based on environmentally friendly solutions as the key element is our most important responsibility, and not least an area of great potential for growth. I am convinced that Norwegian maritime industry has the expertise and potential to achieve profitability through goal-oriented innovation, and in doing so will attain the position as the undisputed world leader in environmentally friendly solutions and operation.

On the basis of this strategy, the Government presents its plan to support the further growth and development of the many segments of the Norwegian maritime industry. The strategy is supported with a grant of NOK 252 millions, earmarked for research, innovation and measures to improve expertise.

I will follow up the strategy in co-operation with the various participants. The objective is that we will see the first results of our commitment to the maritime industry as early as in 2009.
Enjoy your reading!

Dag Terje Andersen
The Minister of Trade and Industry

Contents

The Government's vision:

Norway will be a world leading maritime nation. Norwegian maritime industry will supply the most innovative and environmentally friendly solutions for the future

Norwegian maritime industry encompasses shipping, shipbuilding, maritime equipment manufacturers and maritime service suppliers. These sectors are of prime importance to wealth generation and employment in Norway.

The strategy is supported by an allocation of funds of NOK 252 millions earmarked for research, innovation and measures to improve expertise. The net wage arrangement is to be continued, and ship owner taxation based on a European model will be introduced.

On the basis of the challenges facing the Norwegian maritime sector, we discuss objectives and initiatives in five main areas:

Globalisation and framework conditions
An environmentally friendly maritime industry
Maritime expertise
Maritime research and innovation
Short Sea Shipping

Globalisation and framework conditions:
The Government's aim is to contribute to global regulation of maritime industries in order to prevent tax competitiveness, promote environmentally friendly and safe solutions while simultaneously promoting secure terms of employment for employees.

Environmentally friendly maritime industry:
International shipping is facing major environmental challenges. The increasing demand for transport services will, if current technology prevails, challenge the frameworks for sustainable development.

The Government wishes to see the Norwegian maritime industry leading the way in environmental matters. This will require major Norwegian investments in research and innovation.

Maritime expertise:
Expertise will be a decisive factor for the continued development of the industry. We will contribute through the maritime strategy to a joint effort in co-operation with the industry to increase the levels of recruitment and expertise in the maritime sector.

Maritime research and innovation:
Norway shall be the leading nation in maritime research and innovation. Increased support to more environmentally friendly shipping through prioritising environmental maritime technology and demanding environmentally friendly maritime operations in cold climates.

Short sea shipping:
Norwegian Short sea shipping will be a more environmentally friendly and competitive alternative to transport by road, thus enabling more goods to be transported by ship. The Government will invest in environmental projects in the maritime sector and the development of the coastal fleet.

The Norwegian maritime sector

Norway has one of the largest and most comprehensive maritime sectors in global terms. This has provided the basis for our unique expertise in maritime activities and represents a major potential for innovation. The shipping companies represent the largest segment of the Norwegian maritime industry. A large number of maritime companies co-operate closely with the shipping companies. The shipping companies are in many respects the backbone of the Norwegian maritime industry.

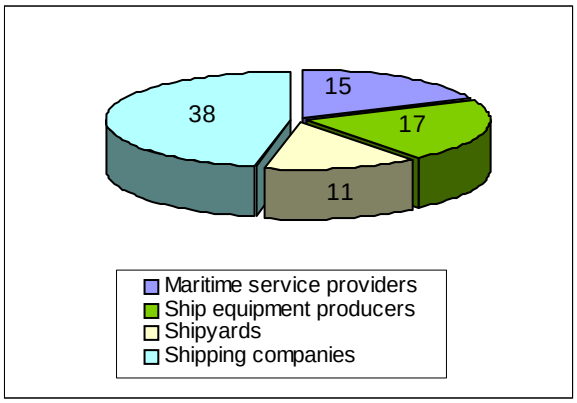
We define maritime industry as all activities connected with shipping and shipbuilding. Ship owners, financing, insurance, classification, maritime law and other associated services. Shipbuilding encompasses activities such as shipyards, equipment suppliers and ships architects. We have also seen the offshore industry and maritime industry forging closer bonds during recent years. The maritime industry has also clear links to the fishing and tourist industries. We find maritime companies nationwide, and the maritime sector is therefore a vital element in securing activity in all regions of Norway. Compared to other regions in Norway, the maritime industry is most significant in Oslo region and along the western coast from Rogaland to Møre in terms of total turnover.

We differentiate between four main types of maritime industry activities: shipping companies (including rig and drilling rig companies), maritime service providers, ship and rig building yards and ship equipment manufacturers, see figure 1.

Shipping companies is the largest group with 46 percent of wealth creation, i.e. NOK 38 billions, followed by ship equipment manufacturers, maritime service suppliers and shipyard.

Figure 1

Wealth creation in the maritime sector divided between 4 main groups (billion NOK)



Shipping companies

Norwegian controlled tonnage was the fifth largest in the world as of January 1st 2007 measured in deadweight tonnes, after Greece, Japan, Germany and China. Norway previously held third place in the ranking. We have not participated in the growth in international shipping, despite the fact that we have had the greatest growth in the offshore fleet. In the third quarter of 2007 the Norwegian fleet grew by 21 ships to a total of 1,795 ships. This is the highest number of ships ever.

There has been a gradual decline in the use of the Norwegian flag for the foreign going fleet. About 49 percent of this fleet is currently sailing under the Norwegian flag, compared to 53 percent at the start of 2006.

In 2002 the percentage of the Norwegian foreign going fleet sailing under the Norwegian flag was around 60 percent.

The number of vessels registered in the Norwegian International Skip Register (NIS) has shown a considerable fall during the last five years. There were 622 vessels registered in NIS in june 2007. This represents a reduction of 4 percent from July 2006.

In 2006 Norwegian shipping showed a growth in turnover of approximately 10 percent compared to 2004. Norwegian shipping generates a total turnover of NOK 117.9 billions, and employs 31 000 persons, of which 17 000 are Norwegians. The figures include 5 000 employees in ship owners' offices in Norway, with the remainder working as seamen.

Foreign going vessels and supply ships working along the Norwegian coast generate the largest contribution to the increase in turnover. Offshore ships and supply ships working along the Norwegian coast and internationally represent the highest increase in employment.

Shipping is Norway's largest export industry after oil and gas, and is also the largest branch of industry with regard to the export of services. Norwegian shipping operates in most of the major shipping markets, such as tank, bulk, chemicals, container, vehicle and LNG, and features amongst the leaders in a number of offshore markets, for example rig and supply. Norwegian ship-owners have however to some degree left the traditional liner of trade and cruise activities.

Some examples of the world's leading ship owners are Solstad Offshore ASA, Color Line ASA and Wilh. Wilhelmsen ASA.

Wilh. Wilhelmsen ASA offers transport and logistics services spanning the entire globe, from the manufacturer to the customer's door.

A considerable part of the shipowners' activities are carried out under the auspices of the company Wallenius Wilhelmsen, one of the largest vehicle shipping companies in the world. The company is also one of the global leaders of maritime services, for example ships management.

Solstad Offshore ASA has developed into one of the leading offshore shipping companies, and operates offshore ships in the North Sea, Brazil, the Mexican/US gulf, West Africa and Asia.

Color Line ASA has developed into one of Europe's leading cruise-ferry companies. The company operates six international ferry routes between ten ports in Norway, Germany, Denmark and Sweden. The company operates in the dividing line between passenger transport and tourism, and is an important participant in attracting foreign tourists to Norway.

Maritime service providers

Ship owners are dependent on services from a wide range of maritime service providers. The most important amongst these are ship financers, insurance, maritime law, classification, port and harbour services and shipping agencies.

Many Norwegian maritime service providers rank amongst the largest and most important in the world in several areas. About 18 000 persons are employed by these companies.

One example, Det Norske Veritas (DNV) (ship classification) has approximately 16 percent of the global market for ship classification.

Another example is the Grieg Group, which operates a wide range of activities in the

international arena. In addition to shipping activities and agency services, the Grieg Group is engaged in global logistics, insurance brokerage, investment advice and maritime information systems.

The two largest banks in the world in the specialist field of arranging loans to shipping are located in Oslo. The Oslo Stock Exchange is one of the most important trading venues for shares in maritime companies.

Shipyards

Norway has long traditions in shipbuilding, and there is still a high level of shipyard activity along the coast. There are fewer shipyards, and those that remain have become highly specialised during recent years and are highly proficient in the areas in which Norwegian ship owners excel. Norwegian shipyards operate in four main markets: offshore ships, small specialist ships, fishing vessels and passenger ferries.

Despite there being a large number of small, specialised yards, there has also been a trend towards consolidation into larger groups. Europe's largest ship building group, Aker Yards ASA, with its head office in Oslo, is one example of this.

Aker Yards, ASA with yards in the west of Norway and at Brevik, is a world leader in the construction of advanced ships.

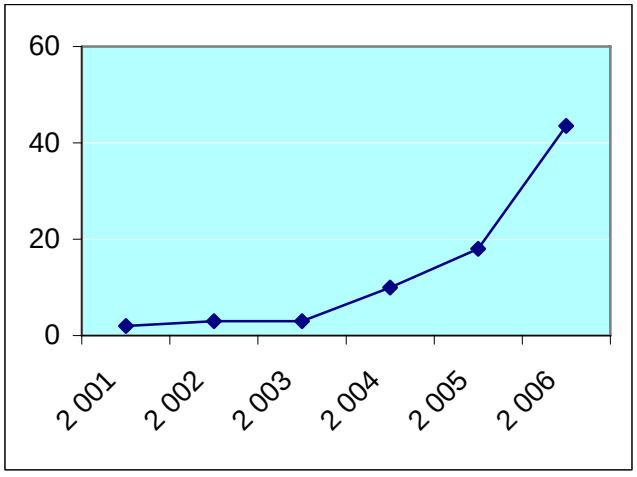
Leading expertise and highly skilled staff in innovative work environments are the most important competitive advantages of Norwegian shipyards.

Demand for new vessels in the world market is high, and Norwegian shipyards have agreements for the delivery of ships for many years ahead. Orders received in 2006 totalled NOK 43.5 billions, or almost three times the total for 2005, see figure 2. This resulted in an order reserve at the close of the year of NOK 56 billions. The major part of the order reserve is made up of contracts for the construction of offshore vessels, for example supply ships.

This illustrates that Norwegian yards have ventured successfully into the explosive upswing in this market. Yards that for example build fishing vessels have a low order reserve.

Figure 2

Orders received by Norwegian shipyards 2000-2006 (NOK billion)



In 2005 Norwegian offshore and shipyards generated wealth creation of about NOK 11 billions. In the same year turnover for the 20 largest shipyards was roughly of NOK 20 billions.

In total approximately 20 000 persons are employed in the Norwegian shipyard industry.

Norwegian shipyards participate in international work sharing. This means that many yards have hulls constructed in foreign yards, and then moved to Norway for outfitting and completion. A large number of the hulls ordered at the close of 2006 were for example built in Romania, for outfitting and completion in Norway.

This form of work sharing illustrates that Norwegian yards, to a higher degree than previously, are specialising in the more complicated and technically demanding areas of shipbuilding that require advanced knowledge and expertise.

Norwegian yards compete with yards in many of the major shipbuilding nations. The world's largest shipbuilding nations are South-Korea, Japan, China and the EU countries.

Ship's equipment industry

Norway is home to maritime equipment manufacturers in a wide variety of areas, including motors and engines, pump systems, navigation equipment, surface coatings, heating systems, ships furniture and positioning systems to name a few. Norwegian maritime equipment manufacturers supply about 7 percent of ships equipment purchased world wide, and export in the region of 70 percent of their total production.

In 2005 Norwegian maritime equipment manufacturers generated wealth creation of about NOK 17 billions. The Norwegian ships equipment industry has approximately 22 000 employees.

Some examples of the development of the Norwegian maritime equipment industry are Jotun AS, Frank Mohn AS and the Kongsberg Group.

During its initial phase of establishment, Jotun AS sold ships paint to the many whaleboats that had to be re-painted each summer.
The company soon developed into a national and global supplier of quality protective coatings. The Norwegian shipping has been a decisive factor for Jotun's existence. Products supplied by Jotun currently protect more than 10 000 ships and other vessels.

After having been a major supplier of herring pumps for many years, in the 1960's Frank Mohn AS developed a series of pumps for specialist tank ships. The company is now the world's largest manufacturer of discharging pumps for tankers. The bulk of production is exported. In recent years the company has concentrated on the development of submersible pumps and other equipment for the Offshore industry.

The Kongsberg Group is an internationally oriented and knowledge-based group. The company's main activities are in the markets for maritime electronics and defence systems. The main part of the group's activities is focussed on international markets.

Associated sectors

A large part of Norwegian maritime activities are linked to the extraction of oil and gas. Platforms and other offshore installations are equipped with advanced equipment that has, many of the same functions required in traditional shipping activities, for example systems for telecommunication, dynamic positioning, propellers, pumps and so forth.

The oil and gas companies use to a high degree the same suppliers as the maritime industry. Further, oil and gas companies are important customers for Norwegian shipping. If Norwegian competitiveness in the maritime sector is weakened, this will have consequences for petroleum related activities on the Norwegian continental shelf. Both sectors are vital elements in national wealth creation, and there is mutual synergy between them.

Coastal-based tourism is vital for Norway. Tourism is closely linked to the maritime industry, mainly through the international ferry systems, the Coastal Express and cruise activities. Cruises to Norway represent a small part of total cruise activities, but the segment is increasing. The number of cruise passengers visiting Norway has increased by 168 percent from 1997 to 2006. Companies such as Color Line ASA complement land-based tourism with a considerable number overnight stays.

The Coastal Express remains a very popular attraction for cruises in Norwegian waters, and the fjords of Western Norway retain their position as attraction number one. This will be discussed in the government's strategy for tourism.

