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MEETING OF THE CM INTERSESSIONAL
 LEGAL AND RELATED ISSUES
 WORKING GROUP ON CO₂
 SEQUESTRATION
 10 - 12 April 2006
 Agenda item 5

LC/CM-CO₂ 1/5
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**REPORT OF THE MEETING OF THE CM INTERSESSIONAL LEGAL AND
 RELATED ISSUES WORKING GROUP ON CO₂ SEQUESTRATION**

1 INTRODUCTION

1.1 The Meeting of the CM Intersessional Legal and Related Issues Working Group on CO₂ Sequestration was convened at IMO Headquarters, London, from 10 to 12 April 2006.

1.2 Delegations from the following 15 Contracting Parties to the London Convention 1972 attended the Meeting:

ARGENTINA	NETHERLANDS
AUSTRALIA	NORWAY
BELGIUM	REPUBLIC OF KOREA
CANADA	SWEDEN
CHINA	SPAIN
FRANCE	UNITED KINGDOM
GERMANY	UNITED STATES
JAPAN	

1.3 Delegations from the following nine Contracting Parties to the 1996 Protocol to the London Convention 1972 also attended the Meeting:

AUSTRALIA	NORWAY
BELGIUM	SPAIN
CANADA	SWEDEN
FRANCE	UNITED KINGDOM
GERMANY	

1.4 An observer from the following State that is neither a Contracting Party to the London Convention 1972, nor to the 1996 Protocol also attended:

MYANMAR

1.5 An observer from the following intergovernmental organization attended the Meeting:

ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT/
 INTERNATIONAL ENERGY AGENCY (OECD/IEA)

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1.6 Observers from the following three international non-governmental organizations also attended the Meeting:

INTERNATIONAL ASSOCIATION OF OIL & GAS PRODUCERS (OGP)
THE WORLD CONSERVATION UNION (IUCN)
GREENPEACE INTERNATIONAL

Opening of the Meeting

1.7 In opening the proceedings, the Secretary, Mr. René Coenen, welcomed all participants to the Meeting of the Working Group. He recalled that, in October 2005, the 27th Consultative Meeting had reviewed an analysis of the views of Contracting Parties concerning the compatibility of CO₂ sequestration in sub-seabed geological formations¹ with the London Convention and Protocol. He reminded the Working Group of the Consultative Meeting's conclusions in this regard, as shown in its report (LC 27/16, paragraph 6.24).

1.8 Consequently, the 27th Consultative Meeting had instructed the Working Group to:

- .1 develop a menu of options to clarify (and, if appropriate, amend) the Protocol and the Convention, with a view to facilitating and/or regulating the use of CO₂ sequestration in sub-seabed geological formations, on the basis of the suggestions made at the 27th Consultative Meeting and subsequently by written submissions to this session; and
- .2 report its work and recommendations to the 28th Consultative Meeting, enabling that Meeting to consider, how best to facilitate and/or regulate, CO₂ sequestration in sub-seabed geological formations under the Protocol and the Convention.

1.9 He informed the Meeting that, on 24 March 2006, the London Protocol had entered into force following the accession of Mexico to it as its 26th Contracting Party and, consequently, the 1st Meeting of Contracting Parties to the London Protocol would be convened in conjunction with the 28th Consultative Meeting (30 October to 3 November 2006). This major development enabled the Contracting Parties to both agreements to consider what action to take with regard to CO₂ sequestration in sub-seabed geological formations. While it had simplified the task of this Working Group to develop options to clarify (and, if appropriate, amend) the Protocol and the Convention, it had also added urgency to complete this task at this session.

