3. Environmental sustainability & climate change

Value creation

Our investment in cutting-edge technologies has not only reduced our impact on the environment but also allowed us to operate more efficiently, minimizing air and sea pollution and protecting marine life.

Shipping is considered to be the most efficient and cost-effective mode of transport for international trade. However, due to the scale of the sector, the increased emissions have a major impact on the environment (approximately 3% of global GHG emissions).

In the struggle to curb climate change, the shipping industry is called to reduce greenhouse gas emissions by 2050 with an intermediate goal for 2030 and comply with increasingly strict regulatory environment, adopted by the International Maritime Organization (IMO) and the European Commission.

We aim to maintain our operation's impact on the environment as low as possible. To achieve this, we follow the highest environmental standards, apply targeted measures and adopt latest technology solutions that reduce our carbon footprint and comply with applicable regulations.

Our energy and environmental policy and management system

We are committed to protecting the environment and we strive for continual performance improvement to every aspect.

Our energy and environmental policies, include:

- Control mechanisms for pollution prevention.
- The integration of the Environmental Management System and Shipboard Energy Efficiency Management Plan (SEEMP) into our company's business processes.
- Environmental incident prevention procedures as well as emissions and waste streams controls.
- Reviews of our energy and environmental management system that ensure it achieves its targets onboard and ashore.

Our measures

Our measures to minimize our operation's impact to the environment

We are committed to reduce the greenhouse gas emissions linked to our operations and meet industry's goals.

We have implemented a variety of innovative solutions to cut our emissions and improve our fleet's energy efficiency onboard our vessels:

Onboard

- **CO_2 emissions.** The introduction of new technologies has significantly reduced the emissions of our new buildings, compared to previous generation vessels.
- **Eco-friendly materials** are used when available (paints, lubricants, chemicals).
- **Minimization of relevant forwarding activities.**
- **Increased energy efficiency** throughout our fleet by embracing energy saving technologies (energy saving devices, led lighting systems).
- **Elimination of single-use plastics on board our vessels.** We have also committed to eliminating single-use plastic bottles on board all our vessels by 2024, a measure that we have already implemented on shore.

We acknowledge that operations ashore contribute to our overall environmental footprint, and therefore we have taken action to achieve our goal, more specifically:

Ashore

- **Reduced electricity consumption** by applying energy saving measures in the operation of computers, information systems and their peripheral subsystems.
- **Reduction of single-use plastic** by replacing single-use plastic bottles with water bottles in our office area.

Energy Efficiency

Energy Efficiency Operational Indicator (EEOI)

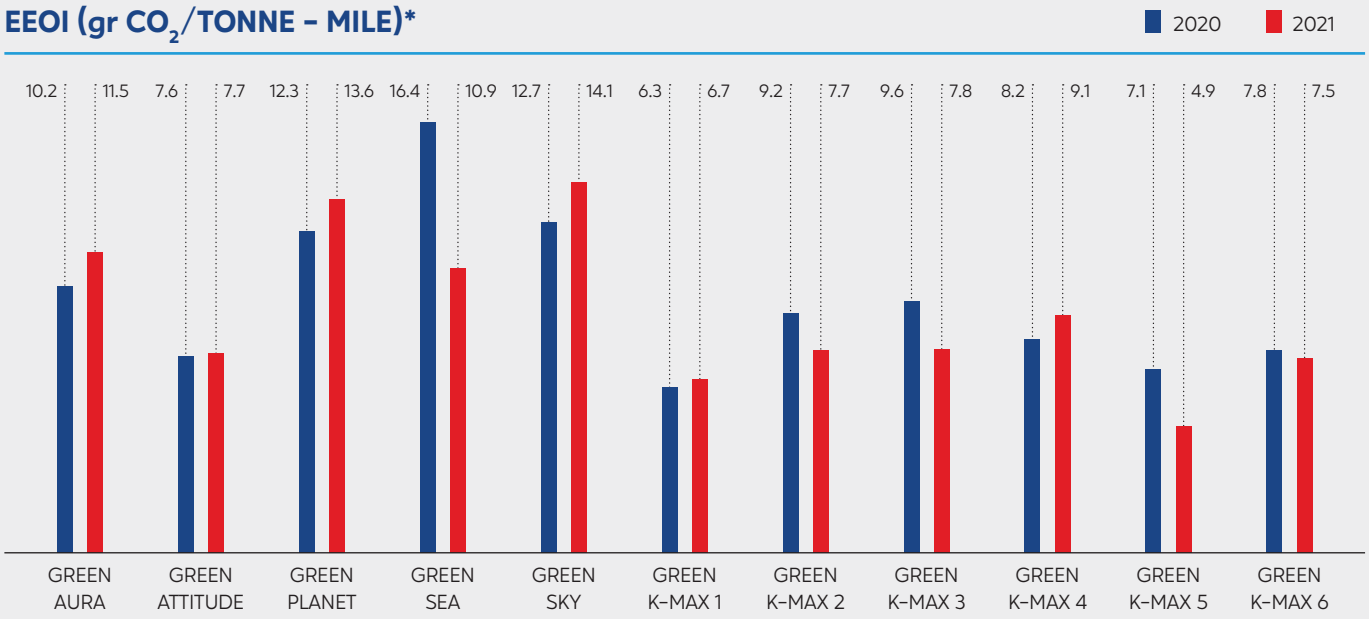
We closely monitor the Energy Efficiency Operational Indicator (EEOI) set out by the IMO (Guideline MEPC.1/circ.684), to measure our fleet's energy efficiency and evaluate the impact of the technical measures and operational enhancements applied onboard.