The fishing fleet is an integrated part of the total marine expertise and know-how. The fishing fleet comprises a total of approximately 6 800 vessels, of which 2 000 are engaged in year-round activities. The fishing fleet is a buyer of equipment and services from the maritime sector, in particular the shipyards and ships equipment segments. The fishing fleet is also in competition with other segments of the marine industry for skilled labour, not least ships captains and engineers.

The development and production of equipment to the fish farming and aquaculture sectors is also based in part on knowledge developed in the same environments that the maritime sector draws on. One example of a marine / maritime environment as described is SINTEF in Trondheim.

1. Globalisation and framework conditions

Photo: Scanpix

The government's aim is to contribute to the global regulation of the maritime industries in order to prevent tax competition, promote environmentally friendly solutions while simultaneously promoting secure terms of employment for employees

1.1 Globalisation

Globalisation is driven by the removal of restrictions on international trade, investments and the movement of capital. The world is rapidly becoming a single market. Countries that were previously isolated and poor are now opening their economies for trade and becoming part of the global economy.

Globalisation has contributed to a strong increase in international shipping. Since 1970 the volume of goods transported on the world's seas and oceans has more than tripled, see figure 3. International shipping now carries 90 percent of the world trade.

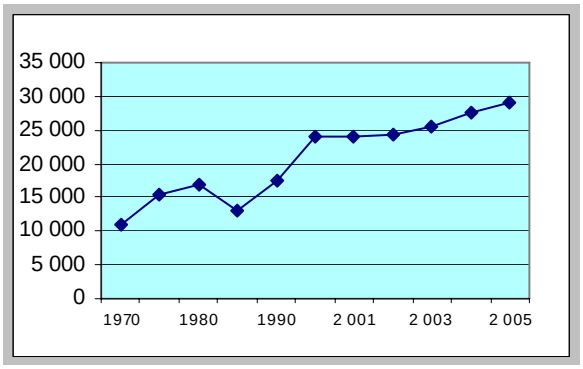
The shipping industry is characterised by multinational capital, labour and technology in a global market. The mobility of vessels, together with the establishment of open registers with no requirements for nationality has contributed the shipping industry becoming the world's first truly global industry.

Take the following example: a ship that was designed in Norway, built in South-Korea, owned by a listed Norwegian ship owner with Norwegian and foreign shareholders, registered in Liberia, operated by a Norwegian management company with offices in Malaysia, manned by Norwegian officers and a Filipino crew, classified by Det Norske Veritas, underwritten by British insurers and working in liner trade between Asia-USA-South-America in a pool arrangement with a Japanese ship owner.

Increased globalisation results in major structural changes in the majority of branches. The tendency is fewer and larger global participants. Decisions concerning the company's future structural development, where the operating units will be located and where research will be carried out are all taken centrally at head office.

Figure 3

Sea borne world trade (billion tonnes)



State aid to shipping companies is common in a large number of countries. From a global perspective, this favouritism results in a less effective economic allocation of resources. Higher tax levels and payroll expenses in Norway would probably result in that the volume of Norwegian shipping activities would be reduced.

The government wishes to provide the right framework to ensure that the maritime industry will continue to choose Norway as the host nation. If we are to succeed, the basic economic conditions must be in place. High educational standards and beneficial social arrangements are also features of the Nordic social model, that contribute to reorganisation over time, and that make Norway attractive as country in which to establish economic activities.

It would prove difficult to maintain and retain the unique expertise and dynamics in the maritime environment if ownership and head office functions are moved abroad.

The government therefore bases its planning on that our maritime sectors shall be secured easy access to markets and good terms on-which to compete with participants in other countries.

This is also the reason why the government proposes the introduction of a taxation regime for shipping companies that is competitive in comparison to the rest of Europe. At the same time we will take the initiative internationally to a reduction in state tax subsidies to maritime transport.

1.2 International framework conditions

A major part of maritime transport predominantly takes place in international markets. It is therefore vital that international regulations are introduced for vessels and crews regardless of the country of registration or origin. Further, threats of terrorism striking the shipping industry in recent years has emphasised the need for regulations and initiatives to improve security and contingency measures. The UN organisation, the International Maritime Organization (IMO), was established to prepare international regulations for safety, security and the protection of the environment in shipping activities. The UN International Labour Organization (ILO) has the task of developing international regulations governing seafarer's rights.

The government's intention is that Norway shall be an active instigator for secure and environmentally friendly shipping. As one of the world's major maritime nations, it is in Norway's interest to work for a high level of safety, unified environmental regulations, good reputation and global solutions.

Norway can contribute with broad, all-round experience and expertise in the maritime area.

The government therefore wishes to be a prime mover in the work of forming international regulations under the auspices of the IMO and ILO. Various segments of the industry are actively participating in this work. High international safety, security and environmental standards form a barrier against competition on unacceptable terms.

In recent years the EU has engaged actively in developing a maritime policy, and has adopted new regulations that through the EEA Agreement also apply to Norway.

The EU maritime green book

The European Commission presented its maritime green book in 2006. The green book touches on key Norwegian interests, both within and outside the framework of the EEA Agreement, among these shipping, the fisheries, the environment, maritime law, research and tourism.

The green book is linked to the EU's Lisbon Strategy, and shall stimulate wealth creation, competition, and employment, protection of the environment and safety and security in relation to the EU's ocean and sea areas.

The key question in the green book is whether Europe can afford to manage its oceans and seas in a sectoral unconnected way or has the time come to establish a truly integrated maritime policy. The document has been out for public consultation, and the Norwegian comments were sent to the European Commission in April 2007. The European Commission will prepare a more concrete proposal for rules and regulations and other measures in the autumn of 2007.

The accident involving the vessel Erika in 1999 when large areas of the French beaches were polluted by oil resulted in an increased level of attention being focussed on safety at sea in Europe. In the work of developing the international regulations, Norway works in close co-operation with The European Commission, The European Maritime Safety Agency (EMSA) and the member countries. This co-operation is organised under the framework of the EEA Agreement.

Health, environment and safety

Through alterations and amendments to the Seaman's Act the government has included the principle of non-discrimination of seamen on board Norwegian vessels. The two new articles of the Seamen's Act adopted by the Norwegian Parliament in 2007 deal with equality in the workplace, the ban against discrimination and rules governing the sharing of information and consultation with the of the company elected labour representatives.

There is a ban on direct and indirect discrimination on the basis of politics, membership in a labour union, sexual orientation, disability or age. The ban on discrimination applies to all facets of employment, from advertising of vacancies and until the employment comes to an end. The regulations will reinforce the rights of seafarers. The changes came into force on March 1st 2007.

The ILO adopted a new convention on the working and living conditions for seafarers in 2006. The convention collates and updates 68 different ILO conventions and recommendations. The material content covers minimum age, health requirements, employment agency services, employment contracts, wage payment, working hours and rest periods, holidays, home travel, cabins and leisure areas on board, food and diet, medical services, the ship owner's responsibilities in case of illness and injury to persons, requirements to the working environment and the prevention of industrial accidents, welfare centres in ports, social

security arrangements for medical nursing and sickness and industrial injury benefits.

The government has decided that a Proposition to the Odelsting (Parliament) with the necessary legislative changes and a Government White Paper on the ratification of the Convention shall be prepared.

Framework conditions for shipbuilding

Norway is an active participant in the OECD's work on shipbuilding. China and Taiwan participate in this co-operation, and both countries are in the process of developing large and comprehensive shipbuilding industries or have a special focus on the industry. The government's aim in this work is to contribute to combating international competition based on subsidises, and at the same time ensuring that Norwegian yards have good framework conditions.

Negotiations on an international agreement on normal terms of competition in the shipbuilding industry.

Negotiations commenced in 2002 on an agreement on normal terms of competition in the shipbuilding industry. The negotiations also included a number of countries that are not OECD members, among these China, and according to the timetable were to finalise by the close of 2005.

In September 2005 the parties were still far from each other in key areas. A decision was therefore made to postpone the negotiations until further notice in order to give the parties time to reflect on their standpoints. Efforts are being made to find a basis on which the talks can be resumed under the leadership of Norway's Ambassador to the OECD.

Export financing

The maritime industry is typified by that it is capital intensive and that real capital (the industries fixed assets) has a long life.

The industry has a long delivery time span from the time an investment decision is reached to when the investment is actually made.

This means that the requirement for long-term financing is high. We have a number of banks in Norway that are world leaders in maritime financing.

Norway's state-supported export financing arrangements consist of the so-called 108 arrangement and guarantees under the Guarantee Institute for Export Credit) (GIEK). The arrangement is regulated by the OECD's Arrangement on Officially Supported Export Credits (see box). The Maritime sectors are major users of both the 108 arrangement and guarantees under GIEK, but questions linked with export financing are also of major importance to trade and industry in general.

The government has initiated an investigation into the public support offered in connection with export financing in Norway. The 108 arrangement was assessed in 2007, and one is in the process of implementing an assessment of GIEK. In carrying out this work the government wishes to secure good export financing terms for Norwegian exporters.

OECD Arrangement on Officially Supported Export Credits (Consensus agreement) and public export financing.

About the agreement
Credit markets in many countries are poorly developed, and it is therefore important that exporters that in addition to the exported product also can offer the purchaser a financing package. To secure an equal framework conditions for this type of financing, the consensus agreement regulates the terms and conditions of the financing package.

In addition to the actual consensus agreement, there are also dedicated sector agreements for shipbuilding, aircraft and a nuclear power plants In Norway's case it is only the sectoral agreement for shipbuilding that these of importance. This sector agreement came into force from 2002.

The 108 Agreement
According to the OECD Consensus Agreement, member states can offer officially supported export credits on CIRR (Commercial Interest Reference Rate) terms. Norway introduced its CIRR scheme in 1978, the so-called 108 Agreement. The CIRR is based on the government bond rate for the particular country's currency, plus 1 percentage point. In 2002 Norway opened up for the use of CIRR-terms for exports of ships. Eksportfinans ASA administrates the 108 Agreement, and is the sole provider of officially supported export credits in Norway.

Guarantees
GIEK on behalf of NHD administers the state guarantee arrangements. There are two guarantee arrangements that are relevant for ships and ships equipment: the general arrangement and the building loan guarantee arrangement for ships. The general guarantee arrangement can be used to cover risks that would be difficult to cover in the private market. This includes all kinds of risks, apart from commercial risks for credits to purchases in OECD countries with a term of less than two years. The guarantee limit for the general arrangement was increased in 2007 from NOK 40 to 50 billions. Guarantees cover all branches, of which the largest as of May 2007 is shipped equipment (24 percent), drilling rigs (12 percent) and supply ships (12 percent). The building loan guarantee arrangement for ships is discussed later in this chapter.

1.3 Norwegian framework

Shipping is a global and mobile industry, and the location of activities is therefore sensitive to the framework conditions offered.

Many countries, including our nearest neighbours, prepare the terrain for attracting maritime activities through for example the introduction of tonnage tax arrangements.

Tax-based competition

The EU/EEA regulations for state support allow for favourable taxation of shipping companies and seafarers than that permitted for other industries. Shipping activities are also exempted from taxation to a high degree in the rest of the world, as activities are organised through companies in countries where tax is not levied.

The government is of the opinion that such tax competition between countries is unfortunate.

The government will work for the discontinuation of tax competition in shipping in international organisations (OECD, WTO).

Not all shipping activities that are eligible for state aid in Europe are directly exposed to global competition. In its comments to the EU's maritime green book, the government said that the various State aid and relief arrangements have created an unfortunate competitive situation in ferry traffic between EEA countries. Although it may prove difficult to achieve a breakthrough for a comprehensive revision and changes in the guidelines for state aid to shipping in the short term, the government will continue to take up this theme with the European Commission.

The most natural arena for a European initiative for an international agreement on the limitation of state support/subsidies to shipping will be the WTO.

Work is in progress in the WTO to negotiate an agreement that would discipline the use of subsidies in the service industries in general.

The EEA Agreement's regulations for government grants to maritime transport

The regulations for government grants in the EU, which also encompass Norway through the EEA Agreement, provide the framework for the taxation of maritime transport in Europe. The EU grants exemption from the ban on government grants in the EEA Agreement for maritime transport and allows tax exemption down to zero tax for ship owners and seafarers. For other commercial enterprises and industries the norm is no government grants in the form of special tax relief. The original guidelines were adopted in 1997. The European Commission revised the guidelines for government grants to shipping in 2004. The revised guidelines apply until 2011.

The purpose of the guidelines is to ensure competitiveness, wealth creation, employment and good contingency arrangements in European shipping sectors. The global situation with regard to competition and the terms and conditions that apply to competitors outside Europe are central elements in the reasoning behind the guidelines. The inherent mobility of the industry with the use of open ships registers, location of ownership of vessels to so-called tax havens/low tax countries and the use of manpower from low cost countries are key words here further, the guidelines ensure the harmonisation of state aid arrangements among EU countries.

Taxation of shipping companies

The maritime industries operate in international and highly competitive markets. Shipping is a highly mobile industry, and is exposed to tax competition internationally. In both the European Union and the rest of the world the shipping industry pay little or no tax on its activities.

If Norway is to maintain and develop its position as one of the leading maritime nations in the world, it is necessary to work to attain fixed objectives.

The current taxation arrangement for shipping does not stimulate new investments in Norwegian shipping.

The government therefore propose that a new shipping tax arrangement based on the European model is introduced with effect from the fiscal year 2007. For more detail please refer to Proposition to the Odelsting (Parliament)No. 1 (2007-2008) Taxation, public charges and customs tariffs resolution.

The new shipping taxation arrangements will increase profitability of operating shipping activities in Norway, and will be in line with the arrangements in other EU countries.

