

Current Legal Developments



The Netherlands: The 2018 Agreement between The Ocean Cleanup and the Netherlands

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Abstract

The Ocean Cleanup is a Dutch non-profit organisation on a mission to develop and deploy pioneering technology to rid the oceans of plastic. Considering the unique nature of the activity and the technology involved, it is not immediately self-evident which international regulations are directly applicable to this novel use of the high seas. The Dutch government, however, pledged to support the endeavour, and entered into a tailor-made Agreement with The Ocean Cleanup in order to ensure that its activities are conducted in accordance with general international law on maritime safety, the protection of the marine environment, and other legitimate uses of the high seas. This article reflects critically on the parties' choice to base the Agreement 'by analogy' on the Law of the Sea Convention's provisions on marine scientific research, and analyses the relationship of its core provisions with applicable international law, as well as identifying potential gaps.

Keywords

The Ocean Cleanup – plastic pollution – high seas – new technologies – marine scientific research

Introduction

The Ocean Cleanup is a Dutch non-profit organisation on a mission to reduce the amount of plastic in the oceans.¹ In October 2018, following a successful crowdfunding campaign and 5 years of development, the Ocean Cleanup towed System 001, nicknamed 'Wilson', into the Great Pacific Garbage Patch (GPGP) for its first operational trial. The GPGP, that measures nearly three times the size of France, is situated on the high seas between California and Hawaii, and is estimated to contain over 79 thousand tonnes of plastic.² System 001 is a 600-meter-long U-shaped floating boom that suspends a 3-meter-long curtain in the water column.³ The idea is that the device, propelled by wind and currents, will move faster than the floating plastics, thereby accumulating debris within the barrier. A support vessel will periodically collect the accumulated debris and land it on shore for recycling. If the trial with System 001 proves successful,⁴ the hope is that a scaled-up deployment of 60 devices can clean up 50% of the GPGP within 5 years.⁵ The ultimate ambition is to apply these systems to all five subtropical gyres where currents concentrate ocean-borne plastic waste.⁶

The Ocean Cleanup is a legal entity incorporated under Dutch law. The Dutch Government not only has an obligation of due diligence to ensure that activities under its jurisdiction and control do not cause harm to other states or the environment in accordance with applicable international law,⁷ it ex-

1 See The Ocean Cleanup, 'System 001 Info Pack 2018: Launching System 001' (2018), available at https://www.theoceancleanup.com/fileadmin/media-archiv/Documents/System_001_Info_Pack_2018.pdf; accessed 30 March 2019. See also <https://www.theoceancleanup.com/system001/>; accessed 30 March 2019.

2 L Lebreton et al., 'Evidence That the Great Pacific Garbage Patch Is Rapidly Accumulating Plastic' (2018) 8 *Scientific Reports* 4666, available at <https://www.nature.com/articles/s41598-018-22939-w>; accessed 30 March 2019.

3 For an animated explanation see <https://www.theoceancleanup.com/technology/>; accessed 30 March 2019.

4 Currently the system is undergoing repairs after it failed to retain the captured plastics and suffered an equipment malfunction. Updates available at <https://www.theoceancleanup.com/updates/>; accessed 30 March 2019.

5 The Ocean Cleanup (n 1), at p. 9.

6 I.e. the North Pacific gyre, South Pacific gyre, Indian Ocean gyre, North Atlantic gyre and South Atlantic Gyre. See for detailed clean-up projections <https://www.theoceancleanup.com/technology/>; accessed 30 March 2019.

7 See e.g. 2001 ILC Articles on Prevention of Transboundary Harm from Hazardous Activities, Yearbook of the International Law Commission, 2001, Vol. 11, Part Two, Article 3 and Commentary; Stockholm Declaration Principle 21; Rio Declaration Principle 2. The no-harm principle is furthermore customary international law, see e.g. *Pulp Mills on the River Uruguay*

pressed a willingness to actively ‘facilitate and support’ the Ocean Cleanup’s activities.⁸ Due to the unique nature of the activity, it is not self-evident which international legal frameworks are directly applicable. Neither is there dedicated domestic regulation in place.⁹ In order to ensure that the Ocean Cleanup’s activities are conducted in accordance with general international law on maritime safety, the protection of the marine environment, and other legitimate uses of the high seas, the Dutch government entered into an agreement with the Ocean Cleanup on 8 June 2018 (hereafter ‘the Agreement’).¹⁰ The Agreement draws ‘by analogy’ on the provisions of Part XIII of the UN Convention on the Law of the Sea (LOSC or ‘the Convention’) on marine scientific research (MSR).¹¹ This article examines the suitability of this approach in the light of the unique nature of the initiative, and analyses the relationship of the Agreement’s core provisions with applicable international law.

The Status of System 001

The legal categorisation of System 001 is not immediately obvious. It is a floating structure unattached to the seabed, leaving it subject to the influence of wind and currents. Lacking autonomous means of propulsion or navigation, it relies on a support vessel to move it into position, but it is fitted with sensors that allow for real-time monitoring of its position and the surrounding environment. System 001 bears identification markings to indicate its connection

(*Argentina v. Uruguay*) Judgement, ICJ Reports 2010 (1) at p. 14, para. 101; *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua) and Construction of a Road in Costa Rica Along the San Juan River (Nicaragua v. Costa Rica)* Judgement, ICJ Reports 2015, at p. 665, para. 104; and e.g. P Birnie, A Boyle and C Redgwell, *International Law & the Environment* (3rd edn, Oxford University Press, Oxford, 2009), at p. 143 *et seq.*

8 See Explanatory Notes to the *Agreement between the State of the Netherlands and The Ocean Cleanup concerning the deployment of systems designed to clean up plastic floating in the upper surface layer of the high seas* (The Hague, 8 June 2018) *Staatscourant* 2018 nr. 31907, 6 July 2018, at paras. A1-2.