1.10 He also informed the Meeting that, in 2003, the IMO Assembly, by its resolution A.963(23), adopted "IMO Policies and Practices related to the Reduction of Greenhouse Gas Emissions from Ships". In this resolution, the Assembly urged the Marine Environment Protection Committee to undertake further work to identify and develop the necessary mechanisms needed to achieve limitation or reduction of greenhouse gas emissions from international shipping. As a follow-up, the MEPC agreed to approach this policy directive from a technical and methodological perspective and to concentrate the work on CO₂ emissions from shipping rather than the six greenhouse gases identified by the UN Framework Convention on Climate Change. Work on this issue would continue in the Committee. To put this activity in context, an IMO study carried out in 2003 estimated that ships contributed 1.8 percent of the world's total CO₂ emissions. However, in view of an expected reduction of CO₂ emissions from

¹ The Working Group agreed to use the word "formation" instead of "structure", although further consideration may be necessary. Henceforth, "formation" is used in this report, except where documents were quoted.

land-based sources and of a continuing increase in international trade most of which is carried by ships, the contribution from the shipping sector was likely to rise. These trends would warrant further action from the maritime sector on CO₂ emissions.

Election of Chairman

1.11 The Meeting unanimously elected Mr. John Roberts (United Kingdom) as Chairman of the Working Group.

Adoption of the agenda

1.12 The Working Group adopted the agenda for this Meeting, as shown at annex 1 to this report. This annex includes a list of documents submitted to the Meeting.

2 OUTCOME OF THE MEETING OF THE SG INTERSESSIONAL TECHNICAL WORKING GROUP ON CO₂ SEQUESTRATION (3 TO 7 APRIL 2006)

2.1 The Meeting was informed that the SG Intersessional Technical Working Group on CO₂ Sequestration had met at IMO Headquarters from 3 to 7 April 2006, under the chairmanship of Mr. Todd Bridges (United States). The 27th Consultative Meeting had instructed the Working Group to:

- .1 make an assessment of the potential risks and a general assessment of the benefits to the marine environment of CO₂ sequestration in sub-seabed geological formations within the scope of the London Convention and Protocol;
- .2 develop an assessment framework ensuring compatibility with Annex 2 to the London Protocol;
- .3 identify relevant gaps in knowledge; and
- .4 reach a view on the implications of CO₂ sequestration in sub-seabed geological formations for the marine environment.

2.2 The Meeting was informed of the main conclusions of that Working Group, which included the development of the 'Evaluation of CO₂ Sequestration in Sub-seabed Geological Structures' (CS-SSGS), and a Risk Assessment and Management Framework for CS-SSGS. The full report of the SG Intersessional Technical Working Group on CO₂ Sequestration would in due course be submitted both to the 29th session of the Scientific Group (5 to 9 June 2006), and the 28th Consultative Meeting (30 October to 3 November 2006).

2.3 The Working Group agreed to draw on these results for its work, as appropriate.

3 FACILITATION AND/OR REGULATION OF CO₂ SEQUESTRATION IN SUB-SEABED GEOLOGICAL FORMATIONS

.1 Development of options to clarify/amend the 1996 Protocol to the London Convention 1972

3.1 It was recalled that, at the 27th Consultative Meeting, many delegations had expressed the view that the focus of analysis regarding possible amendments should be on the Protocol and not

on the Convention. Some delegations stated that amendment of the Convention itself would not be appropriate (LC 27/16, paragraph 6.26).

3.2 For the preparation of options to clarify (and, if appropriate, amend) the London Protocol, the Working Group considered the following submissions received:

