Climos Views on Legal Framework for OIF

Submitted to the Legal and Intersessional Correspondence Group of the London Convention -- by Climos

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Introduction

- The purpose of this paper is to provide Climos' perspective on some of the open legal questions that may help inform the discussion under the London Convention/Protocol and specifically the Legal and Intersessional Correspondence Group's (LICG) work on ocean iron fertilization.

- Climos has stated that it will fully comply with all permitting and other environmental regulatory requirements that apply to its activities. We have therefore been particularly conscious of the applicable legal framework for our activities, and have reviewed with interest the views expressed by participants in the Legal and Intersessional Correspondence Group (LICG).

- Because Climos' business plan is focused on ocean iron fertilization (OIF), rather than the other techniques for ocean carbon sequestration addressed by the LICG, we limit our points to the legal framework applicable to OIF, focusing in particular on the particular OIF projects that Climos intends to conduct.

Essential Background on OIF and Climos

- Climos intends to conduct its activities in ocean areas that are iron limited, that are far from having any influence upon coastal waters, and that are outside of specially protected areas or unique jurisdictions such as the Antarctic. The potential areas that have been identified are on the high seas.

- Climos has not yet identified which vessel it would employ to conduct this activity or the port facility from which the iron compound would be loaded; these factors will be determined by operational and business considerations.

- Climos will place a solution consisting of an iron sulfate compound, a chelator (HCl), and ocean water into a carefully defined ocean patch for the purpose of stimulating the growth of naturally occurring short-lived phytoplankton blooms. In general terms, we intend to use an iron sulfate compound that is manufactured and used for a variety of land-based applications such as fertilization of plants and nutritional supplements for animals. While the iron sulfate is originally derived from a co-product of either steel manufacturing or titanium dioxide manufacturing, it is further processed by commercial formulators according to specifications appropriate for fertilizer uses. (Further information about the iron sulfate solution will be provided in a separate paper by Climos.)

Is OIF "Mere Disposal" or "Placement of matter for another purpose"?

- The threshold question is whether OIF falls within the scope of the London Convention and London Protocol. This question turns on the interpretation of the definition of "dumping," which is facially identical in both the Convention and the Protocol: it includes "any deliberate disposal into the sea of wastes or other matter from vessels . . ." and excludes "placement of matter for a purpose *other than the mere disposal* thereof, provided that such placement is not contrary to the aims of" the relevant agreement.

- We believe that, taking into account all the circumstances of OIF, the deposition of iron sulfate in OIF operations constitutes "placement of matter for a purpose other than mere disposal," as opposed to its "*mere disposal*."

    - First, the iron sulfate compound is a specially formulated product that is procured at considerable expense for this purpose. For purposes of the London Convention/Protocol, which divide material into "wastes" and "other matter," the iron sulfate compound would qualify as "matter" rather than as a "waste."

    - Second, and along the same lines, the iron sulfate is not being "disposed of," but rather actively *used* for a purpose entirely distinct from its mere disposal, namely its properties as a catalyst in the generation of phytoplankton blooms, an activity expressly undertaken for purposes of climate change mitigation.

    - Many of the submissions to the LICG appear to reflect a background concern that OIF operations might serve somehow as a pretext for the disposal of an unwanted waste. The commercial realities involved in OIF operations should be sufficient to assuage such concerns: the iron sulfate compound that will be used to catalyze phytoplankton blooms is a specially formulated product that requires significant resources to obtain and to transport to distant ocean waters for deployment. Simply put, it is difficult to identify any reason that a commercial or research entity would purchase this substance and transport it hundreds of miles into the open ocean for a purpose *other than* the generation of a phytoplankton bloom as a tool for carbon sequestration. There is no commercial benefit to OIF operations other than the sale of carbon credits associated with such sequestration.

    - Some have suggested that there must be an *a priori* determination of efficacy in order to determine if the activity is really being conducted for a purpose other than mere disposal. OIF's efficacy as a tool for carbon sequestration will certainly be a key factor in determining whether the activity is pursued at all: if it does not successfully sequester carbon for a meaningful time period in a measurable way that permits the monetization of that benefit, it will not be pursued by commercial actors. But efficacy does not appear relevant to an evaluation of the purpose for which the iron solution is being deployed, at least insofar as it relates to the type of scaled-up experiments being considered, which have as part of their goal the further measurement and demonstration of efficacy.