9 See para. A3 of the Explanatory Notes (n 8).

10 *Agreement between the State of the Netherlands and The Ocean Cleanup concerning the deployment of systems designed to clean up plastic floating in the upper surface layer of the high seas* (The Hague, 8 June 2018) *Staatscourant* 2018 nr. 31907, 6 July 2018. The Agreement was concluded between the State of the Netherlands and two legal entities, both represented by the CEO of the Ocean Cleanup: Stichting The Ocean Cleanup, a foundation under Dutch law with its statutory seat in the Netherlands; and The Ocean Cleanup Projects B.V., a private limited liability company under Dutch law, incorporated in the Netherlands. Full text of the Agreement in Annex.

11 Explanatory Notes (n 8), at para. A1.

to the Netherlands.¹² However, these depictions of the flag are based on Article 262 of the LOSC; they are not intended to identify the Netherlands as the flag state under Article 94.¹³ While not elaborating on the system's status as a 'vessel', 'installation', or otherwise, the Agreement does not exclude the possibility that it could be regarded as a 'vessel'. Whereas the LOSC does not provide a definition of the term, the Dutch Civil Code defines a 'ship' as something that is, 'according to its construction destined to float, and floats or has been floating'.¹⁴ This criterion would be met by the Ocean Cleanup system. As a 'ship' owned by a legal entity governed by Dutch law, the system can thus in principle be registered in the Netherlands and as a vessel flying the Dutch flag.¹⁵ The system has not been registered at the time of writing, yet the Agreement explicitly leaves this possibility open for the future.¹⁶

Part VII of the LOSC governs the deployment of the system on the high seas. Although Article 87 does not provide an exhaustive list of high seas freedoms, the categorisation of the Ocean Cleanup's activities under any one of the recognised freedoms is not self-evident. Article 87 includes the freedom to construct 'installations permitted under international law', which would logically entail the right to deploy such installations. While the system's qualification as a 'vessel' may be less obvious, there is no apparent reason why the system could not be regarded as an 'installation'.¹⁷

A further point of reference for the deployment and use of installations can be found in Part XIII. Although embedded in the regime on MSR, these provisions relate to the legal status of installations (and equipment) and maritime safety-related aspects of their deployment in general. Without using the term

12 Agreement (n 10), Article 1.5.

13 See Explanatory Notes to Article 1.5 (n 8).

14 Articles 8:1 and 8:2 Dutch Civil Code (translation by author).

15 See Article 8:194 (registration of titles and interests in seagoing ships) Dutch Civil Code, and the criteria for nationality in Article 3:1 Dutch Commercial Code. Possibly not all standard requirements applicable to vessels flying the Dutch flag, for example in terms of certification, would apply to the system due to its unique character. This would arguably require certain tailor-made arrangements to be made with the Dutch flag administration and the relevant classification society.

16 Agreement (n 10), Article 6.4.

17 LOSC Article 87(1)(d), the Convention does not provide a definition of either of the terms. Note that the terminology for 'installations' is not consistent throughout the various parts of the LOSC: Articles 56, 60 and 80 of the EEZ and Continental Shelf regimes refer to 'installations and structures'; Article 87(1)(d) refers to 'other installations permitted under international law' and Articles 258–262 on MSR refer to 'installations or equipment'. There is no indication, however, that installations need to be 'fixed'. Indeed, state practice provides ample examples of non-fixed 'installations' used for MSR, which would constitute an 'installation permitted under international law'.

‘MSR’ in the text of the Agreement, the parties chose to apply the LOSC provisions on MSR ‘by analogy’, which, according to the Explanatory Notes, allows the Dutch government to “sufficiently fulfil its duty of care and provide for a recognisable context in the international arena”.¹⁸ Yet, as will be discussed below, the Agreement not only transposes obligations from Part XIII that relate strictly to the deployment of installations, but also more MSR-related ones, such as the obligation to publish scientifically relevant findings.¹⁹ Although this may give the impression that the Agreement in effect treats the Ocean Cleanup’s activities as MSR, the reluctance to explicitly qualify it as such may have to do with the fact that it is not necessarily an obvious fit.

The Ocean Cleanup as Marine Scientific Research?

The LOSC does not define which activities qualify as MSR.²⁰ MSR is considered to cover a wide range of disciplines and activities that have in common that they serve a ‘scientific purpose’.²¹ The Ocean Cleanup has a unique agenda in this respect.²² Its goal is to rid the oceans of plastic in order to improve the overall condition of the marine environment. Although this is not a primarily scientific aim, it does entail a considerable amount of research. The Ocean Cleanup describe their challenge as unique in that they “not only try to develop a technology to solve the problem, but at the same time work at understanding the problem itself”.²³ This involves, for example, collaboration with scientists researching the make-up and movements of plastics within the GPGP.²⁴ A study commissioned by the Ocean Cleanup to explore whether its activities could qualify as MSR distinguishes between the current trial phase

18 Explanatory Notes (n 8), at para. A3.

19 See Agreement (n 10), Article 6.1 and Explanatory Notes to Article 6.1 (n 8), referring to Article 244 LOSC.

20 A Soons, ‘Marine Scientific Research: Provisions in the Convention on the Law of the Sea, Issues of Interpretation’, *The UN Convention on the Law of the Sea: Impact and Implementation* (Law of the Sea Institute, Honolulu, HI, 1987) 365-372, at p. 366.

