



ROYAL ASSOCIATION OF NETHERLANDS SHIPOWNERS

Boompjes 40

3011 XB ROTTERDAM

Tel.: 010 - 414 60 01

Fax.: 010 - 233 00 81

[kvnr@kvnr.nl](mailto:kvnr@kvnr.nl)

[www.kvnr.nl](http://www.kvnr.nl)



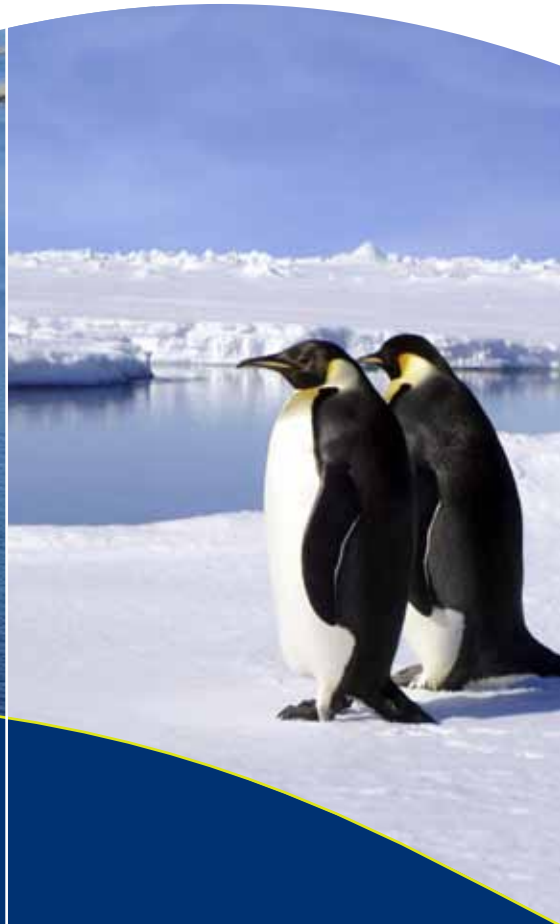


ROYAL ASSOCIATION OF  
NETHERLANDS SHIPOWNERS



## GREEN AND POWERFUL SHIPPING

THE ROYAL ASSOCIATION OF NETHERLANDS SHIPOWNERS' VISION  
ON THE SHIPPING INDUSTRY IN THE NETHERLANDS IN RELATION  
TO THE ENVIRONMENT



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*A foreword by Tineke Netelenbos,  
president of the Royal Association of  
Netherlands Shipowners.*



## *Green and powerful shipping*

Medium and long-term projections indicate - despite the current world-wide recession - a recovery of world trade, including the shipping industry. Consequently, the shipping industry is set to become a more significant source of pollution and disturbance to the environment, if no further measures are taken.

In recent decades numerous treaties, conventions and regulations have been drawn up and come into effect, all of them aimed at the protection of the marine environment. As a result, the shipping industry has become a highly regulated industry, possibly the most regulated one in the world. In many respects this has led to a spectacular reduction in environmental damage.

Over the last few years the emphasis has shifted to the reduction of emissions to air, like nitrogen (NO<sub>x</sub>), sulphur (SO<sub>x</sub>), particulate matter (PM) and, of course, carbon dioxide (CO<sub>2</sub>.) Emissions to water, too, are being increasingly regulated by the new Ballast Water Management Convention, which has been signed by the Netherlands as well. Ballast water discharge –which potentially includes organisms that are alien to the local environment– will be prevented by the convention.

The Royal Association of Netherlands Shipowners (KVNR) and its members are making every effort to achieve further significant improvements to the shipping industry's environmental performance. The challenge here is to find a way to combine environmentally responsible shipping with an economically sound and powerful industry in the Netherlands, within Europe and worldwide.



*Tineke Netelenbos:*

*"I am fully confident that the future of the shipping industry in the Netherlands will be both green and powerfull."*

The KVNR has expressed its ideas on environmentally responsible shipping and economically sound management in the following vision:

### *The shipping industry in the Netherlands: green and powerful shipping*

1. In 2050 zero emission ships will be a reality
2. From 2020 the shipping industry's growth will be carbon neutral
3. In 2050 carbon reductions of 50% compared to 2020 will have been achieved

Said vision has been set out in the Energy Efficiency and Carbon Reduction Covenant for the shipping industry. It was signed by the minister of Infrastructure and the Environment, shipowners, shippers, shipbuilders and dredgers/offshore in 2011. Green shipping will provide opportunities for the Dutch shipping industry. Investments in clean ships will pay off.

Reductions in fuel consumption equal reductions in cost for shipowners, which in turn will benefit their competitive position as well as the environment. Shipowners are already taking their responsibility with a large number of concrete measures. However, shipowners are also dependent on other parties within the maritime cluster and the logistic chain as a whole. Therefore, the KVNR will intensify their existing partnerships and enter into new ones whenever possible.

