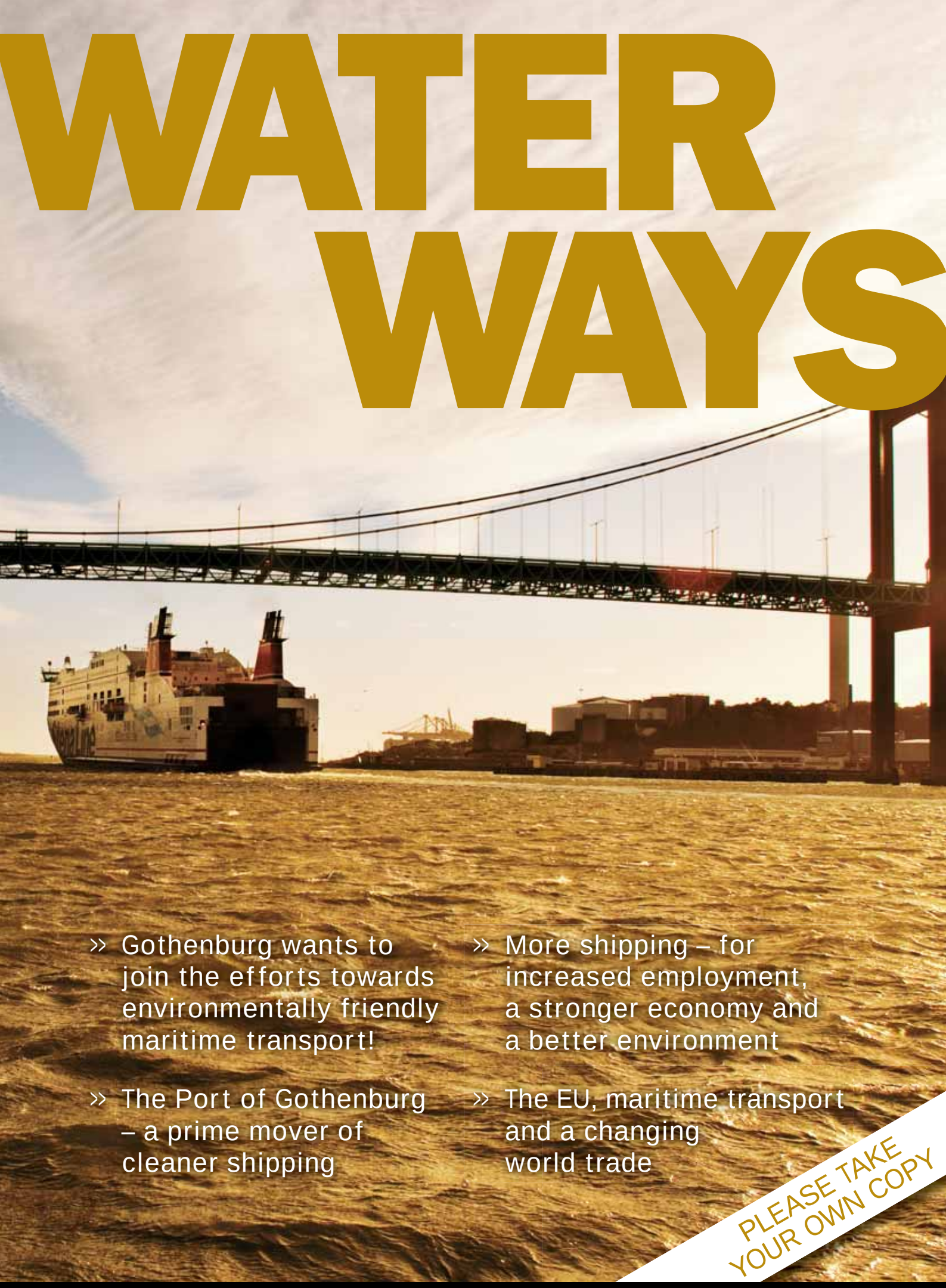
WATER WAYS



» Gothenburg wants to join the efforts towards environmentally friendly maritime transport!

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A MAGAZINE ABOUT THE SEA, SHIPPING AND THE ENVIRONMENT

Contents

Waterways

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Text: Berit Blomqvist, phone: +46 31 13 34 94, assisted by Barbro Wilén.
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Gothenburg wants to join the work for environmentally sound shipping!

Shipping is the heart and soul of Gothenburg and has been for a long time. During the past year, the city has gathered the inhabitants around a dialogue about the future of the city in two different future projects: one because of the forthcoming 400-years anniversary of the city and a second one for the development of the so called River City. In this dialogue we can see very clearly that a large portion of the inhabitants emphasise that shipping and the sea are very important parts of the city's identity. Most people want to develop the city's proximity to water and make the city's port more visible.

Maritime Transport is a very tangible part of the city's history but it is also its future. In Gothenburg, we work together with the academic institutions, the region, and the business community to develop shipping for the future. It is an effort that consists of many parts because environmentally friendly maritime transport for the future involves the development of competence, infrastructure, environment and safety consciousness. And it is a task that demands investment and well defined strategies.

50,000 tonnes of carbon dioxide. That is the emissions avoided during one year because goods arrived to the Port of Gothenburg by train instead of by lorry. We note that the volume of goods to and from the port increases. To avoid driving large quantities by lorry with large environmental disturbances as a consequence, a working train connection is needed also in the future. Therefore we have been working for a long time for an extension of the port railway line to a double track line, which can improve the connection between the north river bank and the rest of the island of Hisingen.

Another important part of the city's contribution to the development of shipping is what happens in the Port of Gothenburg As a large actor we are directly able to steer environmental impact and ensure that we contribute to a long-term sustainable environmental development through the work of the port. Some concrete examples are land based electricity supply for ships, differentiated harbour dues, environmentally certified electricity and international co-operation in matters of environmental development. The port also supports green ships in accordance with the Clean Shipping Index model and ships investing in improved bunker quality.

Anneli Hultén, Mayor and Chairman of the City Executive Board.

Gothenburg is a vital port city and shipping is a part of the city's soul. To remain like this we need to make conscious investments and encourage environmentally friendly solutions. We will then also give maritime transport good opportunities for the future.

Within the EU, maritime transport has always been in focus since it is an energy-efficient means of transport and an important branch of industry. For this reason, it is also important that the EU countries retain control over their shipping industry.

EU, Shipping and a c

At least 90 percent of world trade is transported in a ship. In addition, shipping grows every year. This is to a large extent due to growth in China, which has increased by about ten percent per year during the past few years. Growing prosperity increases the need for better housing, roads and bridges, which in their turn demand added imports of steel and ores. Transporting all this demands a great number of ships. The higher growth itself is because China has become the world's low cost factory with massively increased exports to the US and Europe as a result. This makes the demand for maritime transport grow even more.

Shipping builds prosperity

The European countries are proud of their merchant fleets. Every country with self esteem tries to protect the shipping that once transported the first export products over the sea.

Shipping has always been an important part of building wealth; at first in your own country, then in the entire world. Millions of people are much better off today than only twenty years ago and that increase in wealth would not have taken place unless shipping with its enormously cost efficient transport solutions had moved raw materials and finished products over the seas for a pittance.

But since shipping is so important, it is also important to be able to steer the industry in the direction you desire. It is in this context that the EU's interest in shipping should be considered. Within the EU, shipping is not only seen as an important industry for the building of prosperity but also as the solution to the problem of congested roads. When the internal European borders have disappeared, trade between the countries has increased and so has road transport. Some years ago, the EU published a white paper where a serious attempt was made to solve the problem by investing in more coastal shipping and shipping on the European rivers.

Shipping for less road congestion

European shipping has also increased, but road transport has grown even more. The reason for this is not only that the lorry is so easy to route e.g. from a factory gate in Västerås to a distribution warehouse in the centre of Europe, but because the lorry is not subject to a lot of the administrative red tape that the ship must still tackle before each port call. This is something that the EU is trying to solve by harmonizing rules, launching smart computer systems and removing unnecessary information forms. A lot remains to be done before shipping can move as easily, administratively speaking, between EU countries as road and rail transporters do.

The EU has also implemented a more cohesive plan over sea and water. The EU desire is to see a more comprehensive approach to the sea that we all are so dependent upon.

hanging world trade

Swedish shipping – a role model

The fact is that shipping is not just a guarantor of continued prosperity and less congested roads. Shipping also has its own homework to do. At the same time that there is no other commercial means of transport which emits so little carbon dioxide per ton transported as shipping, there is a large potential for improvement where sulphur is concerned. Especially at the global level. Ships in the Mediterranean, Asia or South America e.g. have the right today to use bunker oils with 3.5 % sulphur content.

In the Baltic and the North Sea, however, the industry has already adapted to legislation allowing a maximum of 1 percent sulphur content. In addition to this, many ships in Swedish waters have voluntarily used bunker fuels with a maximum of 0.5% sulphur.

If you volunteer to show the way you could well consider some praise from the politicians well earned. But there was no praise; instead a quite different decision appeared out of the blue.

There was actually somewhat of a shockwave going through Swedish basic industry and the shipping industry when it was understood that the IMO (The United Nations International Maritime Organisation) had passed the decision that the shipping companies in the Baltic and North Seas were obliged to lower the maximum sulphur content of their bunkers to 0.1 percent. Most of them had anticipated a legal limit of 0.5 percent. The business community considers that quite sufficient. Many now fear that more goods will be transferred from maritime to land modes of transport now that shipping will be so much more expensive because of the new stricter sulphur rules.

More expensive per nautical mile

Swedish industry is worried that the higher cost of transport will increase the distance handicap it already has to the European market. For all transport north of Rotterdam which is more expensive today because the distance is longer, it will also be more expensive for each nautical mile transported after 2015. It is hardly a thing which agrees with the EU's talk of an inner market where the whole of the EU has a level playing field.

Change of time table necessary

The shipping industry does not really mind the demands as such, but considers the time table too crowded. Technological change is not able to keep pace, to put it bluntly. The technical leap from bunkers with 0.5 % sulphur to 0.1 sounds minor, but is gigantic. Removing the final tenths of a percent is very difficult and costly.

In addition, Swedish and Nordic shipping companies feel frustrated that they should get this extra cost in the competition with global shipping, which in 2015 can still use bunkers with a sulphur content of up to 3.5 percent.

In Finland, the government has defied the EU and said that it will not implement the new rules until the entire world's shipping industry implements a 0.5 percent limit on sulphur. That is supposed to happen in 2020 or 2025 at the very latest. The Swedish government did not venture that far but it is of the opinion that the demand for 0.1 percent should be implemented simultaneously throughout Europe.

The representatives of the shipping industry really want to lower their sulphur emissions, for when that is accomplished there is no means of transport which is as considerate to the environment as a ship. But they believe that it must happen in a way that leads to a better environment without putting the competitiveness of northern Europe at risk.

European Maritime Day in Gothenburg

May 20–22, the EU flag will be seen all over Gothenburg. The European Maritime Day will be celebrated in Gothenburg during those dates. A number of EU Commissioners will fly in for a number of different meetings and seminars. Representatives of the European Maritime Industries, maritime researchers and a number of officials will also attend.

