

Challenges in governance of climate interventions: Perspectives from the London Convention – London Protocol’s (LC-LP) approach to governance of marine geoengineering (MGE)

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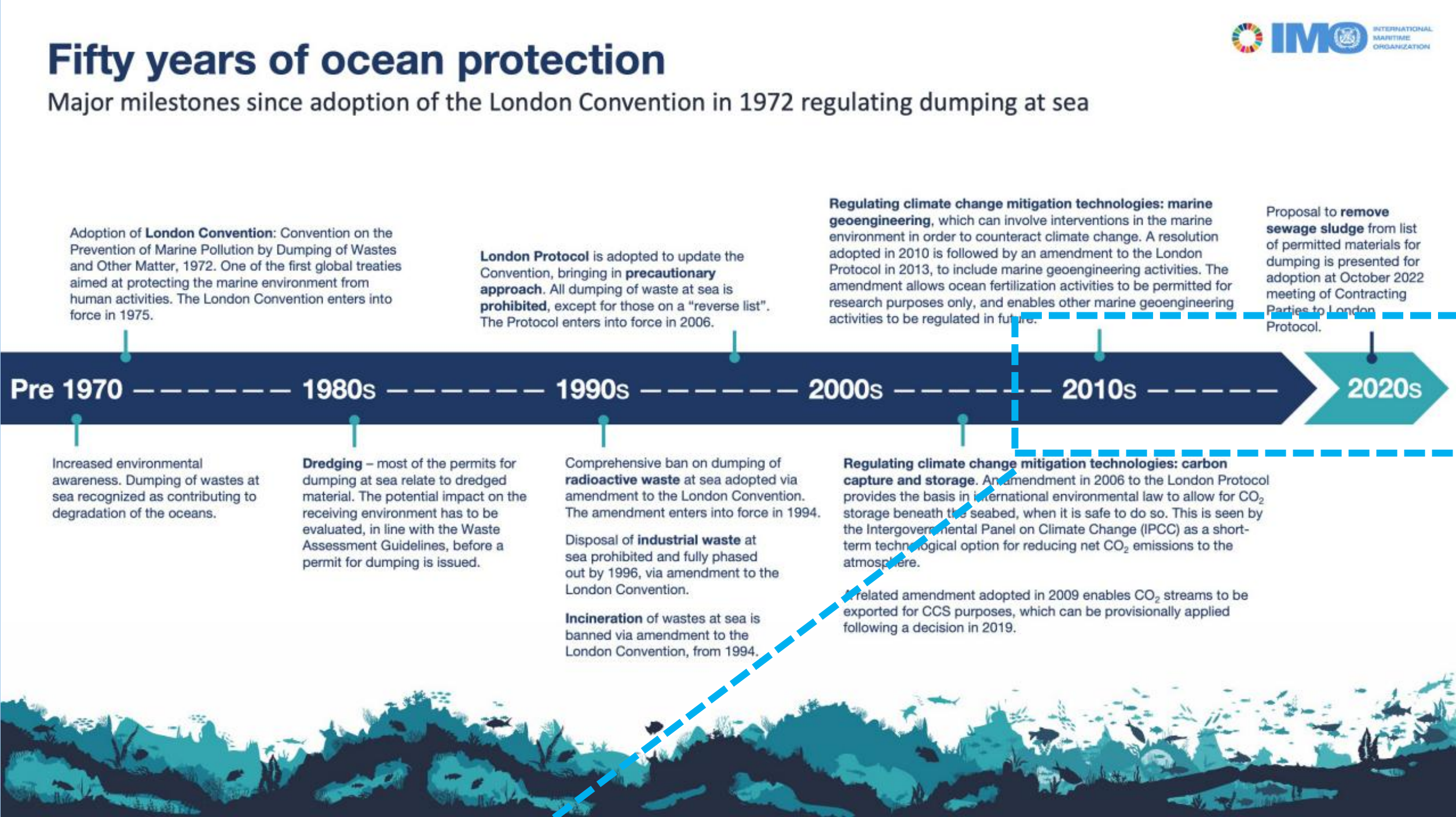
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Interest in the development and testing of marine geoengineering (MGE) techniques continues to grow, aimed either at enhancing carbon dioxide removal (CDR) or managing reflectivity and influx of solar radiation (SRM), with calls for expansion of open field trials, including those with involvement from the private sector.