Employment of seafarers

Grant arrangements for the employment of seafarers will secure Norwegian maritime expertise and the recruiting of Norwegian seafarers, and in addition contribute to that Norwegian ship owners have competitive conditions in relation to conditions in other countries. The government has actively contributed to this through its budgets.

It is proposed in the national budget for 2008 that the state aid arrangement for seafarers is increased by NOK 380 millions to NOK 1.710 billions.

This is an increase from the balanced budget 2007. The means have been allocated for measures that contribute to secure employment of Norwegian seafarers.

State aid arrangements encompassed 9 300 seafarers in 2005. This increased approximately to 10 000 in 2007. Average annual payments per employee under the arrangement are NOK 150 000.

Current refund and net wage arrangements encompassed a range of rates, differentiated

between types of positions, groups of vessels, and vessels registered in the Norwegian International Ship Register (NIS) and the Norwegian Ordinary Ship Register (NOR). Viewed in totality the current arrangements do not appear to express clear prioritising, but rather as a group of the individual arrangements. In order to receive grants, the other terms and conditions of the arrangements must be fulfilled, among these that shipping companies encompassed under the net wage arrangement pay a sum per employee per month to the expertise fund under the auspices of the Foundation Norwegian Maritime Expertise.

The government will invite the Foundation's governing body and the industry to participate in discussions of the level, future application and prioritising of the income of the Expertise Fund.

Work permits for seafarers

In the Soria Moria Declaration is stated that the government would introduce the requirement for work permits for foreign seafarers on vessels sailing under foreign flags that transport passengers or goods between Norwegian ports.

The background for the need to introduce such legislation is to combat social dumping and secure fairer and more equal competition in Norwegian domestic maritime transport.

The Ministry of Labour and Social Inclusion is working on a proposal for the changes necessary in the regulations governing foreign nationals within the framework of international obligations Norway has in this area. A proposal was sent for a broad hearing in the autumn of 2007.

The Norwegian ship registers

The government has the aim of ensuring that as many Norwegian-owned vessels as possible are registered in the Norwegian registers NIS and NOR. When vessels are registered in Norway, the national authorities can better control that the vessel meets with the required safety, environmental and labour-related standards. Apart from this, a large fleet under Norwegian jurisdiction also increases the potential for exerting influence on international regulations relating to safety and security, the environment and working conditions in fora such as the IMO, ILO and in the EU. This means among other things that Norway can exercise influence on future international and regional environmental and safety requirements in maritime transport.

It is first and foremost Norwegian ship owners that choose the NIS flag. In recent years we have seen a gradual but steady reduction in the numbers of NIS vessels, see figure 4. The main reason for this is that Norwegian ship owners have either moved out or relocated ownership outside Norway.

Ship owners who still have their head offices in Norway, but establish shipping companies abroad, often choose to register under foreign flags. One reason for this is the requirement for activities in the country where the companies are located.

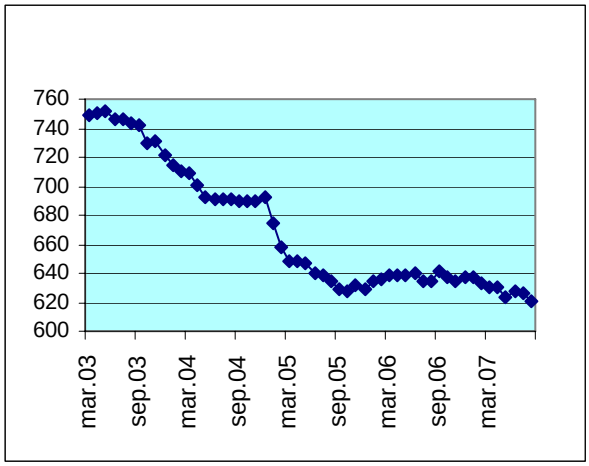
This is the most important reason why growth in the Norwegian controlled fleet occurs under foreign flags.

It is important that the NIS register continues to present itself as an attractive quality register. The development of good communications solutions, more user-friendly and efficient

services, and the ongoing adaptation of activities to new technology and information requirements have been, and remain, relevant measures for strengthening the NIS register. The Norwegian Ship Registers have concentrated on the marketing of the NIS register in recent years.

Figure 4

NIS 2003-2007(Number of vessels)



In 2008 the government will allocate an extra NOK 3 millions to marketing the NIS register in order to attract tonnage.

The building loan guarantee arrangement

Through the building loan guarantee arrangement for vessels, GIEK can offer building loans to shipyards to finance the building process up to the delivery of the vessel.

The background of the scheme is that a government-backed risk deferment instrument is necessary in order to secure sufficient building loans for the yards and thus contracts for Norwegian yards. The scheme relieves the banks of up to 50 percent of the risk in connection with new-buildings and conversions of vessels. The risk is shared equally between the banks and GIEK. The demand for building loans rose dramatically towards the close of 2006. This was connected with the large influx of orders to Norwegian shipyards. The guarantee framework for the scheme was therefore increased from NOK 2.5 billions to NOK 5 billions early in 2007.

1.4 Market access

International shipping is not fully included in the services agreement in the WTO. Only a small number of the WTO's 151 member countries have taken on liberalisation commitments for shipping. Norway is amongst the countries that have assumed obligations, while key WTO members such as the USA, EU, India and Brazil have no commitments for shipping in WTO. Norway is engaged in finding solutions that accommodate the need for international regulation of the market conditions in shipping. The market for international shipping is basically relatively open.

The government is working to remove the remaining restrictions and bind current practice, so that there is a set of regulations to relate to in cases of breaches of agreements, and to prevent the re-introduction of protectionist measures.

An increasing number of countries are entering into bilateral trade agreements.

This trend can cause that Norwegian manufacturers and exporters are discriminated against in vital markets. Norway also enters into similar agreements through EFTA. A central objective of the free EFTA trade agreements has therefore been to prevent discrimination against EFTA's export companies in relation to

exports from other countries. The EFTA free trade agreements aim to eliminate both current and potential discrimination against our goods and services, and are therefore important tools in boosting Norwegian commercial and industrial activities in a global marked. EFTA third country agreements are of importance to shipping.

Bilateral shipping agreements are negotiated on the basis of concrete Norwegian interests and to achieve equality in access to markets with agreements negotiated by the EU

The trade agreement between Norway/EFTA and Canada

EFTA and Canada have agreed on a trade agreement. The agreement removes all customs duty on industrial goods and introduces a number of simplifications for trade between the signatories. In the course of time Canada will phase out customs tariffs on all ships and boats. Norway will thus enjoy an important competitive advantage in the Canadian market. Canada is Norway's third largest trading partner after the EU and USA. Norway exported goods worth more than NOK 24 billions to Canada in 2006. Total joint trade in 2006 was NOK 35.5 billions. Because of the high volume of trade, a trade agreement with Canada will no doubt contribute to an increase in wealth creation for Norwegian companies. Canadian customs tariffs on ships are not fixed in the WTO, which means that Canada is free to introduce increases at any time. Current tariffs in this area stand at 25 percent.

The trade agreement means that customs duty will be removed on a number of ships and will be gradually be reduced for ships and other floating installations that are sensitive for the Canadian shipping industry. In the longer term this will provide new opportunities for Norwegian shipyards.

Profiling of the maritime industry

In the current global situation regarding competition, the various countries' maritime industries compete not only on products and services, but also to a high degree on the basis of reputation.

The Norwegian maritime industry has traditionally enjoyed a first class reputation.

This is due in the first instance to the scope and quality of goods and services, and the marketing and profiling of the various participants. The government nonetheless believes that there is a need to improve the co-ordination of the profiling activities.

Currently several countries compete to attract maritime companies. By attracting shipping, they hope to be able to develop their own maritime clusters and increase employment in associated maritime activities, among others equipment manufacturing, financing and classification.

Singapore is already one of the most important shipping centres in global terms, and the country is highly focussed on attracting maritime companies and ship owners. In addition to Singapore, Hong Kong, South Korea and Canada are all actively engaged in attracting a greater number of maritime companies.

Profiling of the maritime industries abroad has two objectives. The marketing efforts of Norwegian participants in foreign countries will be supported, and Norway will be profiled as a host nation for maritime activities.

The government will request that Innovation Norway, in co-operation with the Norwegian Ships registers, the Norwegian Maritime Directorate and participants in the maritime industry develop a joint strategy for marketing and market profiling of Norway abroad.

Blue Denmark

In 2006 the Danish authorities presented a plan of action "Blue Denmark" with the ambition of making Denmark Europe's leading maritime nation. The plan of action focuses on improved educational and recruiting for trade and industry, research, innovation, taxation and financing of development (they to plan the remove two taxes: tax on profits on the sale of ships and tax on shipping companies), reductions on administrative burdens and fewer exclusively Danish regulations, the promotion of Danish influence and market access, increased focus on quality shipping and an efficient, service oriented and modern administration.

Measures and initiatives

- The government will work against subsidy and tax competition in shipping through international organisations (OECD, WTO), and will take the initiative to a reduction of the state aid arrangements for ferry traffic between EEA countries.
- The government will introduce a shipping taxation arrangement based on the European model with effect from the fiscal year 2007. Please refer to Proposition to the Odelsting (Parliament) No. 1 (2007-2008) Taxation, public charges and customs duties resolution
- The government will continue the role Norway has as an instigator in the development of international regulations for shipping in the IMO and ILO in close cooperation with the other member countries and the institutions of the EU.
- The government will propose to the the Storting that Norway shall ratify the ILO Convention on the working and living conditions of seamen (The Consolidated Maritime Labour Convention) at the earliest opportunity.)
- The government will commence work on a review of the government-backed export financing system in Norway.
- The government will continue the net wage arrangements for seafarers.
- The government will re-introduce the requirement for work permits for foreign seafares on ships under foreign flags.
- The government will continue the building loan guarantee scheme for ships under GIEK.
- The government will request that Innovation Norway, in co-operation with the Norwegian Ships registers, the Norwegian Maritime Directorate and participants in the maritime industry develop a joint strategy for marketing and market profiling of Norway abroad.
- The government will vitalise the marketing of the NIS register and has al located NOK 3 millions in the budget for this purpose.
- Norwegian authorities will work actively in co-operation with other shipping countries to have shipping fully included in the services agreement in the WTO.
- The government will negotiate new free trade agreements under the auspices of EFTA in order to protect the competitiveness of Norwegian commerce and industry, hereunder our shipping interests.
- The government will negotiate a bilateral shipping agreement with India.

2. An environmentally friendly maritime industry

Photo: Viking Avant, Eidesvik ASA. Photographer: Harald Valdehaug

The government's aim is that the Norwegian maritime industry shall be the world's most environmentally friendly and lead the way in the development of new solutions

2.1 Environmental challenges

Shipping has an advantage compared to other forms of transport: ships have the ability to transport large volumes of goods with a high level of energy efficiency and low emissions. In addition the infrastructure of transport by sea means that encroachments in nature are limited. This notwithstanding, there are a number of environmental challenges linked to shipping, amongst these the operational emission of a number of pollutants to the sea and air, and in the case of accidents at sea there is a risk of severe pollution.

The composition of the fleet, national and international, is complex and a range of vessels of different types covers a number of functions.

The demand for transport services is dependent on activity levels in Norwegian and international economy.

The composition of the fleet, with regard to both desired functionality and age spread makes generalisations difficult in connection with the reduction of the total emissions.

A ship has a life expectancy of more than 20 years. This places great demands on future-oriented environmentally friendly and safe ships. This represents both a challenge and an opportunity for the whole of the Norwegian maritime environment. Increased focus on environmentally friendly solutions in maritime activities means that ships are designed, built, equipped, operated and recycled using methods that result in the absolute minimum possible emissions.

The Norwegian Shipowners Association has developed a zero-emission vision. This is an important and ambitious vision.

The vision will be realised through the development of technology and efforts to achieve strict international legislation. The government will support these efforts. The Norwegian shipbuilding and ships equipment industry has an independent responsibility to contribute positively to environmentally friendly solutions. The aim is to lead developments in order to meet the increasing demand for environmentally friendly solutions, as soon as such solutions are demanded to a sufficient degree to justify commercialisation.

There are few incentives for the shipping industry to choose environmentally friendly solutions that exceed the minimum standards laid down in international regulations. Some major buyers of transport services do however insist on higher standards for vessels carrying their goods, for example IKEA and Toyota. The Norwegian shipbuilding and equipment sectors would be well served with Norway taking a leading position in pressing for higher environmental standards internationally, and that Norway implements international regulations at the earliest opportunity.

The shipping company taxation arrangement has an environmental element in the form of environmental differentiation in tonnage tax. The arrangement is voluntary, and only affects shipping companies' environmental investments to a small degree. This differentiation functions as a positive incentive for those that have already taken emission-reducing measures. The level of the differentiation of tonnage tax and thus the environmental differentiation in itself do not in themselves encourage a high volume of new investments.

There are strong incentives in connection with the government's proposals for a new tax arrangement based on the European model in the budget for 2008 for ship owners to invest in environmental initiatives. This will result in an increase in investments in environmentally friendly solutions in Norwegian shipping.

During the phasing period of the new arrangement, ship-owners will have to adhere to a repayment schedule for previously accrued tax credits. Part of these tax credits can however be used by the individual company as allocations to funds for environmental initiatives etc. This will result in an increase in investments in environmentally friendly solutions in Norwegian shipping.

The government will carry out an examination of the environmental differentiation system in order to among other objectives include greenhouse gasses. One should strive to achieve an environmental differentiation system that also has value as transferable to other taxes and charges. The indicators in such a system should be introduced internationally, so that these have transferable value to the incentive systems of other countries. In order to contribute to the transfer of goods from road to sea, the government will carry out a total assessment of all charges and taxes in sea transport compared to other forms of transport. The applicability and potential for environmental differentiation will also be evaluated in connection with the assessment.