Sunday May 20 is a day for the general public: the actual EU meeting will take place May 21 and the 22 will be the day of the industry associations. The EU Commission has chosen Gothenburg to host the 2012 European Maritime Day, but the event will be arranged in co-operation with the City of Gothenburg, the Ministry of Enterprise, Energy and Communications and the Region Västra Götaland.

During the public day, May 20, between 10.00 and 18.00 it will be possible to visit ships and exhibitions and participate in a number of activities at the following locations: Eriksberg, Lindholmen, Amerikaskjulet, Gullbergsvass, Packhuskajen, Klippan and Lilla Bommen. For a full programme for the day visit: www.europasmaritimadag.se.

For more information on the entire event visit: www.emd2012.se.

Catharina Elmsäter-Svärd:

More Maritime Transport for increased employment, a stronger economy and a better environment

– For our elongated country it is important to have a vital maritime industry of our own. But shipping is not only a branch of industry; it is also a means of transport. It is thus important that the playing field is level also from the point of view of transport policy.

The Minister of Infrastructure, Catharina Elmsäter-Svärd, has decided to make a difference. The issues that have landed on her desk will be worked through thoroughly and solutions be found – if they are within what is politically possible.

– We do not own all the issues; the industry must also address some of them. Together we can create better conditions.

Creating the tools for developing maritime and other modes of transport is her most important task as a minister for infrastructure.

– If we talk about shipping as a transport mode it does not really matter what flag flies from the stern. Goods will always leave or arrive whether we have Swedish flag vessels or not. 90 percent of our exports and imports are transported by ships today and this will continue.

Sweden wants to be able to influence world shipping

Catharina Elmsäter-Svärd emphasises that since shipping is so important in itself, politicians also want to be able to influence it. And to do that a vital Swedish shipping industry is needed. It is important for Sweden to make its opinion heard in IMO and it is important for the entire maritime cluster that there are Swedish shipping companies with Swedish seafarers.

– From the point of view of trade, Sweden is almost an island where everything that does not use the Öresund Bridge or is destined for Norway and northern Finland is transported by ship. No other transport mode can carry the same volume of goods in a comparable cost and energy efficient way. Maritime transport is necessary for many companies and jobs in many trade relations, says Catharina Elmsäter-Svärd.

National merchant fleet important

– Nobody should have to doubt that the Alliance really considers a strong maritime industry important. It is a question of jobs, knowledge, safety at sea and not least environmental efforts. These are areas where Sweden and the Swedish shipping industry has been a driving force and is seen as an international model in many circles.

– Swedish shipping companies have participated in developing Sweden and I believe in future investments in efficient maritime transport systems, more environmental adaptation and an industry which really adds value to our country. The skills are there, we are at the forefront in many fields and now we want to take another development step. The Mona Lisa project (page 23) is an innovative spearhead venture which is taking place at the right time, says Minister for Infrastructure Catharina Elmsäter-Svärd. It is a venture which shows how our Swedish authorities in collaboration with the shipping industry and equipment manufacturers can actually build a safety system which is directly in demand from shipping companies and authorities in other countries. It is that way, always being at the forefront, that we develop shipping. I want to see more examples like that.

Level playing field

But what about shipping as a mode of transport, when will it get a level playing field?

– I know that the shipping industry considers it unfair that it has to pay for all of its costs for infrastructure while e.g. rail transport's costs are mainly paid by the taxpayers. But the representatives of rail also have some arguments for not having to pay higher track charges than they are already doing. I have started an enquiry which will review all charges to be paid or not by the users. When we have all the facts, we will make a thorough revision of all dues. But we have already said that we have an ambition to increase track charges. If we are able to raise them to 2,500 million in ten years, which would cover the main part of the annual maintenance costs, remains to be seen. But that is our ambition. Today, rail operators pay fees of about 700 million.

Wants to see more consensus between transport modes

The Minister emphasises that the different transport modes must be seen as a unit, not as competitors.

“I am happy that we were given European Maritime Day in Sweden and for us in the government it was absolutely self evident that the event should be held in Gothenburg. That is where most of the maritime industry is located.”

To manage future challenges in the transport area both from the point of view of capacity and environment, all modes of transport must function well separately, but it is even more important that they work well together. Each separate part has its advantages and can contribute to the development of a long-term sustainable transport system.

– Our task will be to create the rules and conditions to allow them to compete on equal terms.

Well established shipping strategy

May 22, in connection with European Maritime Day the government will present its finished maritime strategy and before that there have been several discussions with the various industry partners. All this to create a government bill as well established as possible.

– My predecessors have made a number of investigations and they will be an important source of knowledge and an excellent basis for the maritime strategy. Shipping is in all ways a global industry which is influenced by rules and competition from the entire world. In this connection, you can only confirm that many Swedish shipping companies work under less favourable competitive circumstances than their international counterparts.

Catharina Elmsäter-Svärd points out rules, rising costs and international competition as examples of what the shipping industry faces earlier and harder than our domestic industry, which is, of course, also subject to competition.

– When we present our strategy we want to know that we have looked into everything in order to be able to address the challenges of the future with force. The government will want to see the shipping industry as an important part of a cohesive maritime cluster in co-operation with other similar activities and industries.

Minister of infrastructure Catharina Elmsäter-Svärd

Born in 1965 in Södertälje. She lives in Enhörna, is married and has two children. Since 2010 she is Swedish Minister of infrastructure. Earlier appointments and assignments:

2008-2010 County Council Finance Commissioner in Stockholm.

2006-2008 Chairman of the Committee on the Labour Market, Swedish Riksdag.

2003-2006 Chairman of the Committee on Environment and Agriculture, Swedish Riksdag.

1997-2008 Member of the Swedish Riksdag.

1994-1997 Group Leader The Moderate party in Södertälje.

1987-1994 Hotel Manager in Södertälje.

1986-1987 Ad rep Södertäljekuriren.

1984-1986 Ombudsman MSU.

The Port of Gothenburg

– a driving force for cleaner maritime transport

The Port of Gothenburg is a proud port role model. After a great number of international prices and awards, self confidence is at its peak. But ambitions are higher than that. Environmental work has only started – and preferably the entire world should join in.

Some fifty years ago, the activities of the port took place openly in front of people out for a stroll in the central parts of the city. Since then, activities have been refined and rationalised, but they have also become more anonymous where you cannot see them behind the fences on the island of Hisingen.

Therefore, many inhabitants believe that the port handles smaller amounts of goods today than before. Nothing could be more wrong.

The fact is that Stena Line alone handles as much goods as the entire port did 50 years ago. Total volumes have more than quadrupled during the same time.

But port activities have not only become more efficient; they has also become more environmentally adapted through the years.

Last winter when we received the international award Energy Globe Awards, it was of course an important recognition for us, says Åsa Wilske, Senior Manager Sustainability in the Port of Gothenburg.

– But the fact is that we were just as pleased when we were invited to the World Ports Climate Initiative, which was started by i.a. Bill Clinton's "Clinton Climate Initiative". He has assembled the twelve largest ports of the world plus the Port of Gothenburg to spread best practices over the world. Being a part of this group feels really great! In the world we are small, in terms of volume. We are not even on the list of the one hundred largest ports, and we can still be a role model.

Cold Ironing – the most important environmental initiative

So what has the Port of Gothenburg done in the past few years? Shoreside electricity supply, also referred to as cold ironing is perhaps the most noted part of the port's environmental initiative.

– We have approximately 11,000 port calls during a year and in almost 30 percent of these calls the ship can be connected to the ordinary land electricity supply during the stay in port, Åsa Wilske says.

The port's strongly expressed ambition is to connect all ferries and ro-ro ships in the near future.

For the shipping companies to invest in the electricity connection is not free of charge, so the estimate for a large container vessel which stays for a few hours in ten different ports on her way to China looks very different. If only the Port of Gothenburg offers shoreside electricity, it is not economically sound.

– That is why it is important to us that we spread both the environmental ambitions and the technological development that we have participated in generating together with e.g. Stena Line, Stora Enso and ABB. Therefore the Port of Gothenburg has initiated cooperation within the World Port Climate Initiative to increase interest in and knowledge about shoreside electricity supply. An informative home page has been built together with the ports of Amsterdam, Antwerpen and Hamburg: www.onshorepowersupply.org.

Shuttle trains – for the environment

The Port of Gothenburg is not only dependant on shipping. Most industries are not located in Gothenburg, neither do most consumers live there. Thus, goods must also be transported on land. The port has worked actively for a long time to increase the share of rail transport to and from the port.

Today there are shuttle trains to Karlstad, Åhus, Gävle, Södertälje, Helsingborg, Stockholm and many other destinations, with departures daily.

The first shuttle train was introduced in 2002 and that year the port managed to create six railway lines; there are more than 20 today. The fact is that half of all the container goods now arrives in a railway carriage. All to lower the environmental impact in Gothenburg and in Sweden as a whole.

According to the independent consultants WSP, the rail shuttles mean that the emissions of greenhouse gases decreases by 51,000 tonnes annually compared to goods transported by road.

Cooperation with customers

The port also works actively with its customers to reward those shipping companies that invest in measures to improve environmental performance. Port dues i.e. the fee every shipping company has to pay for port infrastructure is environmentally differentiated. The money that the port collects from the ships that emit the most is then portioned out to the most environmentally friendly ships. All ships that already use fuel which contains less than 0.1 percent sulphur, the limit which will become law in the Baltic Sea from 2015, receive up to 250,000 SEK per ship as an extra environmental rebate. Some 40 ships achieve the qualifying limit and a total of six million SEK were paid by the port during this campaign to ships which are run on low-sulphur fuels.

Three ships have also been classified as "Green Ships" and thus been rewarded with 60,000 each by the port. To be considered a Green Ship, the ship must be adapted to be classified as "good performance" according to the Clean Shipping Index. The shipping company must, in short, work systematically in accordance with a special environmental plan to minimise emissions to both air and water. Read more on page 26.

Green bunkering

The port has also developed a concept called "green bunkering", together with bunkering operators, environmental authorities and the Coast Guard.

– Green bunkering means that all bunkering operators must take a special training course, have the equipment necessary to take care of an oil spill and conduct regular inspections, explains Åsa Wilske, who thinks that the port's rules for green bunkering have been shown to lower the risks of oil spills radically.

It is yet another example of how the port, in cooperation with its customers, is a setter of standards in the environmental area. Even if everything does not happen overnight.

– We have close to 2,000 customers world wide, a little depending on how you define a "customer". When we want to achieve something, many persons must be informed, many persons who must calculate and think before they can make a decision. I do not think it is strange that environmental investments take time, says Åsa Wilske. Change takes time. The important thing is that some companies dare to take the lead – and the Port of Gothenburg is such a company. That is one of the reasons why the port has decided that it will be possible to bunker LNG in Gothenburg in 2014.

