Environmental opportunities for shipping

Clean Shipping Index

FOR SUSTAINABLE SHIPPING

Clean Shipping Index
ranks the world's ships – with focus
on environmental performance.

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Clean Shipping Index – at a glance

- **is a tool for cargo owners and transport purchasers to select environmentally well-performing shipping services**
- **provides an environmental ranking system for both vessels and carriers**
- **has a holistic view on the environmental problems of shipping focusing on CO_2, NO_x, SO_x and particles as well as chemicals and water and waste**
- **includes both a global and regional/local approach**
- **gives credit to maintenance, good operation and technical improvements**
- **goes beyond current laws and regulations**
- **is a web-based tool which is quick and easy to fill in for carriers – and at no expense**
- **covers main types of vessels of all ages**
- **has a network of many cargo owners such as H&M, SKF, Akzo Nobel which is a strong economic driving force**
- **has verification with online documentation by objective and authorized third parties such as Lloyd's Register, DNV and Bureau Veritas**
- **has potential to become a "ticket to trade" for environmentally well-performing carriers**
- **creates a "win-win" situation for cargo owners, quality shipping and the environment.**

Clean Shipping Index Sustainable Shipping Tool

What do companies like Volvo, AkzoNobel, H&M, Ericsson and InterfaceFLOR have in common – apart from having annual turnovers expressed in billions? These cargo owners do not only take into account the environmental performance of their own products, but are increasingly looking at the entire life cycle of products including sea transport.

The abovementioned companies are part of a growing group of now over thirty large cargo owners that form a so-called "private governance network" with the aim of stimulating sustainable development in the maritime industry by using their market power: the Clean Shipping Network. The network originates from Sweden and is now expanding across Europe. The tool used is the Clean Shipping Index.

Clean Shipping Index

The Clean Shipping Index is an easy to use, transparent tool which can be used by cargo owners to evaluate the environmental performance of their providers of sea transport. The index takes into account five different areas of environmental impact: CO_2 emission, SO_X and particulate matter (PM) emissions, NO_X emissions, chemical products and water/waste. This holistic approach is what makes this index special compared to other initiatives in the industry.

"Information is entered on a ship-by-ship basis but is also added to total carrier fleet score"

Beyond existing regulations

To be included in the Clean Shipping Index, ship-owners are required to complete a questionnaire consisting of twenty questions on a vessel's operational impact. The information is entered on a ship-by-ship basis but is also added to total carrier fleet score for an overall ranking. Scores can only be obtained for measures that go beyond existing regulations. Based on the scores, a ship is ranked as having a 'low', 'medium' or 'good' performance. The final index score is the total average score multiplied by the percentage of reported ships of the totally owned or managed fleet. Data can be analysed in much more detail, down to the level of NO_X emissions for a single engine or stern tube oil usage on a single ship for example.

This picture from the North Sea Foundation shows the operational emissions from shipping.

▶▶

Shipping Requirement

A vessel or shipping company cannot perform well in only one area of the index (for instance sulphur emissions) and get a good overall performance – no good grades for being a perfect student in just one of the subjects. The index is dynamic; what is good environmental performance at one time might change as new technology gets installed and the environmental legislation becomes stricter. For example, a question on clean and safe ship recycling has been added to the questionnaire. Today thirteen of the fourteen largest shipping companies in the world have presented information in the CSI database. New ships are entered almost daily and at this moment data from around one thousand six hundred large vessels is included in the database.

> "Today thirteen of the fourteen largest shipping companies in the world have presented information in the csi database"

Win-win situation

Most of the harmful emissions come from daily ship operation. Intentional and unintentional discharges of oil, chemical cargo residues, garbage and cleaning agents, anti-fouling paint, exhaust and other air emission and non-indigenous species from ballast water have an on-going adverse impact on life in the seas of the world. Compared to land, the environmental legislation process has been slow when it comes to shipping. If reasonable but significant environmental demands are coordinated from large cargo owners, a win-win situation could be created. This is beneficial for quality shipping companies, subcontractors for clean technology and last but not least – the environment itself.

