

**Contribution from the International Maritime Organization (IMO)
to the report of the 14th meeting of the Informal Consultative Process on the topic
“Impacts of ocean acidification on the marine environment”**

Introduction

The International Maritime Organization (IMO) has been concerned for some years about elevated levels of carbon dioxide (CO₂) in the atmosphere, caused by CO₂ emissions from the combustion of fossil fuel and the subsequent contribution to climate change and ocean acidification. The Organization has sought to tackle this issue on two fronts:

- .1 through the adoption of a comprehensive mandatory regime aimed at limiting or reducing greenhouse gas emissions from ships. These include the adoption of both technical and operational measures, under MARPOL Annex VI, designed to put in place best practices for fuel efficiency (primarily, an energy efficiency design index for new vessels and an energy management plan for both new and existing ships). Amendments to MARPOL Annex VI entered into force on 1 January 2013. IMO is continuing its discussions on market-based measures (MBMs) to address GHG emissions from ships and on impact assessment of such measures on developing countries.
- .2 in the context of discussions by Contracting Parties to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (the London Convention) and its 1996 Protocol (London Protocol).

The following paragraphs elaborate on the discussion held under the London Convention and Protocol.

CO₂ sequestration¹ in sub-seabed geological formations under the London Protocol

Since 2005, the following has been achieved:

- .1 Contracting Parties adopted amendments to Annex 1 to the London Protocol to regulate CO₂ sequestration in sub-seabed geological formations (entered into force on 10 February 2007). The rules state that carbon dioxide streams may only be considered for dumping, if: (1) disposal is into a sub-seabed geological formation; (2) they consist overwhelmingly of carbon dioxide (they may contain incidental associated substances derived from the source material and the capture and sequestration processes used); and (3) no waste is added for the purpose of its disposal. In other words, these rules do not permit CO₂ sequestration in the deep oceans themselves. To facilitate the licensing process, the Contracting Parties adopted a “Risk Assessment and Management Framework for CO₂ Sequestration in Sub-Seabed Geological Structures” and “Specific Guidelines on Assessment of CO₂ Streams for Disposal into a Sub-Seabed Geological Formations”. These Guidelines aim at providing advice on how to capture and sequester CO₂ in a manner that meets all the requirements of the LP and is safe for the environment, both marine and atmospheric, for the short- and long-term.
- .2 a specific CO₂ sequestration reporting format was adopted in October 2008, as it is necessary to archive documentation so that future generations would be informed of the existence of the CO₂ sequestration reservoirs, its history and the assessment process leading to their use; and

¹ OECD/IEA estimate that carbon capture and sequestration (land and sea based) could contribute to around 20% of total emissions reductions by 2050.

- .3 In order to ensure that this approach translates into the effective, invaluable climate mitigation tool it is intended to be, Contracting Parties adopted on, 30 October 2009, an amendment to Article 6 of the London Protocol enabling the export of carbon dioxide streams for the purpose of sequestration in transboundary sub-seabed geological formations. The amendment will enter into force for those Parties which have accepted it, on the 60th day after two-thirds of the Parties have deposited their instruments of acceptance with IMO.

In 2012 the Meeting of Contracting Parties adopted the revised "Specific Guidelines for Assessment of Carbon Dioxide Streams for Disposal into Sub-seabed Geological Formations" to take into account transboundary migration of carbon dioxide waste streams within sub-seabed geological formations after injection in the light of the 2009 amendment of article 6 of the London Protocol. The Meeting further considered a draft text for the "Development and implementation of arrangements or agreements for the export of CO₂ streams for storage in sub-seabed geological formations", which will be further developed by an intersessional correspondence group, under the leadership of Canada.

Ocean fertilization discussions under the London Convention and Protocol

In June 2007, the Scientific Groups, established under the London Convention and Protocol, considered large scale iron fertilization of the oceans to sequester CO₂. This practice is aimed at drawing down an additional amount of surplus CO₂ from the atmosphere in the oceans for sequestration purposes. In November 2007, the Contracting Parties endorsed the view that the scope of work of the London Convention and Protocol included ocean fertilization, as well as iron fertilization, and that these agreements were competent to address this issue due to their general objective to protect and preserve the marine environment from all sources. Recognizing that it was within the purview of each State to consider proposals on a case-by-case basis in accordance with the London Convention and Protocol, States were urged to use the utmost caution when considering proposals for large-scale ocean fertilization operations.

In October 2008 the Contracting Parties developed and adopted the (non-binding) resolution on the regulation of ocean fertilization (LC-LP.1(2008)). By this resolution Parties have declared, *inter alia*, that, "given the present state of knowledge, ocean fertilization activities other than legitimate scientific research should not be allowed".

Since 2009, the Contracting Parties have developed and analyzed a broad set of regulatory options. In 2010 they adopted resolution LC-LP.2(2010) on the 'Assessment Framework for Scientific Research Involving Ocean Fertilization', the development of which was required under the 2008 resolution prohibiting ocean fertilization activities for purposes other than legitimate scientific research. The Assessment Framework guides Parties on how to assess proposals they receive for ocean fertilization research and provides criteria for an initial assessment of such proposals, including detailed steps for completion of an environmental assessment, which encompasses risk management and monitoring.

In order to maintain the momentum to regulate ocean fertilization, the Contracting Parties further reviewed options that would establish a global, transparent and effective control and regulatory mechanism for ocean fertilization activities and other activities falling within the scope of the London Convention and Protocol that have the potential to cause harm to the marine environment. Currently the main focus is to add a new London Protocol article directed at regulating ocean fertilization activities, including a mechanism for other marine geoengineering activities to be listed in the future. The Meetings, having considered draft texts for the proposed amendment and new annexes agreed that further work should be undertaken intersessionally by correspondence, with a view for consideration by the next session of the governing bodies in 2013.