- .1 document LC/CM-CO2 1/3 by Norway. Norway supported legislative amendments for better facilitation/regulation of the use of CO₂ sequestration in sub-seabed geological formations, as part of a suite of tools and approaches available to mitigate climate change. Amendments should be made to the London Protocol. Possible ambiguity in the London Convention should, if necessary, be addressed by way of interpretation. Amendments to the Protocol should, in Norway's view, be limited in scope and relate solely to CO₂ sequestration in sub-seabed geological formations. The document contained concrete proposals to amend the London Protocol;
- .2 document LC/CM-CO2 1/3/1 by the United States, in which it raised six issues that needed to be addressed when identifying and assessing options to facilitate/regulate CO₂ sequestration: *First*, the basic approach on how CO₂ sequestration should be viewed; *Second*, the issue of form, e.g. an amendment or interpretation; *Third*, the issue of timing with regard to an amendment or interpretation; *Fourth*, which Parties would be covered by each option; *Fifth*, the issue that captured CO₂ would contain other constituents and how to address these; and *Sixth*, if Annex 1 to the Protocol were amended to include CO₂ sequestration other amendments to the Protocol to regulate this practice might need to be considered;
- .3 document LC/CM-CO2 1/3/2 by the Netherlands, in which five possible options were identified to facilitate and regulate the use of CO₂ sequestration in sub-seabed geological formations under the London Convention and Protocol. In the Netherlands' view, the most appropriate option would be an amendment of Annex 1 to the Protocol, with a second possible amendment of the Protocol itself. An interpretative declaration, a reservation, or a new Protocol would not be desirable, possible, or helpful. The document gave a description of five possible options;
- .4 document LC/CM-CO2 1/3/3 by Australia, in which it expressed its strong support for an amendment of Annex 1 to the London Protocol to remove any doubt that the Parties recognize the role of this type of sequestration as part of a suite of measures to mitigate climate change and related impacts, including increased ocean acidification. While acknowledging that there was a range of options available to the Parties, Australia provided a draft amendment to Annex 1 to the Protocol, as shown in its document; and
- .5 document LC/CM-CO2 1/3/4 by the United Kingdom, in which it considered that steps should be taken to ensure that the process of CO₂ sequestration in sub-seabed geological formations was clearly within the scope of the London Protocol, in a way which both facilitates it and regulates it to ensure that the marine environment was protected. In doing so, it was important that any amendment or clarification was carefully formulated so as not to change the legal position on any other issue. The proposed amendments contained in this

document built on the earlier submissions of Norway (LC/CM-CO2 1/3) and Australia (LC/CM-CO2 1/3/3).

3.3 Other delegations that spoke supported the regulation/facilitation of CO₂ sequestration in sub-seabed geological formations by amending Annex 1 to the Protocol. In addition, the following issues were raised by delegations:

- .1 for the period in which the London Convention and Protocol would both be in force, the relation between these agreements remained very important and possible amendments regulating CO₂ sequestration in sub-seabed geological formations should aim to avoid a divergence between the Convention and Protocol as to the level of protection of the marine environment;
- .2 any amendments to Annex 1 to the Protocol should primarily be based on scientific and technical considerations and should ensure the protection of the marine environment;
- .3 the possibility of amendments to Article 6 (export of wastes or other matter) and Annex 2 to the Protocol should be carefully examined; and
- .4 facilitating and regulating CO₂ sequestration in sub-seabed geological formations was only one of several options to mitigate ocean acidification and should be seen in the context of an overall need to reduce CO₂ emissions to the atmosphere. This issue should be reflected in any amendments and associated resolutions being considered.

3.4 The Working Group agreed to focus its attention on Annexes 1 and 2 and, possibly, Article 6 of the Protocol, whereby CO₂ sequestration in sub-seabed geological formations would be treated as permissible dumping, subject to regulation. It would then be a matter for one or more Contracting Parties to the Protocol to submit specific amendment proposals for consideration at a Meeting of Contracting Parties to the Protocol.

3.5 The Working Group noted that, as the 1st Meeting of Contracting Parties to the Protocol would be convened from 30 October to 3 November 2006, specific amendment proposals would have to be received at the Secretariat before the end of April 2006, if they were to be considered at that Meeting - in order to meet the requirements of Articles 21 and 22 of the Protocol that the Organization should communicate proposed amendments to all Contracting Parties² at least six months prior to its consideration at a Meeting of Contracting Parties.

Amendment of Annex 1 to the Protocol

3.6 The Working Group agreed that an interpretative declaration of the Protocol instead of an amendment to Annex 1 would not be an adequate basis for regulating CO₂ sequestration in sub-seabed geological formations.

² In practice, the Secretariat would send such proposals to all Contracting Parties to the Protocol, Contracting Parties to the Convention, and accredited IGOs and NGOs.