One is considering the introduction of stricter environmental standards in connection with the state's purchases of sea freight and sea passenger transport services, which is in accordance with the Climate Report.

The government wishes to increase awareness in order to secure more energy-efficient

design and operation of vessels in the future. We currently know little about the actual emissions from individual vessels. The government will, in co-operation with the industry, develop a system under which each vessel will produce an overview of its emissions. This also encompasses reporting to the relevant authorities.

The government will continue Norway's active role as initiator in the IMO for the mapping of emissions from international shipping, and for the introduction of a obligatory regime within the next few years for a reduction of greenhouse gasses by all parties regardless of flag state.

International environmental rules

Roughly 50 percent of the world tonnage sails under flags of convenience, and just over 20 percent under flags of developing countries. It is therefore vital for the shipping industry that the IMO is a dynamic organ that imposes international standards for both environmentally friendly and safe transport by sea.

The IMO Convention MARPOL (The International Convention for the Prevention of Pollution from Ships (73/78)) regulates emissions from vessels. Annex VI in MARPOL regulates emissions of ozone destructive gasses, NOx, SO_2 and VOC (Volatile Organic Compounds). IMO's environmental committee is revising the complete regulations relating to air pollution (MARPOL Annex VI). Norway's aim is that stricter standards will be introduced in the regulations for all sources of emissions and that particle standards are also included.

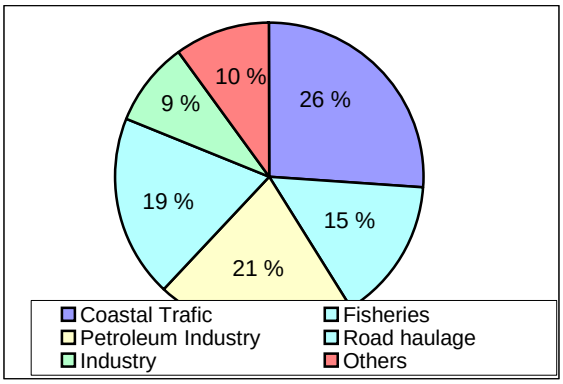
Through the preparations made by Norway to IMO meetings and through the IMO's decision making processes, a number of elements are under evaluation, amongst these whether the proposed initiatives are cost-effective, technically practical and implemental, and competition distorting.

2.2 Emissions to air

Coastal shipping and fisheries emit roughly 40 percent of Norway's total emissions of nitrogen oxides (NOx) and 15 percent of sulphur emissions, see figure 5. NOx is formed during the combustion process in engines, gas turbines and furnaces. NOx contributes to acidification and ground proximity ozone and can also function as a fertilizer and cause eutrophication.

Figure 5

Emissions of nitrogen oxides in Norway for various sources 2005



In 2002 Norway ratified the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (The Gothenburg Protocol). Pursuant to the Gothenburg Protocol, Norway has an obligation to reduce its annual emissions of NOx to maximum 156 000 tonnes by 2010.

The preliminary figures for 2006 show that emissions of NOx are 194 000 tonnes. Annual emissions must therefore be reduced by 38 500 tonne, or roughly 20 percent.

A NOx -levy was introduced with effect from January 1st 2007 that encompasses approximately 55 percent of emission sources in Norway.

The Parliamentary levy bill included a clause that emission sources that are included under environmental agreements with the state on the implementation of NOx reducing measures in accordance with stipulated environmental goals, can be exempted from the levy. The Confederation of Norwegian Enterprise, together with organisations that represent the branches to whom the levy applies, has put forward a proposal for such an agreement.

The government will continue the compensatory arrangements for the most affected branches. In the case of the fishing fleet and shipping, NOxRED schemes have been introduced under which the state provides government support for investments in emission-reducing measures.

The NOxRED scheme for shipping was approved by the EFTA Surveillance Authority ESA in February 2007. The NOx-RED scheme applies for the period 2007-2009 with a framework of NOK 50 millions.

In addition to the compensation schemes, the government will increase efforts in research and development to stimulate the development of NOx-reducing technologies.

The government wishes to see the establishment of stricter international NOx -standards for new engines and those standards are introduced for older engines. If no standards are introduced for existing vessels, one will not see any significant reduction in NOx-emissions from shipping activities for a many years.

Norway therefore proposes that large, low speed engines that were installed in vessels prior to 2000 shall meet with the same standards that currently apply to engines installed after 2000.

In the case of engines installed in vessels after 2010/2011, Norway proposes an emission standard that lies 20-25 percent under today's standard, while engines installed after 2015 shall be subjected to even more stringent standards and that emissions should be reduced by 40-50 percent from current levels.

In 2005 costal shipping and the fisheries represented about 15 percent of sulphur emissions generated in Norway. Sulphur dioxide leads to acidification. Sulphur emissions from shipping are regulated under the MARPOL Annex VI on emissions to air. The regulations provide the option of establishing special areas, so-called SECAs (Sulphur Emission Control Areas) with more stringent requirements for sulphur content in oil. The North Sea will be one such area from August 2007.

Global standards should be introduced by 2015 at the latest for the use cleaner fuels (distillates) with sulphur content of less than 0.5 percent. The distillate standard, which was introduced by INTERTANKO, is a cause of controversy in IMO. With the support of Norway, IMO's Secretary-General has appointed an expert group with a mandate to assess the potential for the implementation of and consequences of the various proposals put forward for future regulations. If the proposal is implemented, sulphur emissions from shipping will be reduced by 12 million tonnes.
In other words, sulphur emissions from international shipping will be reduced from in excess of 15 million tonnes to less than 3 million tonnes.

The measure will probably also result in a reduction in NOx emissions of 10-15 percent. Mandatory standards imposed on distillates will result in that oil spills resulting from shipping accidents such as groundings and collisions will have totally different effect in that lighter oils behave physically differently from heavy oils. The use of cleaner fuels will thus contribute to easier and safer clean ups after accidents. It is estimated that negotiations in connection with the ongoing revision in IMO will be completed during the course of 2008.

The government has given its support to INTERTANKO's proposal, and will work for the proposal in IMO.

2.3 Greenhouse gasses

Gasses that contribute to the greenhouse effect are first and foremost CO_2, methane, nitrous oxide and fluoride gasses.

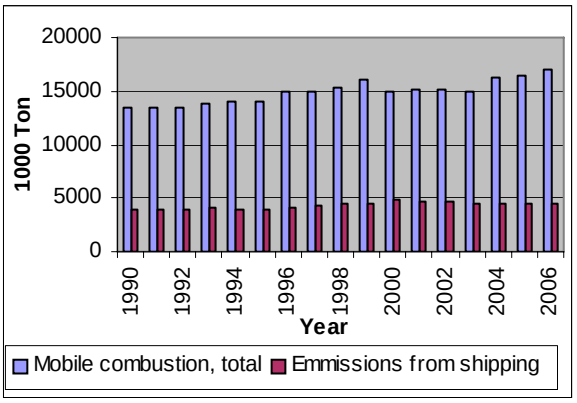
Emissions of CO_2 from coastal shipping represent about 5 percent of Norway's total greenhouse gas emissions and 24 percent of the total emissions from the transport sector, see figure 6. These emissions form part of the national greenhouse gas account, and are encompassed under the Kyoto Protocol.

In a global perspective, CO_2 -emissions from international shipping are estimated to be 2-3 percent of the total CO_2 -emissions. Emissions of CO_2 from regional shipping are subject to the CO_2- levy of NOK 200 per tonne CO_2 and mineral oil levy.

International shipping is not included under the Kyoto Agreement. One of the reasons for this is that it was difficult to achieve agreement on the distribution of responsibility for these emissions. The IMO is working on the development of mechanisms that will contribute to a reduction in greenhouse gas emissions from international shipping.

Figure 6

Emissions of greenhouse gasses 1990-2006. Carbon dioxide (CO_2)



The work is difficult, both politically and in relation to the establishment of good mechanisms.

Norway wishes to see that the IMO establishes binding standards for international shipping regardless of which country the vessel is registered in. If agreement is not reached under the auspices of the IMO on a climate regime in the very near future, the government will work for the introduction of a mandatory regime for the whole of the international shipping sector under the Climate Convention.

The government will continue to promote Norway's role as initiator in IMO for the charting of emissions in international shipping, and for the adoption within a few years of a binding and mandatory regime for the reduction of greenhouse gas emissions from all vessels, regardless of flag state.

Norway has proposed and developed a CO_2 -index for vessels. The index was adopted by the IMO in 2005, and introduced as a voluntary trial arrangement until 2008. As yet it is too early to say how such indexes can be implemented to regulate the industry.

The index can in any case be used to energy-optimise ship operation, which in turn will result in a reduction of emissions. At this point in time very few ships have taken such indexes into use.

It is desirable that CO_2 -emissions are mapped for more ships. The government will take the initiative to establishing co-operation with the industry on how such indexing can be implemented.

There are ongoing discussions in the IMO Environmental Committee on a possible market-based system for greenhouse gas reductions throughout the shipping industry.

In the work of reducing greenhouse gas emissions by the shipping industry, Norway shall be an innovator and shall develop and propose both market-based tools and regulatory standards.

The environmental gains in gas-fuelled operation are considerable. Natural gas is a clean fuel, and emissions of soot, smoke and particles are to all intents and purposes close to zero. Emissions of NOx are reduced by in the region of 90 percent. Likewise, there are no emissions of SOx in that the gas is free from sulphur content. Emissions of CO_2 lie 20 – 25 percent below emissions from equivalent diesel engines.

Gas-powered ships are dependent on the availability of gas/fuel. One therefore needs Liquid Natural Gas (LNG) ship bunkering stations along the coast. The infrastructure for LNG distribution will increase the availability of gas, and contribute to that gas will become more readily available for use in shipping. Companies that wish to build infrastructure, can apply to Enova for grants.

The grant scheme administered by Enova can contribute to that in the course of time gas is made available in an increasing number of locations.

2.4 New technology

The government deems it to be vital that efforts are also concentrated on the development of new, environmentally friendly alternative energy sources that can be utilised in shipping. Shipping in the years ahead must become more energy-efficient than is currently the case.

If satisfactory solutions are to be found, there must be co-operation between shipping companies, shipyards, equipment suppliers, the authorities and research institutions.

CO_2 -emissions from ships can be reduced over time by reducing fuel consumption and the use of alternative fuels. The use of fuel cells will result in zero NOx-emissions, and emissions of CO_2 could be reduced to 40 – 45 percent of similar energy production based on diesel fuel. There is ongoing development and trials of fuel cells for use in the transport sector and stationary and mobile power supplies in several countries. Fuel cells convert energy inherent in hydrogen or natural gas into electricity, heat or both.

The largest fuel cell project currently under way in Norway is FellowShip, a co-operative project led by Det Norske Veritas. FellowShip is an attempt to develop fuel cell systems for use by ships, in the first instance based on natural gas (see description of the project in section 4).

Hybrid-vessels are an option for some types of ships, and among other things electrically powered propulsion systems have been installed on a number of cruise ships. This means that the combustion engine or gas turbine transfers energy to the electricity generator that in turn drives the propellers and supplies the remainder of the ship's energy needs.

Hybrid vessels can prove to be an important contribution in reducing local pollution from shipping, but do not result in significant reductions in emissions of CO_2.

The use of solar energy and modern forms of wind power are exciting solutions for an even more environmentally friendly shipping industry.

The emission-free ship, E/S Orcelle

Under the 2005 World Fair, Wallenius Wilhelmsen was the centre of great attention about the 100 percent emission-free E/S Orcelle. The concept is based on new materials, new design, wind, and solar power. The ship, which is powered by solar energy and wind & wave energy, can be a reality within 20 years.

2.5 Other emissions from shipping

Transport by sea can also have a negative effect on the environment through the discharge of operating waste to the sea (oil, refuse, sewage etc), leaching from anti-fouling surface coatings and the introduction of non-native species ballast water and ships hulls.

The degree of the effects will depend on the volume and frequency of the influencing factors and vulnerability of the environment.

The introduction of non-native organisms is now considered to be one the most serious threats to the biological multiplicity in marine ecological systems.

Introduced species can represent a threat to the ecological system and valuable marine resources in a variety of ways.

The government will prepare a set of national regulations for handling ballast water that will be in accordance with the International Convention for the Control and Management of Ships' Ballast Water.

When accidents occur at sea there is a potential for the release of oil. Norway has already introduced comprehensive preventive sea-safety measures in our coastal waters through the establishment and operation of the maritime infrastructure and services, and established a state-organised oil pollution contingency system for the prevention or limitation of the negative consequences of incidents and accidents at sea.
Key accident preventive measures in sea transport at authority level are the monitoring of ships traffic, the separation of traffic, the piloting service and navigational aids.

In addition to the above, the Norwegian authorities are active in extensive international co-operative efforts to improve safety at sea.

The International Convention for the Control and Management of Ships' Ballast Water (the Ballast water Convention).

In 2004 IMO adopted a new convention for the control and management of ship's ballast water and sediments from ships.

Norway ratified the Convention on March 29th 2007, and work is underway on new regulations governing the handling of ballast water. The Convention stipulates that in an intermediate phase ballast water shall preferably be replaced in open seas (in waters of more than 200 metres depth and 200 nautical miles and in all cases 50 nautical miles from land/200 metres depth). Standards for the cleansing of ballast water will be introduced during period from 2009 to 2016 dependent on the vessel's size and building year. The Convention has not yet come into force, and the diffusion of ballast water will therefore continue to be a challenge up to 2020.

Norwegian Oceansaver has developed a concept for the cleansing of ballast water. All technology to be used aboard vessels shall be certified. Prior to certification can be awarded, thorough tests shall be carried out in accordance with IMO specifications. The Norwegian Institute for Water Research, (NIVA), has prepared a dedicated procedure with dedicated laboratories and cultivation systems to carry out this demanding test.