Almost 20 years ago, state parties to the long-standing London Convention (1972) and the updated parallel instrument the London Protocol (1996) agreed that the LC-LP had competency to address one such MGE activity, namely ocean fertilization (OF), with a view to its regulation, recognising the growing commercial interest at the time, and its potential to impact on marine ecosystems.

In 2026, the LC-LP continues to provide a policy framework to allow proposals for marine-based climate change mitigation technologies to be scientifically assessed and offers a global, transparent and effective regulatory and control mechanism to govern OF and other MGE activities that fall within its scope.

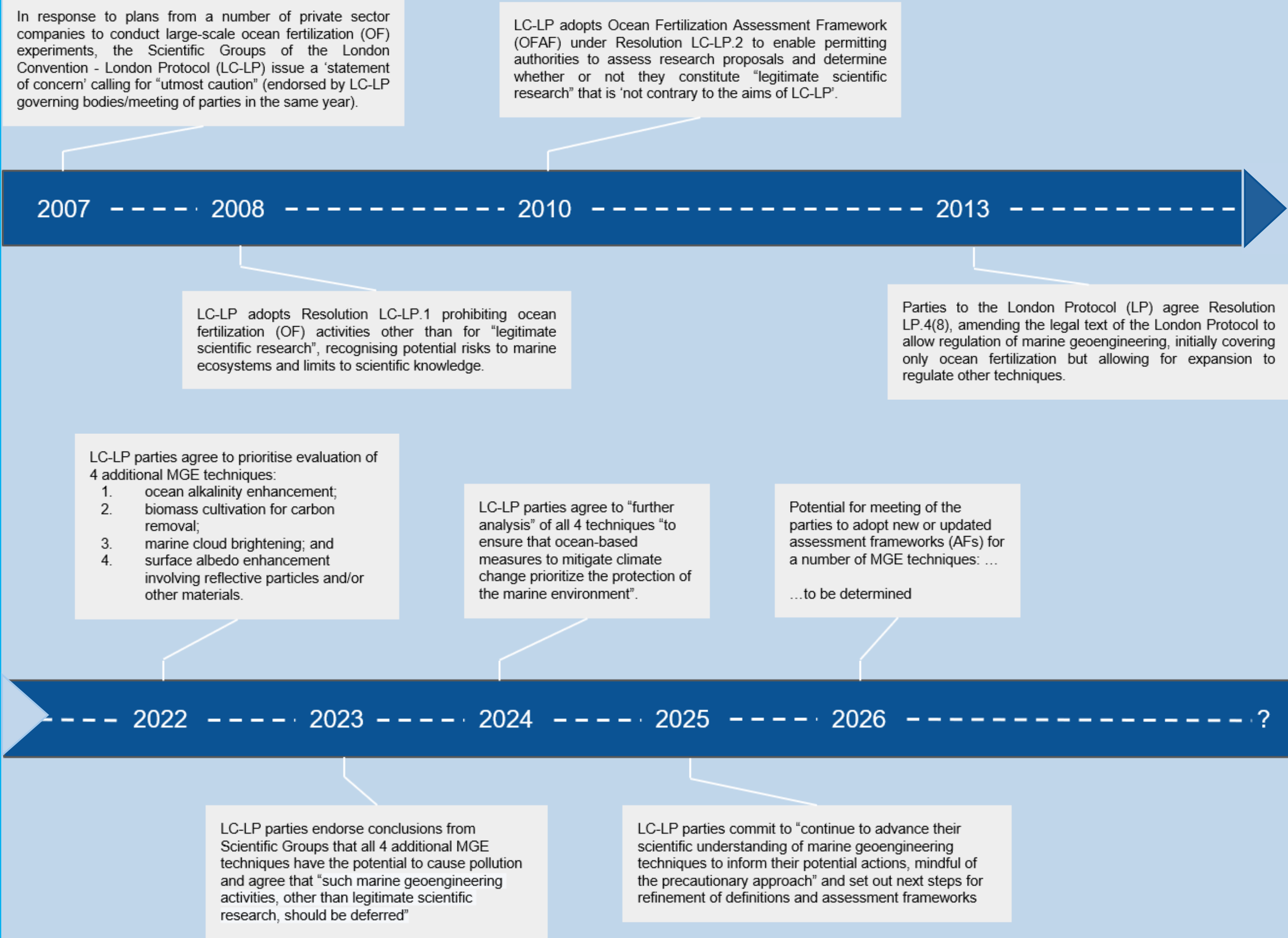
History of the London Convention – London Protocol (LC-LP)