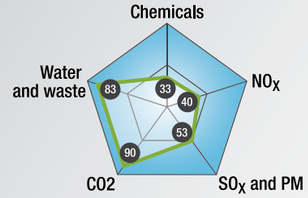
Submission is voluntary and data is only verified if ship owners pay Class Societies (so far Lloyd's Register and Det Norske Veritas offer these services) for a third party verification. Amongst the shippers in the Clean Shipping Network, submission of data is becoming a requirement for shipping goods. Volvo for example requires all ship-owners transporting Volvo goods to submit CSI data.

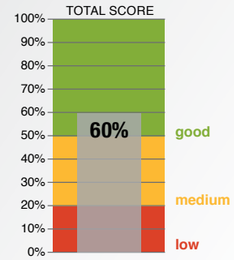
Reason

The five areas of environmental impact – CO_2 emission, SO_X and PM emissions, NO_X emissions, chemical products and water/waste – that the scoring system takes into account have a maximum score of 30 points each, and they are all important to address. The scoring system may be seen as a tool to estimate how well a vessel is doing in each area. The weighing together of the score gives a hint of the overall performance but must be judged with reason and used as a platform for more detailed discussions in for example a procurement situation. The basis for CO_2 scoring is for example how well a vessel performs compared to a reference ship. To get scores the vessel must have emissions below this reference. Information needed for carrying out the calculations is the cargo carried, the distance travelled and the fuel consumption. Operational factors are accounted for by using estimates of average load factors and payload factors.

This is example data from Clean Shipping Index based on self-assessment by the shipping companies.

M/T FureWest





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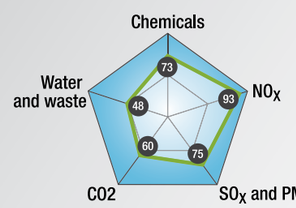

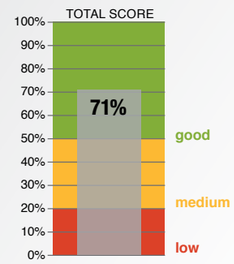

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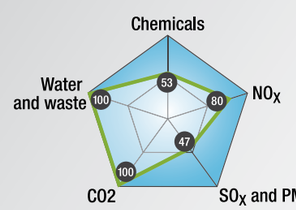
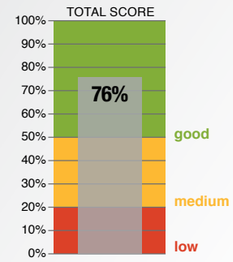
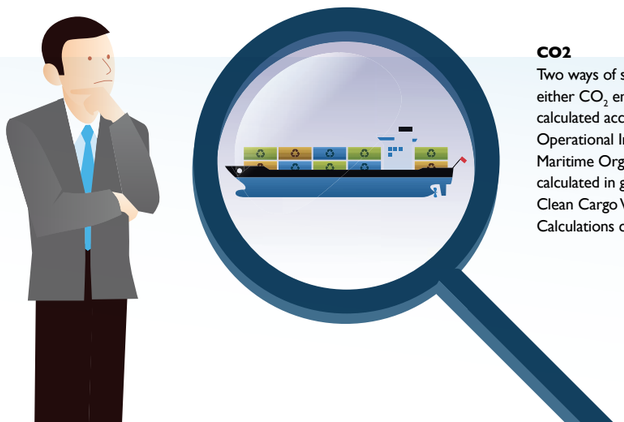






CO2

Two ways of submitting CO_2 data are accepted; either CO_2 emissions in grams/tonne-nm calculated according to the Energy Efficiency Operational Indicator (EEOI) of the International Maritime Organisation (IMO) or CO2 emissions calculated in grams/TEU-km according to the Clean Cargo Working Group calculation formula. Calculations cover a period of one calendar year.

NO_x

The basis for NO_x scoring is how the NO_x emissions from main/auxillary engines relate to the standards set in the Revised MARPOL Annex VI. Just complying with global standards does not qualify for a score. The reference emission levels are tied to the same levels as defined in Tier I, II and III in the Annex VI. Pre- and post-combustion reduction techniques are rewarded.

SO_x and PM

Scores can be obtained if sulphur content in the fuel during a calendar year is lower than global standards for both main and auxillary engines. A distinction is made between operations in ECAs (Emission Control Areas) and non ECAs. Particulate matter is included because of its close link between SO_x emissions and PM emissions. Use of abatement techniques is rewarded.