The working life of a ship is dependent on good maintenance to avoid amongst other things corrosion and the degeneration of inherent hull strength. The development of good surface coating treatments for hull protection that while affording protection do not leach pollutants is a challenge. Norwegian manufacturers are world leaders in anti-fouling ships solutions.

2.6 Emissions from shipbuilding

Shipping will not be an environmentally friendly form of transport if the building of ships is not also environmentally friendly. The Norwegian Pollution Control Authority (SFT) – and the Regional Commissioners inspected 84 shipyards, offshore yards and mechanical workshops for emissions in the autumn of 2006.

The inspections revealed that far too many have poor control over emissions to sea, and that 80 of 84 yards were in breach of the pollution regulations.

Many of the yards had poor handling routines for hazardous waste and lacked proper environmental documentation. In addition the inspections revealed serious deficiencies in the Internal Control routines in many shipyards.

Inspections have continued in 2007, and the pollution authorities are now working on more stringent regulations for shipyards. Amongst the measures being assessed is the introduction of specific standards for the handling of materials that have been removed from hulls.

The situation regarding the seabed at approximately 100-yard areas will also be investigated by the close of 2008. This includes areas in both active and closed shipyards. The work is part of a national plan to clean up polluted seabeds. By 2010 the condition of the seabed at the locations with highest priority shall have been investigated, and measures required to rectify pollution shall have been clarified.

The body responsible for implementing the measures is the one is responsible under the regulations laid down in the Pollution Act, and the same body shall also bear the costs of the inspections and measures.

2.7 Recycling of vessels

The IMO Environmental Committee (MEPC) is currently preparing and international mandatorily regime for ships from "cradle to grave".

This means that the regulations apply to both the vessels themselves and the recycling yards. The Convention is scheduled for completion in 2008-2009. Norway is leading the work on development of the Convention.

The government's aim is that the Convention will, to the highest degree possible, contribute to resolving the problems associated with risks and damage to the working environment and external environment in connection with ship- recycling, while at the same time being sufficiently attractive to ensure that the major recycling nations and flag states ratify the Convention.

Measures and initiatives

- Total funding for maritime research and innovation of NOK 212 millions will be to a high degree prioritised for the development and implementation of future-oriented environmentally friendly solutions.
- The government will investigate and report on the potential for stimulating increased innovation and faster implementation of environmentally friendly technologies by imposing stricter standards in connection with state purchases of transport services by ship.
- The government work for the adoption of a mandatory regime for the reduction of greenhouse gasses for international shipping.
- The government will actively contribute to the further development of indexing tools and other tools both nationally and within the IMO to reduce the emission of greenhouse gasses.
- The government will, in co-operation with the industry, develop a system where each individual vessel has an overview of its emissions combined with reporting to the relevant authorities.
- The government will work to achieve concrete reductions in emissions through the IMO of NOx, through the introduction of standards for older engines, and the introduction of stricter standards for new engines with up to 40-50 percent lower emissions than the current standards.

- The government will work through the IMO for the phasing out of the use of heavy oils as fuel on board ships.
- The government will, through its work with the IMO be a prime motor in the work of developing a new convention that ensures the defensible recycling of vessels.
- The government will work through the IMO to establish unified criteria for an international environmental differentiation system in IMO.
- The government will update the regulations on environmental differentiation for among things to include greenhouse gasses.
- The government will investigate and present an overview of all fees, tithes, levies, taxes and so forth in shipping, in comparison to other forms of transport, to contribute to the transfer of goods from road to sea transport.
- The government will improve the distribution network for gas, for among other reasons making preparations for the introduction of gas-powered ferries.
- The government will prepare national regulations for the handling of ballast water that is in accordance with the International Convention for the Control and Management of Ships' Ballast Water.
- The government will, in a proposal for a new investment fund, prioritise among other things the maritime sector and place special emphasis on environmental initiatives.
- The government will work for the inclusion of international shipping in future climate agreements.

3. Maritime Expertise

Photo: Simulator Center at Ålesund University College

The government's aim is that Norway shall be the world leader in maritime expertise

3.1 Demand for expertise

Expertise is a vital element in the development of the maritime industry's competitiveness and ability to create wealth. Growth in the global economy and development in the offshore sector have provided good times for the maritime industry, and not least an increase in recruitment. The need for labour will increase in the years ahead. It will thus be necessary to attract labour through increased recruitment both from the Norwegian educational system and from abroad. The goals set out for the Norwegian maritime industry impose demands on education, the development of expertise and recruitment. These are decisive factors in maintaining and developing our ability to generate quality and innovation in the Norwegian maritime industry. The industry and the educational system must co-operate in order to meet future need for expertise.

The government wants to see increased efforts in the development of maritime expertise and has therefore allocated additional funding of just under NOK 40 millions.

The need for highly qualified personnel applies firstly to the recruitment of graduate engineers, economists, lawyers, and other candidates with professional qualifications in maritime subjects. It is presumed that there is no lack of candidates for positions that require higher educational qualifications in economy or law.

In addition to higher education qualifications, a number of activities require maritime certificates, and many companies are seeking employees with such qualifications.

As is the case with a number of other branches in the Norwegian industry, the maritime industry is affected by the lack of engineers, graduate engineers and candidates with technical/scientific educational backgrounds. The government's emphasis on science subjects will thus also be to the advantage of maritime industry, and the numbers of applicants seeking education in the sciences has increased since the science subjects strategy was launched in 2006.

An important measure in meeting the challenges posed by the demand for expertise in maritime industry is the Foundation Norwegian Maritime Expertise (The Expertise Fund). The establishment of the fund in 2003 has resulted in an increase in the number of trainee positions at sea, see box.

The Foundation Norwegian Maritime Expertise

In 2003 the Norwegian Parliament ruled that shipping companies that are encompassed under the state aid arrangement shall pay a fixed sum per employee per month to a fund that will work for improvements in skills and expertise and recruiting initiatives for Norwegian seafarers. The Foundation Norwegian Maritime Expertise has been awarded the sole right to collect and administer these monies. The Foundation's Board deal with and assess all applications received in accordance with the Foundation's stated aims.

All shipping companies that receive state aid must have an average of two apprenticeship places per vessel. Further, a sum of NOK 500 per employee per month is paid to the Foundation. In 2006 the foundation collected approximately NOK 47 millions. The Foundation's funds are used mainly as grants to shipping companies that have trainee positions (apprentices, cadets and junior officers), accounting for approximately NOK 37.6 millions. This is an increase of NOK 3 millions compared to 2005.

Further, the Foundation prioritised roughly NOK 8.3 millions in grants to a number of recruiting and training projects, HES-measures etc. Shipping companies with on board trainee positions have the right to a fixed grant sum per employee per month. Grants to trainee positions cover only part of the costs the shipping companies incur in establishing such positions. The aim of the grants is to encourage shipping companies to establish trainee positions. There has been a positive development in the number of trainee positions during the time the Foundation has been awarding grants for such positions. During the second half of 2005, grants were given to 1 650 trainee positions. The number increased to 2 000 by the close of 2006.

The international work environment in the maritime industry is not sufficiently reflected in the educational system. The quality of maritime education in Norway should be at a level were we can attract foreign students and researchers.

The government wishes to contribute with scholarship schemes designed to recruit foreign students to maritime education, and is allocating NOK 2 millions for this purpose.

The Norwegian maritime industry is a truly global business and recruits much of its labour force outside Norway. This applies first and foremost to seamen, but also to the shore-based industry.

The combination of a very high degree of international orientation and high level of expertise makes it important to adapt conditions for the maritime industry that contributes to increased the professional mobility.

The industry is dependent on that Norwegian personnel and expertise can be utilised outside Norway, and that foreign personnel can be engaged to work in Norway without this resulting in major administrative consequences.

3.2 Recruitment

It is difficult to estimate the future demand for labour in the maritime industry. In its editorial "The best maritime education in the world" from April 2007, Mandagmorgen (Monday Morning, a weekly newsletter) recommended that the maritime industry should plan on the basis of annual recruiting requirements to companies engaged in maritime activities of at least 5 000 persons.

In the long-term, a good national and international reputation is the most important factor in successful recruitment. This is the responsibility of the industry. Shipping has traditionally enjoyed a high status in Norway compared to many other countries. The present situation is that the maritime industry is not attractive

among young people. It is therefore important to profile maritime industry in a manner that makes it an exciting profession and attractive career alternative for young people.

The recruitment campaign "Ikke for alle" (Not for everyone) is a three-year campaign that has the objective of attracting young people to take up maritime studies. The project is supported by grants from the Foundation Norwegian Maritime Expertise.

A number of shipping companies have issued guarantees of trainee positions on completion of the studies. The combination of the The recruitment campaign and guarantees from shipping companies should be continued to ensure continued recruitment and job security in the longer term.

The maritime industry must itself shoulder much of the responsibility for the fact that recruitment to maritime activities both on shore and in particular at sea has declined.

The various segments of the industry have themselves created uncertainty about the future of Norwegian shipping through their one-sided focus on the need for special framework conditions for shipping companies if they are to operate their activities from Norway with Norwegian seafarers. It is only recently that the industry has taken active responsibility for the recruiting of personnel through recruitment initiatives and trainee-arrangements.

Focus on recruitment and the increase in the number of trainee positions has in all probability had a beneficial effect. According to the statistics for maritime education, there was an increase in the number of applicants of 8.4 percent from 2006 to 2007.

In 2005 the Norwegian maritime industry launched a two-year training programme under the auspices of the Norwegian Shipowner's Association called Maritime Trainee. The participating companies cover a wide segment of the Norwegian maritime environment. Response has been good both due to a large number of maritime companies offering trainee positions and the large number of well-qualified applicants.

The Ministry of Education and Research has launched an initiative plan for science subjects with a particular emphasis on recruitment. A national recruitment campaign will be implemented in the spring of 2008 with the intention of reaching young people who would not otherwise opt for science subjects, and in particular female students. The recruitment campaign will be co-financed by several paries amongst others: the Ministry of Education and Research, the Ministry of Trade and Industry and the Norwegian businesses and labour organisations. The new initiative plan for 2007/2008 is a follow up of the strategy "A joint effort for science subjects 2006-2009". The Ministry of Education and Research will co-operate with Norwegian industry, labour organisations, the Norwegian Association of Local and Regional Authorities and the education sector. Good role models, improved contact with industry and focussed recruiting initiatives can result in an increase in recruitment.

The international work environment and the pressing need for labour contributes to a situation where the maritime industry should expend greater effort in approaching prospective employees with minority backgrounds.

The shipping company Höegh is a partner company in the Alarga programme. Alarga is a

non-profit special interest organisation that has the objective of creating space in private industry for skilled, young people with two foreign parents of non-western origin. Active recruitment of young people from minority backgrounds provides an opportunity for shipping companies to reach a larger section of the general public.

3.3 Maritime education

A number of workplaces demand and/or wish to employ persons holding maritime certificates. The fisheries for example compete with the shipping industry for applicants with such qualifications.

The government will examine the current mustering system and will evaluate actual sailing time for the issuance of maritime certificates for non-convention imposed requirements. The question of simplifying the mustering system for employees on vessels has been discussed previously. For safety and security reasons it is necessary to have control of seafarers onboard vessels. There is however reason to evaluate at today's system in order to to see if this is being done in the most effective and efficient way.

There are three main parties in the merchant maritime educational system: institutions of further education, technical colleges universities/university colleges.

In addition, the military operates education at the Norwegian Naval Academy resulting in certification. The training ships are important for recruiment to maritime professions, and there is a long list of applicants to these.

The school training ship M/S GANN is one such school. The school has invested in a new ship in order to modernise and update its training facilities. The government wishes to contribute to the financing of the school's new ship with NOK 5 millions.

In addition to the standard educational syllabus, post-qualifying and in-service training courses are important elements of the total maritime educational system. University colleges offer a number of courses, including simulator training, express launch courses, courses in passenger handling and contingency handling, safety/security and contingency work, courses in dynamic positioning, the use of electronic charts and helicopter evacuation and so forth.

Four university colleges offer traditional maritime education: Tromsø, Ålesund, Stord / Haugesund and Vestfold. In addition to these are the 15 technical colleges that lie under the authority of the county councils and 15 colleges of further education that offer maritime education. The university colleges offering maritime study programmes train students in the operation of vessels and for shore-based activities. With the exception of the Vestfold University College the university colleges only enrol students for the nautical programme. In 2006 there were only 15 students enrolled in the ships engineer programme.

In addition there is a number of engineering educational opportunities offered that are relevant to the maritime sector, including both the traditional shipping activities and the oil and gas industry. Amongst others the NTNU (The Norwegian University of Science and Technology) has a long traditions in offering education in marine engineering.

The University College in Bergen also offers courses in marine engineering as well as a newly established study programme in sub-sea technology.

Number of students/pupils – maritime education 2002-2007

Year	Further education	Technical college	University college
2002	625	493	125
2003	631	494	135
2004	621	509	117
2005	569	461	98
2006	519	457	89

From the autumn of 2007 the University College in Vestfold is participating in a joint Masters programme in Maritime Management, but as of today's date there are no Norwegian institutions offering a complete master programme in management, economics and social sciences specifically aimed at the maritime industry. Handelshøyskolen BI (The Norwegian School of Business Management) offers elective subjects and courses for part time students at Bachelor level. In the autumn of 2008 BI will commence specialisation in shipping at Bachelor level in economics/administration. The government wishes to contribute to the establishment of programmes at master level in maritime management in Norway, and allocating funds for the development of such studies.