Future marine fuels

– We create the possibilities for shipping to use the fuels of the future and thus we must have a palette of different alternatives. LNG or natural gas as it is also called is abundant in the North Sea. There is more gas than oil and the gas is also much cleaner for the environment. But, just like oil natural gas is a finite resource, which affects the climate. Thus, LNG is not a long-term solution.

– Biogas is much better, since the raw materials for making biogas can be grown forever. The trouble with biogas is that it is difficult to make economical, especially to start with.

– Thus some operators must be in the forefront and I am proud that the Port of Gothenburg will have a biogas plant within the port area.

These days it is, however, not just the port's own decisions that govern the handling of goods in the port. Some time ago, terminal operations were sold to private operators. Logent Gothenburg Car Terminal AB handles all car activities since 2010, APM Terminal took over operations in the Skandia terminal in 2012 and later during 2012 the port hopes that the EU will have approved that DFDS and Cobelfret's subsidiary C Ports take over operations of the ro-ro terminal.

– It is true that we no longer govern everything ourselves. But in all concession agreements we have included demands that our environmental ambitions shall continue as before. That is in the interest of all of us, says Åsa Wilske.

Facts about the Port of Gothenburg

- 887,000 containers TEU (no 115 in the world)
- 549,000 roro units
- 227,000 new cars
- 1.7 million passengers
- 20 million tonnes of oil
- 41 million tonnes of goods

65 percent of all container traffic to and from Sweden and one third of Sweden's seaborne foreign trade go via the Port of Gothenburg which is thus the largest Nordic port.

(All figures are from 2011).

www.goteborgshamn.se

The most shipowner intensive island in the world – an island in transition

For a long time, Donsö was home to the most Swedish of Swedish shipping. But now even the shipowners of Gothenburg's southern archipelago have started to desert the Swedish flag. The winds of change are blowing and the island's young entrepreneurs are investing in wind power and the bunkering industry.

Donsö in the southern archipelago of Gothenburg has 1,400 inhabitants and eleven shipping companies which makes it the most shipowner intensive island in the world, at least per capita. Only 20 years ago, most of the shipping business was conducted from the owners' kitchen.

Now the founders' children have taken over the companies and the business is conducted from a newly built office down in the harbour. But the feeling of familiarity is the same, like the small scale and the long standing contracts with e.g. St1 and Preem, Statoil and Neste.

A majority of Swedish controlled product tanker tonnage is operated from companies with their roots on Donsö. The fact is that if you include Ektank (which started on Donsö but has moved its office into the city) and the Stena Sphere, only a handful of Swedish tanker operators cannot be connected to Donsö.

How come just Donsö has become the Swedish shipping metropolis where product tankers are concerned?

It may be a random event, maybe like the old ones say: "We only did as our neighbours. Some started shipping companies at the beginning of last century, often with bunkering ships, and others followed. If he can do it, so can I." Maybe it is all just the legacy of the greatest Donsö shipowner of them all: Sten Allan Olsson, born and bred on Donsö. With two empty hands and without any contacts free of charge into society, he knew how to start and run a business. Today, the Stena Sphere has a turnover of over 50 billion SEK.

Even if nobody knows exactly how it started, everybody knows that the Donsö shipping companies have always been in the forefront of environmental awareness. To quote an example, they were among the first in the world with double bottoms and double hulls and their ships have a recognised high quality.

Until recently, these ships seldom traded outside of Europe, but these days you can find ships, from time to time, in the waters outside South America or along the African continent with Donsö in its stern. Or, it is no longer for certain, that it still says Donsö.

Flagging out – a difficult decision

To start with it was unthinkable to talk about flagging out. It was therefore with great sorrow that some of the shipowners on the island realised that it was no longer possible to run the shipping business under the Swedish flag. The conditions were so much more favourable under Faroese, Danish or Norwegian flag, and when cargo owners started to compare and demand lower freights it was no longer necessary to close your eyes to the facts.

It is a fact that virtually all other European maritime nations have a more favourable shipping policy than Sweden, who has not yet lived up to the terms of the EU's State Aid Guidelines for Maritime Transport. Competition became too fierce, and when one shipping company took the step, almost all the rest of them followed…

Tärntank is the shipping company that has driven the developments furthest and moved the entire shipping office, including the CEO to Skagen in Denmark. On Donsö only a management company with a few inspectors and charterers remain.

Furetank has also only management left on Donsö; the shipowning company is in Faeroe Islands and the commercial company in Denmark.

Bunkertell, Älvtank, Donsötank, Swedia, Kiltank and Veritas Tankers are on the other scale; they plod on with the Swedish flag in spite of the additional annual costs of several million per ship. In between there are the others who have flagged out parts of or the entire fleet. Each tanker under Swedish flag costs about two million more than if it is flagged out, so remaining is not an easy decision.

Even if none of the shipping companies has laid off any of its seafarers in connection with the flagging out, it has become more difficult for student to get their on-the-job training onboard the tankers that previously sailed with Donsö in the stern. The ships that now fly the Danish flag feel obliged to receive Danish students instead of the Swedish ones. It is also more frequent for Danes or Philippines to replace the Swedes who quit.

Irrespective of if they flag out or not, most of them try to continue operating commercially on Donsö, but there is genuine sorrow both among shipowners and employees that you can no longer keep the Swedish flag flying.

Entrepreneurship, however, continues to thrive on Donsö.

Donsö Shipping Meet 2013

An example of this is Donsö Tanker Meet, a major effort where all the customers and subcontractors of the shipping companies have been invited to an exhibition. In June 2011, several thousand people visited Donsö during the days in question. The foreign guests could hardly believe their eyes when they understood that it was this small island with all its picturesque houses that had been behind the success of the Donsö fleet over the years.

September 3-4, 2013, the next exhibition will take place and then it changes its name to Donsö Shipping Meet and all of maritime Europe will be invited, whether you engage in tanker, roro or bulk shipping – or offshore.

For it is not only about large tankers on Donsö. Bunker shipping, in itself the main foundation of many Donsö shipping companies, has experienced somewhat of a renaissance on Donsö during the past few years. OljOla has "always" been there, but lately new shipping companies have been added like Bunkertell and Kiltank.

The latest addition is Northern Offshore Services which operates high-speed catamarans, which mainly transport personnel to handle operation and maintenance of offshore wind farms. It is three young shipping entrepreneurs who have managed to find a niche in probably the only expanding shipping market at the moment. Pity that the lack of regulations and shipping policy has made them flag out all their ships too and even open an office in Denmark. Future development will thus take place there.

You hardly need to be a Donsö resident to think that this is a sad development – for Donsö and for Sweden.

The following shipping companies are located on Donsö:

Rederi AB Älvtank

Rederi AB Älvtank is the oldest of the active shipping companies on Donsö today. The operations started already in 1948 when the company bought its first tanker, built for traffic on Lake Vänern and the river Göta Älv. The company owns two tankers and cargo acquisition is made by the Danish agent Milestone Maritime. 40 employees.

Rederi AB Donsötank

Rederi AB Donsötank was started in 1953 and today owns and operates five chemical and oil tankers and one dry cargo vessel. Four of them are built since 2000 and are on long-term charters to Broströms and ESL Shipping in Helsinki (dry cargo). 150 employees.

Furetank Rederi AB

The shipping company started in 1955 but after the family sold all ships to a company in the Faeroe Isles, the Swedish company has been remade into a management company; the company handles technical operations of the earlier Swedish owned seven tankers and the technical operation and manning of SKB's vessel. Number of employees 40. Furetank is also part owner of the Danish brokers Milestone Maritime which is the freight agent for some 20 tankers.

Swedia Rederi AB:

Swedia was started in 1958 and owns two tankers today. In addition, the company's chartering department has five other tankers on commercial management. It means that Swedia handles cargo acquisition also for the accounts of the owners of these five ships. 40 employees.

Tärntank Rederi AB

Tärntank Rederi AB was started in 1958 and was the largest shipping company on Donsö for a long time. Today, the entire company has moved to Skagen. All that remains is technical operations, i.e. the inspectors who ensure that the ships conform to the high demands of the customers, and three brokers who acquire cargo for the ships; in total 14 persons.

OljOla AB

OljOla was started in 1978 and is a bunkering company with two ships on long time charter to Stena Oil. Bunkering takes place primarily around the Danish East Coast and the Swedish West Coast, i.e. Skagen, Gothenburg and Brofjorden. 15 employees.

Rederi AB Veritas Tankers

The company was started in 1983 and has three tankers. One has been on charter to Finnish Neste since 1999. The others operate on the spot market and Sirius Chartering handles the acquisition of cargoes. 51 employees.

Sirius Rederi AB

The company was started in 1994 and has ten tankers today. The company acquires cargoes for its own (and other owners') ships via Sirius chartering, which is a wholly owned shipbrokers. Sirius Rederi AB also owns the ship agency Vald. Anderssons Shipagency. A total of 250 employees.

Bunkertell Rederi AB

It was started in 1966 as a pure bunkering company, but in 2009 its operations were changed to collect sludge and slops primarily in the Port of Gothenburg. Owns one ship and has five employees.

Northern Offshore Services AB, NOS

NOS was started in 2008and is a service provider in the wind power industry. The company has ten crew transfer vessels in operation and four more on order. 75 employees today, before the end of the year they will be 90. All expansion takes place in Denmark.

Kiltank Rederi AB

Kiltank was started in 2008 and is a bunkering company with one ship which is on charter to OMB Bunker in Germany. The operations are focused on Travemünde, Lübeck and Rostock. Nine employees.

Lighthouse – leads the way

– Lighthouse is the national competence centre of the maritime sector and the activities are based on the three catchwords: education, research and innovation, says Klas Brännström, Head of Department of Chalmer's department Shipping and Marine Technology and Director of Lighthouse.

Lighthouse was started in 2006, in connection with the 100 years anniversary of the Swedish Shipowners' Association, when the association donated 100 million during a 10-year period to Lighthouse as a part of the celebrations. Behind the initiative was the realisation that shipping was falling behind in research and development.

– Sweden was simply losing the competence that has been built during the hey-day of shipping and shipbuilding. We still had the educations for Naval Architects, Ships' Masters and Engineers and some peak competence in shipbuilding but we were lagging behind in general maritime research. Our first goal was to build creative research environments.

After receiving additional 70 million during a 10-year period from Vinnova and a promise from the Swedish Maritime Administration to finance a number of doctorate students and special project money from Region Västra Götaland and additional money from Chalmers and the University of Gothenburg, the venture was off to a good start. Today Lighthouse employs 30-40 full time researchers.

Maritime Environment and Human Factors

Through Lighthouse, research within Chalmers received two additional main focuses: Marine Environment and Human Factors. For education and research in shipbuilding, the greatest change was that activities moved from Chalmers to Chalmers Lindholmen.

The eight doctoral student of Maritime Environment carry out research on alternative fuels; they analyse fuels and ships from a life cycle perspective to evaluate environmental stress; they investigate ways to purify exhaust gases from sulphur (scrubbers) and nitrogen (catalytic converters); they evaluate the risks for oil spills from the hundreds of ship wrecks lying on the bottom of the sea along our coasts and they spend a lot of energy on how to decrease energy consumption onboard ships. Among other things.