EEOI is calculated as the ratio of mass of CO_2 emitted per unit of transport work (gr CO_2/tonnes* miles travelled). The average EEOI of our overall fleet in 2021 was 9.21 g/CO_2/nm, recording an 6% decrease in comparison to 2020 when our average EEOI was 9.76 g/CO_2/nm.

Our fleet's average EEOI for 2021 is 21% lower than the industry average (11.67 g/CO_2/nm)[1].

1. Based on the IMO's 2020 GHG Study, published in July 2020

EEOI (gr CO_2/TONNE – MILE)*



**EEOI is calculated based on actual voyages within the reporting year.*

9.21
gr CO_2/tonne – mile

Average EEOI of our fleet for 2021

↓ 6%
EEOI

Average EEOI of our fleet compared to 2020

↓ 21%
lower EEOI

Compared to industry average

Energy Efficiency

Energy Efficiency Design Index (EEDI)

The Energy Efficiency Design Index (EEDI) per vessel, mandatory for new ships at MEPC.263(68), is a technical measure that evaluates the energy efficiency of the vessel by design (equipment and engines). EEDI is expressed in grams of carbon dioxide (CO_2) per ship's capacity–mile and is calculated by a formula based on the technical design parameters of the ship.
All of our vessels continue to attain lower EEDI compared to the minimum requirements.