In addition to the civilian educational system, the Norwegian Navy offers education leading to diploma qualifications at the Norwegian Naval Academy. This is both a military oriented and maritime education. To enable candidates from the Navy to receive 'civilian' diplomas, the studies must adhere to the minimum required standards laid down in the Standards of the Training, Certification & Watchkeeping (STCW) Convention. The Navy invests in expertise and also offers excellent further - education learning opportunities.

From the autumn of 2007 Befalsskolen for Sjøforsvaret (BSS) – The Officer Training Academy for the Defence Forces – will also offer diploma education in several new study programmes of equal standard. The objective of the new structure is to increase the numbers of officers available to the Naval Defence Forces. The restructuring means that amongst other things young people with technical educational backgrounds will be able to take up studies at the BSS. The numbers of applicants for officer training has shown a considerable increase in 2007 and the capacity has been fully utilised. The "Naval Defence Forces" new educational services, together with the new divisional officers arrangements in the Defence Forces, opens up for new avenues of co-operation between the maritime industry and the Naval Defence Forces if the parties should find that this serves their purpose.

The lack of available courses coupled with a lack of co-operation, insufficient numbers of teachers, and major challenges in relation to the through-put of students indicate that neither the structure nor the quality of the educational services offered are good enough.

The situation for maritime education and the estimated requirements for future workforces indicate that one must focus on quality and co-operation between the educational institutions. The government will investigate and report on how the quality and future structure of maritime education can be improved with the aim of attracting more students/pupils to enrol in and complete this branch of education.

The results of this work are expected to be available in January 2008.

The demand for new recruits also applies to teachers in maritime education. The government believes there is a need to implement a survey of the requirement for recruiting teachers to maritime education. In addition to the recruitment of teachers, it is vital that teachers are given the opportunity to update their skills and knowledge.

As a step in improving skills and expertise amongst teachers, the government will provide additional funds for initiatives designed to raise the professional skills and expertise of educators in maritime education.

Increased use of Professor II and Instructor II posts will be a good supplement and will provide an increase in professional expertise within the field of maritime education. Professor II positions are a co-operation between maritime industry and universities/university colleges. Similar arrangements should also be suitable for introduction in technical colleges and the institutions of further education. There are currently no Instructor II positions, but this could be a good solution for co-operation between the maritime industry and education institutions. The government will contribute with funds to such positions in maritime education.

The industry currently finances one professorship at the BI, see box. The industry is evaluating whether one can collectively finance more professorships at for example the BI, NHH and NTNU.

Technical maritime school equipment is essential in order to secure the students are provided with a sound basis for a future career in shipping.

Wilhelmsen's endowment professorship.

Torger Reve is Professor in strategy and international competitiveness at Handelshøyskolen BI. Reve holds Skibsreder Tom Wilhelmsen's Foundation's endowment professorship, and leads a newly established research centre for maritime industries at BI. The centre has the academic responsibility for research and education in shipping and maritime industries, and will concentrate in particular on the industries competitiveness in the international arena. Tom Wilhelmsen's foundation contributes NOK 6 millions to basic research projects related to maritime industries at the Centre for Maritime Competitiveness at Handelshøyskolen BI. The endowment professorship is financed for a period of 5 years from August 1st 2006 to July 31st 2011.

In order to safeguard that the infrastructure in maritime schools and colleges is updated, the government is allocating NOK 10 millions to school equipment. The government will revert with regard to application criteria for funding.

It is claimed that the dropout rate is a problem for maritime education. In order to sort out this problem, one is currently evaluating the reorganisation of the syllabus so that students are given diploma studies and simulator training at an earlier stage in the studies, which it is believed will be a motivating factor.

Further, emphasis will be placed on co-operation with ship-owners so that students can work for periods in the maritime industry in order to improve their motivation to continue the studies.

The government has constituted a public committee that will evaluate how technical and professional training can be best equipped to meet the future challenges. The committee will

hand in its report on September 1st 2008. This review will also be of importance to the maritime departments of technical schools.

There is relatively little research and development work carried out with regard to engineering and maritime educational environments. The government believes that the scope of R&D work in maritime related education must be increased.

The industry itself must be an initiative taker and co-operating partner in achieving this.

3.4 Co-operation

Norwegian maritime education is spread out nationwide. It is therefore a challenge to improve the effectiveness and quality of the education offered. There is also a need for better co-ordination of maritime education in Norway.

There is local co-operation on certain aspects, in particular further and continuing education, teacher exchange, the use of simulators and so forth. A number of companies have co-operative agreements with technical colleges, and several companies have established maritime educational centres for courses, joint use of equipment and so forth.

Even though improved co-operation is called for, there are already a number of excellent initiatives in place. There has been co-operation for several years between a number of participants in maritime education and research in Vestfold, from further education level to university college level. From the autumn of 2006 the University College in Vestfold, the Technical College in Vestfold and Vestfold Maritime Technical School have co-operated on co-ordinating diploma subjects.

These studies are now co-located and there is now a common syllabus. The diplomas will be the responsibility of the Technical College, while the Bachelor programmes, research and the
planned programmes will be under the auspices of the University College.

The local social and business communities are deeply involved in the project. Norway's Maritime Educational centre (NMU) was established in 2004 by Vestfold County Council. The government wishes to provide support to the establishment of NMU

In addition to local co-operative initiatives, the government will assess whether there is a need for stronger co-operation at national level. The government is positive to the initiative taken by the industry's participants for a report on a main centre for maritime expertise in a co-operation between the industry, the authorities and educational institutions.

The industry is also looking at the possibility of establishing a centre of expertise with an educational programme that can attract both Norwegian and foreign students and with a strong focus on research activities.

Depending on what one is looking for in the flora of maritime expertise in Norway, a centre of expertise could be situated at a number of locations in the country. One solution may be to appoint a single educational institution as the key-point with responsibility for co-ordinating the academic element, strategic development and marketing.

This centre of expertise model has the potential to become a highly competitive participant in the international market place.

Other countries have already successfully established centres of this type; see the boxes on the National Maritime College of Ireland and "Lighthouse" in Gothenburg. The government will evaluate any initiative that may be put forward by the industry concerning the development of a potential model in Norway.

"Lighthouse" in Gothenburg

In Sweden Chalmers Technical College in Gothenburg and the Swedish Shipowner's Association have established a centre for Nordic maritime expertise "Lighthouse" in Gothenburg.

The centre's main activities are research and education. The centre's aim is to develop expertise for the future for the Swedish shipping industry. The goal for the period 2006-2015 is that approximately 1 billion Swedish kroner will be invested in maritime education, research and development. The target is that 2 000 students will successfully sit for examinations from six studies in these fields, 100 Doctorate scholarships in a variety of study lines and 100 research and development projects with a focus on shipping. The vision is to be the first choice for maritime research, development and education.

National Maritime College of Ireland (NMCI) in Cork

In 2006 Ireland established The National Maritime College of Ireland. The College is a co-operative project between The Cork Institute of Technology and the Irish Navy. The College is partially privately financed. The public partners are The Cork Institute of Technology and the Irish Navy Training College. The private partner is Focus Education Ltd. The model makes it possible for the College's administration and teachers to focus on that the students acquire the requisite skills and knowledge. Focus Education Ltd. is responsible for the day-to-day operation of the institution. The College offers a wide range of educational training to the maritime industry. With advanced simulators, technical machinery rooms and a training unit for sea rescue, the College is an advanced centre of education for crew and officers for both merchant and military vessels.

3.5 Foreign employees

In the recent years, we have seen vigorous growth in the numbers of short-term immigrants from new EU countries.

This has contributed to relieving the scarcity of labour, particularly in the building and construction industry and the shipbuilding industry.

The requirement for language skills in both English and a Scandinavian language for personnel who will advise and guide passengers in emergency situations on passenger vessels in scheduled traffic calling at Norwegian ports applies regardless of flag. In order to increase the flexibility of the shipping companies, the government will assess whether it will be possible to delete the requirement for a Scandinavian language without affecting the safety of both passengers and crew on board.

The authorities wish to see that case processing time in connection with work permits and other statutory requirements for those who wish to work in Norway are as short as possible, while at the same time cases concerning applicants from abroad are dealt with in a thorough and proper manner. For this reason the Norwegian Directorate of Immigration (UDI) has received an additional allocation of NOK 2.5 millions in the national budget for 2007 as a step in the recruitment of qualified staff to prioritise the processing of more applications for work permits from this group of applicants.

The government and the UDI are also interested in further efficiency measures so that processing times do not hinder private and public employers that need foreign labour. One will monitor developments and assess the need for more initiatives in this area.

The government will instigate a broad study of case handling routines in immigration cases. The objective is to analyse and identify areas that may benefit from more efficient routines for resolving tasks, productivity gains and improved services to users while maintaining a satisfactory quality of service.

Measures and initiatives

- The government proposes that a grant of an additional NOK 10 millions be made to purchase equipment for maritime education.
- The government proposes to grant an additional NOK 8. 5 millions to measures designed to improve the level of expertise of teachers in maritime education.
- The government will support the establishment of a Norwegian Maritime Educational Centre (NMU). Funds will be allocated by application.
- The government proposes to support a new school training ship for the maritime school GANN with NOK 5 millions.
- The government proposes to grant NOK 5 millions to Professor II/Instructor II positions in maritime education.
- The government will contribute with NOK 2 millions to scholarship schemes with the aim of increasing the number of foreign students enrolled in maritime education.
- The government proposes to grant NOK 1.5 millions to the adaptation of the Masters study in management/economy/ administration /social sciences in the maritime sector.
- The government has appointed a public committee to assess how academic and technical training best can be equipped to meet the challenges of the future. The committee will submit its report by September 1st 2008.
- The government will report on the situation in Norwegian maritime education, including recruiting, dropout percentages, the deficiency in numbers of teachers and teaching expertise. The report will be finalised in January 2008.
- The government will assess the possibility of simplifying the mustering system for seafarers and the reduction of the actual sailing time requirement for non-convention imposed requirements.
- The government will extend the Expertise Fund. The government will invite the Foundation's Board to participate in discussions concerning new levels, arrangements and the prioritising of funds.
- The government will promote effective and efficient case handling routines and contribute to the introduction of revised immigration regulations that do not place unnecessary hinders in the way of recruiting foreign labour.

4. Maritime research and innovation

Photo: Marintek

The government's aim is that Norway shall be the world leader in maritime research and innovation

4.1 Innovation and expertise

The government will contribute to Norwegian maritime industry becoming the leading supplier of innovative and environmentally friendly solutions for the future. Grants and funding allocations to maritime research and innovation are therefore being increased from the current level of NOK 152 millions to NOK 212 millions in 2008. In a dialogue with the industry, the government has identified the environment, demanding environmentally friendly maritime operations and advanced transport and logistics as new areas of development for the maritime funds in the Research Council of Norway and Innovation Norway.

The basis for profitability in Norwegian maritime industry lies in the ability to offer competitive goods and services. Norwegian maritime industry has upheld its competitive edge in international markets by demonstrating the ability to change and innovate.

Some innovations are typically characterized by improved efficiency or minor improvements, while others are more radical, for example the introduction of novel technical solutions.

Surveys show that extensive co-operation between demanding customers (shipping companies) and manufacturers contribute to innovation. In the maritime industry, this kind of co-operation is vital in ensuring continued innovation, particularly between consultants, equipment manufacturers, classification companies, shipyards and workshops, finance institutions, competitors, research institutions, business associations and universities.

Both general framework conditions, such as taxation and environmental regulations, and selective tools have an affect on the research and innovation activities of enterprises.

The innovative ability of maritime industry is also influenced to a high degree by the enterprises' own priorities. A number of means are employed in the maritime industry to promote R&D and innovation. Some means and arrangements support work in a number of selected areas in research and innovation, for example the Research Council's programme Maroff and Innovation Norway's scheme Maritime Development.

Others support long-term strategies to improve levels of expertise, diffusion of knowledge and research infrastructure, such as for example The Norwegian Centre of Excellence SFF – CESOS and Norwegian Centres of Expertise NCE Maritime. In addition to means aimed specifically at maritime industry, the industry also exploits a number of non-segment specific instruments, for example "Skattefunn", research and development contracts and the "Brukerstyrt Innovasjonsarena" (User-Driven Innovation Arena) (BIA). The work of establishing a co-operative arena between the maritime industry and the authorities resulted in Marut. This initiative was implemented in part to counter the EU's strategic commitment to its shipbuilding industry, Leadership 2015.

In order to achieve improvements in the co-ordination of the research and innovation effort, Marut is now well established as a co-operative arena between maritime industry, the implementation apparatus and authorities. Marut will continue to play an important role in the realisation of Norway's objectives in the area of maritime research and innovation.

Through Leadership 2015, the EU has focused on eight areas, hereundermaritime research and innovation. The EU opened up for among other things, an increase in government grants and support to maritime innovation, and several European countries introduced grant arrangements for activities specifically targeting innovation.

In Norway the scheme Maritime Development was established in 2006 under the auspices of Innovation Norway. This was in addition to the already established scheme for grants and support to maritime research and development, Maroff, administered by the Research Council of Norway.

The EU also commenced work on the technology platform Waterborne, a project in which Norway is an active participant. The maritime sector is one of the few sectors where authorities have elected to maintain dedicated sector-oriented research programmes.

Government grants to maritime research and innovation have increased considerably during recent years.

The government is now extending and increasing its efforts by NOK 60 millions while expecting the industries own investments in the area to show a generous increase. Even though maritime industry in Norway scores high on innovative ability, it appears to be the case that maritime industries in our competing European neighbour countries invest more resources in research and development than the Norwegian industry.

Given increased international competition and the major challenges associated with the ability to adapt to change and develop sustainable maritime industries, the Norwegian

maritime industry has good reasons to place more emphasis on research and innovation in the years ahead.

