GESAMP
Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection

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Agenda item 7

SCOPING ACTIVITIES

Proposal to establish a GESAMP marine geoengineering working group

Submitted by IMO

Background and context

1 Parties to the London Convention and London Protocol first expressed concern about the marine environmental impacts of a marine geoengineering activity in 2007 due to a proposed ocean fertilization activity planned by the US company Planktos.

2 In 2008, the Parties adopted Resolution LC-LP.1(1) deciding ocean fertilization activities other than legitimate scientific research should be considered as contrary to the aims of both instruments. In 2010, by Resolution LC-LP.2(2), the Parties adopted an Assessment Framework for Scientific Research Involving Ocean Fertilization[1]. However, whilst these Resolutions set out political commitments, they were not legally binding.

3 In addition, in the absence of appropriate international mechanisms, Parties to the Convention on Biological Diversity (CBD) adopted Decisions IX/16 (2008) and X/33 (2010) which form a de facto moratorium on deployment and most forms of research into ocean fertilization and other forms of geoengineering "in the absence of science-based, global, transparent and effective control and regulatory mechanisms for geoengineering". Once again, these Decisions are not legally binding.

4 The London Protocol was amended in October 2013 to regulate ocean fertilization activities and also enables the Parties to regulate other marine geoengineering activities within the scope of the Protocol, in future. The amendments need to be ratified by two thirds of the Contracting Parties to come into force.

5 The amendments comprise:

.1 A definition of "marine geoengineering" in Article 5bis: used to determine what activities might be listed in new Annex 4 and regulated under new Article 6bis:

"Marine geo-engineering" means a deliberate intervention in the marine environment to manipulate natural processes, including to counteract anthropogenic climate change and/or its impacts, and that has the potential to result in deleterious effects, especially where those effects may be widespread, long-lasting or severe.

.2 A new Article 6bis in “Marine Geoengineering Activities” that sets out the regulatory controls for activities listed on new Annex 4. It provides that Parties shall not allow

[1] An online repository of references relating to application of the Assessment Framework for Scientific Research Involving Ocean Fertilization has been developed and is available on the London Protocol website: http://www.imo.org/en/OurWork/Environment/LCLP/EmergingIssues/geoengineering/OceanFertilizationDocumentRepository/Pages/default.aspx

placement of matter into the sea for a marine geoengineering activity listed in new Annex 4 except where the listing provides for the activity or sub-category of the activity to be authorised under a permit. Activities not listed in Annex 4 would not be regulated by the new Article 6bis.

.3 A new Annex 4 to list types of marine geoengineering activities regulated under new Article 6bis. Annex 4 currently contains just one listing, namely ocean fertilization, but could be amended in the future to list further activities, as appropriate. The definition of ocean fertilization in Annex 4 is taken from the definition agreed by the Contracting Parties in resolution LC- LP.1 (2008). The listing provides that an ocean fertilization activity assessed as constituting legitimate scientific research is permissible. All other ocean fertilization activities are prohibited.

.4 A new Annex 5 'Assessment Framework for Matter that may be Considered for Placement under Annex 4' that contains a generic assessment framework, which Parties must use before issuing permits pursuant to new Article 6bis.

Some consequential amendments

6 A wide variety of marine geoengineering techniques have been proposed that involve either adding substances to the ocean or placing structures into the ocean, primarily for climate mitigation purposes, but also for other purposes such as enhancing fisheries[2]. These proposed techniques are often little more than concepts but most of them involve potentially large scale interventions in the ocean with the potential for significant impacts on the marine environment. In addition, many of these activities would be likely to take place on the high seas outside national jurisdictions so that they will raise international concerns. While a number of reviews of geoengineering per se have considered a small number of marine geoengineering techniques, mainly for their efficacy, none have reviewed a wide range of marine geoengineering techniques for their marine environmental impacts.

7 A GESAMP study is needed to assist the London Protocol Parties to:

.1 Better understand the potential ecological, social and impacts of different marine geoengineering approaches on the marine environment; and

.2 Identify those marine geoengineering techniques that it might be sensible to consider for listing in the new Annex 4 of the Protocol.

Proposed Terms of Reference

8 The GESAMP study should:

.1 Provide an initial high level review of a wide range proposed marine geoengineering techniques, based on published information, addressing:

- The main rationale, principle and justification of the techniques
- Their potential practicality and efficacy for climate mitigation purposes
- The potential impacts of different marine geoengineering approaches on the marine environment

[2] During GESAMP 42, Dr. Chris Vivian will be giving a presentation on the various marine geoengineering techniques being proposed, and their potential impacts.

- Identifying those techniques that appear to be likely to have some potential for climate mitigation purposes and that bear further more detailed examination

.2 Provide a more detailed focused review of a limited number of those proposed marine geoengineering techniques that appear to be likely to have some potential for climate mitigation purposes addressing:

- The potential ecological (and social/economic) impacts of those marine geoengineering approaches on the marine environment.

- An outline of the issues that would need to be addressed in an assessment framework for each of those techniques, using the London Protocol Assessment Framework for Scientific Research Involving Ocean Fertilization as a template.

- Their potential practicality and efficacy for climate mitigation purposes.

- An assessment of monitoring and verification issues for each of those marine geoengineering techniques.

- Identification of significant gaps in knowledge that would require to be addressed to fully assess the marine environmental implications of those techniques.

.3 Consider what useful additional work might be done by the Working Group beyond that listed above; and

.4 Produce a report on the above work.

9 The expertise required by the Working Group includes:

.1 Marine scientists and engineers with expertise in marine ecology (in particular plankton ecology, macroalgae and benthos), fisheries, marine chemistry/geochemistry, biogeochemistry, physical oceanography (including modeling), atmospheric chemistry and climate science;

.2 Scientists and engineers who have studied marine geoengineering techniques and their potential impacts; and

.3 Social scientists with expertise including environmental economics and possibly international law.

Work plan

10 The working methods of the Working Group will be a mix of meetings and intersessional work/correspondence, including videoconferencing/telephone conferencing where appropriate.

11 Provisional timeline:

.1 Meetings in November/December 2015 and February/March 2016;

.2 Deliver interim report by end March 2016;

.3 Deliver draft final report by end August 2016;

.4 Deliver final report by end December 2016;

.5 Peer review of the draft report required; and

.6 Provisions for publication, dissemination and outreach (PR).

Administrative arrangements

12 The following administrative arrangements are proposed:

Sponsors: IMO (Government of Canada), others (to be discussed at GESAMP 42).

Budget and funding: At least USD 80,000 secured (Government of Canada). Additional funding will be sought, if required.

WG Chairperson(s) and members: Chairman Dr. Chris Vivian, Cefas, United Kingdom (past Chairman of LC/LP Scientific Groups). Other members to be discussed at GESAMP 42.

Technical Secretary: IMO (Mr. Edward Kleverlaan)

Action requested of GESAMP

13 GESAMP is invited to consider the information provided and take action as appropriate.