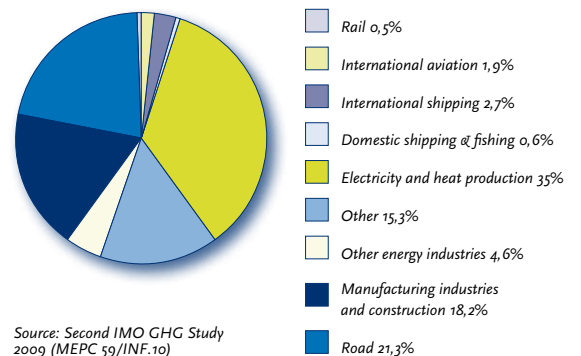
New regulations, therefore, should be based on sound impact assessment and need to be drawn up in close consultation with the industry itself.

Any disruption of the level playing field is almost certain to lead to flagging out and/or a modal shift from sea to road transport rather than to the best possible environmental outcome. In all this, it is vitally important to take into account the specific characteristics of the Dutch fleet with its relatively small vessels and their strong representation in specific segments of the industry and in short sea shipping.

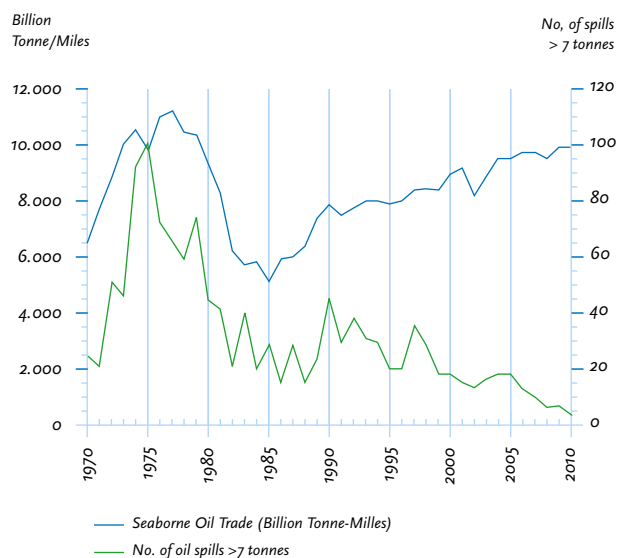


*Thanks to innovations, the shipping industry's carbon emissions per ton/kilo-metre have been significantly reduced.*

Graph A Industry segments' contribution to global carbon emissions



Graph B Seaborne oiltrade and number of oil spills > 7 tonnes



Source: Fearnresearch 1970-1989, Lloyds List Intelligence 1990-2011

## *A lot has been achieved.*

In recent decades, the shipping industry has expanded significantly. Currently, around 50,000 vessels travel the international shipping routes. As the shipping industry carries out 90% of goods transport worldwide it is the backbone of the world economy. International trade in bulk, half-products and goods would simply be impossible without the shipping industry.

The fleet of the Netherlands is one of the youngest and most modern in the world, therefore it is also one of the cleanest.

It occupies a prime position within European short sea shipping, which accounts for 40% of the transport between EU member states. We want to maintain and consolidate that position and this requires that a close watch be kept on the shipping industry's competitive position in comparison to that of other transport modalities, including road transport. If environmental regulations were to lead to a modal shift from short sea to road transport within Europe, congestion on the roads would be increased and more noise pollution, reduction in road safety and increased carbon emissions would be the result. Moreover, said modal shift would be contrary to the European Commission's objective of transferring 50% of overland transport to water by 2050.

### **CARBON REDUCTIONS PER TON/KILOMETRE**

Tariffs have dropped drastically, even in absolute terms. Among other things, this is due to the increase in vessels' size and the implementation of innovations aimed at the significant reduction of fuel consumption per ton/kilometre. Thanks to these developments, the shipping industry's carbon emissions per ton/kilometre have also been significantly reduced. Currently, emissions from the shipping industry amount to 2.7% of total worldwide carbon emissions (Graph A).