The shipping companies role as demanding customers in relation to the shipyards and equipment manufacturers provides them with the opportunity to exert pressure for innovation throughout the value chain.

It is therefore crucial that ship-owners consistently and to the highest possible degree transform the Norwegian Shipowners Association's vision of zero emissions to sea and air into practical action when purchasing new vessels and equipment.

A few progressive ship-owners have made research and innovation a key strategic priority. This commitment should strongly encourage and inspire other shipping companies.

Selected grants aimed at R&D and innovation in maritime industry, 2005-2008 (million kroner)

Grants	**Administrator**	**2005**	**2006**	**2007**	**2008**
Maritime development	Innovation Norway		20	25	25
Maroff *(hereunder infrastructure /equipment to Marintek)*	The Research Council of Norway	40	70	90	125 *(25)*
Marintek, basic grants	The Research Council of Norway	6	6	7	7
Strategic industry-focussed research – marine technology	The Research Council of Norway	11	10	12	12***
Centre for Ships and Offshore Structures* (SFF-CESOS)	The Research Council of Norway	13	13	13	13
NCE Maritime** (Norwegian Centre of Expertise)	Innovation Norway, The Research Council of Norway, SIVA		5	5	5
Environmental projects in the maritime industry and development of the commercial shipping fleet	Innovation Norway				25
Sum		**70**	**124**	**152**	**212**

*Annual grants over five years from 2003, with the possibility of a five-year extension from 2008
** Annual grants over a ten-year period from 2006
***Estimated amount

In co-operation with the industry the government will work towards clearly defined goals to ensure that maritime expertise, research and innovation becomes an even greater competitive advantage. The government will in particular emphasise the following innovation areas: Maritime environmental technology and demanding environmentally friendly maritime operations, hereunder operations in the High North regions.

There is reason to believe that boosting research and innovation efforts in these areas will require special means since private actors lack sufficient incentives to prioritise them. The government will assume more financial responsibility during a period regards these areas. The government will impose stricter requirements for financing participation from the industry in the area advanced logistics and transport.

Another important prerequisite for intensifying research and innovation work in the maritime industry is improved access to world class advanced laboratories and scientific equipment. Major investments have been made throughout the years in experimental infrastructure in the research environments at Marintek and NTNU in Trondheim, and these are now internationally renowned research institutions.

There is however a need for considerable upgrading and new investments if these institutions are to maintain their competitiveness and continue to offer Norwegian shipping attractive research services.

The government will upgrade and strengthen the maritime research infrastructure at Marintek, and therefore proposes to increase basic funding and grants for necessary equipment by NOK 25 millions.

The government also wish to emphasise participation in international research and knowledge development. Norwegian participation in the EU's 7th framework programme will provide access to, and contribute to, international research and knowledge development. The results of the EU's 6th framework programme show that Norwegian maritime industry asserts itself positively.

4.2 Challenges and opportunities

The Norwegian maritime industry is unique in an international comparison because it is uncommonly comprehensive. In Norway one finds almost all segments of the international maritime value chain represented.

In addition to this, there are segments of the industry that are made up of specialised clusters that focus on maritime niche markets and areas of technology, for example in the offshore or fish farming sectors. The mutual interdependence between these strategically vital sectors in Norway has resulted in the development of complementary and specialised skills and knowledge. This is a competitive advantage that can be further empowered and developed.

Since 2005 the maritime industry has enjoyed a period of vigorous growth, in part driven by the consistently high oil prices and high levels of activity in the offshore sector. This has resulted in a demand for maritime

services and products in the groups of maritime industrial companies that serve the Norwegian and international oil and gas sector. In addition to this, the sea freight market has been driven forward by economic development and vigorous growth in Asia, which in turn has resulted in an increase in the demand for ships and equipment.

Examples of research and innovation measures

1. The Norwegian Centre of Expertise – Maritime (NCE). The maritime environment in Møre is linked to offshore shipping activities and consists of 170 companies, generates roughly NOK 25 billions in turnover and provides direct employment for 13 000 citizens in the region. The value chain from design to ship-owner is located with its main base within a relatively small geographic area, a fact that aids quick and effective co-operation and co-ordination. The region has two university colleges, and supplies candidates to the industry. The objective of awarding selected environments NCE status is to contribute to an increase in wealth creation by promoting and improving co-operation-based innovative and internationalisation processes in local environments with clearly defined ambitions and a high potential for further growth.

2. The SFF (Norwegian Centre of Excellence) – CESOS (Centre for Ships and Offshore Structures).
The aim of the SFF – CESOS at NTNU is to establish a world-leading centre that will develop the basic knowledge necessary for the design and operation of tomorrow's ships and maritime structures. This knowledge is necessary for the further development and design of safe, cost-effective and environmentally friendly technological solutions for maritime operations. The intention of the SFF arrangement is to stimulate Norwegian research environments to establish centres dedicated to long-term, basic research at a high international level, and the aim is to improve the quality of Norwegian research.

Some of Norway's most important natural resources are found either in or under the sea. The Norwegian maritime industry is mainly focused on oil and gas, the fisheries and fish farming. Due to the geographic location of Norwegian sea and ocean areas and the weather conditions in these areas, the Norwegian maritime industry has managed to develop specialized expertise and competitive advantages in demanding maritime operations in cold climates.

The development of the oil and gas sector in the northern areas creates the demand for even more specialisation, expertise and technology.

The same applies to the development in fish farming that is increasingly focused on areas far out at sea. There are a number of challenges in connection with maritime activities in Arctic regions, for example climatic conditions such as ice and extreme cold. Cold climate operations also give birth to a new set of safety requirements that have to be included in contingency plans and the training of personnel who will participate in emergency situations. The Arctic is particularly sensitive to pollution, and maritime operations must therefore contribute to sustainable development and resourse management in the northern areas.

Increased exploitation of oil and gas and a steady increase in the global demand for transport is a global threat to the environment in the form of emissions to sea and air. It is of vital importance to Norway that our sea and coastal environment is clean and pollution free.

The fishery sector, the fish farming sector and the tourist industry are totally dependent on this. Accidental spillages and similar incidents in our region could have extremely serious consequences for our coastal and sea-based activities.

At the same time increased environmental awareness and international environmental conventions have resulted in an increase in the demand for environmentally friendly solutions. Given Norway's international environmental commitments, and the growing market for maritime environmental technology, one of the main challenges facing the maritime industry is to develop technology that can reduce emissions in all segments of maritime industry activities.

With its basis in Norwegian technology and expertise, the industry has every chance to become a world leader in environmentally friendly maritime solutions. It is also a challenge to secure an efficient and environmentally friendly commercial shipping fleet adapted to future needs and environmental standards.

Norway has considerable influence in the IMO, which stipulates safety and environmental standards for shipping. In order to improve the industry's competitiveness in the international market place, the government proposes to co-ordinate research and innovation and development of the international regulations through a closer and more obligatory mutual reporting and dialogue between the industry through Marut and the authorities through the Forum for environmentally friendly shipping.

The government wishes to reduce emissions of greenhouse gasses and other emissions to sea and air. This will in turn promote the development of sustainable technology and industry that might prove to be an ever-more important competitive advantage in the future.

The government will therefore continue to support the development of NOx reducing technologies. One example of how the state –funded participants The Research Council of Norway, Innovation Norway and private participants can work jointly in contributing to resolving environmental challenges and stimulating new industrial ventures is the previously mentioned FellowShip Project.

FellowShip (Fuel Cell Low Emission Ship)

FellowShip started in 2003 with the objective of developing commercially viable fuel cell systems for use in the shipping and offshore sectors. The project is based on cutting edge fuel cell technology in combination with a wide range of Norwegian professional expertise that represents a continuous value chain in maritime industry. The main partners in the project are the classification company Det Norske Veritas, the shipping company Eidesvik Offshore, the ships architects group Vik-Sandvik, the fuel cell integrator Wärtsilä Ship Power Automation, together with the German company MTU as sub-supplier of the fuel cells.

FellowShip was made possible through the support of the Research Council of Norway's programme Maroff of NOK 34 millions, and NOK 4 millions from the "Renergi" programme. Innovation Norway's Maritime Development supports the second phase of the project with NOK 5 millions. The programme is scheduled for completion by the close of 2008.The technology that is developed through FellowShip results in zero emissions of NOx, SOx, and particles, and a halving of CO_2 emissions compared to conventional diesel engine technology. In the long term this technology can contribute greatly to Norway's efforts to meet its commitments in relation to the future environmental agreements that are expected to result in the wake of the Gothenburg Protocol and the Kyoto agreement.

Measures and initiatives

- The total funding framework to maritime research and innovation of NOK 212 millions shall to a higher degree be prioritised towards the development and implementation of environmentally friendly solutions for the future.
- Through the Research Council of Norway and Innovation Norway the government will increase support for maritime research and innovation. The following maritime research and innovation areas will be given high priority: environmentally friendly maritime technology, demanding environmentally friendly maritime operations, hereunder operations in the northern areas and advanced logistics and transport. Support to projects in the two first-mentioned areas will be increased by NOK 5 millions each.
- The government will upgrade and vitalise the infrastructure for maritime research at Marintek. The government proposes to increase basic funding and grants for necessary equipment by NOK 25 millions next year.
- The government aims to increase the influence of the authorities in the coordination of international environmental regulation in IMO and targeted research and innovations efforts.
- The government will continue to support the development of NO_X reducing technologies under Maritime Development in Innovation Norway and Maroff in the Research Council of Norway.

5. Short Sea Shipping

Photo: Nordfjell, Nor Line

The government's aim is that Norwegian short sea shipping shall be a more environmentally friendly and competitive alternative to road transport so that more goods can be transported by sea

5.1 Short sea shipping

Short sea shipping is the transport of goods or passengers by sea between ports in Europe and between ports in bordering countries. Short sea shipping competes to a large extent with other forms of transport such as road and rail.

Norway has a long coastline, and a high percentage of commercial and industrial activities are located along the coast. This has facilitated the role of shipping as an important national transport system. Sea freight is also the dominant for transport in the export and import of goods from and to Norway. In 2006 roughly 70 percent of imports and 60 percent of exports measured in tonnes was carried by ships. Domestic Norwegian transport is open to all ships regardless of flag, with the exception of vessels registered in NIS. Foreign companies handle 40 percent of the Norwegian import and export market.

Shipping in itself is only to a small degree a door-to-door concept, and is therefore dependent on efficient transfer facilities to other modes of transport such as road and rail. The outbound cargo volume from Norway is five times that of the inbound volume.

This considerable imbalance in the volume of import/export goods means that many ships, in particular bulk carriers enter Norwegian waters with little or no cargo and leave again with full cargo holds. In the case of container ships, the opposite is often true they arrive in Norway fully loaded and leave again without cargo.

The fleet currently serving Norwegian exporters and importers have a considerable spare capacity. The domestic fleet has a load factor of 55 percent and outbound traffic is closer to 70 percent.

The ports are the hubs of transport by sea. Efficient ports and good links between the ports and the land-based transport network are therefore key factors in increasing the competitiveness of sea transport services.

According to Statistics Norway (the State's statistics office), the average transport distance for land transport in 2004 was just less than 59 kilometres. The average distance at sea was 189 kilometres.

Despite this, a higher volume of goods is transported by road than by sea. In 2004 85 million tonnes were transported by ship, while 254 million tonnes were transported by road.

5.2 The EU and short sea shipping

Norway participates actively in the EU's work of promoting short sea shipping. The Ministry of Trade and Industry, The Ministry of Fisheries and Coastal Affairs and the Ministry of Transport & Communications have established a Norwegian centre for short sea shipping (Shortsea Promotion Centre Norway – SPC-N). SPC- N is part of a European network of such centres (The European Shortsea Network – ESN). The main objective of the centre is promoting sea transport in order to transfer transport from road to sea.

In 1999 The European Commission took the initiative to preparing an overview of bottlenecks in short sea shipping in Europe. Work done on the basis of this analysis has resulted in the removal of many of the identified bottlenecks. This work is ongoing, in part under the auspices of the ESN, The European Commission and the individual participating countries.

The EU's primary transport policy is laid down in the white paper "European Transport Policy for 2010 : Time to decide" published in 2001 and the revision of the same document, "Keep Europe moving – Sustainable mobility for our continent" published in 2006. In order achieve an increase in the transfer of goods from road to other modes of transport, the white paper proposes a policy in which measures are implemented that combine the use of public levies, the revitalisation of alternative means of transport to road transport and dedicated investments.

One of the proposed measures is the further development of the Motorways of the Sea concept, i.e. regular and frequent transport routes that can compete with the flexibility offered by road transport. Motorways of the Seas shall be an integrated part of door-to-door transport chains, and the links between sea and shore-based infrastructure have therefore been given high priority. Norwegian authorities are active participants in the work of developing the Motorways of the Sea concept in the Baltic Sea and North Sea.

Another initiative is the Marco Polo Programme in which EEA countries also participate. The programme commenced in 2003 and will continue until 2013. The main aim is to promote a more environmentally friendly transport system for goods.

The programme offers financial support to the establishment of new sustainable transport solutions that can contribute to the transfer of goods from road to sea, rail and inland waterways.

The programme applies to international goods transport and premises co-operation between a minimum of two member countries or between enterprises in at least one EU country and a third country, for example an EFTA/EEA country. The project Shortsea XML will develop a standard message for communication between participants in European short sea shipping. The Marco Polo- programme has provided funding for this project and the work is led from Norway. The government will continue the Norwegian participation in the EU's Marco-Polo programme through Marco Polo II.

Norway will further participate in the European Interregional Co-operation (Interreg). In the trans-national programmes in which Norway participates, i.e. Interreg IVB Northern Periphery, Interreg IVB The North Sea, Interreg IVB The Baltic Sea, which cover the areas the Nordic Peninsula, North Sea and Baltic Sea, the maritime aspects have a special priority, with focus on among other things innovation, the environment and transport.