21 DR Rothwell and T Stephens, *The International Law of the Sea* (2nd edn, Hart Publishing, Oxford, 2016) at p. 348.

22 Although the Ocean Cleanup is a non-profit organisation, there are commercial elements to its proposed strategy, as it ultimately aims to self-finance based on the proceeds derived from selling the plastic as raw material, see The Ocean Cleanup (n 1), at p. 8.

23 See <https://www.theoceancleanup.com/scientific-publications/>; accessed 30 March 2019; see also The Ocean Cleanup Policy Plan, available at https://www.theoceancleanup.com/fileadmin/media-archive/Documents/TOC_Foundation_Policy_Plan_Beleidsplan.pdf; accessed 30 March 2019.

24 See for example Lebreton and others (n 2); L Lebreton and A Andrady, ‘Future Scenarios of Global Plastic Waste Generation and Disposal’ (2019) 5 *Palgrave Communications* 6, available at <https://www.nature.com/Articles/s41599-018-0212-7>; accessed 30 March 2019.

and the final operational ‘clean up’ phase. Drawing a parallel with scientific research into techniques to contain and clean up oil spills, the study argues that this could be seen as striving to contribute to the body of knowledge about methods to clean up or restore the marine environment.²⁵ To this extent, the Ocean Cleanup’s activities could be regarded as serving a scientific purpose. However, once the technology has proven successful, it is questionable whether its continued operation could still be considered MSR. The Agreement does not distinguish between the trial phase and the operational phase, nor does it or the Explanatory Notes elaborate on which aspects of the Ocean Clean-up’s activities could be treated as MSR or not. The question thus remains open.

Scientific research is a recognised high seas freedom.²⁶ The tricky distinction between ‘pure’ research and ‘applied’ research is not particularly relevant on the high seas in the absence of the need for coastal state consent, which may be withheld when MSR has direct significance for a coastal state’s exclusive rights over natural resources.²⁷ MSR on the high seas is largely self-regulated, in contrast to the EEZ and continental shelf where coastal states exercise a degree of discretion and oversight.²⁸ It thus provides an open category of activities covered by a framework of general principles, including rules on the deployment and use of MSR installations or equipment. These are aligned with the other rights and obligations of states concerning the protection of the marine environment, maritime safety, and other legitimate uses of the high seas.²⁹ The choice to model the Agreement on Part XIII appears to be a pragmatic one. As the Agreement was concluded shortly before the scheduled launch and actual deployment of the system, it enables compliance by the Ocean Cleanup without requiring major changes to the setup of its activities.³⁰ Finally, by applying Part XIII ‘by analogy’ the Agreement gives the Minister a sufficient legal basis to take responsibility for the Ocean Cleanup’s activities in international fora.³¹

25 AC Fresacher et al., ‘The Ocean Cleanup Project as Marine Scientific Research’ (Leiden University, Leiden), at p. 23, available at https://www.theoceancleanup.com/fileadmin/media-archive/Documents/TOC_Foundation_Policy_Plan_Beeldsplan.pdf; accessed 30 March 2019.

26 LOSC Article 87(1)f, whereas Article 257 speaks of ‘marine scientific research’.

27 See LOSC Article 246. See also Rothwell and Stephens (n 21), at pp. 346–347.

28 LOSC Articles 246–255. MSR in the territorial sea falls under the sovereignty and jurisdiction of the coastal state, LOSC Article 245. See also *ibid.*, at p. 360.

29 LOSC Articles 238–241 and 258–263.

30 Explanatory Notes (n 8), at para. A3.

31 As an example, the Explanatory Notes mention the International Maritime Organization (IMO) where the system could be discussed with respect to shipping routes and

For reasons of consistency the Agreement therefore follows the terminology found in the LOSC and other relevant international instruments.³²

The Netherlands does not have implementing legislation for Part XIII of the LOSC in place, so the Agreement draws on the relevant provisions directly. It is uncontroversial that the Ocean Cleanup exclusively fulfils peaceful purposes set forth in Article 240, although this requirement is not repeated in the Agreement. Whether it resorts to appropriate scientific methods and means is closely linked to the question of which (part of its) activities would be seen as MSR,³³ but, as observed above, this is a point on which the Agreement is mute. The Agreement focusses instead on providing for the system's interaction with other uses of the high seas and maritime safety,³⁴ as well as its compliance with regulations on the protection of the marine environment,³⁵ each of which will be discussed in more detail below. Flowing directly from the application of Part XIII is the requirement that the Minister will ensure that other states as well as relevant international organisations are informed through the appropriate channels of the Ocean Cleanup's activities.³⁶ On the part of the Ocean Cleanup, the Agreement imposes the obligation, in accordance with Article 244, to make (scientific) findings publicly available within reasonable time.³⁷ From the start of its work, the Ocean Cleanup has shared results from various stages of the system's design process, as well as from the ongoing research into plastics on its website and in publications with collaborating scientists in peer-reviewed journals.³⁸

Maritime Safety and Other Uses of the High Seas

Article 4.1 of the Agreement provides that the Ocean Cleanup will take the necessary precautionary measures to prevent hindrance caused by the system. The Article only refers to fishing activities, but read in the light of Article 87 of the LOSC it can be presumed that this should cover all other legitimate

navigational issues. *Ibid.* The Ocean Cleanup has been invited to present its project at the IMO. The Ocean Cleanup (n 1), at p. 6.