Research on the human factor is more focused on human abilities and limitations and is conducted by 14 persons, eight of them doctoral students. Among other things they have made special studies on how officers and ratings work together on the bridge and with the new technology, both under stress and under normal circumstances. They have also found out how the risks of fatigue can be minimised and how the engine room should be laid out to achieve the best working environment possible.

Research results are communicated

– The results reached up to now are communicated to the industry through news letters and seminars, open and free of charge; open to everyone. But, of course, we also use the results in education. That is the heart of the university that all education should rest on research, says Klas Brännström. After fine years, Lighthouse is now ready for the next step,

Photo: Jan-Olof Yxell

Life boat drill at Chalmers Lindholmen.

the one that was perhaps the main purpose behind the whole effort: the innovation leap.

– We simply want to create competitive advantages for the maritime cluster, we want more entrepreneurs. But their enterprises should be based on a sustainable foundation; this means that they should be socially, economically and ecologically sustainable.

– Innovation does not mean that you must invent something sensational; it is more of putting things in a new context in order to become useful to the general public. The container is an innovation. Not because the construction in itself is so remarkable but because it was standardised and made such a break-through that it has revolutionised world trade, says Klas Brännström.

Exactly what innovative projects will be born within Lighthouse is of course impossible to say today. It is, however, clear that there is a basis for them thanks to the research that has been done for over five years.

Shipping and Marine Technology at Chalmers University of Technology has about 900 students enrolled studying to be Master Mariners, Marine Engineers, Naval Architects or Shipping Logisticians/ Agents.

This number includes those students who follow the three master programmes: Naval Architect, Maritime Management and Marine Engineering.

The School of Economics and Commercial Law at Gothenburg University. The School of Economics has a total of 4,100 students enrolled who study to become graduate business administrators, logisticians or lawyers. Of these, about 300 follow the programme for logistics at candidate level or the Master programme Logistics and Transport Management which has a maritime slant with about 30 students per year.

The students' education and master programmes are financed just like all other university education via the taxpayers and fees (for non-European students). Lighthouse coordinates all maritime projects and finances the research environments, i.e. the doctoral students at Chalmers and the School of Economics and a number of professors.

MAERSK makes a difference in Gothenburg

One of largest groups of companies in the Nordic area with companies like Svitzer, Broström, APM Terminals and Maersk Line, is well established in West Sweden.

A.P. Møller-Maersk is working systematically and strategically on sustainability.

– Taking these issues seriously is basic to being able to run our business in the future, says Annette Stube, Head of Group Sustainability in Copenhagen.

The group celebrated its 100th anniversary a few years ago and has a planning horizon of several decades. In the company's journey towards long-term sustainability it is not just a question of the environment but also of corporate social responsibility (CSR).

– In 2009, Maersk joined the UN initiative Global Compact and thus also accepted the ten principles that the agreement is based on. Within the UN initiative, there are four focus areas which Maersk is working with: Human rights, working conditions, environment and corruption.

– In shipping, we have focused on the issue of climate change. The transport sector as a whole contributes 23 percent of all emissions of carbon dioxide. Most of it is emissions from aviation and road transport; shipping accounts for three percent of the world's total CO_2 emissions. We take our responsibility seriously and have promised to lower our emissions by 25 percent per tonne transported by 2020 compared to 2007.

– We work systematically and methodically with our sustainability goals. We have 100 projects running in order to bring down energy consumption and emissions from the ships that the group operates. One example is exhaust recovery which immediately brings down the energy consumption of the larger ships by ten percent.

– Compared to a road vehicle, the ship is unbeatable. When I take the car to the shopping centre to buy new shoes, I generate more CO_2 emissions than transporting the shoes from Asia to Gothenburg.

Local initiatives for sustainability

Locally it means cooperating with the stakeholders found here, e.g. the Port of Gothenburg. One of the port's initiatives is the programme for better bunker fuels, which aims at having ships change to fuels with less than 0.1 percent sulphur when they approach Gothenburg.

Both Broström tankers and Maersk Line container carriers joined the programme early on.

– A shift to better fuels leads to better health at the same time as our customers' environmental footprints from the chain of transport is reduced, says Christian Juul-Nyholm, Manager of Maersk Line Scandinavia. Our emissions of sulphur in the port area decreases by 90 percent by the change of fuel, which takes place six nautical miles outside Vinga.

– Maersk Line's environmental goal is to be rid of sulphur emissions completely from shipping.

During the spring, the tugboat and response company Svitzer will take delivery of two new ships, known as Eco Tugs. At least one of them will be stationed in Gothenburg. The new ships have diesel-electric propulsion and will reduce CO_2 emissions from towing by up to ten percent in one blow.

The ships are also equipped with catalytic converters and filters which reduce emissions of NO_x and SO_x by over 80 percent. As always, Svitzer uses shorebased electricity during port stays in Gothenburg.

The terminal operating company within the group, APM Terminals took over operations of the container terminal in Gothenburg at the beginning of this year, and will invest 800 million SEK during the next five years. These investments will give more efficient logistics, which will save both money and the environment. APM Terminals continue the environmental ambitions initiated by the former owner, the Port of Gothenburg. E.g. every second container is transported by railway. The well developed rail shuttle services reduce the number of trucks by more than 500 per day.

– When it comes to climate change we know that we are part of the problem but we have also decided to be part of the solution. Even if it is a long way to get there, we have come a good distance towards the goal, says Annette Stube.

A.P. Møller Maersk A/S (Mother company): Turnover about 380 billion SEK. Total number of employees: 117,000 in 130 countries. In addition to shipping the group is also large in e.g. oil production and logistics.
Maersk Line: Fleet: About 500 container carriers which operate in all parts of the world. Maersk Line makes about 35,000 port calls per annum. Total number of employees: about 25,000 persons, about 120 of them in Gothenburg.
Maersk Tankers where Broström is a part: Fleet: About 250 tankers operating in all parts of the world. Broström makes about 6,000 port calls per annum. Total number of employees: About 2,400 persons in Maersk Tankers, of these about 50 in Broström in Gothenburg.
Svitzer: Fleet: About 500 tugs in ports of which 5 in Gothenburg. Total number of employees: About 4,500 persons, about 50 of them in Gothenburg.
APM Terminals: In Gothenburg since 2012: Total number of employees: About 24,000 persons, of which about 400 in Gothenburg.

For more information about the group's sustainability work, please see www.maersk.com.

Wind turbines and
– a part of Stena Line's en

Even the most environmentally friendly mode of transport can be improved. That understanding l
which were started ten years ago. Since then, total energy use has declined by 30 percent and r
unchanged transport capacity.

For a long time, Stena Line has been in the forefront in the environmental area. As early as 1989, the first ferry for Germany was using shoreside electricity during port stays. This was long before other shipping companies followed.

Since environmental awareness has been large, it was also natural for Stena Line in 2002 to be certified in accordance with the independent environmental certification ISO 14001. Such a certification involves a promise of a continued improvement of environmental performance.

– With ISO 14001 a start for a more structured and comprehensive effort was made, says Stena Line's Per Wimby, responsible for the environment.

– Through the certification we received a map to relate to. Having analysed the whole operation from an environmental point of view, we knew where we were and where we were going.

Everyone should contribute

In 2005, the environmental effort was established and communicated throughout the organisation. Now everyone should contribute to lower Stena Line's environmental impact. The overall goal is to minimise emissions to water and air, lower energy consumption, sort more and increase the staff's awareness of environmental work. A concrete and measurable goal was to try to lower energy consumption by 2.5 percent; year by year by year…

A total of 200 projects have been started which will all contribute to the positive development.

One of them was to inspect lighting onboard all ships; fluorescent lamps were exchanged for low energy lamps, dimmers and individual controls were installed so they only gave light when it was needed and on board the new ships, lights are automatically turned off when the passenger leaves the cabin.

The company also has sun film on all windows on board and on office windows ashore. This way the warming effect of the sun decreases as does the need for air conditioning.

But Stena Line has also replaced the ships' propeller blades with a more optimised design which increases the efficiency. The Poland ferry Stena Vision e.g. has decreased oil consumption, thank to the new propeller blades by almost four tonnes per voyage. That is roughly as much as a normal house does away with during a year.

ECO-driving at sea

The concept ECO-driving is used by the nautical officers on board. Every trip is planned to reach the destination on time with as little energy use as possible. All relevant parameters like e.g. weather and winds are included in the calculation and pacers are programmed and optimise the trip further. During a year, average fuel consumption is reduced by some four percent.

Also other departments have contributed to the saving of energy among other things by taking up a discussion about times of departure with customers. After a thorough analysis it was decided that it was possible to leave the terminal half an hour earlier. Since the time of arrival in Kiel is the same, the speed can be reduced as can fuel consumption.

A large environmental gain was also made when the two new ferries for Germany were introduced, with larger car decks which could take all cargoes that had earlier been transported in two separate ro-ro ships. Two ships that carry as much as four did previously, everyone can understand the environmental bonus from that project.

Cold ironing – a complicated process

Stena Line has also continued its efforts to use electricity from shore. These days, all Stena Line's ferries are attached to the ordinary electricity supply during stay in port. The new ferries for Germany however, showed that electricity in port is not a simple matter.

At sea, all ships must of course generate their own electricity which is made by the ship's own engines. Even in port it has been natural to use the self-generated electricity, since European land electricity and that produced on board have different frequencies. The electricity generated on board most ships has a frequency of 60 MHz, the same standard used on land in the US; in Europe 50 MHz is used.

The earlier generation ferries for Germany were specially built already in the 80ies for the 50 MHz European standard since Stena Line wanted that in Gothenburg, even

cold ironing in port

vironmental efforts

ies behind Stena Line's environmental investments
nitrogen emissions by 50 percent – in spite of

if it was more expensive. The new ferries for Germany were originally built for another port where land electricity was not an option. When those ferries came to Gothenburg, Stena Line did not want to back off from land supply and a development project was started together with sub-contractors to find a way to convert 50 MHz electricity to 60 MHz. That effort finally paid off and since 2011 there is a frequency converter that enables the ships to use ordinary land electricity on board. According to the Port of Gothenburg, this is a real technology breakthrough which can speed up the development of electricity supply to other ports and other countries.

Less noise

With electricity from shore you do not only save 500 tonnes of oil per year and ferry.

There is also less noise. To further reduce noise levels, frequency modulated fans have been installed on the car deck. They are steplessly controlled by actual needs and the ramps of the car deck have also been given a special noise reducing coating.

All the new ferries have catalytic converters installed which almost eliminate nitrogen oxide emissions (NO_x). The converters have brought the company's nitrogen emissions down by 50 percent. Stena Jutlandica, Stena Germanica, Stena Scandinavica and all of Scandline's ferries in Öresund have catalytic converters.

Wind generators in the bow

One of the most noticed projects is that involving placing a wind power generator in the bow of Stena Jutlandica. The purpose was dual. The generators were to generate enough electricity for lighting the car deck and the structure itself would decrease air resistance and with it fuel consumption. Both these goals were reached, but unfortunately, the power generator in itself was too weak to withstand the forces of weather onboard a ship.