Chemicals

Scoring relies on the environmental effects of different types of chemicals used on board. Properties of chemicals present in anti-fouling, stern tube oils, external hydraulic fluids, gear oils for thrusters and/or controllable pitch propellers, boiler/cooling water treatment, cleaning agents and refrigerants are covered by the index. For example a non-toxic anti-fouling coatings, that is coatings without chemical or biological activity and water lubricated stern tubes get high scores.

Water and Waste control

Questions in this section relate to ballast water treatment, sewage/black water treatment, garbage handling, sludge oil handling, bilge water treatment and – last but not least – crew awareness.

When your customers know you are doing your part in the global effort towards a healthier planet, that's good for overall brand perception and is therefore also a wise business decision. And when you decide to join the frontrunners of today you become part of a growing group of companies and organisations that think about the long term, beyond the confines of their company grounds with both their common sense as well as their hearts.
In the following pages you can read about some of the companies which already use Clean Shipping Index today.

Susanna Hambeson
Environmental Manager

VOLVO

Volvo Logistics Corporation

Volvo Logistics is a part of Volvo Group and provides logistics solutions for the automotive industry. Volvo Logistics has around 1200 employees and a turnover of approximately 10 billion SEK.

– How would you describe the Clean Shipping Project?
"Clean Shipping Project is a collaboration between the largest export and import companies in Sweden, where we in the network put environmental demands on the shipping industry. The project has two very inspiring managers in Ulf Duus and Jan Ahlbom. They are quite frankly two of Sweden's top people when it comes to environment and how chemicals effect the marine environment."

– Why did Volvo Logistics join the Clean Shipping Network? "Volvo Logistics are no rookies when it comes to setting high standards for our suppliers. We have placed environmental demands on our transport suppliers for over 10 years. Therefore, joining the Clean Shipping Network was an easy step to take and a part of our strategy to support sustainable development."

– In what way have Volvo benefited from the Clean Shipping Project? "For Volvo it's important to be a part of such a proactive environmental project and to work together with so many prominent environmentally focused companies. The database is easy to understand and to work with – it's a flexible tool and a great way to work with the shipping companies. It makes my work easier."

– How do you work with the database? "If our major shipping suppliers don't submit data to the database from January 2010, we will not use their services. If they submit data and the environmental performance is good we might extend our collaboration. We will also start using the data as input for our emission calculations for sea transport."

Per Nilsson
Global Supply Manager
Björn Lindahl
Logistic Manager

Tetra Pak

Tetra Pak is the world's leading food processing and packaging solutions company. Tetra Pak provides customers in over 170 countries with safe, innovative and environmentally sound products. They have over 20,000 employees all over the world and their net sales were 8,955 million EUR in 2009.

– How would you describe the Clean Shipping Network?
"Clean Shipping Network is a group of cargo owners who have joined together in a network to place environmental evaluation demands on the shipping industry."

– Why did Tetra Pak join the Clean Shipping Network? "We met the two project managers Ulf Duus and Jan Ahlbom and they told us about their ideas on how to make the shipping industry more environmentally adapted. We showed the system we use at Tetra Pak to evaluate our contracted suppliers with green, yellow and red colors depending on their evaluation result. We felt that our system was too general when it came to evaluating shipping companies and did not consider the environmental impacts of shipping. In short: combining Ulf and Jan´s research into shipping's environmental impact with our evaluation system led to the Clean Shipping Index. We have recommended that several cargo owners to join the Clean Shipping Network because the Clean Shipping Index is a great tool to evaluate one's shipping suppliers. The larger the cargo owner network is, the more positive impact we can make together. "

– Has Tetra Pak changed shipping supplier because of the results in the Clean Shipping Index? "Yes, we have changed supplier because of what we have seen in the Clean Shipping Database. During the selection process we evaluate the shipping companies' environmental data according to the Clean Shipping Index. During the procurement process we also put environmental demands on the shipping companies if there is something specific that we want them to focus on, for instance if their SO_x emission levels are too high. Then we put specific demands on that for the next procurement process."