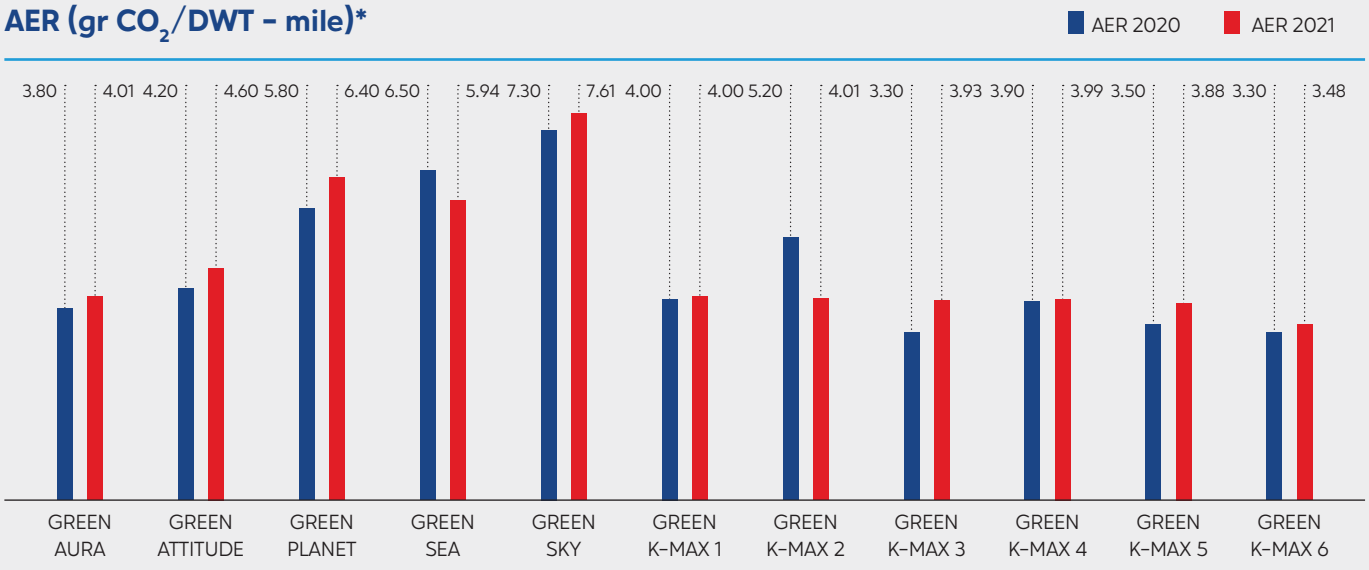
3.79
gr CO_2/tonne – mile

Average fleet EEDI

Annual Efficiency Ratio (AER)

The Annual Efficiency Ratio (AER) is an additional carbon intensity metric calculated in accordance with the Poseidon Principles, which is used for the assessment of the energy performance of vessels. AER is reported in grams of CO_2 per DWT – mile.

AER (gr CO_2/DWT – mile)*



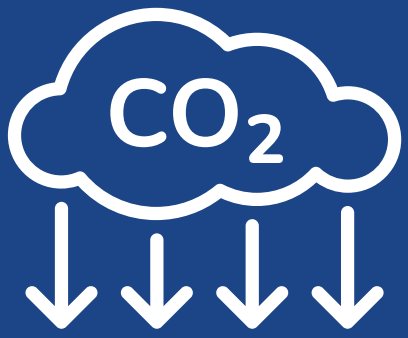
** Vessels Greek K-Max 2, Greek K-Max 3, Greek K-Max 4, Greek K-Max 5 and Greek K-Max 6, were delivered during 2020 and they were not operating for the whole year.)*

The average AER for our fleet in 2021 was 4.71 grams of CO_2/DWT – mile, reduced by approximately 10.4% in comparison to 2020, despite to the growth of our operations.

Energy consumption ashore

We aim to manage and reduce the foortpring of our operations both ashore and onboard and apply specific measures to reduce the elecrticity consumption. In 2021, the office consumption ashore was increased by approximately 0.2% in comparison with 2020, due to return to the office (from remote working) of our employees.

Reducing Emissions



We follow the reporting requirements set by the European Union's Monitoring, Reporting and Verification (MRV) system, and the IMO's Data Collection System (DCS) on fuel consumption, to better monitor our emissions and environmental footprint.

IMO 2020 – reduction of sulphur limit

On January 1st, 2020, the sulphur limit outside designated emission control areas was reduced to 0.50% m/m (mass by mass) from 3.50% by IMO regulation.
In compliance with IMO 2020, we continue to use marine fuel oil that meets the required sulphur content.