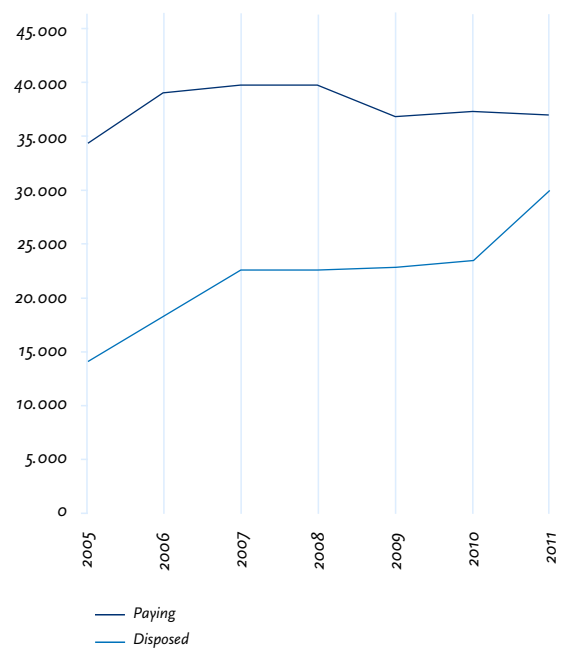
### **LESS OIL DUMPED**

International legislation that has come into force in recent decades has also provided a substantial contribution to cleaner and safer shipping. Double hulls for tankers have become compulsory. The quantity of oil dumped because of accidents or illegal dumping has been cut down considerably over the course of the years (Graph B).



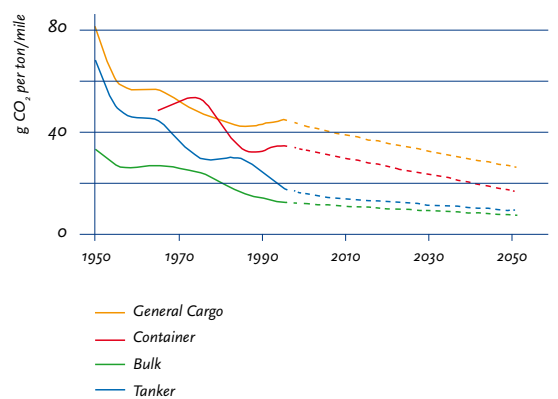
*The Dutch fleet is among the youngest  
and most modern in the world and  
therefore it is also among the cleanest.*

Graph C Total numbers of ships paying and disposing in Dutch seaports

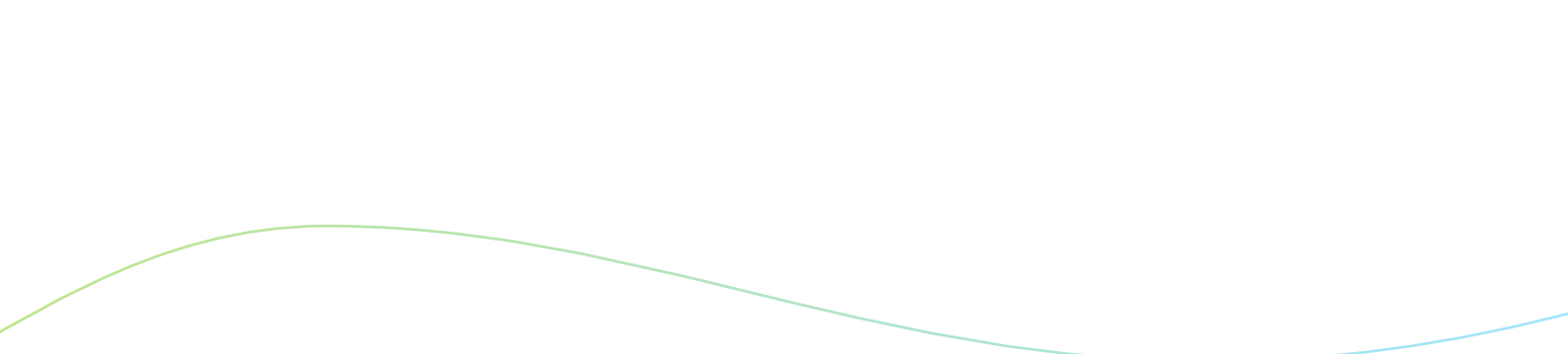


Source: Sounding Board Port Reception Facilities

Graph D Carbon emissions per ton/mile



Source: DNV and LR



Other examples of new legislation include the prohibition of the use of anti-fouling containing tin on ships' hulls, the Ballast Water Management convention and stricter regulations on the sulphur content of marine fuels and NOx emissions to air. Equally strict regulations have been implemented regarding the disposal of vessels' waste water and domestic waste. The duty to report is being well adhered to by Dutch ships. Figures submitted by Dutch ports have demonstrated an increase in the amount of waste disposed of there by the shipping industry (Graph C).

#### **POWERFUL DEVELOPMENTS**

In short, the shipping industry has already taken important action and has experienced powerful developments. Over the past 60 years, the shipping industry has managed to cut its carbon emissions per ton/kilometre by 70% compared to 1950 (Graph D).

Predictive scenarios for the decennia to come have indicated, however, that any growth in world trade will be accompanied by an increase in the shipping industry's relative contribution to various types of emissions. Other modalities, too, are improving their environmental performance, partly due to pressure exerted by new legislation. Governments and trade and industry will be faced with the challenge of safeguarding the shipping industry's competitive potential whilst at the same time doing their utmost to improve the industry's environmental performance as much as possible.