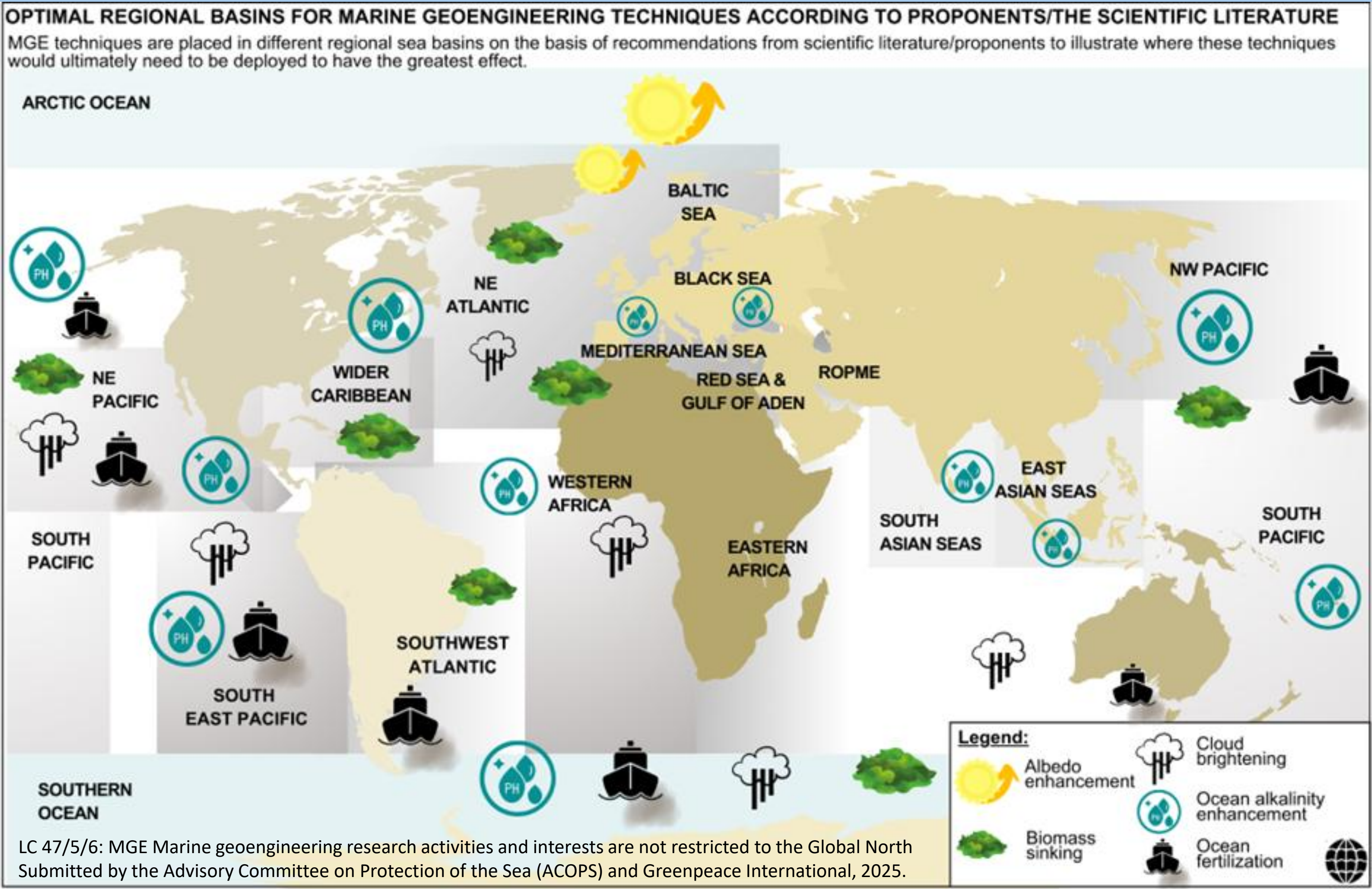
The London Convention (LC) or "Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972)", was one of the first global instruments to protect the marine environment from human activities, with the objective to promote the effective control of all sources of marine pollution and to take all practicable steps to prevent pollution of the sea by dumping of wastes and other matter. It has 87 States Parties.