3.7 The Working Group considered which principal elements would be relevant for regulation of CO₂ sequestration in sub-seabed geological formations under the Protocol:

- .1 all stages of the CO₂ capture and sequestration process³ relevant for regulation under the Protocol should be covered by an amendment;
- .2 captured CO₂ streams contained other substances depending on the specific process of sequestration itself and the source material. There was a general understanding that CO₂ streams should consist of a very high proportion – perhaps 95% CO₂, but that the precise wording required flexibility;
- .3 the need to formulate strict conditions in this amendment so as to avoid creating a loophole in the overall ban on dumping under Article 4 of the Protocol; and
- .4 any amendment should be as clear as possible, so as to avoid creating scope for domestic litigation and legal disputes between Contracting Parties in the future.

3.8 The delegation of the United States stated that it would not be appropriate to include language regarding relative amounts of other substances in the CO₂ stream in Annex 1 to the Protocol.

3.9 The Working Group considered that it was not necessary to specify in the amendment the policy purpose for enabling CO₂ sequestration in sub-seabed geological formations, i.e., to mitigate increasing levels of CO₂ in the atmosphere and ocean acidification. This could best be captured in a resolution.

3.10 Although it was not the intention to draft formal amendment proposals, detailed discussions in the Working Group resulted in the text of a possible amendment to Annex 1 to the Protocol as shown in annex 2 to this report. Delegations stressed that this should be considered as a single package.

Annex 2 to the Protocol

3.11 The Working Group considered whether, on the basis of an amendment to Annex 1 to the Protocol for regulation of CO₂ sequestration in sub-seabed geological formations, Annex 2 should also be amended, or that new guidelines to be developed for this purpose under that Annex would suffice. It was understood that an amendment to Annex 1 regulating CO₂ sequestration in sub-seabed geological formations would, automatically, bring this practice under the purview of the provisions of Annex 2.

3.12 The Working Group noted that the SG Intersessional Technical Working Group on CO₂ Sequestration had considered that CO₂ sequestration in sub-seabed geological formations was a waste management option that should be considered in the context of Contracting Parties' approaches to mitigating GHG emissions. The 'Risk Assessment and Management Framework for CO₂ Sequestration in Sub-seabed Geological Structures' developed by that Working Group had not addressed, in detail, the waste prevention audit and the waste management options, which are requirements of Annex 2. As Contracting Parties were required to address these

³ CO₂ capture and sequestration is defined as a process consisting of the separation of CO₂ from industrial and energy-related sources, transport to a storage location and long-term isolation from the atmosphere (source: IPCC SRCCS, Summary for Policy Makers).

matters in the assessment of CO₂ sequestration in sub-seabed geological formations, further consideration may therefore be necessary.

3.13 The issue was raised that CO₂ sequestration in sub-seabed geological formations had implications for *inter alia* long-term monitoring and mitigation of any leakage of CO₂ and that these concepts were not specifically addressed in Annex 2. Some delegations expressed the view that these issues should be captured in an amendment, whereas other delegations felt that Annex 2, paragraph 18, already provided a basis, or that specific technical guidelines could and should be developed under Annex 2 for CO₂ sequestration in sub-seabed geological formations.

3.14 In light of the discussion, no proposals for an amendment to Annex 2 were developed at this Meeting. Contracting Parties to the Protocol could table such amendments at any time in the future.

Article 6 of the Protocol

3.15 The Working Group considered possible amendments to Article 6 to allow for export of CO₂ for sequestration purposes, based on the proposals submitted by Norway (LC/CM-CO2 1/3) and the United Kingdom (LC/CM-CO2 1/3/4).

3.16 Several issues were raised in connection with possible amendments to Article 6:

- .1 any amendment should be restricted solely for the purpose of CO₂ sequestration in sub-seabed geological formations;
- .2 amendments to Article 6 might have implications for the Protocol's relation with other international conventions, including the Basel Convention, which should be carefully considered; and
- .3 different interpretations existed of the current text of Article 6, including the definition of "export". A clearer understanding of these issues would be needed before embarking on a discussion of amendments.