– How do you work with the database? "We use the database to calculate our environmental footprint when it comes to our transport at sea. These are figures we present in our yearly environmental report. We hope that, in future, we will be able to see the environmental impact of a specific shipment before we book it.. Then the personnel that book the transport can make a choice between price, lead time, environment and other factors. "

An online tool for cargo owners to enable them to make informed, sustainable choices when selecting a shipping company.

How Clean Shipping Index works

The shipping companies fill in a list of 20 easily answerable questions about the different ships in their fleet. These questions range from how high their SO_x and CO_2 emissions are to what type of ballast water treatment or lubricants they use.

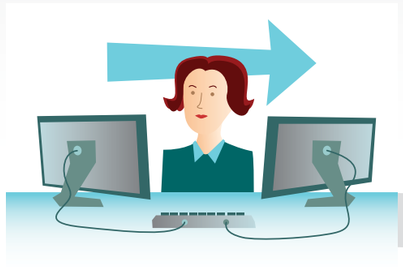
Cargo owners can compare the environmental performance of the shipping companies. Information can be viewed not only for an entire fleet, or a single ship, but also for just a specific issue of choice, like CO_2 for example. The carriers get points in 5 areas; carbon dioxide emissions, sulphur oxides and particle levels, nitrogen oxides, chemicals and water and waste.

It is easy to see the results. Total scores are shown in red for low performance, yellow for medium performance and green for good performance, which is hard to attain. Shipping companies can also compare their performance with that of the competition – and use this as benchmarking.

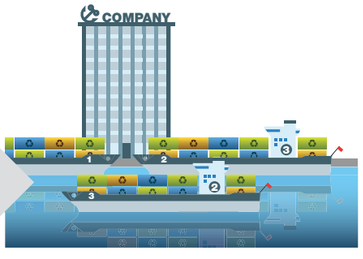
Leading cargo owners like Volvo, H&M and Tetra Laval are already participating. Many of the largest container carriers have entered environmental data into the index and the index database is increasing every day.

CONSUMER
People around the world are becoming more aware about global environmental problems. In their role as consumers they demand more sustainable products and services.

CARGO OWNER
As a cargo owner you know that the consumers are more and more interested in the indirect emissions of your products. They demand that you know how you have transported your products and the Clean Shipping Index helps you keep track of which carriers are best when it comes to environmental performance.



FORWARDER
As a forwarder you know how important it is for your clients, the cargo owners, to know how well the carriers you use perform. Through the Clean Shipping Index you can get access to the environmental performance of the carriers and can allow your customers to choose an environmentally well-performing shipping company.



SHIPPING COMPANY
As a shipping company you can add vessels into the Clean Shipping database and see the environmental performance of your vessels. When the performance is good, you can use this information to gain market share from your competitors.

PORT
As a port you can use the Clean Shipping Index as a tool to measure environmental performance of the ships that call on your port. You could offer well-performing vessels a reduction in the port dues and also lower your ecological footprint in the port and surrounding areas. You would attract high performing vessels as well as environmentally focused cargo owners.

Royal Philips Electronics of the Netherlands is the world´s leading Health and Well-being company. Headquartered in the Netherlands, Philips employs approximately 119,000 employees in more than 60 countries worldwide.

With sales of EUR 25.4 billion in 2010, the company is a market leader in cardiac care, acute care and home healthcare, energy efficient lighting solutions and new lighting applications, as well as lifestyle products for personal well-being and pleasure with strong leadership positions in flat TV, male shaving and grooming, portable entertainment and oral healthcare.

Mark Didden, Sustainability Analyst

PHILIPS

sense and simplicity

Can you describe your CSR policy with regard to transport? With our environmental action program EcoVision4, launched in 2007, we have committed to reduce our operational Carbon Footprint, by 25% by 2012, with a baseline of 2007. Logistical activities represent roughly one third of Philips' CO_2 emissions, or 664 kilotons of CO_2. Last year our operational CO_2 emissions were 16% lower than in 2007, putting well on track to achieve our 25% reduction target.

An important measure to achieve CO_2 emission reduction is to reduce air freight and use sea freight instead. On average, sea freight is 34 times cleaner than air freight, according to our latest calculations. With better planning and forecasting, it is often possible to use sea freight instead of air freight. Sea freight is now for us the standard way of transport.