The "London Protocol" (LP) was agreed in 1996 to further modernize the Convention and, eventually, replace it. Under the Protocol all dumping is prohibited, except for a "reverse list" of wastes that may be considered acceptable for dumping subject to assessment and permitting. The LP currently has 56 State Parties, with some overlap with the LC.

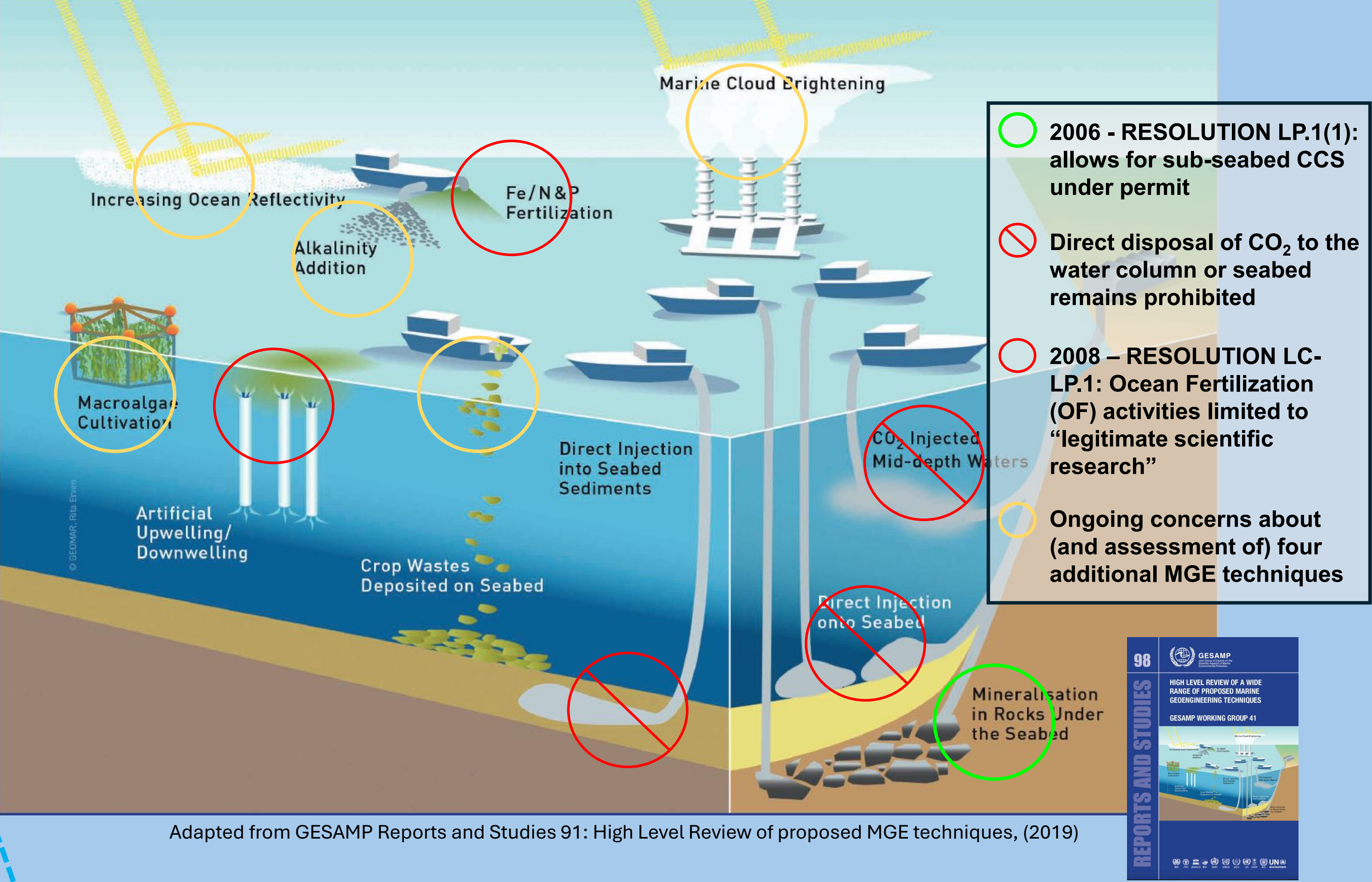
Development of MGE governance and regulation under the LC-LP