100%

of our fleet comply with IMO 2020

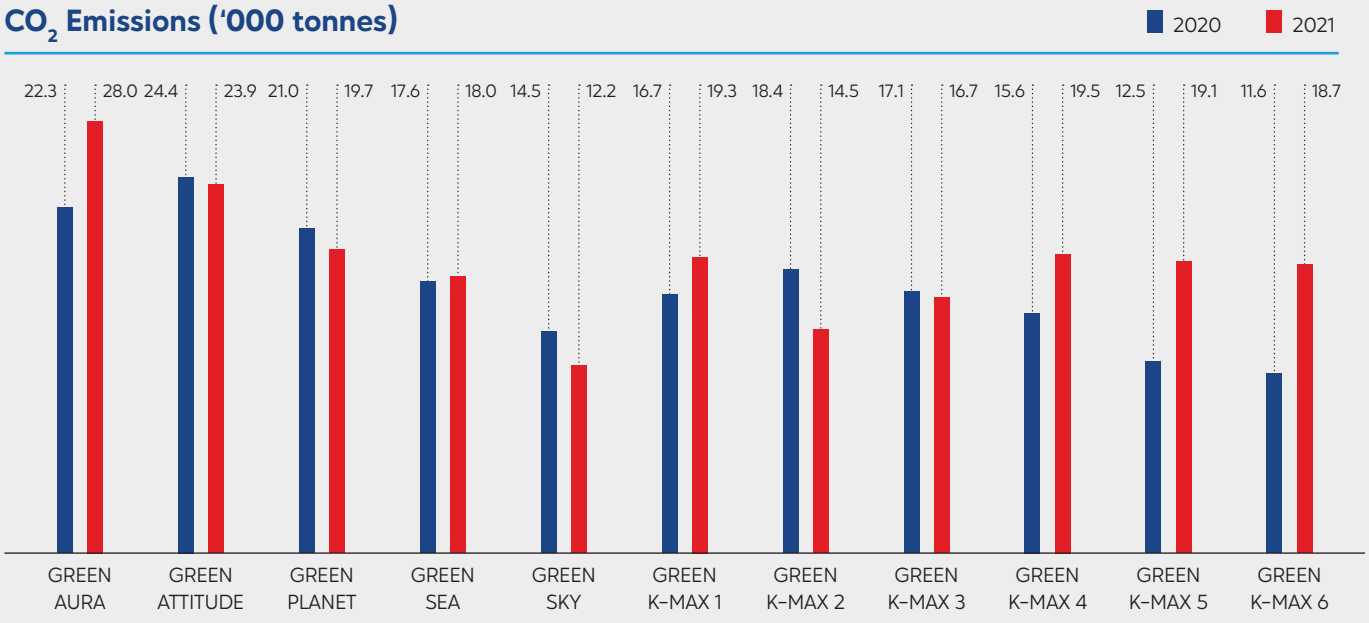
Installation of Exhaust Gas Cleaning Systems

We have installed Exhaust Gas Cleaning Systems (EGCS) in two of our vessels (Aframax), improving upon our decision to switch from HFO to VLSFO.

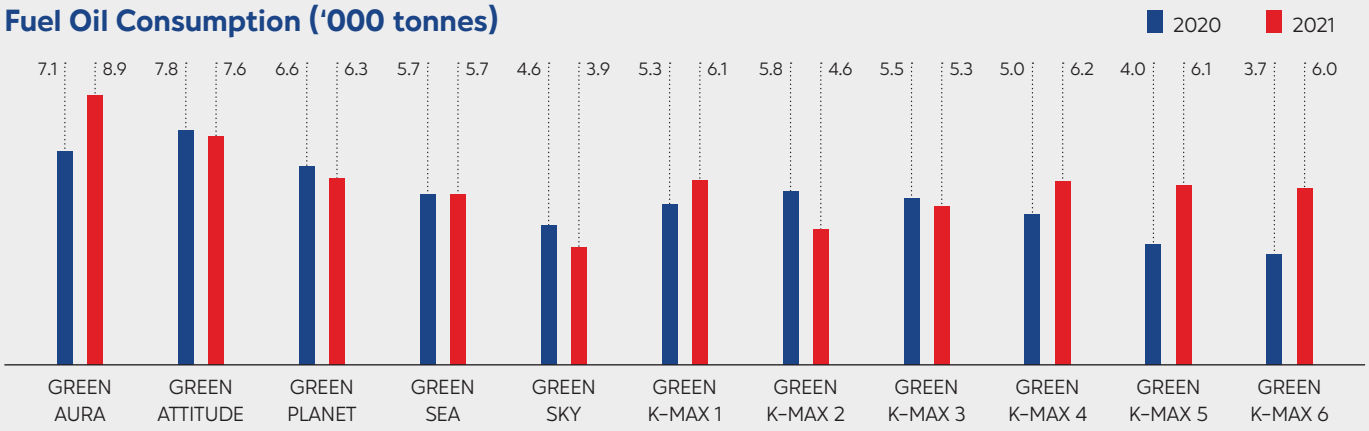
CO_2 emissions

In 2021, our fleet emitted 209,503 tonnes of CO_2 from the consumption of 66,707 tonnes of fuel (HFO, LFO and MDO/MGO), indicating a 9% increase in our total fleet emissions, considering vessels Greek K-Max 2, Greek K-Max 3, Greek K-Max 4, Greek K-Max 5 and Greek K-Max 6, were delivered during 2020 and were not in the water for the whole year.