– We have now dismantled the wind generators to analyse the results we have achieved and to be able to develop the concept further. We used a standard product to get started, now it must be adapted to a marine environment, says Per Wimby. This will take place during 2012.

But what will you do after that, you must have plucked almost all the low hanging environmental fruit already?

– It is true that the first few projects were easier. Now every new project costs more for developing work and construction. But we try to find new environmental gains all the time.

The latest project takes place on board the Stena Germanica where food residue is handled separately to be converted into bio gas. To do this a grinder and a large tank are needed, a considerable investment.

– It is more expensive for us to grind all food residues on board to slurry which can be pumped than just sending it ashore as is. But in addition to the satisfaction with the environmental work itself it becomes cleaner onboard when we do not have to handle the garbage sacks with food residue. The grinder is located in the cafeteria and the residue goes into it directly from the tray.

– This project follows the same pattern as all the others. We start small scale on board one ship and as we have our estimates confirmed in practice we implement the results on the rest of the fleet.

– We know now that our environmental involvement works in practice and the goal of 2.5 percent annual energy savings has been more than achieved. That gives us added self confidence to continue in the same direction, says Per Wimby.

Stena Line

Turnover: About 10 billion SEK.

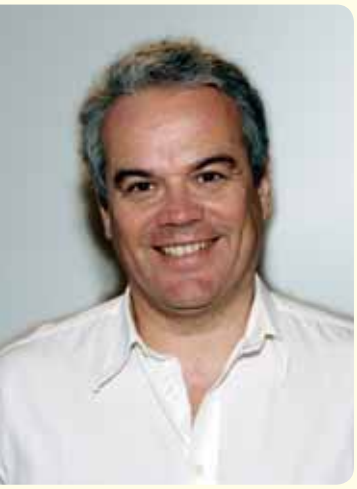
Fleet: 32 ferries, which make up a fine mesh network in Sweden, Denmark, Germany, Poland, Norway, Holland, Great Britain and Ireland.

Total number of employees: About 6,000 persons, about half in Sweden.

The Maritime Cluster – larger than you think

Region Västra Götaland has adopted a maritime strategy where the vision states that: “West Sweden shall be one of Europe’s leading maritime regions with solutions geared to innovation and environmentally adapted growth.” Many people think only of the port and the shipping companies, but the cluster is larger than that.

– We want to develop the maritime industry



Region Västra Götaland (VGR) has involved itself in the maritime cluster for many years. VGR supported the work on the Clean Shipping Index early on; a few years ago, the maritime strategy was adopted and this year the European Maritime Day, EMD, is arranged with the region as a co-organiser together with the Ministry of Enterprise, Energy and Communication and the City of Gothenburg.

– There is a tradition of cooperation in Western Sweden, says Anders Carlberg, the Region’s maritime expert, who works with the EMD programme.

The sea has a central place in the identity of Gothenburg and West Sweden. The many facets of the maritime area of strength are an advantage because it creates a starting point for both broad and deep competence. There is love of the sea that connects all of the different trades working with the sea.

– I hope this manifestation will yield long term results. We have already noticed that the maritime stakeholders are interested in working together and becoming more public. We will, hopefully, be able to continue with public activities about the sea. The living maritime heritage in Gothenburg and all of Västra Götaland is formed by the combined competence in many different maritime institutions, including all types of maritime industry, academia, NGOs and in civil society.

– I also think that the stakeholders of Western Sweden will become even more attractive partners in international cooperation if we work together across boundaries. It is about continuing to build Western Sweden as a centre of maritime competence; only then can world leading research emerge from the University of Gothenburg and Chalmers and our maritime industry continue to work here.

Ships’ insurance for safer shipping

– Working with maritime insurance is both exciting and challenging says Maria Berndtsson, responsible for the P&I department of the Swedish Club.

The Swedish Club started its activities as early as 1872 and for a hundred years it was totally concentrating on the Swedish shipping industry. Today, less than 10 percent of the fleet insured is Swedish owned. The main office remains at Gullbergsvass in Gothenburg.

Activities rest on two legs: Hull (insuring the ship itself) and P&I (the shipowners’ protection & indemnity insurance). When an accident occurs it is the Swedish Club or one of its competitors that help solving the shipping company’s problems. It can range from starting a salvage operation if the ship has run aground to paying the costs of cleaning up after an oil spill.

The Swedish Club is also an international role model as it focuses preventative work. It spreads new research results and encourages its customers to look for potential risks both with equipment and wrong behaviour.

– Work on increasing safety in shipping is continuous and if we can contribute knowledge that can avert an accident, it does not only benefit us as an insurance company, of course, but also shipowners, employees and the society as a whole, says Maria Berndtsson.

The Swedish Club is no ordinary company but a mutual insurance association which is owned by its insurance clients. In June of each year, the annual general meeting takes place and shipowners from practically the whole world come to Gothenburg.

– It is the best days of the year, says Maria Berndtsson. That is when we meet our members and get the faces behind the insurance policies. It is three lovely days with many meetings and exchanges of experiences. The Swedish Club has a total of some one hundred employees with offices at Gullbergsvass in Gothenburg and in Piraeus, Hong Kong, Tokyo and Oslo.

Ships' agents – the master's representative in port

– Here no day is like another, says Mårten Zetterberg; since 2009 employed as a ships' agent with TSA Agency Sweden with offices at Vasagatan.

As a ships' agent, Mårten is the Master's and the shipping company's representative. Absolutely everything that they may need assistance with, he or his three colleagues have to fix, like booking s pilot and tug, send for spare parts, handle the contact with the terminal, arrange air tickets and transport to the airport for crew changes and a thousand other things that can be difficult for a master without local connections to arrange, but easier for someone who lives in Gothenburg.

In addition, the ships' agent makes all payments that the shipping company has to make in port, whether it is pilot and fairway dues or port dues, or stowage, and he also handles all the necessary paper work during and after a port call.

– It is a great job but also very demanding, says Mårten Zetterberg, who got the job after studying Shipping and Logistics at Chalmers for three years. It is not a job for those who want to work 9-5. We work evenings and weekends and are supposed to be available around the clock.

TSA Agency Sweden is part of the same group of companies as Tarbit Shipping; a tanker shipping company in Skärhamn, which runs 14 tankers, which are all in the forefront environmentally.

The fleet contains e.g. Bit Okland and Bit Oktania (page 25) and Bit Viking, the world's first rebuilt tanker which is run on LNG only. The shipping company is in Skärhamn but cargo acquisition and operations are made from Vasagatan and TSA's chartering department TSA Tanker Shipping. In total nine persons work at TSA Tanker Shipping and TSA Agency Sweden.

Classification societies – the inspection organisations of shipping

DNV has played an important role in shipping since 1864, says by Stefan Borggren (left in the picture) district Manager of DNV in Gothenburg.

Det Norske Veritas is an independent foundation whose purpose it is to protect life, property and the environment and was formed in Norway to inspect and control Norwegian merchant ships. In the middle of 1960ies, it also started inspecting the ships of foreign merchant marines and DNV today has about 300 offices in 100 countries and is the second largest classification society with 9,000 employees.

– Traditionally DNV and other classification societies have worked with developing rules for the construction of ships and followed up newbuildings with inspections. We have then regularly surveyed and inspected the ships. Hull and machinery were the main focus areas but lately, the human element has been focused by verifying the safety systems of the shipping companies, ISM and the terrorist protection of the ports, ISPS.

Today we are an important partner of the shipping companies and we assist in the design phase of a ship so that the ship is built in accordance with all the rules. The development of regulations has been enormous these past few years; internationally, nationally and locally.

– Especially in the environmental area, there is a lot happening now, says Mikael Johansson, who is responsible for DNV's advisory service in Sweden. Government agencies as well as customers make greater demands on shipping where environmental performance is concerned. We will soon have new rules on sulphur and nitrogen emissions and stronger demands on shipping to lower the impact of green house gases from shipping.

– This carries with it great challenges for the maritime sector, says Mikael Johansson (right in the picture). But it could also be a competitive advantage for shipping in Sweden where we have been traditionally competent in environmental work.

Sale and purchase brokers – with the world as their market

– As sales and purchase brokers your contacts are your most important asset. This is said by Johan Brax, one of five partners of Brax Shipping.

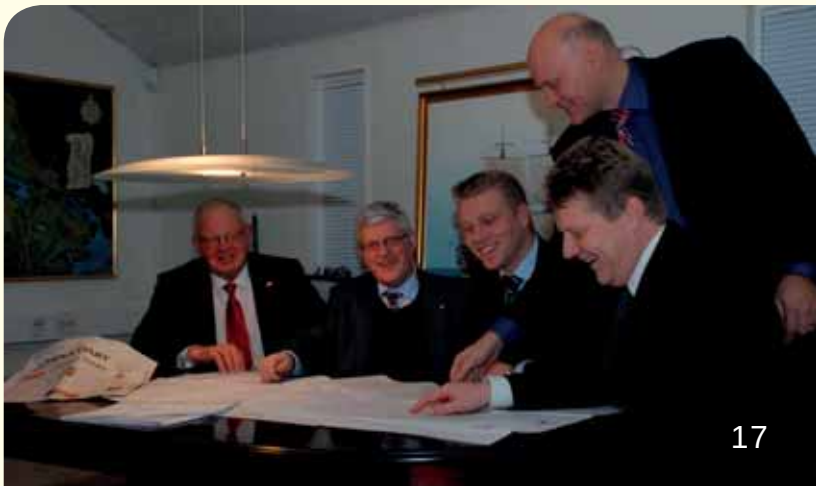
The family business Brax Shipping celebrates 30 years as ship brokers this year and through the years, several hundred ferries, roro and cruise ships have changed owners through this company.

– We truly work all over the world. SOL, our neighbours here at Klippan, and Stena Line are some of our closest customers, but since we work within a small segment of the market, we must work all over the world.

That was the case when two of Stena Line's ferries across the Channel were to be replaced by newbuildings and the old ferries needed new employment. Brax Shipping presented the ships to Marine Atlantic in Canada. The problem was that they were too large for the port in question.

– Stena then shortened the ships by twelve metres. Nothing is impossible, but some businesses demand more than others! Stena showed a fantastic flexibility and decisiveness, praises Johan Brax.

It was his father, Sven-Olof Brax who started the business in 1982 and today seven persons work in the office at Klippan.



– It is not very often that we are all in the office but here we have managed to gather all the brokers, says Johan Brax, standing up. The others are: Sven-Olof Brax, Mikael Lagström, Martin Kärrhage, and Lars Hallengren.

The spider in the web between transporter and industry

– Not in my wildest dreams could we have dreamt this, says Björn Eklund, CEO for Greencarrier with its business in forwarding, shipbroking and liner agency.

– When Stefan Björk and I bought the company more than ten years ago, we were 60 persons in Gothenburg. Today we have 700 employees in 13 countries.

The story of Greencarrier and the two liner agents who were allowed to purchase their own liner agency is a pure success story. It is all about ambition, luck and making the right decisions.