32 Explanatory Notes (n 8), at para. A3 and to Articles 1.1–1.2.

33 LOSC Article 240(b).

34 See LOSC Article 240(c).

35 See LOSC Article 240(d).

36 See Agreement (n 10), Articles 5.1 and 5.2. This is in line with LOSC Articles 242 and 250.

37 This is provided for in Article 6.1 of the Agreement (n 10), on the condition that it does not pose a risk to the further implementation or improvement of the Ocean Cleanup's activities.

38 See <https://www.theoceancleanup.com/scientific-publications/>; accessed 30 March 2019.

uses of the high seas, to which due regard is to be had. This due regard obligation seems to be reflected in Article 4.2, which requires the Ocean Cleanup to consult with any party claiming to suffer hindrance from the system in order to seek a joint solution, thereby denoting a balance of interests. As far as the safety of the system at sea is concerned, the Agreement is drafted, where applicable, in line with legislation applicable to ships flying the Dutch flag.³⁹ This is in accordance with the requirement under the LOSC that MSR is conducted in compliance with other relevant rules of international law,⁴⁰ which, to the extent applicable, would include IMO Conventions such as COLREGS, SOLAS and MARPOL.⁴¹ The Agreement provides that the system will provide as little hindrance as possible to established international shipping routes with a high density of passing vessels.⁴² As no traffic-dense shipping routes traverses the GPGP, the Ocean Cleanup claims that the chances of a vessel coming across a clean-up system are minimal.⁴³ Yet, hindrance cannot be ruled out.⁴⁴ First, the system cannot adjust its own course and may drift into a busy shipping route. Second, the risks would appear to increase significantly as the number of systems deployed increases. The Agreement, however, does not differentiate in any of its provisions between the deployment of a single system or a fleet. The Ocean Cleanup submits that system location monitoring will allow a system that threatens to drift off course to be towed away in good time,⁴⁵ but actual practice will have to prove if this is the case, considering it would require a support vessel to come in from the nearest port. To help ships navigate around the system, it needs to be equipped with traceability and visibility instruments that are standard on sea-going vessels, a requirement that is furthermore in

39 Explanatory Notes (n 8), at para. A3.

40 This applies to the exercise of all high seas freedoms, LOSC Article 87(1), as well as to MSR in particular, LOSC Article 240(d).

41 Convention on the International Regulations for Preventing Collisions at Sea (COLREGS) (London, 20 October 1972, in force 15 July 1977) 1050 *UNTS* 16, as amended; International Convention for the Safety of Life at Sea (SOLAS) (London, 1 November 1974, in force 25 May 1980) 1184 *UNTS* 2, as amended; International Convention for the Prevention of Pollution from Ships (MARPOL) (London, 1973 Convention, 1978 Protocol, 1997 Protocol Annex VI, in force 2 October 1983) 1340 *UNTS* 61, as amended.

42 Agreement (n 10), Article 1.4(4). Note that the wording of Article 261 of the LOSC requires that MSR equipment 'shall not constitute an obstacle to established international shipping routes'.

43 They estimate that on average fewer than five vessels can be found within the GPGP at any given time. The Ocean Cleanup (n 1), at p. 6.

44 See also Explanatory Notes to Article 1.4 (n 8).

45 The Ocean Cleanup is required to do so under Article 2.3 of the Agreement (n 10). See also Explanatory Notes to Article 1.4 (n 8).

line with Article 262 of the LOSC.⁴⁶ At present, the system is fitted with a (solar-powered) GPS, Automatic Identification System (AIS), radar reflectors, navigational signals, and light beacons.⁴⁷ A Formal Safety Assessment (FSA) as referred to in MSC/Circ.1023/MEPC/Circ.392 or equivalent is furthermore required before deployment on the high seas, and this assessment has to be renewed in case of any significant changes to the design of the system.⁴⁸ Finally, the Agreement requires the Ocean Cleanup to take out insurance or security cover for any damage caused by the system to third parties, including damage resulting from pollution or maritime accidents. Any damage resulting from an accident caused by the system for which the Netherlands is liable under international law and has paid compensation to third states, can be recovered from the Ocean Cleanup.⁴⁹

Protection of the Marine Environment

The Agreement contains a number of provisions on the protection of the marine environment from any (accidental) damage caused by the activity itself. This is in recognition of the Netherlands' general obligation to protect the marine environment in accordance with Part XII of the LOSC, and to ensure that activities under its control do not cause damage by pollution to the marine environment.⁵⁰ The Ocean Cleanup is required to take precautionary measures to this end, and is bound to remove any parts of the system from the high seas when they are no longer used.⁵¹ A dedicated Article furthermore requires precautionary measures to be taken for the protection of species

46 Agreement (n 10), Article 2.2. It furthermore requires the system to carry equipment that can detect and monitor problems with the system itself or parts thereof, see Article 2.3.

47 Explanatory Notes to Article 2.2 (n 8). The Ocean Cleanup says it is collaborating closely with the US Coast Guard who will chart the area of deployment as a special operations zone, and will send out regular navigation notices to passing traffic. There is no mention of the creation of safety zones on the basis of Article 260 LOSC.

48 Agreement (n 10), Article 2.4. The Ocean Cleanup says it conducts FSAs; however, these have not been made public. The Explanatory Notes (n 8) state that the Ocean Cleanup has found an EU-recognised classification society to evaluate the assessment.

49 Agreement (n 10), Article 2.5(2). This would for example be the case when damage is caused by pollution of the marine environment resulting from the activity, analogous to LOSC Articles 263(3) and 235.