CO_2 Emissions ('000 tonnes)



Fuel Oil Consumption ('000 tonnes)



66,706 tonnes

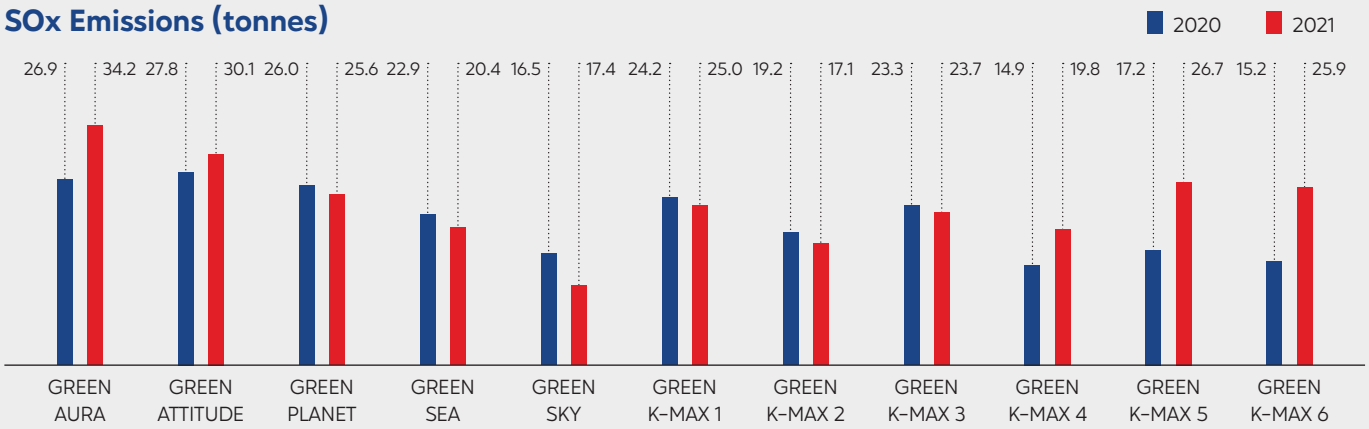
HFO (tonnes) 37,215 • LFO (tonnes) 17,013 • MDO/MGO (tonnes) 12,479

total fuel consumed in 2021

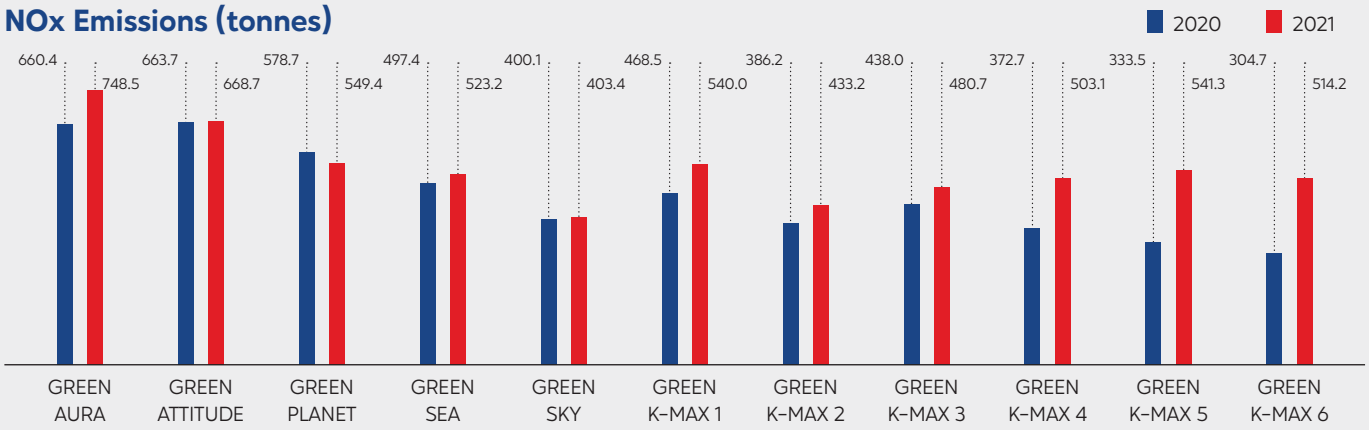
SOx and NOx emissions

Overall, our fleet emitted 266 tonnes of SOx and 5,906 tonnes of NOx in 2021, recording a 13.5% and a 15.7% increase respectively, due to the growth in our operations over the past year (vessels Greek K-Max 2, Greek K-Max 3, Greek K-Max 4, Greek K-Max 5 and Greek K-Max 6, were delivered during 2020 and they were not operating for the whole year).