Global environmental legislation is crucially important to Dutch shipowners for the conservation of the level playing field and their competitive potential in the world markets. Impairment of their competitive position will also make it harder for Dutch shipowners to finance their ambitious environmental objectives.



*Improvements to hull design resulted in reduced fuel consumption whilst travelling at the same speed.*

## *Pro-active shipowners*

During its long history, the shipping industry has been searching continuously for ways to improve itself. Ships' cargo capacity has been increased, as well as the efficiency of their propulsion. Improvements to hull design have resulted in reduced fuel consumption whilst travelling at the same speed. Seafarers are being trained to be environmentally aware and are taught the most economical ways of running a ship. Satellite navigation is used to plot the optimal course. All in all this has resulted in the reduction of both fuel used per ton/kilometre and emissions to air per ton/kilometre.

Dutch shipowners continue to invest in high-tech innovations and unorthodox design, thus reinforcing their competitive potential and at the same time making a contribution to the common environmental objectives.

In the following paragraphs we have provided concise descriptions of investments in the environment that are being made by eight projects initiated by Dutch shipowners. For more information please visit [www.kvnr.nl](http://www.kvnr.nl).

### INNOVATIONS

**Abis Shipping** - Diesel-electric engines for optimal efficiency and flexibility

**Anthony Veder** - Coral Energy: the next level of small-scale LNG transport

**Dockwise** - A promising concept for heavy lift vessel ballast water

**Flinter** - Reducing carbon emissions and fuel costs

**Hanzevast Shipping** - New standards for bulk carriers

**Heerema Marine Contractors** - Reduction of under-water noise levels

**Holland America Line** - Winner 'clean shipping company' award

**Jumbo Shipping** - Heavy lift, light on flora and fauna

**KOTUG** - Tug becomes E-KOTUG



*Dutch shipowners continue to invest in high-tech innovations and unorthodox design.*

**Q-Shipping Ship Management** - Sponsoring sustainability

**Seatrade** - Hybrid reefer ships: more cargo at the same fuel costs

**Scheepvaartbedrijf Schot** -Short sea shipping captain/owner  
with a super-efficient vessel

**Spliethoff** - Scrubbing at sea

**Stena Line** - Winner of the 2012 KVN Shipping Award 2012 for their use  
of electrical facilities ashore

**Van Oord** - Innovative natural building

**Wagenborg** - Smart hull reduces carbon emissions

**Wijnne Barends** - Cooperation results in innovative and efficient sea-river ships

## *More improvements to reduce the carbon footprint*

IMO (International Maritime Organisation) in particular has demonstrated their accountability regarding the reduction of emissions of greenhouse gases on the part of the shipping industry. Major strides were made in 2011 at international level during the 62nd IMO Marine Environmental Protection Committee (MEPC) meeting on the reduction of carbon emissions. International shipping is ahead of every other international industry in this regard. The EEDI (Energy Efficiency Design Index) resolution, for instance, includes mandatory fuel efficiency requirements for newly built ships. The same MEPC meeting also resulted in the Ship Energy Efficiency Management Plan (SEEMP) being made mandatory. According to the SEEMP, shipowners are required to take measures to reduce their fleet's fuel consumption. Logs are to be kept, containing records of vessels' environmental performance. This will be a useful tool to make crew aware of fuel economy and to reduce the actual consumption.



*The KVNR and the government are co-signers  
of a Declaration of Intent, which expresses  
the KVNR's environmental vision.*

The debate on the introduction of ‘Market Based Measures’ –additional tools like fuel levies or carbon emission trading systems– still continues within IMO. The KVNVR is a fervent advocate for a worldwide market tool which will safeguard the level playing field. The KVNVR is also in favour of market instruments that are simple and that lead to the best possible environmental results. In the KVNVR’s view, a levy on maritime fuels would be the most appropriate option.

Reducing the carbon footprint, or even the realisation of zero emission ships, demands still more innovative thinking. The shipping industry will not be able to do this all by itself. We desperately need our partners within the maritime cluster and the logistic chain to achieve this. A covenant on energy efficiency and carbon reduction in the shipping industry was signed by the government, the KVNVR, Holland Shipbuilding Association, the Dredging and Offshore Industry Association and Transporters Organisation EVO. It contains agreements between all parties on how to achieve the further carbon reductions.

The signing of said covenant is an indication of all parties’ willingness to be responsible for a more sustainable environment and to work together in making the shipping industry even greener. The competitive potential of all industries involved –shipping, shipbuilding and dredging/offshore– will be the stronger for this covenant.

For that reason, too, the KVNVR is making every effort to intensify relationships within existing international networks and to achieve new alliances with government and scientific institutes. With a number of other parties, the KVNVR is already a participant in the Platform Clean Shipping and the Logistic Alliance