If deployed at scale, MGE would have global implications; its governance and regulation is therefore of relevance to all states and indigenous peoples



Wider governance of climate change mitigation technologies under the LC-LP



Assessment Frameworks (AFs) and “legitimate scientific research” (LSR)

Under the LC-LP, MGE is defined as “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”.

- AF for ocean fertilization (OFAF), initially developed in 2010, is currently being updated.
- AFs for other MGE techniques, especially ocean alkalinity enhancement (OAE), biomass sinking (BS) and albedo modification (AM), are under preparation.

For OF, a proposal can only be judged to be “legitimate scientific research” if it passes through all stages of the OFAF successfully, including an Initial Assessment and a detailed Environmental Assessment.

Initial Assessment requires that the project meet criteria demonstrating "proper scientific attributes" before being subject to detailed environmental assessment, including that:

- “the proposed activity should be designed to answer questions that will add to the body of scientific knowledge. Proposals should state their rationale, research goals, scientific hypotheses and methods, scale, timings and locations with clear justification for why the expected outcomes cannot reasonably be achieved by other methods”
- “economic interests should not influence the design, conduct and/or outcomes of the proposed activity. There should not be any financial and/or economic gain arising directly from the experiment or its outcomes. (This should not preclude payment for services rendered in support of the experiment or future financial impacts of patented technology).”
- “the proposed activity should be subject to scientific peer review at appropriate stages in the assessment process.”
- “the proponents of the proposed activity should make a commitment to publish the results in peer reviewed scientific publications and include a plan in the proposal to make the data and outcomes publicly available in a specified time-frame.”

Proposed activities that do not meet the above criteria cannot proceed through subsequent assessment stages of the OFAF without revision.

In short, LC-LP provides governance that (1) recognises that the current state of knowledge does not justify progression beyond “legitimate scientific research” and (2) ensures that any such research (i) does not cause pollution, or other adverse impacts on marine biodiversity or climate, (ii) will yield valid and relevant information to support policy decision-making and (iii) is not biased by commercial interests

Outstanding issues and next steps:

- Greater consideration of the possible environmental, social and economic impacts of MGE on developing countries, especially least developed countries (LDCs) and small island developing States (SIDS), including the need for access to information and resources.
- Finalisation and formal adoption (by Resolution) of the updated OFAF, as well as AFs for other prioritised MGE techniques (especially OAE and biomass sinking).
- Further development of AF on proposed albedo modification (AM) techniques.
- Decision on how to address techniques such as marine cloud brightening (MCB) and direct ocean capture (DOC), for which the scope of the LC-LP needs further consideration and clarification.
- Accelerate entry into force of the 2013 Amendment to the London Protocol to enable greater enforcement of the LP provisions on MGE, both for OF and potentially for other of the MGE techniques identified by the parties as having “the potential for deleterious effects that are widespread, long-lasting or severe”.
- Consideration of how the governance and regulation of MGE (and other activities) under the LC-LP should interact with and contribute to implementation of the BBNJ Treaty.