Ambition had already during the 1990ies led Stefan Björk to the position of Managing Director and Björn Eklund to being his deputy of the company that had been the Swedish agent for the Taiwanese liner company Evergreen Line for many years.

Luck had it that the company was for sale approximately as they were themselves ready for new challenges and that a representative of Nordea's business development department happened to call at exactly the right moment.

– In March of 2000, we had suddenly purchased the liner agency for the shipping company that we had worked for almost our entire lives; a shipping company that had gone from absolutely nothing to one of the largest liner companies in the world during our professional lives. We had fought for it for a long time but it was not until everything was ready that we sat down to discuss what we actually wanted with our company. Before that we had not dared to.

Strategy for the future

The two main owners locked themselves up in a hotel in Mölle for two days and worked through different strategies for the future.

– We could focus on our liner agency alone, work hard, make a lot of money and pay off all debt as quickly as possible. But that would mean living with the knowledge that we could lose the agency agreement at any time. Most shipping companies buy out their agencies sooner or later and where would that leave us?

– Our second alternative was, after clearing all debt, abstain from withdrawing the profits. All surplus money should be invested into new activities. In short, broaden our base and make us more independent.

They chose the latter alternative

– The liner business we could handle in our sleep; we had done that all our lives. But we also realised the importance of a really professional board, so we recruited two persons from outside to supplement the two of us. This added important competence to the company; all our suggestions received a second opinion.

Another strategic decision that was made early was enlarging the agency network into the Nordic countries.

– Once again we were lucky. The owner of the Danish agency retired and those in Norway and Finland came up for sale. As a bonus we received the agencies for two Baltic countries.

– In short, we wanted to broaden our Nordic network to become attractive to the large Taiwanese shipping company. Whichever way you look at it, we are not large in Sweden, not measured by Asian standards.

– But, above all, we needed to expand on the forwarding side.

The Nordic countries – our only focus

Björn Eklund is very precise about one thing. Even if Greencarrier will grow, they will never leave their Nordic focus. There are already too many companies in logistics that have been purchased by large global enterprises that have reorganised and centralised; moved important strategic functions abroad and even weakened the local engagement.

– To us, Sweden, the Nordic countries and the Baltic States remain in focus, and every one of our customers should feel that.

The company that had 60 employees in 2000 has increased its employment more than ten times in ten years and it has been done with four important catchwords inscribed on the company's soul: commitment, participation, sense of humour and joy.

–Those are not just words to us; they really stand for all of us here at Greencarrier. What has kept Stefan and me together has always been all our laughter and joy. It goes through the whole organisation, but without removing the consciousness of why we have our jobs. As a liner agent you always have to be at your best, everything we do can be terminated after six months' notice. We, and all our employees, must at all times prove to our clients that we are better at acquiring customers for them than they are themselves. And that we do it in a more cost-efficient way, says Björn Eklund.

Greencarrier is made up of three divisions:

Greencarrier Freight Services is the forwarding company with 400 employees in offices in 13 countries. As a freight forwarder they purchase the necessary transport be it road, railway, air or maritime transport.

Scandinavian Shipping & Logistics operates its own terminals and is ships' agent, brokers and liner agent for Höeg Autoliners A/S. 200 employees in seven places in Sweden and Norway.

Greencarrier Liner Agency is liner agents for Evergreen, one of the world's largest liner shipping companies. 100 employees in the Nordic and Baltic countries i.e. seven countries. At head office there is also a staff function with 20 employees. A total of 120 work at the head office in Gothenburg.

We deliver roro equipment to the world's ships

– We originate from the Swedish shipbuilding industry, says Per Croner, MD of TTS Marine AB, which delivers roro equipment to the world's car and roro carriers. TTS Marine AB has its head office in Gothenburg and is part of the Norwegian group TTS Group ASA, which has subsidiaries in e.g. China and Korea.

Many people probably thought that the Naval Architect education at Chalmers would vanish at the same rate as the Swedish shipyards were ousted but TTS Marine is the proof of the opposite. Today 85 employees and 25 consultants work in Gothenburg with design and manufacturing of advanced ships equipment.

Many employees are Naval Architects, but there are also Marine Engineers, graduate Business Administrators and Civil Engineers. Together they form a team with different tasks in a process that aims to deliver and maintain roro equipment to as many ships as possible. The equipment ranges from stern ramps, internal ramps, bow doors, vertically adjustable car decks and side doors.

– Our market is global and most of our employees travel a lot in their work. This goes mostly for those in the sales department, but also in contracts, design and purchasing departments. The main emphasis is on Asia, mainly Korea, Japan and China where the most numerous and largest shipyards are.

– But we also deliver equipment to yards in Europe that build ropax and cruise vessels.

20-30 newbuildings every year

– We usually deliver equipment to about 20-30 car carriers and roro ships per year and we are equally proud of every new contract we get, says a satisfied MD.

In addition to deliveries to newbuilding yards, the service department finds a growing market.

– Our service engineers often travel to the world's large ports and repair yards to safeguard that our customers, the shipping companies, have well functioning equipment at all times. In principle, they are available around the clock.

– It is a challenge to be market leaders in competition with e.g. Korean suppliers who have certain advantages because of a different level of costs and proximity to the yards. With a high competency, creativity and efficiency we have had market successes and we look brightly to the future in spite of the downturn in shipping.

Research and Development – spearheading the future

Stena invests great resources into research and development work. It is investments which have resulted in better safety, larger cargo capacity and lower maintenance costs.

– But now our focus is increasingly lower bunker consumption which generates lower emissions says Harry Robertsson, Technical Director of Stena Rederi.

Harry Robertsson describes his department's 15 employees as qualified marine technology advisors of the whole of Maritime Stena, i.e. Stena Line, Stena Bulk, Concordia Maritime, Stena RoRo and Stena Drilling.

– It is both exciting and filled with challenges to work with such disparate types of vessels as we have, like ferries, drilling rigs, roro and tanker vessels.

Each of the about 75 ships and rigs that have been ordered, built and delivered to the Stena Group during the past decade has its special conditions which must be met to make them efficient in their segment. It is in the light of this that the interest in research and relevant development projects should be seen.

Air under the ship – for less friction

One of the more spectacular research projects during the past five years is the AirMAX project. The AirMAX is, simply put, a model of a 15m tanker, built with a bottom cavity which is pressurised to create an air bubble under the ship. The air bubble lowers the friction against the water, which we hope will lead to lower fuel consumption.

The problem has earlier been to make the air stay in the bubble. The AirMAX succeeds in this thanks to a uniquely built bulb, patented by Stena.

– We hope to achieve 30 percent lower fuel consumption, but have not reached that so far.

Harry Robertsson emphasised, however, that irrespective of results, the project is money well spent.

– We learn from our trials all the time, they are at the heart of all research and development work. Up to now we have made a great number of trials during two summers and we will make even more together with Chalmers and SSPA before we can draw any firm conclusions.

This project demonstrates that research takes time and that many areas of competence need to be coordinated to reach results.

The project's budget is about 50 million SEK and results are expected during next year.

With methanol in the fuel tanks

Environmental savings is not only about finding ways to lower fuel consumption. There are also projects which aim to find entirely new fuels for the shipping company's large fleet of vessels; like methanol.

– Since the beginning of the year, we work with a project where we will install special equipment to enable our rail ferry, Stena Scanrail to run two auxiliary engines on methanol, says Per Stefenson, responsible for the project in Stena's Technical Department. The methanol is made from natural gas, abundantly available in e.g. the North Sea, but can in the future be made from bio fuels.

– Today the talk is mainly about LNG, i.e. liquid natural gas, but LNG demands enormous investments in port infrastructure and specially designed bunker vessels which affect the price. In addition, it is extremely expensive to refit a ship for LNG operation. The methanol is probably just as good as LNG but much easier to handle and demands fewer changes onboard or in port. No one has seriously tested if methanol works as a marine fuel yet. That is what Stena now, as the first shipping company in the world will find out.

Both running on LNG and methanol is considerably more expensive than the fuel used today, but it can be an alternative when the IMO demands cleaner marine fuels starting in 2015.

– We do everything we can to find efficient solutions but all research takes time, says Harry Robertsson.

Technology leaps take time

– A lorry is changed every five years, while the life of a ship is 20 years or more. The environmental demands on lorries have been introduced gradually during 25 years, while the lower sulphur contents for shipping is to be realised only seven years after the decision was made in the IMO.

– We must also have an organisation with enough competence to order ships that live up to our demands. That means close cooperation with our competent partners. E.g. we are happy to have SSPA here in Gothenburg. Their large test facility tests our ships long before they become full scale real ships, says Harry Robertsson.

If there is anything he wishes for, it is more time for research and development, in order for shipping to find time to adapt to all the demands we all know will come, not least in the sulphur area.

– If we do not get the chance to take the technology leap in a rational manner, there is a great risk that the only effect will be that maritime transport loses out to road transport. That is nobody's gain. It is better for everybody if as much goods as possible is transported by sea, not on motorways or congested rails.

Stena – A lot more than ferries

Stena, says the residents of Gothenburg and thinks of ferries to Denmark and Poland and across the Channel and the Irish Sea. But how many know that ferry operations are less than 20 percent of Stena's total activities? The rest is offshore, tank and bulk shipping, real estate, metal recycling, wind power and medicines. Among other things.

Ever since Sten Allan Olsson entered the Gothenburg business scene 75 years ago, entrepreneurship has been standing on two stable legs: Stena Metall AB and Stena AB. They have a turnover of about 27 billion SEK each. Stena Metall recycles refuse and metals, is represented in 250 places in 14 countries and has 3,600 employees. Stena AB employs over 15,000 persons in Europe, Asia, Africa and South and North America and activities include the following:

Stena Fastigheter owns real estate and is one of Sweden's largest landlords with 24,000 flats and 300 employees.

Adactum is Stena's company for long term investments. Via Adactum Stena owns e.g. Blomsterlandet, kitchen manufacturer Ballingslöv and environmental technology company Envac. Stena Renewable, which is now investing about half a billion SEK in wind power construction in Sweden, is another Stena company which invests in the environment.

Ferry operations is the largest single part of Stena AB, with about 1/3 of the turnover and about 6,000 employees. (See page 14).

Offshore is almost as large and the most profitable and expanding part of Stena's activities with 1,000 employees. In the last few years, Stena has invested in four Drill Max vessels, which can drill at a depth of 3,000 meters. In addition the fleet consists of three more ordinary drilling rigs. The Drill Max vessels can move at a speed of up to 12 knots, something completely unique. The vessel last delivered, DrillMax-Ice, is also specially ice strengthened to make her perfect for drilling in arctic waters, something no other vessel can do today. The vessels cost about five billion SEK each, so the investments are sizeable, but the business is commercially secured through long time charter contracts with the world's largest oil prospecting companies.

Shipping has more than 6,000 employees and is the maritime part which is not ferries but roro, tanker shipping and manning of ships.

The manning company, Northern Marine in Glasgow administers everything to do with the seafarers onboard, whether it concerns the Stena Sphere's own 100 cargo ships or the 55 ships operated for external owners.