3.17 In conclusion, amendments to Article 6 were not deemed to be a priority for consideration at the 1st Meeting of Contracting Parties in October 2006.

.2 Development of options to clarify/amend the London Convention 1972

3.18 The Working Group noted that:

- .1 there was no agreement among Contracting Parties to the London Convention whether or not it allowed CO₂ sequestration in sub-seabed geological formations. This would complicate the development of amendments. Working towards an agreed interpretation of the Convention among its Parties did not seem to be productive for the same reasons;
- 2 moreover, several delegations indicated that they would not favour any amendments to the Convention, while other delegations noted that this possibility should not be excluded;

- .3 there was a wish to avoid disincentives for Contracting Parties to the Convention to accede to the Protocol;
- .4 a significant divergence would be undesirable between the London Convention and Protocol as to the level of protection of the marine environment associated with CO₂ sequestration in sub-seabed geological formations; and
- .5 any technical guidance for regulating CO₂ sequestration in sub-seabed geological formations should be the same under both the London Convention and Protocol. It would therefore be helpful if Contracting Parties to the London Convention could be encouraged to commit themselves to use the same guidance, even if no amendment to the Convention is made.

3.19 Consequently, the Working Group did not develop suggestions for amendments to the London Convention to regulate CO₂ sequestration in sub-seabed geological formations.

4 ANY OTHER BUSINESS

No issues were raised under this item of the agenda.

5 CONSIDERATION AND ADOPTION OF THE REPORT

5.1 The Meeting of the CM Intersessional Legal and Related Issues Working Group on CO₂ Sequestration adopted its report on Wednesday, 12 April 2006.

5.2 The Meeting praised Mr. John Roberts for the leadership and focus he had provided as Chairman during the discussions.

ANNEX 1

**AGENDA FOR THE CM INTERSESSIONAL LEGAL AND RELATED ISSUES
WORKING GROUP ON CO₂ SEQUESTRATION**

1 Adoption of the agenda

LC/CM-CO2 1/1 Secretariat: Provisional Agenda

2 Outcome of the meeting of the SG Intersessional Technical Working Group on CO₂ Sequestration (3 – 7 April 2006)

No documents submitted under this item

3 Facilitation and/or regulation of CO₂ sequestration in sub-seabed geological formations:

LC/CM-CO2 1/3 Norway: Options and implications

LC/CM-CO2 1/3/1 United States: Options and implications

LC/CM-CO2 1/3/2 Netherlands: CO₂ sequestration in sub-seabed geological structures under the London Convention and Protocol – Legal Issues

LC/CM-CO2 1/3/3 Australia: Text amendment option for the 1996 Protocol to enable sequestration of carbon-dioxide in sub-seabed geological structures

LC/CM-CO2 1/3/4 United Kingdom: CO₂ sequestration in sub-seabed geological structures under the London Convention and Protocol – Legal Issues

4 Any other business

No documents submitted under this item

5 Consideration and adoption of the report

LC/CM-CO2 1/WP.1 Secretariat: Draft report

LC/CM-CO2 1/INF.1 Secretariat: List of Participants

ANNEX 2

POSSIBLE AMENDMENT TO ANNEX 1 TO THE LONDON PROTOCOL

1.8 Carbon dioxide streams from carbon dioxide capture processes for sequestration

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4 Carbon dioxide streams referred to in paragraph 1.8 may only be considered for dumping, if:

- .1 disposal is into a sub-seabed geological formation⁴; and
- .2 they consist overwhelmingly of carbon dioxide. They may contain incidental associated substances derived from the source material and the capture and sequestration processes⁵ used; and
- .3 no wastes or other matter are added for the purpose of disposing of those wastes or other matter.

⁴ The word “formation” was chosen instead of “structure”, although further consideration might be necessary.

⁵ CO₂ capture and sequestration is defined as a process consisting of the separation of CO₂ from industrial and energy-related sources, transport to a storage location and long-term isolation from the atmosphere (source: IPCC SRCCS, Summary for Policy Makers).