SOx Emissions (tonnes)



NOx Emissions (tonnes)



266 tonnes SOx

emitted by our fleet in 2021

5,906 tonnes NOx

emitted by our fleet in 2021

Protecting the Marine Environment

IMO Ballast Water Management Convention

In September 2017, the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), set the standards for the sustainable management of ballast water and sediments, controlling the spread of harmful marine species.

In compliance with this regulation and honouring our commitment to sustainable shipping practices, we decided to invest to the retrofit of all our vessels with approved Ballast Water Treatment Systems (BWTS) during 2021.

Ballast Water Treatment Systems (BWTS) enable the removal of inactive biological organisms (zooplankton, algae, bacteria) from ballast water and ensure that discharges from our ballast operations are ecologically responsible. To further improve our performance, we continuously train our seafarers on the BWT systems installed onboard.

100%

of our fleet is equipped with BWTs

Eco-friendly lubricants

All the lubricants used by our ships are 100% environmentally friendly, a commitment we've been upholding since 2014.

100%

of our fleet uses environmentally friendly lubricants

Spills and releases to the environment

Our strong Health, Safety and Environmental management system maintains our high-level safety standards, surpassing compliance with applicable legislation. Our strict operating procedures and regular risk assessments highlight our commitment to protecting the marine environment.

0

spills to the marine environment

Ship recycling and Inventory of Hazardous Materials (IHM)

Requirements for a structured system to control hazardous materials onboard ships (for the Safe and Environmentally Sound Recycling of Ships) came into on December 31st, 2020, when new requirements regarding the Safe and Environmentally Sound Recycling of Ships (on the control of hazardous materials onboard) came into effect. We comply with both the International Maritime Organization's Hong Kong (HK) Convention for the Safe and Environmentally Sound Recycling of Ships and the EU Ship Recycling Regulation (EU SRR).

All our vessels hold a Class-approved Inventory of Hazardous Materials (IHM), and when decommissioned in a certified ship recycling facility, they will be recycled efficiently and safely.

Efficiently managing waste

A waste management system's primary function is to control, manage and dispose all types of waste generated onboard. This system helps us monitor the three main types of waste generated (garbage, sludge and bilge), while ensuring that all other types of waste (plastics, glass, dunnage, paper, metal, bulbs, hazardous materials and batteries) are collected and recycled properly.

Our upgraded waste management system complies with both national and international regulations. Garbage compactors are installed in all our vessels, reducing the volume of waste that is stored onboard, while specific goals are set to reduce onboard waste generation by approximately 1% annually.

Reducing plastic waste onboard – Aegean Shipping waves goodbye to plastic

IMO has developed an action plan to address the marine plastic litter from ships by 2025. In addition, EU aims to reduce plastic waste, while the Philippines aspire to "zero waste in Philippine waters" by 2040. India and Kuwait have already banned the use of single use plastics in the maritime sector.

Aegean Shipping takes action to reduce the use of "single-use plastics" onboard, and aims to a 80% reduction by the end of 2024. We avoid plastic and supply our vessels with reusable or biodegradable items.

We choose foodstuffs and beverages packaged in glass, paper or can, that are easier to recycle.

As part of our plan, we've decided to phase out plastic bottled water. As an alternative, we've installed decentralized water purifiers onboard, well maintained through our vessels' Planned Maintenance System (PMS) and the company's "Shipboard Occupational Health and Safety program." The water source and tanks are frequently checked through external laboratory tests.

