INTERNATIONAL MARITIME ORGANIZATION

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ANY OTHER BUSINESS

The Ocean Cleanup's deployment in the North Pacific

Submitted by the Netherlands and Vanuatu

SUMMARY

Executive summary:	This document draws the Committee's attention to the work of The Ocean Cleanup (TOC), a non-profit organization from the Netherlands focused on cleaning up the plastic debris floating in the five main ocean gyres, starting with the North Pacific Gyre in 2018. Plastic debris is harmful to marine life and consequently the human food chain. Some 50% by weight of this debris consists of discarded fishing nets and lines, which can also pose a threat to shipping. The document informs the Committee on safety measures taken by The Ocean Cleanup to minimize hindrance to shipping.
Strategic direction, if applicable:	4
Output:	Not applicable
Action to be taken:	Paragraph 15
Related documents:	A 30/11/1; resolution A.1110(30) and MEPC 72/16/4

Introduction

1 The Assembly, at its thirtieth session, considered document A 30/11/1, submitted by Australia, France, Iceland, the Marshall Islands, Monaco, Norway, Palau, Samoa, Solomon Islands, Spain, Tonga, Tuvalu, Vanuatu and the Secretariat of the Pacific Regional Environment Program, on Sustainable Development Goal 14 and Plastic Marine Litter. The Netherlands and Vanuatu share the view presented in the document that plastic pollution of the oceans is a significant problem.

2 IMO has taken important and definitive actions to prevent and reduce further pollution of our oceans with marine litter, in particular plastics from marine sources. Although such actions are essential to preserve the oceans from further damage, they do not reduce the impact of plastics currently floating in the ocean gyres. In order to address that issue, and to further contribute to the actions already taken by the Organization, the Netherlands informed

the Assembly on the activities by a non-profit organization from the Netherlands, "The Ocean Cleanup". This organization develops concrete actions to remove plastic from the ocean gyres, starting with the North Pacific Gyre.

Background

3 Marine plastic pollution is conservatively estimated to inflict environmental damage equivalent to $13 billion a year, due to plastic's negative impact on marine life, tourism, fisheries and other businesses. Plastic pollution in our world's oceans threatens more than 600 marine species. Animals ingest and then accumulate plastics, especially microplastics, which has potential consequences for the human food chain.

4 A recently published assessment of pollutants in plastics in the North Pacific Subtropical Gyre indicates that they may pose a chemical risk to organisms as 84% of the samples had at least one chemical exceeding sediment threshold effect levels. Furthermore, surface trawls collected more plastic than biomass (180 times on average), indicating that some organisms feeding upon floating particles may have plastic as a major component of their diets.

5 Plastic caught in gyres will not go away by itself, and can be stuck there for decades. Such plastic needs to be removed before it breaks down into dangerous microplastics or serves as an unintended diet for organisms. By cleaning up the oceans, TOC hopes to inspire change in people's habits and generate creative solutions to ensure plastics never make it to the ocean. Beach clean-ups and other coastal plastic removal projects are complementary to removing plastic from the oceans.

The Ocean Cleanup

6 The Ocean Cleanup (TOC) was founded in 2013 by the Dutchman Boyan Slat with the mission of developing advanced technologies to free the world's oceans from plastic on a large-scale, and in an efficient and environmentally sound way.

7 TOC's passive technology is designed to make use of the action of the ocean currents to collect and retrieve plastic debris. Years of research and design, and a series of pilot projects has led TOC to develop free-floating barrier systems between 1 and 2 kilometres in length and equipped with an impermeable collecting screen reaching 4 metres below the ocean's surface. The systems are expected to capture a high proportion (> 95%) of plastics 10 mm or larger, at and just below the surface of the water. After collection, the plastic will be brought ashore for recycling. TOC's plans are based on several ocean research missions and analysis of nearly 2,000 kg of retrieved ocean plastics.

8 TOC plans to deploy a first working system that demonstrates a functioning barrier and is capable of completing all steps of the process, from ocean collection to recycling ashore, in 2018. Upon achieving successful results, TOC aims to gradually scale up operations in the North Pacific to 50 to 60 systems. By 2040, TOC estimates that these systems, replicated in all five ocean gyres would reduce the total amount of marine plastic in those gyres by 90% compared to their current mass.

Initial deployment

9 TOC has been working with many relevant agencies and advisors to comply with maritime and navigational safety requirements and, where these do not exist, to meet best practice, monitored by the government of the Netherlands. Equivalent action has been taken in relation to environmental aspects of the project.

10 Given its significance as a place where the ocean plastic accumulation is highest on a global scale, TOC intends to begin removing plastics from the North Pacific Gyre, with its closest border approximately 1,000 nautical miles (nm) from the coast of California. TOC is at an advanced stage of preparations to construct and deploy the first system from Alameda, California in 2018.

Maritime safety issues

11 TOC has consulted with the world's major shipping organizations and has been encouraged by receiving strong support for its project and proposals to minimize the risk to shipping. In this respect, the North Pacific Gyre is not traversed by major shipping lanes, with an average of three ships passing through each day (Polestar data for 2016/17). In addition, systems will be fitted with several aids to navigation, including AIS and navigational lights, and will be tracked through GPS. At the start of and during deployment a Notice to Mariners will be disseminated by NGA (National Geospatial-Intelligence Agency of the United States).

12 In the event of a system breaking, for example following a collision, the GPS trackers will enable component parts to be located, collected and repaired. Bulkheads are installed to prevent the barriers from sinking when damaged or punctured. The system will be slow moving, typically at a speed of 1 knot, and its trajectory will be forecast and broadcast, enabling ships to avoid collision. Marine support vessels will also be on hand monitoring the system's location and re-positioning it in case of need.

13 In the annex, a schematic drawing of the first, smaller system to be deployed is provided. As indicated in paragraph 7, following systems will be of a bigger size and might be further refined based on the experiences gained.

Further information

14 Additional information on The Ocean Cleanup's work will be available to delegates during a lunchtime presentation on Tuesday, 22nd May 2018. Any further developments of relevance for IMO as well as reports on progress achieved will be communicated to MSC and other relevant organs of the Organization.

Action requested of the Committee

15 The Committee is invited to note the information provided and to take action as deemed appropriate.

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ANNEX

SYSTEM 1