In total the Stena Sphere operates about 150 vessels.

Out of these about 85 are tankers operated by Stena Bulk. Some of them are also owned by Stena Bulk, others by Concordia Maritime, quoted on the stock exchange, or by external owners. But Stena Bulk operates them commercially, market them and fill them with cargoes for various oil companies around the world.

Stena RoRo owns about ten roro ships, which are chartered to a number of different operators and the rest is ferries and offshore units.

Of course there are government authorities in Gothenburg

The Swedish Agency for Marine and Water Management has its head office in Gothenburg, more information on page 27, but both the Swedish Coast guard and the Swedish Maritime Administration are investing a lot in West Sweden.

The Swedish Coast Guard

– We are on permanent alert. If an oilspill occurs in our Swedish waters, the goal is to be there within four hours, irrespective of where it happens, says Bernt Stedt , head of the Rescue Unit at Coast guard Headquarters.

The headquarters of the Swedish Coast guard is not located in Gothenburg but in Karlskrona. But after its most recent reorganisation, the Swedish Coast Guard is divided into two regions; the Region Sydväst is led from Gothenburg. The regions handle current activities while the headquarters in Karlskrona deals with strategic matters; the development of instruments of control, routines and overall direction.

The ultimate goal is formulated by the government in the form of legislation demanding that the Coast Guard be on permanent standby to be able to deal with oil or other dangerous substances which end up in Swedish waters. The standby resources should be dimensioned to allow one unit to be able to begin clean-up operations within eight hours.

– We are expected to collect 10,000 tonnes of oil. We have never had an accident of that size in the Baltic, but it feels good to be dimensioned to handle a worst case scenario, says Bernt Stedt.

– The primary environmental protection vessels are the Poseidon, Triton and Amfitrite of the so called 001-series and later this year, the Coast Guard takes delivery of another four large ships. That will make a total of 15 environmental protection vessels in the Coast Guard's fleet, which also has some 15 patrol boats and a number of smaller boats and hovercraft.

– But many units are needed to cover our 2,700 km long coast, the longest in Europe, Bernt Stedt says.

It is of course not very often accidents happen. In 2011, three serious oil spills happened. Without the work of the Coast Guard, large amounts of oil could have reached our shores.

– Before this we have not had any serious accidents resulting in oil spills since 2003, so 2011 was an unusual year.

In addition to the three serious accidents, 39 other spills, where the Coast Guard's vessels attended and cleaned up minor spills happened.

– It has become very much better in recent years. The attitudes on board have changed and everybody knows that they cannot escape a spill like they may have done before.

In a spill situation, the Coast Guard is also well served by its three aircraft, which can both observe what the spill looks like in the way of size and oil quality and quickly identify potential environmental culprits.

If a major accident should happen to a ferry or cruise vessel, the rescue would be coordinated with the Swedish Maritime Administration's Sea and Air Rescue Services, where resources are put at the disposal of the rescue co-ordinator. Thus the real rescue capacity becomes much larger – if the worst case scenario would occur.

But, as already mentioned, in spite of the fact that shipping has increased much during the past few years, accidents and incidents have in fact become fewer.

The Coast Guard has 750 employees and a number of ships, which are on call around the clock to intervene anywhere along the Swedish coast – if the worst thing possible happens. What do you do in between?

– We perform a number of controls. On behalf of the Swedish Agency for Marine and Water Management we check that fishing vessels do not have larger catches on board than their entitlements, on behalf of the Swedish Transport Agency we check lashing and other cargo securing on board merchant vessels and on behalf of Customs and Police we handle border controls at sea. We also perform maritime traffic controls in archipelagos and at sea to ensure that rules and regulations are followed.

– You could say that all our ships, both environmental protection vessels and others are utilised as patrol vessels which, when the alarm sounds, are converted into environmental protection units. All our seafarers are regularly trained to combat oil spills and know exactly how to behave should an accident occur, but fortunately these very seldom happen.

The Swedish Maritime Administration invests in Gothenburg

The Swedish Maritime Administration makes major investments in Gothenburg during 2012. With increased focus on safety at sea, innovation and coordination, shipping will grow; and then not only in Gothenburg but in the entire country.

The Maritime Administration has experienced some tough years. Unlike road and rail transport, maritime transport infrastructure is not financed by tax money, but directly by the users. It means that in a recession the politicians do not add extra money; instead income must be raised or costs cut.

– We could not raise fairway dues. That would only have weakened the maritime part of transport even more, says Jonas Vedsmand, Head of Marketing of the Maritime Administration. Thus we had to find other ways to improve our results.

– The Maritime Administration has improved efficiency by working smarter, lowering the costs that can be lowered and influencing income as much as possible. It resulted in an improved net result of 100 million compared to 2009. A common way to work smarter is more centralisation, but in Gothenburg you had to think differently.

– We wanted to centralise all TVS activity to Södertälje to save money but when shipowners, masters and brokers protested, we had to rethink.

Coordination and cooperation

The new way of thinking involved cooperation. Surveillance of shipping is now coordinated with the Port of Gothenburg. The port has its own traffic control system and the synergies became apparent and rent negligible. In the same way, cooperation and coordination became catch words when the Maritime Administration decided to develop its simulator activities.

– We move our large ships simulator to Chalmers. We have access when we need to train our pilots, but the rest of the time it is used by nautical students or by working nautical personnel, who need further training. When it is used externally the Maritime Administration receives an income.

In addition, the cooperation with Chalmers has led to further developments and in April 2012, parts of the department of innovation moved to Gothenburg.

– We will make things happen and be the maritime industry's natural hub of innovation. We will be close both to the researchers and the every day workings of shipping and single out the research results which can make Swedish shipping more efficient in a concrete way. We will join Chalmers, the shipping industry and the engineering companies together to achieve what we refer to as Blue Growth.

The EU financed Mona Lisa project which is managed from Gothenburg today is a part of this effort.

Mona Lisa shows the best way at sea.

The 200 million SEK project Mona Lisa will result in smarter maritime transport with the aid of modern technology and quality assured fairways. The cooperation within Mona Lisa does not only involve the shipping industry, research institutes and authorities in Sweden but also in Finland and Denmark. The cooperation with industry consists of e.g. expert assistance from engineering companies such as SAAB.

– Stena Line and several other ferry lines have used route planning for a long time, but with Mona Lisa we make it accessible for all other shipping, i.e. even those who do not follow a strict time table. We add port and agency information like when a pilot can be available or the quay is ready and we will be able to guide the master into port in a more distinct way. But we never take over responsibility for the ship; we can only advise the master.

As part of the Mona Lisa project the Maritime Administration will make hydrographical surveys in more places than today's fairways. Under special circumstances some ships might then be able to take a short cut in comparison to when all ships are routed through the main shipping lanes. This will lower environmental influence. The World Wildlife Fund also participates and contributes its knowledge so that shipping can consider e.g. breeding times for sea birds.

– With this information our system becomes very dynamic. Every route plan we deliver is based on current information.

With modern technology you should also find methods to get better information that the crew has the right certificates and gets enough time off for rest, all this to keep safety at the highest possible level. For the same reason, the ships that are part of the project should be able to communicate with each other.

– Every ship has a radar where you can see where the other ships are, even in a thick fog. It is elementary technology but with our system you cannot only see exactly where the other ship is but also see what its route plan looks like. This, of course, minimises the risk of collision.

– When the Mona Lisa project is fully developed in 2014, we will be able to spread it further within the EU in the first place; all this in order to strengthen Swedish and EU shipping. And our dynamic route planning system Mona Lisa will be a Swedish precursor, just like we have previously shown the way with the roro concept and the AIS, says Jonas Vedsmand.

The Swedish Maritime Authority

The Maritime Authority offers efficient waterways, modern services and maritime partnership for growth, competitiveness and sustainable development.

With is starting point in its leading role in the Swedish maritime cluster they want to create a basis for business and social benefits by proactive, borderless cooperation. The Maritime Administration calls its way of being, acting and thinking "Maritimt Partnerskap ™" (Maritime Partnership).

Turnover 2011; 2 billion SEK.
Employees: 1,100.

No other European oil company has adapted its activities to the environment as Preem has.

– We are going to lead the transformation towards a sustainable society says Preem's President and MD Michael G:son Löw. We are no longer just an oil company; we are a fuel company which can produce fuels from either crude oil or renewable raw materials such as tall oil.

Good refineries – are there any?

Of course crude oil is still the most important raw material used in Preem's refineries in Gothenburg and Lysekil. But the fact is that it is no longer just about fossil fuels. The Gothenburg refinery is, e.g. the first in the world to produce diesel made from tall oil.

– We call it Preem ACP Evolution Diesel and it consists of renewable raw materials up to 22 percent, explains Michael G:son Löw.

Preem is Sweden's largest oil company and the fact is that even if Norway and Denmark have more oil than Sweden, there is no Nordic company that refines more oil than Preem. Preem accounts for 30 percent of the Nordic and 80 percent of the Swedish refinery market.

Each year, Preem imports 15 million tonnes of crude oil, mainly from Russia and the North Sea and from this emerge 15 million tonnes of refined products, such as gasoline, diesel and heavy oil. In total, Preem transports about 30 million tonnes of oil in our Swedish waters.

Preem accounts for almost 20 percent of maritime transport

Preem is thus the company that generates the largest volume of shipping in our Swedish waters. According to the Swedish Maritime Administration a total of 164 million tonnes were handled in Swedish ports during 2011. Preem alone thus accounts for almost 20 percent of all cargoes handled in our Swedish ports. Its own port in Lysekil, Brofjorden, is the second largest port in Sweden.

When Preem does something, it affects shipping along our coast directly.

– We have decided to do all we can and for us Clean Shipping Index (read more on page 26) is an important tool, says Katarina Sundvall, Shipping Manager of Preem. Preem has participated since the start in 2007 and now works to adapt the index to oil transportation.

Katarina Sundvall received Matirime Forum's Award 2011 for the environment. She received the price because she has implemented Preem's clear and offensive goals for sustainable transport development and made Preem a torchbearer within its industry.

Since Preem does not have any ships of its own, the environmental responsibility is to make relevant environmental demands when purchasing maritime transport. One of the demands is e.g. that all time chartered vessels must have NO_x-reducing equipment on board and in 2016 at the latest, the chartered fleet should emit less than 3 g NO_x/kWh, which is far lower than the world fleet average.

Emissions of nitrogen oxides halved

– During a 5-year period, Preem has halved nitrogen oxide emissions (NO_x) from the time chartered vessels, says Katarina Sundvall. In addition, Preem makes demands on emissions of carbon dioxide (CO_2).

The problem with carbon dioxide is that it cannot be removed, except by saving fuel.

– Preem started a slow-steaming project where the speed of the vessels is optimised to reach the quay at the right time and thus avoid anchoring.

With this relatively simple action Preem lowered carbon dioxide emissions by 4,500 tonnes in 2011.