    - Third, some have contended that the "placement" exclusion might be limited to matter that is either permanently located in a defined site or intended to be retrieved. We are unaware of the legal basis for such assertions under the Convention or the Protocol. We also expect that many Parties and stakeholders would be concerned about the policy implications if such an interpretation were adopted. For example, it is not clear that the addition of nutrients to the marine water column in offshore marine aquaculture -- an activity that has raised questions about potential impacts on the marine environment -- meets either of these potential standards. Nor does the use of certain common marker substances, such as sulfur hexafluoride used to track ocean processes or rhodamine and other dyes used to study ocean circulation and dispersal rates in marine scientific research. Similarly, although it is theoretically possible retrieve cables and underwater pipelines and artificial reefs, such retrieval is not required for them to benefit from the placement exclusion.

Is OIF Contrary to the Aims of the Convention or Protocol?

- The key question, therefore, is whether the placement of such matter is contrary to the aims of the relevant agreement.

- Although the agreements differ slightly in their tone and emphasis, we believe that both agreements share a common aim of protecting the marine environment from harmful anthropogenic interference.

    - The aims of Convention are not expressly stated as such, but can be determined by reference to key provisions in the Convention that refer to general goals and objectives. The preamble refers to the goal of protecting the marine environment, for example, and Article I broadly obligates parties to "promote the effective control of all sources of pollution of the marine environment" and "pledge themselves to especially take all practicable steps to prevent the pollution of the sea by the dumping of waste and other matter that is liable to create hazards to human health, to harm living resources and marine life, to damage amenities, or to interfere with other legitimate uses of the sea."

    - The aims of the Protocol are also not expressly stated, but can likewise be evaluated by reference to Article 2, Objectives, and Article 3, General Obligations. Article 2 provides, for example, that Parties shall "protect and preserve the marine environment from all sources of pollution and take effective measures … to prevent, reduce and where practicable eliminate pollution caused by dumping." Article 3 provides that Parties "shall apply a precautionary approach to environmental protection from dumping ... whereby appropriate preventative measures are taken when there is reason to believe that wastes or other matter introduced into the marine environment are likely to cause harm …." Article 3.3 provides that "[i]n implementing the provisions of this Protocol, Contracting Parties shall act so as not to transfer, directly or indirectly, damage or likelihood of damage from one part of the environment to another or transform one type of pollution into another."

- It is noteworthy that both agreements aim broadly at the protection of the marine environment from *all sources* of pollution -- an objective that today necessarily includes the goal of protecting the oceans from the impacts of change due to anthropogenic use of fossil fuel. Climos therefore believes that an evaluation of whether OIF projects are contrary to the aims of these agreements can only be understood against the backdrop of the ongoing detrimental impacts that climate change and ocean acidification are imposing on oceans today. That background harm, which absent the adoption of near-term protective actions is likely to grow and accelerate in coming years, poses an existing and very real threat to oceans and marine ecosystems. Although Climos understands that OIF is not by any means the sole solution to these threats, OIF can play a potentially significant role in slowing those adverse impacts by removing from the atmosphere large quantities of already emitted carbon dioxide. That context means that in broad terms the aims of OIF are not only "not contrary" to the aims of the Convention and the 1996 Protocol, but indeed are fully supportive of them. This context helps to clarify that, instead of raising concerns about transforming one form of pollution into another, or transferring damage from one part of the environment to another (as prohibited by article 3.3 of the Protocol), OIF projects are in fact a partial response to the harm that climate change is already imposing on the oceans and marine ecosystems.

- Whether any individual OIF project is consistent with the aims of the Convention and Protocol, however, will depend on its circumstances.

    - We believe that OIF projects, *provided they are appropriately designed and executed* (see below), can be conducted in a manner that minimizes adverse impacts and comports with the Protocol's

precautionary approach by taking appropriate preventative measures when there is reason to believe that the project is likely to cause harm.

- The efficacy of OIF as a tool for sequestering carbon (i.e., the environmental benefits generally), which will need to be balanced against the potential for adverse impacts on the marine environment, will also be an important consideration in this evaluation, although more research and further experiments will be required before such information is available.