50 See LOSC Articles 192; 194(2) and 240(d).

51 Agreement (n 10), Article 3.1.

in the area of operation, including the establishment of a monitoring plan.⁵² The systems' impacts on marine life were taken into account in the design of the system, in line with the precautionary approach. According to the Ocean Cleanup, its slow speed and the impenetrable curtain should avoid marine life getting trapped, and instead guide organisms into the current flowing underneath it.⁵³

The Ocean Cleanup published an Environmental Impact Assessment (EIA) in July 2018 before towing the system to the high seas.⁵⁴ Presumably for this reason and the fact that this EIA did not establish a risk of significant harm to the marine environment,⁵⁵ the Agreement does not mention the need for an EIA anywhere. Yet, this appears to be a lacuna, especially as the proposed scale-up of the project might significantly affect the potential (cumulative) environmental impacts in the future, and the 2018 EIA only covered the towing test and the first year of deployment in the GPGP.⁵⁶ Reasonable grounds to expect that significant harm may occur could nevertheless arise at a later stage of the project, in which case the Netherlands is required under international law to assess these risks by means of a new EIA and notify any potentially affected states.⁵⁷ A number of concerns about the Ocean Cleanup's EIA have been raised by experts who claim that it did not adequately address effects of the system on, for example, particular (endangered) species living in the surface layer of gyre,⁵⁸ or the risk of 'by-catch', nor has an approach been developed to

52 *Ibid.*, Article 3.2. See also The Ocean Cleanup Policy Plan, at p. 2, available at https://www.theoceancleanup.com/fileadmin/media-archive/Documents/TOC_Foundation_Policy_Plan_Beleidsplan.pdf; accessed 30 March 2019.

53 The Ocean Cleanup (n 1), at p. 7. See also <https://www.theoceancleanup.com/technology/>; accessed 30 March 2019.

54 CSA Ocean Sciences, 'The Ocean Cleanup Environmental Impact Assessment' (2018), available at https://www.theoceancleanup.com/fileadmin/media-archive/Documents/TOC_EIA_2018.pdf; accessed 30 March 2019.

55 *Ibid.*, at para. ES-3.

56 *Ibid.*, at para. ES-1.

57 LOSC Article 206, as well as customary international law as confirmed in *Pulp Mills on the River Uruguay* (n 7), at para. 204; *Construction of a Road in Costa Rica* (n 7), at paras. 104, 106.

58 R Helm, 'How Plastic Cleanup Threatens the Ocean's Living Islands' *The Atlantic* (22 January 2019); available at <https://www.theatlantic.com/science/archive/2019/01/ocean-cleanup-project-could-destroy-neuston/580693/>; accessed 30 March 2019. For a response by the Ocean Cleanup see B Slat, 'The Ocean Cleanup and the Neuston' (6 February 2019), available at <https://www.theoceancleanup.com/updates/the-ocean-cleanup-and-the-neuston/>; accessed 30 March 2019.

deal with biofouling in an effective and environmentally sound way.⁵⁹ A final provision under the 'environmental' chapter of the Agreement concerns the processing of the captured plastic, and requires the Ocean Cleanup to ensure that this is done in accordance with applicable domestic and international legislation.⁶⁰ It is interesting to note in this respect that the Ocean Cleanup's zero-waste policy treats the captured plastic as raw material, rather than waste.⁶¹ Other than 'best efforts' obligations in terms of precautionary measures, the Agreement does not set out any concrete environmental standards or obligations in addition to what has already been done in terms of the system's basic design, and the environmental provisions thus remain of a general character.

Conclusion

The Ocean Cleanup is a unique operation in both law and practice. The Dutch Government is committed to support the endeavour and recognises its international obligations in this regard, to which the Agreement bears witness. The Agreement steers clear of the definitional and technical difficulties involved in framing the Ocean Cleanup's activities in terms of any specific high seas freedom or particular legal category of activities. The 'analogous' application of Part XIII is a pragmatic, and perhaps questionable, choice, but it may prove to be more problematic in theory than in practice. The freedoms listed in Article 87 were never meant to be exhaustive and the terms are undefined by the Convention. Its application to a new type of activity like the Ocean Cleanup proves that the Convention is flexible enough to nevertheless provide a recognisable legal framework. The Ocean Cleanup's mission to clean the marine environment is clearly in line with the object and purpose of the Convention,⁶²

59 H Summers, 'Great Pacific Garbage Patch \$20m Cleanup Fails to Collect Plastic' *the Guardian* (20 December 2018); available at <https://www.theguardian.com/environment/2018/dec/20/great-pacific-garbage-patch-20m-cleanup-fails-to-collect-plastic>; accessed 30 March 2019; for a critical review of issues left unaddressed by an earlier feasibility study see K Martini and M Goldstein, 'The Ocean Cleanup, Part 2: Technical review of the feasibility study' *Deep Sea News* (14 July 2014) available at <http://www.deep-seanews.com/2014/07/the-ocean-cleanup-part-2-technical-review-of-the-feasibility-study/>; accessed 30 March 2019.