Why did Philips join the Clean Shipping network?
At Philips, we believe in engaging our suppliers to encourage them to share our commitment to sustainability. Our suppliers play a pivotal role in helping us achieve our sustainability objectives.

The Clean Shipping network is an excellent platform to engage our sea freight suppliers and share best practices.

What benefits do you see of the Clean Shipping Index?
In October 2010 our Purchasing Leadership Board made a strategic change to the Supplier Sustainability Involvement Program – towards a more collaborative approach with our strategic and preferred suppliers. The Clean Shipping Index provides an easily accessible overview of the sustainability performance of our sea freight suppliers, which can feed in to our overall supplier sustainability assessment tool.

How do you (intent to) use the CSI database?
As mentioned, the CSI can be used as part of our supplier sustainability assessment. The database itself can be very useful for CO_2 reporting purposes. We report our Carbon Footprint annually in the Philips Annual Report and quarterly internally to our Sustainability Board. CO_2 emission data from logistical activities, so called scope 3 emissions, are generally more time consuming to collect than scope 1 and 2 emissions, which are emissions from our industrial sites and offices. The reason for this is that logistical data is often more scattered, making data collection a challenge. The CSI database can serve as one source from which we can collect our CO_2 data from sea freight, making the data collection more accurate (as the data comes directly from the shipping companies) and less time consuming.

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This helps us to make better choices between using water transport or alternative transport modes

InterfaceFLOR is worldwide leader in the design and production of high-quality, innovative modular floorcoverings and we are widely recognised as an environmental pioneer. Our global head office is located in Atlanta, USA, and we have employees all over the world, with significant manufacturing operations in the USA, the UK, the Netherlands, Australia and Thailand. Our main product is carpet tiles and we distinguish ourselves from competition by leadership in design and innovation, a sustainable product and supply chain and global presence of manufacturing on four continents.

David Kers, European Distribution Manager

Interface **FLOR**

Can you describe your CSR policy in general and with regard to transport? Already in 1994 our founder Ray Anderson has started to implement a strategy to transform Interface towards a sustainable business model. Our commitment is encompassed in our Mission Zero promise, whereby we aim to become ecologically sustainable by 2020, and ultimately to become restorative in terms of our impact on the planet's resources. Our strategy to achieve this consists of 7 fronts in which we address the ecological impact but also our corporate social responsibility. Resource Efficient transport is one of the 7 fronts of our strategy.

We aim to choose a sustainable mode of transport, work with logistics service providers who use a modern transport fleet with low emissions and want to enable logistics partners to plan efficient transports in order to optimise the utilisation of their fleet.

Why did InterfaceFLOR join the Clean Shipping network? In our quest to find more efficient and more sustainable transport solutions we aim to utilise transport over water more to reduce our environmental footprint. We learned that there is a lot of difference in the impact on footprint between the different vessels that are operated. Collecting that information is very difficult and time consuming for a small buyer of ocean and sea freight like InterfaceFLOR. The Clean Shipping Network is facilitating the collection of this information, and uses meaningful metrics as well as the added value of verification of the information by an independent organisation.

What benefits do you see of the Clean Shipping Index? The Clean Shipping network helps us to have more detailed information available on the exact environmental impact of sea and ocean transport. This helps us to make better choices between using water transport or alternative transport modes and of course also helps us to select the most sustainable sea or ocean vessels. We believe this initiative is important, not only for us, but for the transport industry and other buyers of freight. The Clean Shipping Index will also help our forwarding agents as well as our raw materials suppliers to find more sustainable water transport solutions.

“it’s also a tool for us shipping companies to reach out with our environmental work

Annelie Rusth Jensen
Environmental Manager
TransAtlantic

TransAtlantic which has its head office in Skärhamn in Sweden has 7 offices world-wide and runs 38 vessels. They have about 1,100 employees and had SEK 2.3 million in consolidated net sales in 2009. TransAtlantic operate offshore and ice-breaking vessels, both in the Baltic Sea, North Sea and Arctic/Antarctic waters. The Industrial Shipping section of the company primarily focuses on contract-based transport.