Five vessels belonging to four shipping companies stand out as good examples:

- Bit Okland, which is owned by Tarbit Shipping in Skärhamn, has among other things, double engines with nitrogen oxide reduction, which halves nitrogen oxide emissions.
- Wisby Wave, owned by Wisby Tankers AB has an SCR, which reduces nitrogen oxide emissions by about 80 percent.
- Olympus, which is owned by Sirius Shipping AB is the first ship built with a unique exhaust gas purifying system, which reduces emissions by 90 percent compared to an ordinary vessel.
- Ternvag, owned by Tärntank Rederi AB, has the same type of purifying equipment as Olympus.
- Bit Oktania, also owned by Tarbit Shipping will install the same type of catalytic converters as the two ships above during the spring of 2012.

– After many years of intense environmental and safety efforts we now have access to a technology which seriously lowers emissions from our marine transport, says Michael Löw, MD of the company.

But even if they are proud of the results achieved, the management of Preem does not rest on their laurels.

Zero vision emissions

– We strive towards a zero vision of emissions both into the air and water, Together with the Swedish Shipowners' Association, SSPA and Sirius Shipping AB, Preem participates in the project EVO-ship, a zero vision ship fuelled by LNG and with a unique design with e.g. catalytic converter and particulates filter which almost eliminates emissions of CO_2, NO_x and SO_x.

– As a fuel company Preem has a unique possibility to influence the future by creating environmentally adapted fuels, says Michael G:son Löw.

As part of that effort, Preem is one of the largest producers of sulphur free diesels in the world and the first to produce and sell diesel made from tall oil, a residue from the Swedish forest industry, Evolution diesel. Through new technology they have managed to offer products that affect the environment as little as possible and, at the same time, received confirmation of how well they have succeeded internationally. The independent Solomon Study compared all West European refineries and no competitor could reach Preem's environmental achievements. It turns out that Preem emits 20 percent less carbon dioxide, 70 percent less nitrogen oxides and 90 percent less sulphur oxides compared to the mean values of competitors.

– We are very happy with these figures; they prove that we are on the right track, says Michael G:son Löw.

By-product becomes residential heating

Preemraff in Gothenburg refines up to six million tonnes of crude per year. That production generates surplus heat, which is delivered in two waterborne systems to Göteborg Energi. This heat is used in the district heating network and in Volvo's production. 16 percent of all energy that Preem uses in its processes is reused in this manner.

The heat that comes from the refinery is enough to heat 30,000 residential houses in Gothenburg.

– Not many residents consider this when they drive past our installation on Hisingen, says Michael G:son Löw.

– In total we deliver over 490 GWh to the district heating network and Volvo during one year. If that had been produced in the ordinary way, 74 tonnes of nitrogen oxide and 148,000 tonnes of carbon dioxide would have been emitted to the air. It makes a considerable environmental gain reusing our surplus heat.

The refinery in Lysekil is twice as large as the one in Gothenburg. There too surplus heat is utilised and heats 2,600 dwellings, communal facilities and industries. At the refinery in Lysekil there is unused surplus heat of 800 GWh. This corresponds to heating more than 53,000 residential houses. The company also examines the possibility of converting the surplus heat into electricity.

Does Preem dare to call itself the good refinery?

– We know that we have a double responsibility. Society is dependent on our products, but for society to survive long term we must see to it that they are produced in an environmentally and ethically sustainable way.

– We lead that transformation to a sustainable society. We think this is great, even if we always endeavour to be better still, says MD Michael G:son Löw.

Preem has also decided to invest, together with Skangass, 700 million SEK to build a LNG terminal at the Preem refinery in Lysekil.

The new LNG terminal is planned to be ready at the end of 2014 and will create close to 100 new jobs during the period of construction.

– LNG is a very interesting product for Preem for many reasons. It is not only economically advantageous. The carbon dioxide emissions will also be reduced by some 130,000 tonnes per year as a result; and it is an interesting product for our customers. LNG can replace heavy oils with our industrial customers and thus lower their environmental impact. Other exciting areas of use are LNG as fuel for ships and, in a longer perspective, even as fuel for modern short- and long-haul lorries, says Michael G:son Löw, CEO and MD of Preem in a press release just before going to press.

Since this interview was made, Michael G:son Löw retired March 31 but remains on Preem's Board. New MD is Petter Finn Holland, who comes from ExxonMobil.

Clean Shipping Index – for greener shipping

Clean Shipping Index started as an idea with two environmental motivators, continued with a list of demands by thirty cargo owners and is today a world leading tool for buying maritime transport. More than 1,600 ships are already included and now the cargo owners are taking the next step.

Today Clean Shipping Index is a valuable data base, full of environmental data for over 1,600 ships. Through the data base cargo owners can see which ships have the best environmental performance in a way easy to grasp.

Consumer power is the best driver of improvement of the environment. Here the buyers of maritime transport, i.e. cargo owners, set the standard, says Sara Sköld, MD of Clean Shipping Index.

Clean Shipping Index was started in 2007 by Ulf Duus and Jan Ahlbom and has been driven forward by an increasing number of cargo owners starting to make environmental demands on shipping. West Swedish authorities have supported the project from the start and today the City of Gothenburg, the Swedish Agency for Marine and Water Management, Region Västra Götaland, Göteborg Region Association of Local Authorities and the County Administrative Board own the name with all its information.

– The 30 cargo owners who have joined the project have been a driving force all the time. Earlier, every company with environmental ambitions has had to request the information from all the different shipping companies they negotiated with. For the shipping companies it has been a time consuming process to reply to different questions from cargo owners. The questions can be anything from the sulphur contents of the bunker fuel to how sewage is taken care of, different companies focus different things.

Sara Sköld, MD.

From the start all information in the Clean Shipping Index data base was based only on the shipping company's own information and the demands from the cargo owners for procurement was that the shipping company reported at least 20 percent of its fleet. These demands were increased step by step to 90 percent and today, at least two if the company's ships have to be surveyed by a third party. Today, the classification societies Lloyd's Register, DNV and Bureau Veritas offer such third party verification.

– Not that we have to question the information from the shipping companies, but now we KNOW that the information from the verified ships is correct, This way, the classification societies have also been able to verify so called "Green Ships" or ships with a "good performance" in accordance with the Clean Shipping Index, says Sara Sköld.

To receive this nomination, the ship must have at least 35 percent of the points in the categories carbon dioxide (CO_2), nitrogen oxides (NO_x), sulphuric oxide and particulates (SO_x) and (PM) chemicals and water/waste and have an average total value of over 50 percent.

– A ship that only lives up to the legal demands found in Sweden and the IMO (United Nations International Maritime Organization) does not get a single point in the data base. Each point, in fact, means that you do something voluntarily, over and above the norm.

The three ships that have so far qualified are Transatlantic's Trans timber, Furetank's Fure West and Sirius' Olympus.

It costs the shipping company time, money and energy to make the evaluation itself. 15 of 1,600 ships have been validated by a classification society and of those three managed to reach the "good performance" level. But those ships, on the other hand, can brag about being world leading when it comes to environmental performance. Through our international network we know that no other index has as much detailed environmental information about so many ships.

In addition to rating individual ships the shipping company can choose to have its entire fleet evaluated for environmental performance. Up to now, only Maersk has done this, but since it is the world's largest container shipping company it naturally has a great impact, even globally.

– We are pleased that they have accepted this challenge. Now they can show proof of what environmental impact their business has. It is information that they share with their customers, which clears the way to further improvements.

But only the 30 affiliated companies have access to the information in the data base, the information is not public.

– We work with positive role models such as Maersk and the three ships with "good performance" according to the Clean Shipping Index. We hope that the data base will be increasingly transparent when more shipping companies choose to have their data verified.

To continue the thirty cargo owners have decided to establish the non-profit organisation, Clean Shipping Network where they will continue to develop the use of the Clean Shipping Index data base in preparation for purchasing with the shipping companies. The membership will now also be broadened abroad.

– Our cargo owners are global companies which more often have a Swedish base. We now continue to the European and global levels. Shipping is global and our database contains ships from the whole world; of course, we want to spread the use of the data base as a purchasing tool to the whole world.

Read more: www.cleanshippingproject.se

Shipping company under development – for a living archipelago

For 90 years, Styrsöbolaget has operated traffic in the archipelago with passenger and cargo vessels. The jubilee is celebrated with a promise from MD Bertil Karlsson: – We plan to continue to be sine qua non for a living archipelago and an obvious link between the shores of the river in Gothenburg, for at least another 90 years.

The view from Styrsöbolaget's windows is hard to beat. Today the sea is like a mirror, the houses in Långedrag glow white in the sunlight and in the distance the Älvsborg terminal and some roro ships on their way to England can be seen.

Styrsöbolaget's ships do not go that far, operations reach from traffic across the river and the islands in the southern archipelago.

The fleet consists of fourteen ships where the latest acquisitions are the carbon fibre catamarans Valö and Rivö which have now been in service for over a year and have proved to deliver what the building yard promised: higher speed and less environmental impact.

In shipping this is a difficulty since fuel consumption normally increases much more than speed.

– It is an old dream to decrease the travel time for those who commute into Gothenburg, but because of increased swell and fuel consumption it has been difficult to find a working concept. The turn around came with an article in a Norwegian trade magazine about a carbon fibre catamaran which made a minimal amount of swell along with low fuel consumption.

Carbon fibre is 40 percent lighter than aluminium, which in turn makes it possible to install engines with lower effect.

– In spite of the fact that we increased speed from 14 to 27 knots, and thereby in some respects half the travel time to Vrångö, our carbon fibre vessels consume less fuel per nautical mile than our conventional ships. Valö and Rivö which were built at the shipyard Br Aa are the world's first HSC classed carbon fibre catamarans, so here you could say that we are at the forefront.

Styrsöbolaget has also done other things to reduce environmental impact. A fuel saving programme is now under way to invest in fuel measurements on board in combination with a web-based analytical tool, Blue flow.

– It is surprising how much fuel you can actually save only by minor changes of e.g. routes or ways to drive. But it is not fuel measurement as such that is the solution but the commitment displayed by crews. We think that it is vital and stimulating to see how much we can do for the environment without lowering the service in any way.

– We who work in Styrsöbolaget are proud of what we do for a living archipelago and river, says Bertil Karlsson.

Just a tiny puddle

The water surrounding Sweden is only a tiny fraction of the world's oceans. Ten percent of the world's shipping travels here. This puts a high demand on environmental considerations within the maritime sector.

WATER WAYS

Waterways is published by the Swedish Shipowners' Association, The Swedish Shipbrokers' Association and West Sweden Chamber of Commerce.

The Swedish Shipowners'Association is a trade association for the Swedish Maritime Industry and represents Swedish shipping companies with activities all over the world. About 70 members. Headquarters in Gothenburg.

The Swedish Shipbrokers' Association is a trade association for ship brokers, agents and foreign liner companies active in Sweden. About 135 member companies, many small. Headquarters in Gothenburg.

West Sweden Chamber of Commerce is a politically independent industrial organisation which is involved in creating growth and development in West Sweden by helping companies to make more and better business deals and by influencing political decisions. About 2,600 member companies. Headquarters in Gothenburg.