60 Agreement (n 10), Art 3.3.

61 Explanatory Notes to Article 3.3 (n 8).

62 See Preamble and e.g. Article 243 of the LOSC. This is a minimum requirement, *ad-hoc* meetings may be called for at any time.

as well as with general international policy objectives such as UNEP's 'war on plastic'.⁶³ Thus far, it can count on international support.⁶⁴

While the general terms of Part XIII may thus provide a suitable model to ensure The Ocean Cleanup's activities are conducted in line with relevant international law, the generality of the Agreement also leaves a number of issues outstanding. A main concern is the lack of differentiation between operating a single system and the scale-up, especially as the monitoring obligation is limited to one year, and there is no provision for a (renewed) EIA. While recognising the need for 'precautionary measures' in general, the Agreement does not impose specific environmental standards or procedures, nor does it deal with the process of collecting the plastic or the support vessels' interaction with the system. The annual meeting between the parties that is provided for to evaluate the effectiveness of the Agreement is important, because this provides the basis for any future amendments to the Agreement.⁶⁵ The legal relationship between the parties may furthermore change if the system is registered on the Dutch flag registry in the future. Considering it is still early days in the Ocean Cleanup's venture into uncharted waters, any legal issues that remain unaddressed or that only present themselves at a later stage, may thus have to be addressed in a responsive, rather than a pro-active manner. In any event, the current Agreement leaves no doubt regarding the core responsibilities and liabilities, in line with the LOSC's legal framework.⁶⁶

63 See <https://www.unenvironment.org/news-and-stories/press-release/nations-commit-fight-plastic-pollution-together-during-un-general>; accessed 30 March 2019.

64 This is apparent from the close cooperation with the US as the nearest coastal state, as well as statements of support from the industry, e.g. Baltic and International Maritime Council (BIMCO). See The Ocean Cleanup (n 1), at p. 7.

65 Agreement (n 10), Article 6.3; and Explanatory Notes (n 8).

66 The research for this contribution is funded by the European Research Council under the European Union's Horizon 2020 research and innovation programme (Grant Agreement No 639070 – SUSTAINABLEOCEAN).

Annex: Agreement between the State of the Netherlands and The Ocean Cleanup concerning the deployment of systems designed to clean up plastic floating in the upper surface layer of the high seas (Published in Staatscourant nr. 31907, 6 July 2018)

The Parties,

The State of the Netherlands, represented in this matter by the State Secretary for Infrastructure and Water Management, hereinafter referred to as ‘the Minister’;

And

Stichting The Ocean Cleanup, a foundation under Dutch law and registered with the Dutch trade registry under number 57262632, and **The Ocean Cleanup Projects B.V.**, a private limited liability company incorporated under Dutch law with the Dutch trade registry under number 67171699, both represented by Boyan Damir Slat and together referred to hereinafter as ‘The Ocean Cleanup’;

Whereas,

- The Ocean Cleanup has as its objective to significantly reduce the amount of floating plastic in the oceans, more specifically in the five sub-tropical gyres, by means of the technology it has developed;
- The Ocean Cleanup is already well advanced in the development of a system designed to clean up floating plastic from the oceans;
- over the next few years, The Ocean Cleanup intends to deploy several individual systems into the five sub-tropical gyres;
- the first system will be deployed on the high seas in 2018;
- the activities of The Ocean Cleanup are closely aligned with the ambitions of the Kingdom of the Netherlands regarding innovation, sustainability and ocean policy;
- the international community can hold the Kingdom of the Netherlands to account for the activities of The Ocean Cleanup, comprising Stichting The Ocean Cleanup and The Ocean Cleanup Projects B.V., due to the links between The Ocean Cleanup and The Ocean Cleanup Projects B.V. on the one hand and the Kingdom of the Netherlands on the other hand; and
- The Ocean Cleanup indicated that it would appreciate the Dutch government playing an active role in the international community in the interests of its activities.

Agree as follows,

CHAPTER 1. GENERAL PROVISIONS

Article 1.1 Definitions

For the purposes of this agreement and the annexes, the following definitions apply:

- a. international organizations: relevant international treaty bodies;
- b. maritime accident: a collision, stranding or other maritime incident, or another occurrence on board a vessel or external resulting in material damage or imminent threat of material damage to a vessel or its cargo;
- c. system: one or more floating systems developed by The Ocean Cleanup and designed to capture plastic floating in the upper surface layer of the high seas; and
- d. high seas: all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State.

Article 1.2 Interests

The Parties will take appropriate precautionary measures to secure the safety of shipping, the protection of the marine environment and other uses of the high seas.

Article 1.3 Purpose

This agreement lays down the Parties' agreement as to how the interests referred to in article 1.2 are to be taken into account in the preparation and implementation of the activities that The Ocean Cleanup will undertake to clean up plastic floating in the upper surface layer of the high seas by means of a system developed by The Ocean Cleanup.

Article 1.4 Area of operation of the system

1. The system will be deployed exclusively on the high seas.
2. The system will not be deployed in areas under national jurisdiction without the consent of the State or States concerned.
3. The system will create as little hindrance as possible to established international shipping routes with a high density of passing vessels.

Article 1.5 National identification markings

The origin of the system and its connection to the Netherlands will be displayed through identification markings affixed to the system.

CHAPTER 2. MARITIME SAFETY

Article 2.1 Choice of materials for the system

The system is constructed from materials suitable for use on the high seas.

Article 2.2 Traceability and visibility

In order to ensure the safety of navigation, the system is equipped with sufficient instruments to render it visible and identifiable both with the naked eye and with the help of instruments generally present on sea-going vessels. The system's instruments comply with the applicable functional and technical standards for the use of such instruments on the high seas.

Article 2.3 Detection and Monitoring

1. The location of the system will be determined and transmitted by the instruments referred to in article 2.2. This data will be monitored so that it is possible to establish the location of the system.
2. Measures will be taken where necessary if the system drifts or threatens to drift outside of the planned area of operation of the system.
3. The system carries equipment that can detect and indicate leaks in the system or whether there is reason to believe that it no longer constitutes a single floating installation. The data from this equipment will be monitored so that measures may be taken if necessary.