The Benefits

- Easy installation and maintenance
- High quality drinking water, in accordance with International Health Regulations (IHR) of WHO, European Union, World Health Organization (WHO) and MLC 2006 requirements
- Eco-friendly and energy-saving solution (transport, storage and delivery of bottled water, collection, packaging, and disposal)
- Assurance of appropriate supply and consumption
- Provides our crew with pride of doing the best for the marine environment, while ensuring the best hydration they need throughout the day, increasing crew productivity

A total of

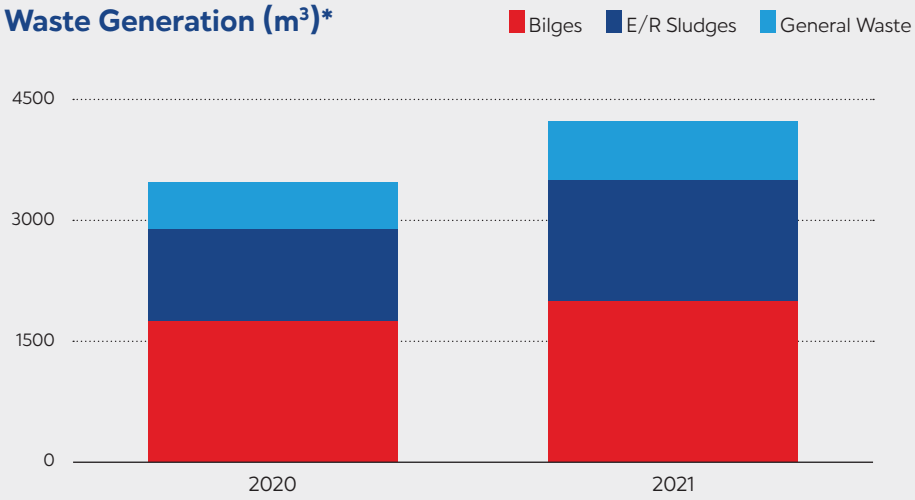
114,975

plastic bottles consumed yearly on our fleet vessels are replaced by water purifiers.

This step will significantly reduce our carbon footprint, saving the equivalent of 19 tonnes of CO_2 on an annual basis.

19 tonnes of CO_2 ▶ **18 round trips Athens to London**

Waste Generation (m³)*

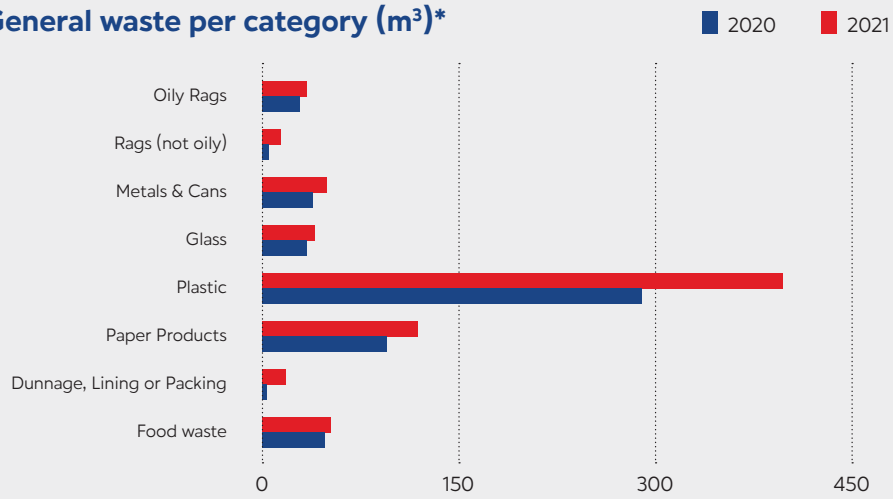


4,269 m³

of waste generated onboard our fleet in 2021

The growth of our operations in 2021 resulted in an increase of 22% in the waste generated onboard in comparison with 2020.

General waste per category (m³)*



** Vessels Greek K-Max 2, Greek K-Max 3, Greek K-Max 4, Greek K-Max 5 and Greek K-Max 6, were delivered during 2020 and they were not operating for the whole year.*

Waste reduction initiatives

Onboard

- **Non-essential single use items** (single-use plastic cups, plates and cutlery, food and beverage containers, food packing films, microwave dishes) **are replaced with sustainable alternatives** (such as tetra pack, glass or biodegradable plastics).
- **Reduction of food waste** through crew awareness campaigns and innovations in food procurement and storage

Ashore

- **Recycling of used computers and other e-waste** using our vendor's "take back" policies.
- **Reduction of waste and use of reusable cups and bottles.**
- **Reduction of paper consumption** by developing a fully paperless operating system, providing high class e-services to users, vendors, suppliers, and seamen.

↓ 6%

Reduction of water consumption ashore

↓ 43%

Reduction of paper consumption ashore