On the basis of experiences gained from projects such as the Northern Maritime Corridor, it will be possible to use these programmes to achieve stated objectives of the Norwegian maritime policy.

5.3 National transport policy

Norway's national transport policy is expressed in the white paper on the National Transport Plan (NTP). The government aims to present a new white paper for the period 2010-2019 at the change of year 2008/2009. The plan will lay down the basis for political priorities in the transport field as a whole, the effective use of political measures and how to strengthen the interplay between the various modes of transport in order to contribute to efficient, safe and environmentally friendly transport solutions. In preparing the National Transport Plan (NTP) 2010 – 2019 the government will base its work on the overriding objective for our national transport which is:

"To offer an efficient, accessible, safe and environmentally friendly transport system that meets society's needs for transport and encourages regional development."

The overriding objective is further defined in four main goals:

- Improved access and reduced costs associated with distance to improve competitiveness in trade and industry and to contribute to the maintenance of the main features of national settlement patterns.
- The transport policy shall be based on a vision that no accidents shall occur in the transport sector that are the cause of death or injury.
- The transport policy shall contribute to reducing the negative impact of transport on the environment, as well as contributing to the attainment of Norway's national objectives and international obligations regarding environmental matters.
- The transport system shall have a universal framework.

In accordance with the above, the coming NTP will include measures and initiatives designed to stimulate and encourage the optimising of the individual modes of transport

to ensure that the advantages of each mode are exploited in the best possible way.

Emphasis will be placed on the fact that the transfer of goods from road to sea and rail is not an objective in itself, but a strategy to assist in achieving the overriding objective of an efficient, accessible and environmentally friendly transport system. As part of in this work, high priority is given to ensuring that there are good links between the transport networks, which is a decisive factor if shipping is to play a more prominent role in national and international transport.

The Ministry of Fisheries and Coastal Affairs is working on a revision of the Harbours & Fairways Act. The main objective is to establish a legal framework that contributes to the development of ports as efficient logistical hubs and the sea transport as an efficient, safe and environmentally friendly mode of transport. Questions relating to ownership organisation and management of the ports are key elements in the revision.

5.4 High North regions

In its strategy for High North regions the government has stated that the main objective of government policy in this field is to create sustainable growth and development in the High North regions. The reasons for this is the increasing level of international interest in Arctic oil and gas reserves and marine resources.

The challenges presented by global climate change and the potential for future transport routes for both energy and shipping have contributed to this rise in interest.

The oil and gas industry is a large and demanding customer for Norwegian shipping companies, shipyards and subsuppliers. Major investments have already been made in the Snøhvit Field, where the LNG carrier fleet plays a key role.

The Norwegian maritime industry has developed an expertise that will be of great value in relation to the market for the recovery of oil and gas in Northwest Russia. For their part, the authorities have invested major resources into research and the following up of the Unified Administrative Plan for the marine environment in the Barents Sea and the seas off Lofoten.

Fish stocks and other renewable marine resources have been the historical resource base for the coastal populations. Proper management of these resources, business development in connection with sea farming and aquaculture, and research into marine bioprospecting can contribute to creating sustainable economic growth in the High North regions. Maritime expertise and research will be a vital premise for the positive development of the marine resource basis in the north. The challenge related to global climate change is perhaps best manifested in the Arctic region. The highly vulnerable Arctic eco-system functions as a barometer of the global situation for scientists engaged in climate research.

The melting of the polar ice has already contributed to improved ease of access and freer passage, especially in the summer months. This has awakened interest in the potential for new transport routes in the future, for example the Northern Maritime Corridor (NMC) and other Arctic fairways.

Oil and gas deposits and new transport routes is a the potential for considerable commercial activities for maritime industry in the years ahead.

Environmental damage in due to pollution caused by emissions or shipping accidents can however have a massive impact on the vulnerable Arctic eco-system.

The Northern Maritime Corridor (NMC)

The Project Northern Maritime Corridor is a co-operation between the two Interreg IIIB programmes The North Sea and the Northern Periphery. During the period 2002-2006 NMC has worked on improving the potential for sea freight activities in the corridor from the Mainland of Europe and Great Britain, along the cost of Norway and to Northwest Russia. NMC is a co-operation between 20 regions in nine countries, and participants are from both the public and private sectors.

Rogaland County Council is responsible for the project (lead partner) together with the Regional Council for Northern Norway. In addition, there has been special emphasis on Northwest Russia administered by the Barents Secretariat. An interdepartmental co-ordination group has been established at central level consisting of OED, MD, SD, UD, NHD and FKD.

It is therefore unequivocally clear that a pre-requisite for the sustainable exploitation of this potential is major investment in safety measures and the environment: With more than 30 years of experience in exploration, development and operation on the Norwegian continental shelf, the Norwegian oil and gas sector and the maritime industry have together accumulated a wealth of valuable HES expertise in the field. Norwegian HES expertise and technology can also play an important and central role for co-operation with Russia in the Barents Region.

Governments High North Strategy stipulates that research and knowledge development relevant to the High North region shall be a point of focus. Further, environmental technology developed for and in the High North region shall be developed through increased R&D efforts.

The new priorities and the increase in funding through the Research Council of Norway's programme Maroff and Innovation Norway's scheme Maritime Development shall together contribute to the achievement of these goals. At the same time, maritime innovation and the development of business activities associated with demanding maritime operations in the Northern Region will be accelerated due to the fact that the increase in funding will also be a factor in triggering the influx of private capital and investments.

A revitalised and proactive research infrastructure creates the premises required for further acquisition of knowledge.

The Norwegian authorities have high priority on safety at sea in the High North regions. The establishment of a vessel traffic monitoring service in Vardø January 2007 is an important instrument in this regard.

The vessel traffic monitoring service in Vardø monitor maritime traffic, exchange information and interact with vessels. In order to increase the safety standards at sea and minimizing the risk of acute pollution, Norway introduced 1st of July 2007 a new traffic separation scheme and recommended routes of the coast from Vardø to Røst.

The routes are placed about 30 nautical miles offshore. The routing system applies to tankers regardless size and to cargo ships of more than 5000 gross tonnages. The government also established a state run tugboat service for the stretch Vesterålen to Grense Jakobselv in 2003.

The Ministry of Fisheries and Coastal Affairs has established a close co-operation with the Russian authorities with regard to safety at sea and oil pollution preparedness in the north. During the coming period work will be done on among other measures the establishment of a Norwegian-Russian vessel traffic monitoring- and information system for the Barents Sea.

The government is also positive to that the University of Tromsø, together with the Shipowner's Association of Norway and the Maritime Forum in Northern Norway have established a study in maritime Arctic expertise (MAK). The aim is to develop and offer shipping companies the expertise necessary for the safe operation and management of vessels in the Northern Region.

Participation of the industry will ensure that the educational services offered are relevant, and will at the same time contribute to improving the industry's reputation.

Satellite communication, navigation and images for weather reporting, the monitoring of national boundaries, shipping, the fisheries and the environment, together with the assertion of sovereignty are all important elements in Northern Region Policy.

The grants for space-related activities in 2008 will include funds for the commencement of work on a Norwegian satellite for receiving AIS (Automatic Identification System) signals. The system enables real time overview of ships in Norwegian waters that are equipped with AIS transmitters. Funds will also be allocated for research activities under the auspices of the Andøya Rocket Launch Field, and to ESA related ground observation activities in the north.

5.5 From road to sea

Shippers' choice of mode of transport is decided mainly by price and the quality of services offered. Sea freight is the dominant mode of transport for all freight connected to Norway's foreign trade. This is particularly true of the import and export of bulk products, but also applies to general cargo. In domestic terms, it is only in the case of movements of goods between West and North Norway that sea freight has a significant volume. Sea freight has almost 100 percent of all traffic between some of these distances.

Approximately 75 percent of the transport of domestic general cargo is carried out over distances of between 100 and 600 kilometres, but both sea, rail and road carriers carry out most of the domestic transport of general cargo over distances of between 300 and 600 kilometres. If more cargo are to be carried by ship, measures must be introduced to promote inter-modal transport solutions.

This implies amongst other measures extending and improving the infrastructure to ensure efficient and effective correspondence between ports, sea freight networks and land based freight networks.

Color Line

The launch of Color Line's new SuperSpeed concept in 2008 is an important example of innovation. With its large cargo capacity and short turn-round time in ports, Color Line is extending the motorways on both sides of the Skagerrak and shortens journey times by a considerable margin. In 2006 Color Line transported more than 192 000 trailers between Norway and the mainland of Europe, an increase of about 10 percent compared to the previous year. Measured in heavy vehicles this is equal to 23 percent of all heavy traffic over Svinesund in 2006.

5.6 Fees and other public charges

In the Soria Moria Declaration the government stated that it would carry out a full assessment of all dues and other public charges on sea transport (gebyrer og avgifter for sjøtransport) in order to establish a level playing field of competition between sea transport and land-based transport .The government will follow up this matter in the NTP.

The Ministry of Fisheries and Coastal Affairs is currently working on a review of The Norwegian Coastal Administration's charges.

The review will amongst other things look at how the revenues from charges are categorised in relation to the size of vessels and the various categories/groups of vessels. The review of the Coastal Administration's charges will be completed prior to the review of the NTP.

There are a number of other levies and charges on carriage by sea that have an influence on the divergence of the various modes of transport and the transport sector as such. Levies and charges on carriage by sea must be evaluated against the financing structure in the other segments of the transport sector, and in relation to the overall levies and charges policy. A full review must therefore be implemented in connection with review of the NTP.

5.7 The Norwegian regional shipping fleet

An efficient short sea shipping fleet is essential if short sea shipping is to be as a key element of an inter-modal transport service.

Interaction and co-ordination between various modes of transport demands full co-operation at all levels and in all segments, and this is of course absolutely vital if demanding customers are to have their requirements met. Several Norwegian shipping companies have a modern and efficient short sea shipping fleet. It is however also a fact that much of the Norwegian short sea shipping fleet has an high average age and are organised in small units. The average age of ships in the segment of the fleet that are owned and/or operated by Norwegian are 23 years.

The oldest vessels are in the categories dry cargo vessels and bulk carriers.

It is the smallest vessels that have the highest average age. Profitability in the short sea shipping fleet varies greatly. There is much that indicates that that one of the advantages of having a large fleet is that the turnover per vessel is higher. The reason for this is that a larger fleet allows for greater flexibility and it is easier to exploit the full potential of the fleet better. Renewals in the fleet happen through purchase of older tonnage.

Efficient and environmentally friendly short sea shipping is ensured by that vessels are adapted to meet modern transport patterns and requirements and not least that the high-volume cargo carrying capacity of the vessels is utilised to the fullest possible extent in comparison to for example road transport units. The larger the volume of goods carried on a route, the easier it is to consolidate shipments, which in turn provides the basis for more efficient and cost-effective transport solutions. Development along these lines would no doubt disfavour a number of small ship-owners with old vessels. Improved co-operation between small shipping companies should therefore be an objective.

The Ministry of Trade and Industry has initiated a study with the aim of obtaining a well-founded basis on which to evaluate a number of measures and initiatives designed to increase wealth (verdiskapning) creation in, and the modernisation of, Norwegian short sea shipping.

The report resulting from the study will include an analysis of the services available and services demanded in connection with this segment of the shipping sector, and the economic impact of this segment.

The report will identify the challenges that are not resolved by the industry itself and where it will be good economics that the authorities contribute.

Proposals for concrete measures and initiatives will be included. The report will be finalised in 2007.

The short sea shipping fleet can, as is the case with other branches of Norwegian industry, utilise the existing industry-oriented government schemes.

Three schemes operated under the auspices of Innovation Norway will be particularly applicable to the short sea shipping fleet: low risk loans, research and development contracts, and maritime development. In addition the *Skattefunn* tax deduction scheme will be an option. Projects for which grants are applied for must fulfil the requirements imposed for enterprise and socio-economic profitability.

In 2008 the government will allocate NOK 25 millions to Innovation Norway for the development of the short sea shipping fleet and environmental projects in maritime industry.

Measures and initiatives

- The government will allocate NOK 25 millions to Innovation Norway for environmental projects in maritime industry and the development of the short sea shipping fleet. A major part of the allocation will be earmarked for the short sea shipping fleet.
- The increase in research and innovation funds of NOK 5 millions for requiring environmentally friendly maritime operations shall contribute to the development of technologies for a safe and environmentally friendly short sea shipping fleet in the High North regions.
- The government has initiated a report on Norwegian short sea shipping. Based on the report's findings, the government will evaluate the need for further measures and initiatives for the industry.
- The Ministry of Fisheries and Coastal Affairs is currently working on a review of The Norwegian Coastal Administration's charges. Among other things the possibility of introducing solutions that the fees and charges to a larger extent will be based on a cost principle will be considered.
- In connection with the National Transport Plan, the government will present an overview of all charges, levies and fees imposed on carriage by sea in comparison to other means of transport. The overview will form the basis for an evaluation of the competitiveness of carriage by sea in comparison to land-based transport.
- The government will pursue Norway's participation in the EU's Marco Polo-programme through Marco Polo II. Norwegian authorities and the transport industry will work to raise the awareness of the Marco Polo- programme in the industry aiming at an increased Norwegian participation in new projects financed through this programme.
- Norway will also continue to participate in the European Interregional Co-operation (Interreg). The government will strive to propose projects within the framework of these programmes with a basis in the objectives of Norwegian maritime policy.
- Norway will actively participate in the EU's work of promoting short sea shipping through amongst other measures the Shortsea Promotion Centre - Norway. Furthermore, Norway will continue the work of removing bottlenecks for short sea shipping and the development of Motorways of the Sea.

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