Tackling Maritime Bunker Fuel Emissions:
The Evolution of Global Climate Change Policy at the International Maritime Organization

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• What is the International Maritime Organization?

• Greenhouse Gas Emissions from the international maritime industry are only 2.7% of global anthropogenic emissions…so why focus on the IMO’s Climate Change Policies?
The Essential Problems

• Competing Institutional Principles:
  - Equal Treatment of Ships vs. CBDR

• The Carbon Reality of Shipping:
  - Long Fleet Lifetime, Predicted Growth
Current State of Affairs (IMO)

- Energy Efficiency Design Index (EEDI)
  (voluntary in 2009->mandatory in 2011?)

- Ship Energy Efficiency Management Plan (SEEMP)
  (voluntary in 2009-> mandatory??)

- Market Based Measures (MBMs)
  (expert group in 2010->expert group in 2011?)

- Energy Efficiency Operational Index (EEOI)
  (standard for monitoring and evaluation)

- IMO Greenhouse Gas Studies
  (2000 and 2009)

- Mandatory Audit Scheme
  (2015?)
State of Affairs (extra-IMO)

- European Union Unilateral Action
  (Shipping emissions into the EU-ETS-> end of 2011??)

- UNFCCC AWG-LCA Process
  ("Cook Islands Text"-> path forward in UNFCCC?)
  (Seen as source of potential funds)
  (Blockage and Ripeness)
Two Sets of Research Questions

Set 1: Institutional Factors
How has the IMO as an institution addressed climate change over time, and why?

Set 2: The Role of Science and Technology
How have scientific considerations relating to methods of attribution of emissions and technical considerations related to reducing emissions influenced IMO’s policy-making?
Methodology

**Process Tracing** *(George and Bennett)*

- Elite Interviews
  - IMO Technical Experts
  - Delegates to IMO Working Group and Expert Group Meetings
  - NGO/Observers at COP15 and IMO
  - *UNFCCC Cancun COP16*

**Negotiation Observation**

- Summer 2010 Energy Efficiency Working Group, MBM Expert Group

**Documentary Sources**

- Full history of MEPC, Sub-Committee and Working Group meeting reports relating to CO2 and climate change from 1980s to present
Question Set 1: Institutional Factors

• Why did it take 17 years (from UNFCCC in 1992 until 2009) for the IMO to develop its first measures for reducing carbon dioxide emissions?

• What factors both *within* and *outside* the IMO influenced the course of development of the IMO’s approach to climate change and how did these inside/outside factors interact?

• How has the relationship of the IMO with the UNFCCC evolved over time and how have these relationships shaped IMO’s approach to climate change?
Timeline

- 1992: IMO Deliberations
- 1996: IMO Decisions
- 2000: IMO GHG Studies
- 2004: IMO GHG Studies
- 2008: UNFCCC Actions
- 2012:
IMO Climate Change Policy

• There were several identifiable political opportunities available to the MEPC and IMO during the 1990s to act on carbon dioxide emissions, but a combination of the institutional schedule of the MEPC, the lack of champions for the issue within the IMO (and lack of pressure), as well as interests within the shipping industry prevented meaningful action. **Result : First GHG STUDY.**

• Once the Kyoto Protocol was agreed and the principle of CBDR coalesced, options for action within the IMO were restricted and a balancing-act negotiation was initiated, which has continued to this day.

• The IMO has consistently acted on climate change only when pressure from the UNFCCC has forced it to do so. Each time, however, in an effort to maintain ownership of the issue, the IMO has sought to act *before* the UNFCCC.

• CBDR has proved stronger than equal treatment for all ships. The maritime industry is attempting to stave off UNFCCC-ownership by moving modestly within the IMO. *Will the EEDI be enough to do this?!*
Question Set 2: The Role of Science and Technology

Science

• How are standards for carbon accounting developed in the IMO and what role do considerations of the carbon cycle play in attribution of emissions within the IMO?

Technology and Innovation

• What role does the current state of technology play in shaping IMO energy efficiency policies?

• What is the role of IMO environmental policy in driving technological innovation within the maritime industry?

• Do these conclusions equally apply to the scientific and technical information required for other market-based measures for the shipping industry?

• If technological innovation can only reduce emissions in the long run, does the policy-making process place taken a long-term view?
Technology and Innovation

• What role does the current state of technology play in shaping IMO energy efficiency policies?

The technical expertise within the IMO is high, and part of the slowness of action on emissions can be attributed to a desire to “get the policy right” so that it is technically sound for all portions of the shipping industry (i.e. all ship types and situations).

Engine power to be used when calculating the correction factor for power $f_j$

3 In submissions GHG-WG 2/2/20 and MEPC 59/4/14, both of which outline the proposed methodology for the determination of the correction factors $f_j$ and $f_i$, it is understood that the power correction factors for ice-classed ships have been derived as the ratio between the total installed main engine power of a non-ice class ship expressed as a function of the ships perpendicular length, and the total installed main engine power of an ice-classed ship of similar length between perpendiculars:

$$f_j = \frac{P_{av,mw}(L_{PP})}{\sum_{i=1}^{n} P_{ME}}$$
Technology and Innovation

- What is the role of IMO environmental policy in driving technological innovation within the maritime industry?

- There is evidence from other IMO marine environmental protection regimes that IMO regulations can spur maritime industry innovation (e.g. Ballast Water Management Convention.)

- Mandatory measures are likely to influence industry innovation in part because they are to be implemented for new ships and will ramp up in stringency over time.

- According to several experts, whatever makes it into the “mandatory” requirements is likely to be ‘dwarfed’ by the impact of higher fuel prices on innovation.
Technology and Innovation

- Do these conclusions equally apply to the scientific and technical information required for other market-based measures for the shipping industry?

The institutional history of technical requirements and engineering specifications, coupled with the lack of economic expertise among country representatives within the IMO, may contribute to the slowness with which market-based measures have been advanced.

The economic expertise necessary for policy-debate also leads to stronger maritime industry control over the treatment of market-based measures within the IMO.
Technology and Innovation

- If technological innovation can only reduce emissions in the long run, does the policy-making process place taken a long-term view?

While there is recognition amongst experts within the IMO and amongst many negotiators that the policy-making process will have limited impact on emissions in the short-run, and the EEDI has been developed as a long-term approach to reducing emissions that is palatable to industry interests, the façade of IMO action presented to the UNFCCC and to the world by the IMO External Relations Office blurs these distinctions in order to retain control of the policy area.

Update: The breakdown of talks at the MEPC 61 in October 2010 evinced a lack of progress that may have future ramifications for IMO control.
Managing Technical Complexity and Governing the Global Environment

• Scientific and technical complexity is strongly political (but it’s not all equally political: baselines, ship-types, speeds, safety, models, methodologies, how you attribute emissions).

• The ad-hoc nature of the process increases under issue saturation and technical complexity.

• Despite the lack of institutional hierarchy, the threat of unilateral UNFCCC (or EU) action on this issue, induces action within the IMO, but this action is designed to be minimally sufficient to stave off others from acting on their threats.

• This institutional inequality may be do to the narrower remit of action on climate change within the IMO.
Questions?

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