Article 2.4 Formal Safety Assessment

1. The Ocean Cleanup will carry out a Formal Safety Assessment as referred to in MSC/Circ.1023/MEPC/Circ.392, as amended, or an equivalent assessment of the system, before the system is deployed onto the high seas.
2. In the event of any significant change to the design of the system based on which the Formal Safety Assessment was carried out, a supplementary Formal Safety Assessment will be carried out, at least in respect of that significant change.

Article 2.5 Liability

1. Before the system is transported to the high seas, provision will be made for insurance or security subject to the usual conditions in order to cover any damage caused to third parties, including damage caused by oil pollution or other pollution arising from or caused by the system, and any damage resulting from a maritime accident caused by the system or parts thereof.
2. In the event of damage resulting from an accident caused by the system or parts thereof for which the Minister is liable to a third party under the applicable law,

the Minister may recover compensation for such damage from Stichting The Ocean Cleanup, The Ocean Cleanup Projects B.V. or the owner of a system that acceded to this agreement pursuant to article 6.8, insofar as such party is liable for the damage under the applicable law.

Article 2.6 Investigation by the Netherlands or another State

The Ocean Cleanup will cooperate with any investigation initiated by the Netherlands or another State involved into the facts of a maritime accident in which the system or parts thereof were or may have been involved.

CHAPTER 3. PROTECTION OF THE MARINE ENVIRONMENT

Article 3.1 Safeguarding environmental interests

1. The Ocean Cleanup will take the necessary precautionary measures that may reasonably be expected of it to prevent damage to the marine environment arising from the deployment of the system.
2. The Ocean Cleanup will ensure, in as far as it may reasonably be expected to do so, that the system or parts thereof are removed if they are not being used or fall into disuse during deployment on the high seas.

Article 3.2 Protection of species

1. The Ocean Cleanup will take the necessary precautionary measures that may reasonably be expected of it to prevent harm arising from the deployment of the system to species present in the area of operation of the system.
2. The Ocean Cleanup will implement a monitoring plan during the first year of the system's deployment on the high seas. The interaction between the system and species present in the area will form part of that plan. This will take into account, among other things, the impact of plastic and other materials that may be captured by the system on species present in the area.

Article 3.3 Processing of plastic

1. The Ocean Cleanup will endeavour to ensure that the processing of plastic and other materials that may be captured by the system on the high seas complies with applicable national and international regulations.
2. The Ocean Cleanup will include a provision in its agreements with third parties concerning the processing of plastic and other materials that may be captured by the system on the high seas to the effect that such third parties must comply with applicable national and international regulations.

CHAPTER 4. OTHER USE OF THE HIGH SEAS***Article 4.1 Safeguarding interests in relation to other uses of the high seas***

1. The Ocean Cleanup will take the necessary precautionary measures that may reasonably be expected of it to prevent the system from hindering fishing activity in the area of operation.
2. If any hindrance nevertheless occurs, The Ocean Cleanup will consult with the respective party claiming to be suffering hindrance from the system in order to seek a joint solution acceptable to both The Ocean Cleanup and the party claiming hindrance.

CHAPTER 5. INTERNATIONAL COMMUNITY***Article 5.1 Safeguarding diplomatic interests***

1. The Minister will ensure, through the appropriate diplomatic channels, that other States are informed of The Ocean Cleanup's activities and, if necessary, that contacts are facilitated between The Ocean Cleanup staff and any States concerned.
2. In view of the Minister's obligation under paragraph 1, The Ocean Cleanup will inform the Minister of any contact it has or has had with other States and the scope and outcome of such contact.

Article 5.2 Involvement of international organizations

1. The Parties will consult each other as to the way in which international organizations will be informed, where necessary, with regard to The Ocean Cleanup's activities.
2. For the purposes of the consultations between the Parties referred to in paragraph 1, The Ocean Cleanup will inform the Minister about contacts it has or has had with international organizations and the essence and outcome of such contact.

CHAPTER 6. OTHER PROVISIONS***Article 6.1 Transparency concerning activities***

1. The Ocean Cleanup will provide the Minister, as soon as reasonably possible, with the results of the deployment of the system, the monitoring of the system and unforeseen circumstances relating to the system or parts thereof.
2. The Ocean Cleanup will provide the Minister with information regarding its activities at the latter's request as soon as reasonably possible.

3. The Ocean Cleanup will make known and publicly accessible outcomes or findings of scientific relevance within a reasonable time, provided this does not pose a risk to the further implementation or improvement of its activities.

Article 6.2 Confidentiality

The information exchanged by the Parties concerning the implementation of this agreement will not be shared with any third parties without mutual consent, in accordance with applicable legislation.

Article 6.3 Evaluation

1. The Parties will meet at least once a year to keep each other informed of relevant developments.
2. The Parties will evaluate the effectiveness and outcomes of this agreement at least once a year, and at the end of the duration of this agreement. The Parties may agree to amend this agreement as a result of such evaluation.

Article 6.4 Investigation of possibility of registering the system

This agreement does not affect the option for The Ocean Cleanup to explore the possibility of registering the system as a ship in the Netherlands and as a vessel flying the Dutch flag.