- A case-by-case evaluation of specific OIF projects would therefore be required in order to evaluate the legal framework that is applicable to them.

Defining a Well-Designed OIF Project – The Climos Elements of a Code of Conduct

- Climos recognizes the potential concern about the lack of clear global regulatory guidance applicable to OIF. In part to address these concerns, and to in effect define an OIF project that is designed in a manner to minimize any adverse environmental impacts, we have proposed elements of a Code of Conduct that track the core precautionary elements of these agreements, including (among other things) the need for:

    - advance permitting by government authorities, pursuant to applicable domestic laws governing ocean activities;

    - environmental impact reviews; and

    - careful project monitoring.

- Climos has proposed these as elements with the goal of further stakeholder and government input before the Code is finalized.

- Climos' own OIF projects will adhere to this code, and will be designed and executed according to a scientific approach to avoid adverse impacts through modeling, environmental impact assessments, careful characterization of the material, and monitoring and assessment.

- Although we intend that the Code of Conduct would apply to commercial and scientific projects in the absence of clear regulatory guidance, regulatory authorities may also find the Code of Conduct useful for purposes of determining the applicable regulatory framework. For example, whether a particular OIF project is being conducted pursuant to the Code of Conduct may serve as a useful proxy for purposes of identifying whether it is likely to be consistent with the aims of these agreements.

- It therefore may be desirable for the Parties to the London Convention/Protocol to develop and publish guidance that would identify best practices for OIF, drawing on the elements of the LC/Protocol's Waste Assessment Guidance and the Code of Conduct that we have proposed. This guidance could be similar to the artificial reef guidance currently under development by the SG -- an activity where jurisdiction is not always clear regarding applicability of the LC/Protocol. If the Parties are so inclined, Climos would welcome the chance to provide technical support to interested Parties to develop the elements of this guidance.

Specific Questions in the Event that the Convention or Protocol Apply

- The source and quantity of the iron sulfate to be deployed in any given OIF project are issues that would generally be relevant only if it were determined that an OIF project were "dumping" within the scope of the Convention or Protocol.

- Climos intends to provide the relevant authorities with full information about the composition, purity and source of material it will use for OIF activities. As noted, a separate paper provides provisional information available at the time being.

- With respect to the amount of iron sulfate that will be used, moreover, Climos will use the minimum amount required to achieve the desired biological effect among phytoplankton. Such an approach not only makes good environmental sense, it also makes good business sense given the cost of these inputs. More information about the operational goals for concentration of the iron across the project area is provided in the technical specifications paper.

- With respect to questions about the specific application of the Convention:

    - Questions have been raised whether iron sulfate for OIF would, if the Convention applied, fall within the Annex I category for industrial waste, defined as "waste materials generated by manufacturing or processing operations." As discussed above, the iron sulfate that will be used by Climos will not be a "waste" within the meaning of the Convention but rather a product, processed and engineered to specifications appropriate for this application. As a result, even if the Convention applied, the iron sulfate compounds used in OIF would not fall within Annex I.

    - Concerns have also been raised about whether an OIF project would need to be evaluated under Annex II. As noted above, Climos will obtain information about the constituents of the iron sulfate that it procures in order to confirm the absence of "significant quantities of" the matters listed in that Annex.

    - With respect to the iron sulfate itself, we believe that a well-designed OIF project -- that is, one that at minimum adheres to the elements identified in the draft Code of Conduct -- is unlikely to use "materials which, though of a non-toxic nature, may become harmful due to the quantities in which they are dumped, or which are liable to seriously reduce amenities." Nevertheless, the EIS that we have commissioned from TetraTech should help illuminate this question, which we would be pleased to address further at that point.

- With respect to the Protocol, the primary question, if the Protocol were deemed to apply to a particular OIF activity, is whether the substances used fall within the list of permissible substances on Annex 1. The precise scope of some of these categories is not clear. In the absence of such clear guidance and given the undesirable impact a narrow interpretation might have on the ability to conduct carefully designed OIF experiments under the Protocol, the Parties may wish to consider an amendment to the Protocol that expressly includes materials used for OIF within the scope of Annex 1.