

Wind Energy and its application in Maritime

Background:

The work to address greenhouse gas (GHG) emissions from ships has been undertaken by the Organization continuously since the adoption of Conference Resolution 8 on CO₂ emissions from ships in September 1997, in particular, through the adoption of global mandatory technical and operational energy efficiency measures for ships under MARPOL Annex VI. It is also recognized that this is leading to new technologies, alternate fuels and accordingly safety and training related issues, thus work is happening at both MEPC and MSC on these aspects.

Additionally, the Assembly at its thirtieth and thirty-second sessions in December 2017 and December 2021, approved for the Organization a strategic direction to “Respond to climate change”,

Also the United Nations 2030 Agenda for Sustainable Development, in particular SDG 13, requires to take urgent action to combat climate change and its impacts.

Wind propulsion is also getting some tail winds at IMO as a source of power.

Wind-assisted propulsion system (WAPS) technologies have gained significant attention in the shipping industry as a means of reducing fuel consumption and emissions. These technologies harness the power of the wind to supplement a vessel's propulsion by generating aerodynamic forces.

Considering the various aspects of this technology Papers would need to be developed based on the attributes the group is allotted, which the registered team is given. These could be considered for submissions to MSC or MEPC depending on the content.

WIND ENERGY RELATED PAPER:

Considering the various discussions and progress at IMO on the technology of “wind energy “, prepare submissions considering the technical developments taking place in the maritime field as submission to MEPC or MSC:

i. For the consideration of the paper to MSC considering that the Committee has also recognized in its work on “**Development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels**” Wind as an Alternative source of energy both in primary and a supporting role and further recognized that wind propulsion systems reliability and availability may need to be further improved for the maximum potential benefit to be realized, even though it is not a new technology , develop documents to progress the work further.

To assist in the following documents are being shared while the participants may also consider reading other submissions in ISWG and MEPC covering wind energy to understand the technological aspect as well.

- i. MSC108/5
- ii. MSC108 Inf.24

For the consideration of the paper to MEPC – one aspect is the technological development, the other is the integration of wind energy in the regulatory mechanism for GHG reduction – EEDI, EEXI and GFI. Various submissions have been made and at MEPC 82 also a submission is made for Inclusion of wind propulsion in the GFI formula.

To assist in the following documents are being shared while the participants may also consider reading other submissions on the aspect of wind energy in MSC also to have a holistic understanding.:

- a. MEPC 80/INF.10
- b. MEPC 80/INF.33
- c. MEPC 81/INF.39
- d. MEPC 81/INF.40
- e. MEPC 82/7/9
- f. ISWG GHG 16/2/7

Thus, while the background papers are intended to give the participants a view of how MEPC and MSC are progressing on this aspect of GHG reduction strategy and Wind Energy role in them and understand the progress made till date, the objective is to now develop documents which along those lines can guide further work at the MEPC and MSC as selected by the participating team. The team must clearly indicate that the paper is intended for MEPC or MSC.

The Teams have to submit their paper as per the Role assigned to them in accordance with the Table below:

TABLE:

A	B	C	D	E
Developed Nation	Developed Nation	Developing Nation	Developing Nation	NGO
Large spending capability on manufacturing	Limited spending capability on manufacturing	Moderate spending capability on manufacturing	Large spending capability on manufacturing	International presence and very active both wrt environment and human element
Limited interest in Shipbuilding but some interest in engines	Large Interest in Shipbuilding and engines	Limited Interest in Shipbuilding and engines	Large Interest in Shipbuilding and engines	Not applicable
Huge reserves of fossil fuels	Moderate reserves of fossil fuels	Limited reserves of fossil fuels	Moderate reserves of fossil fuels	Not applicable
Limited R & D in the field of energy sources other than fossil fuels	Large R & D in the field of energy sources other than fossil fuels	Limited R & D in the field of energy sources other than fossil fuels	Moderate R & D in the field of energy sources other than fossil fuels	Extremely supportive of renewable energy and critical of fossil fuels

Limited R & D in the field of ship design	Large R & D in the field of ship design	Limited R & D in the field of ship design	Large R & D in the field of ship design	Not applicable
Limited exposure to wind energy offshore and onshore	Large exposure to wind energy offshore and onshore	Moderate exposure to wind energy offshore and onshore	Large exposure to wind energy offshore and onshore	Has immense concern for impacts of any new technology on the ecosystem
Trade is international – no specific wind patterns seen to impact the trade	Trade in areas which have high wind potential	Trade in areas which have high wind potential	Trade is international – no specific wind patterns seen to impact the trade	Sea level rise impact on nations – highly concerned and vocal regarding need for renewable sources of energy
Fleet strength limited	Fleet strength moderate	Fleet strength low	Fleet strength high	Not applicable
Level of ambition wrt zero carbon - moderate	Level of ambition wrt zero carbon - aggressive	Level of ambition wrt zero carbon - moderate	Level of ambition wrt zero carbon – moderate	Level of ambition wrt zero carbon – highly aggressive

Note: In order to inject realism and relevance into the exercise, the table has been drawn up on the basis of various aspects which influence the stands taken by various 'Parties' at the International Maritime Organization (IMO)

General guidelines:

1. The template for making a document for submission to IMO is available on the IMO website.
2. Teams are recommended to go through the circulars MSC-MEPC.1/Circ.5/Rev.5 dated 31st July 2023 ORGANIZATION AND METHOD OF WORK OF THE MARITIME SAFETY COMMITTEE AND THE MARINE ENVIRONMENT PROTECTION COMMITTEE AND THEIR SUBSIDIARY BODIES (**attached**) to guide them about the working of the committees at IMO and also in that the PROCEDURES FOR PREPARATION AND SUBMISSION OF DOCUMENTS.
3. The submission should be in Arial 11 and single spacing
4. The submission should be aligned basis points 1, 2 and 3 above.
5. Submitters are encouraged to familiarize themselves with the IMO Strategy on Reduction of GHG Emissions from Ships

Additional Guidance:

1. The Participants will additionally have guidance from Industry stalwarts (besides their own campus coordinators) who will act as Guides and be assigned to them. The Papers are to be prepared in the format similar to IMO (downloadable from the IMO website as a public user) and submitted as per schedule announced separately and available on the IMU website. After the last date of **Paper submission 1**, papers submitted by the Teams

playing different roles will be shared, enabling participants playing a particular Role to understand the positions taken by the Teams playing other Roles, but not allowing them to see the Papers of teams playing the same role as their own. (For Example; the stream is having 30 participating teams for their topic, thus there will be six teams per Role category. Now Teams of Role Category A would get to see all papers of category B, C, D & E, but not the papers of category A. The rationale behind such disclosure is to make the participants to understand the viewpoints of the other categories of the same topic. Noteworthy part of the competition is that the papers of participants of the same category of same topic will not be subjected to the disclosure within themselves).

2. **Length of papers:** There is no restriction on the length of papers so as to encourage participants to do intensive research. However, it is strongly recommended to keep the contents relevant to the topic. Irrelevant information, duplication of information, plagiarism & copyright infringement may attract negative marking and in severe cases, papers may get disqualified.
3. After understanding the viewpoints of teams with different roles of the same Topic, each team can insert modifications, if any, to the contents of their Paper submission 1 (already submitted) and can submit a modified paper highlighting the changes as their **Final Paper**, (length of Final paper should not exceed by 2 pages from original paper submission 1), within the time prescribed in the schedule.