“As I see it, the Clean Shipping Project was initially a simple way for cargo owners to evaluate shipping companies and make it easier to find environmentally friendly transport. But in a way it’s also a tool for us shipping companies to reach out with our environmental work. We are more anxious to see the positive results now that we are able to submit the data ourselves. We feel that being an active shipping company in the Clean Shipping Project is a good complement as we are both quality certified according to ISO 9001 and certified according to ISO 14001.

Early on, when the Clean Shipping Project started, we heard a lot about it. The first time we received the questionnaire from Tetra Laval, we felt a bit discouraged by the sheer size of it. This was at the time when the system was Excel-based and a huge pile of data was needed in order to complete the form. I remember thinking “If we’re having this trouble filling out the form, how will Tetra be able to read anything from all this data?”.

Since Clean Shipping launched the internet-based index with only 20 questions it’s become much more user friendly. What we want as a shipping company is one standard evaluation system instead of every client inventing their own methods and systems. That’s what’s great about the Clean Shipping Index: if a client asks how we perform environmentally, we can send over our index performance data and the client is thereby often satisfied.”

Was there anything difficult about answering the 20 questions in the Clean Shipping Index? “Well, we had a lot of trouble finding the revolutions per minute values of the vessels older than 10 years in order to calculate the NOx emissions. It took several hours to look for this and a lot of searching the internet for data on the engine manufacturers. But some indexes exclude vessels older than 10 years because one has to have an EIAPP certificate in order to participate. Clean Shipping Project is open for all vessels and that’s great.”

Are you planning to verify your vessels – to check if the data you’ve submitted to the database is correct? “We’ve actually already started verifying our vessels. We’re happy about the results of the first verification. It seems that we at TransAtlantic have a good picture of our vessel’s environmental performance and that we have filled out the Clean Shipping Index questionnaire correctly.”

Preem is the largest fuel producing company in Sweden and their two refineries are considered to be the most modern and environmentally adapted in Europe and the world. Preem’s turnover was SEK 73.6 billion in 2009.

“We at Preem think that Clean Shipping Project is a great initiative and that the Clean Shipping Index is a valuable tool for evaluating the environmental performance of our sea transport suppliers. There are other environmental performance indices on the market, but they only focus on what comes out of the smoke-stack. Clean Shipping Project takes a holistic perspective, including emissions to the water, garbage, chemical handling and so on. At Preem we’re continuously focused on looking at the big picture when it comes to the environmental problems we’re facing. We wanted a simple, practical tool to evaluate our sea transport suppliers. Since we joined the Clean Shipping Network, we have a tool box to do just that, without investing time and money on developing our own system.”

Captain Fredrik Backman
Vetting Coordinator

– How do you use the Index and what are your plans for the future? “We have a target at Preem to use the database index in our yearly environmental report. We also aim to use the Clean Shipping Index when traders book the transport and when operations plan the transport. It would be great if they could see the environmental performance of the shipping company along with pricing and other information that they have when they book transport today. In 2011 we will have an environmental target connected to Clean Shipping Index and we will follow up on that target to make sure that we continuously improve ourselves.

Our suppliers of transport know they have to continuously improve themselves when it comes to environment. And they know that we pay more for improved environmental performance.”

“What the Clean Shipping needs now is that more cargo owners will join the Network and this will increase the need for shipping companies to submit more vessels to the database. This is an issue that I am working hard on: trying to get more oil and petrochemical companies to join the network. We currently work together to evaluate the shipping companies on health, safety and security, this is also called vetting. My vision is that we can incorporate the Clean Shipping Index in the current vetting system as an evaluation of the environmental performance of the shipping company.”

“

the Network is also a place for inspirational exchange

Yuehua von Fircks
Business Development

Setra Group is one of Sweden’s largest wood exporters and supplies eco-certified wood products for the construction industry. Setra has 1,200 employees and they spend over SEK 2.5 billion in exports to Europe, North Africa, the Middle East and Japan.

”We work hard on lowering our impact from transports which is a major part of Setra Group’s environmental impact. Joining the Clean Shipping Network is in line with our continued efforts to lower our environmental impact from sea transport. As a start we are using the Clean Shipping Index on our contracted shipping lines. We plan to use the index in our procurement process in order to put demands on all suppliers of sea transport. The Clean Shipping Network is also a place for inspirational exchange with other environmentally focused companies.”

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Clean Shipping Index

FOR SUSTAINABLE SHIPPING

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