

Company name: GRIMALDI GROUP

**APPENDIX for “SAILS charter” - Form to be completed by the shipowner -**

Please check the items covered by the expected commitments, specifying for each of them the means set up, and the targeted results. The form must be sent electronically to *Mfc.Dam.Dgitm@developpement-durable.gouv.fr*, stating in the subject of the message: "Charter SAILS + [name of the shipowner]".

**Expected commitments are :**

- the protection of marine species as a whole, and in particular marine mammals,

The Grimaldi Group already cooperates with scientific bodies in Italy in the framework of the protection of cetaceans in the Mediterranean. Numerous scientists are regularly hosted onboard the Group's ships in various maritime routes between Italy, Spain and Greece for the observation of cetaceans.

- the reduction of the underwater noise impact of ships,

In the last few years, the Grimaldi Group has proceeded to change propeller blades on more than 50 of its ships in order to have a double impact: reduction of fuel consumption and underwater noise. Thanks to the new blades, ships are able to sail at the same speed but with less power and at same time a decrease of the propeller's RPM (Revolutions Per Minute) is obtained, which reduces noise and vibration underwater.

- the decrease of atmospheric pollutants and greenhouse gas emissions

In order to comply with regulatory requirements which, as of 2015, establish sulphur emission limits of less than 0.1% for ships operating in the ECAs (Emission Control Areas), the Grimaldi Group has heavily invested in the installation of "scrubber" systems, with reduction powers that offer SO/CO ratios, in the smokestack, lower than MGO (Marine Gas Oil) combustion, reducing also emissions of particulate and unburned fuel by around 70%.

At the end of 2018, 32 ships of the Group had scrubbers installed onboard. In addition, in 2018 a retrofit plan began in view of the entry into force, as from 01.01.2020, of IMO MARPOL ANNEX VI which will introduce a new sulphur limit of 0.5% worldwide.

Project “**Zero Emission in Port**” - The purpose of this project is to prevent vessels from using auxiliary engines, while at berth, and consequently reduce harmful emissions. To achieve this, the two biggest ro/pax vessels of the Group have been recently retrofitted with lithium ion mega

batteries (NMC type) for a total of 5.5 MWh while another 12 ro/ro newbuildings, due to be delivered in 2020-2022, will also be equipped with this battery system.

These batteries will be recharged during navigation by taking the necessary energy from shaft generators directly connected to the propulsion engines. The energy thus developed and accumulated will then be used in the port to power all the ship systems: lighting, ventilation, air conditioning, ship automation, ballast pumps, etc.

the strengthening of ties with the managers of marine protected areas managers and with scientific sector as a whole

The Grimaldi Group has a continuous and widespread cooperation with the scientific academic world, in particular with relation to R&D projects, as well as with Associations for projects related to marine environment protection.

the fight against invasive species with anticipated implementation of the IMO Ballast water convention

In order to comply with the IMO Ballast Water Convention, the Grimaldi Group has prepared management plans and manuals with the related mitigation procedures for existing ships, while on newbuildings under construction the installation of modern ballast water treatment systems has begun, which will meet the technical specifications outlined by the IMO. Currently Ballast Water Treatment systems are fully operational on 14 ships and will gradually be extended to all other vessels that come into dry dock, well in advance compared with the compulsory deadline.

the optimization of energy performance of ships,

The Grimaldi Group is one of the shipowning groups which has invested most in the new “**Foul Release Coating**” technology, also called silicon paint, which unlike the standard release coating, is a non-toxic paint which does not release poison into the sea and is capable of reducing the friction of the hull with a notable increase in efficiency. The increase in efficiency recorded thanks to the application of silicon was on average 10%, leading to an annual reduction of approximately 230,000 tonnes of CO<sub>2</sub>. New investments in hull efficiency involved all the Group ships, extending know how also to the units of its sister companies Finnlines and Minoan Lines. Additionally, 20 upgrades of this silicone coating were done during 2019, using the latest-generation product.

In total, out of 130 ships operated by the Group, over 80 have had their hull treated with silicon paint so far.

Moreover, on five ships of the fleet the “**Bulbous Bow Modification**” project has been implemented, with a fluid dynamic study of the water lines of the new bulb optimized to the

operating conditions of the ships concerned. It has brought an 8% increased efficiency compared to a conventional bulbous.

Finally, the “**Air Lubrication System**” is an innovation capable of reducing the friction of the hull, through a flow of small air bubbles under the “fat bottom” by means of specific blowers controlled with VFDs (Variable Frequency Drives). The flow of small bubbles under the hull is capable of reducing its resistance to friction.

Many other single projects have been implemented in the direction of Energy Efficiency.

Specific actions by passenger ship companies and cruise companies: Raising passenger awareness of marine environmental protection, the definition of eco-responsible maritime sea-routes in relation with the coastal states concerned, the financial support to the managers of marine protected areas

As an example, the Group has been cooperating for years with the NGO Marevivo on projects related to the increased awareness of school students, funding dedicated courses on the environment protection, as well as for plastic recycling onboard ships and, ultimately, its complete ban.

Description of the implemented measures to ensure transparent information on the effectiveness of the commitments made in the context of this Charter (eg. identify a point of contact, a website etc.)

For further information please contact:

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or visit the Group’s website: [www.grimaldi.napoli.it](http://www.grimaldi.napoli.it)