Article 6.5 Unforeseen circumstances

1. In the event of unforeseen circumstances, the one Party encountering the unforeseen circumstances will inform the other Party in writing of said circumstances.
2. The Parties will enter into consultations within four weeks of the notification by one Party of the other of the unforeseen circumstances.
3. If the unforeseen circumstances are such that, in accordance with standards of reasonableness and fairness, the maintenance of this agreement in its present form cannot be expected, one Party may propose to the other Party in writing to amend this agreement, indicating the parts to be amended. Any amendment requires the written consent of the other Party.
4. The written request referred to in paragraph 3 must explain the unforeseen circumstances and why they are such as to rule out the possibility of maintaining this agreement in its present form.
5. If the consultations referred to in paragraph 2 have not resulted in agreement between the Parties within twelve weeks of the date of the written request referred to in paragraph 3, either Party may cancel this agreement in writing if circumstances have changed to such an extent that the agreement should, in the interests of fairness, be ended at short notice. Examples of such changed

circumstances include financial cuts adopted by the government and any serious prejudice or harm to the international interests of the Kingdom of the Netherlands.

6. The written cancellation referred to in paragraph 5 sets out the change in circumstances and explains why these circumstances are such that the parties cannot reasonably be expected to maintain this agreement in its present form.
7. If one Party cancels this agreement, both Parties are responsible for a proper settlement of the cancellation. Neither Party is liable to pay compensation to the other as a consequence of the cancellation of this agreement.
8. Written requests and written approvals by the Parties, as referred to in paragraph 3, are to be appended to this agreement as annexes.

Article 6.6 Amendment for other reasons

If the Parties wish to amend this agreement for reasons other than unforeseen circumstances, article 6.5, paragraphs 3, 4 and 8 apply *mutatis mutandis*.

Article 6.7 Termination

1. Without prejudice to the other provisions of this agreement, if one Party is in breach of this agreement or if compliance is impossible, either temporarily or permanently, the other Party may terminate this agreement in whole or in part without recourse to the courts.
2. If one Party cannot fulfil its obligations under this agreement due to force majeure, the other Party may not terminate this agreement until a period of six months has elapsed, unless the Parties agree on a different period. The six-month period begins on the day following the date of dispatch of a written notification on the situation of force majeure.
3. Force majeure does not include, in any event: a staff shortage, strike action, staff illness or failures by third parties.
4. The Party that invokes termination as referred to in paragraph 1 or 2 must inform the other Party of the termination by means of a written notification stating the grounds for termination.
5. If this agreement is terminated, both Parties are responsible for a proper settlement of the termination. Neither Party is liable to pay compensation to the other as a consequence of the termination of this agreement.

Article 6.8 Accession

1. A third party may accede to this agreement only if it is:
 - a. the owner of a system other than The Ocean Cleanup Projects B.V.;
 - b. associated with The Ocean Cleanup; and
 - c. a legal entity under Dutch law.

2. For a third party to accede, an accession agreement must be signed by the acceding third party and by Stichting The Ocean Cleanup, and by the Minister by way of confirmation.
3. The Minister is deemed to have signed the accession agreement by way of confirmation as referred to in paragraph 2 if the Minister has made no objection within eight weeks of the dispatch to the Minister of the accession agreement signed by the acceding third party and Stichting The Ocean Cleanup.
4. By means of the accession referred to in paragraph 2, the acceding third party becomes party to this agreement, on the understanding that the acceding third party may not invoke article 6.5, 6.6 or 6.7.
5. The model contained in annex 1 to this agreement is the template for the accession agreement.
6. This agreement will not be amended as a result of accession by a third party.
7. A third party that has acceded may withdraw from this agreement by means of a written notification to the Parties. In the event of withdrawal by a third party that has acceded, all those involved are responsible for a proper settlement of the withdrawal.
8. A signed accession agreement referred to in paragraph 2 and a written notification referred to in paragraph 7 are to be appended to this agreement as annexes.

Article 6.9 Enforceability

This agreement is legally enforceable.

Article 6.10 Recourse to the courts

All disputes between the Parties arising from or in relation to this agreement are to be settled by the competent court in The Hague.

Article 6.11 Invalidity

If a provision of this agreement has to be regarded as void, voidable, invalid, unlawful or otherwise non-binding, that provision is to be removed from this agreement and replaced by a provision which is binding and legally valid and which conveys the substance of the invalid provision as closely as possible. In such a situation, the remainder of this agreement will remain unchanged.

CHAPTER 7. CONCLUDING PROVISIONS

Article 7.1 Entry into force and duration

- 1 This agreement will enter into force for a period of five years following the date on which it is signed by all Parties.

- 2 This agreement will be automatically extended each time by a two-year period, but not before an evaluation as referred to in article 6.3 has taken place with regard to the preceding period.

Article 7.2 Applicable law

This agreement is governed exclusively by Dutch law.

Article 7.3 Language

This agreement has been drawn up in Dutch and in English. The Dutch text is the official version of this agreement and will prevail in the event of a dispute. The English text has been appended as annex 2 to this agreement.

Article 7.4 Publication in the Government Gazette (*Staatscourant*)

1. This agreement and any amendments thereto will be published in the Government Gazette (*Staatscourant*) and within four weeks of signature by all Parties.
2. The following will be published in the Government Gazette (*Staatscourant*) in Dutch and English:
 - a. the written documents relating to amendments to this agreement as referred to in articles 6.5, 6.6 and 6.11;
 - b. a written cancellation as referred to in article 6.5;
 - c. a written notification as referred to in articles 6.7 and 6.8; and
 - d. an accession agreement as referred to in article 6.8.

Done and signed in triplicate, At The Hague, on 8 June 2018 State Secretary for Infrastructure and Water Management, Stichting The Ocean Cleanup, The Ocean Cleanup Projects B.V.