
Environmental plan paper

Stage1, 2 and 3


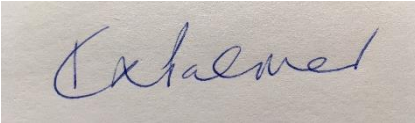

Report for: Oil Companies International Marine Forum

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Executive summary

Oil Companies International Marine Forum (OCIMF) would like to develop an environmental plan that sets out its ambition(s) and planned future activities on the environment in line with its vision, mission and strategy.

OCIMF requested Lloyd's Register Advisory Services BV (LR) to assist them to develop an environmental plan paper which demonstrates their dedication to resolve environmental issues affecting the industry whilst engaging with its members [Ref 27]. LR's proposed method to develop its environmental plan is in the form of following stages:

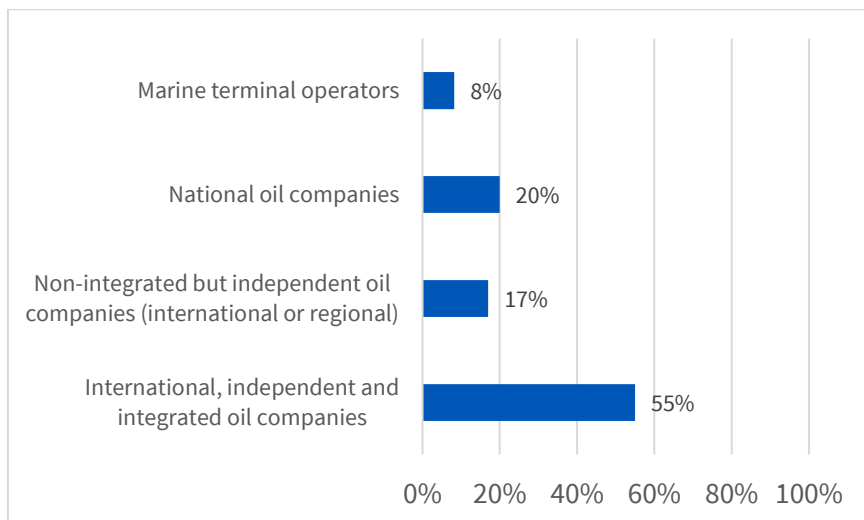
Stage 1: Desktop review of literature and other available already captured data,

LR undertook a desktop review of existing OCIMF documentation, kick off meeting minutes with OCIMF's environmental sub-committee and discussions on the strategy; industry documentation [Ref 10, 13, 16, 17, 18, 19, 20]; academic research; and any other sources of information agreed with OCIMF, [Ref 2, 3, 4, 9].

Stage 2: Online survey and stakeholder consultation,

LR prepared a set of questions for the e-survey. The e-survey is a set of questions that took into consideration the outcomes from the desktop review and main objectives of the study. Questions were shared with the OCIMF Secretariat and the Environmental Sub-Committee (ESC) for their review, comment and approval.

OCIMF used a suitable online survey platform to host the survey and produce results in custom charts and dashboards [Ref 24, 25, 26]. The results were collected anonymously to protect the confidentiality of participants.



OCIMF membership profile that participated to the survey

A stakeholder consultation also ran subsequently with the e-survey. Based on discussions with the OCIMF Secretariat and the ESC, a list of relevant stakeholders was identified representing varied membership groups and geographies. All members who participated to the e-survey were also given the opportunity to take part in the stakeholder consultation.

The consultations were in the form of semi-structured interviews. LR took a qualitative approach to evidence gathering and undertook 19 video conferencing interviews. The goal of conducting the stakeholder consultation was to gather information (data, facts, and knowledge), opinions and views from a spectrum of stakeholders on the development of the environmental plan paper and the materiality of environmental impacts.

Stage 3: Write a paper based on the results from Stage 1 and 2,

Following the e-survey and stakeholder consultation, the LR team initiated a qualitative review and analysis. The LR team carried out a screening of the responses to establish:

- who responded, and their sector;
- what environmental issues they addressed and deemed material to OCIMF; and
- what their views and concerns are, expectations and ambition of OCIMF's environmental plan.

The project team then drafted this paper based on the desktop review, online survey and consultation activities. The discussion paper contains the key points that stakeholders would benefit from knowing before the workshop meeting, such as objectives and methodology.

Stage 4: Workshop engagement with members,

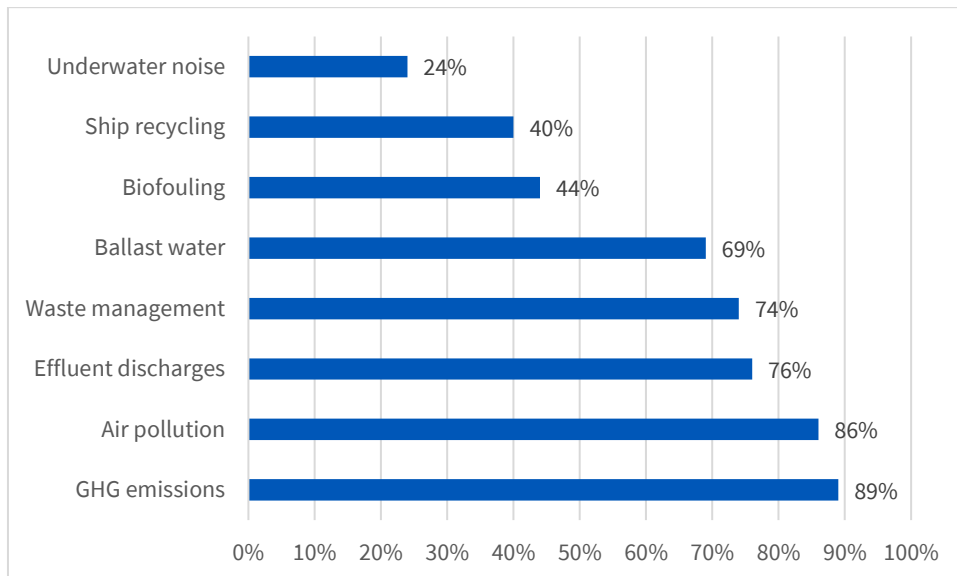
Stage 5: Write an environmental plan paper consolidating all activities and comments, and

Stage 6: Presentation of results.

So far, LR has completed Stage 1 and Stage 2 of this project, and this report is the deliverable of Stage 3. Following this paper, LR will carry on with the remaining deliverables of this project as listed above.

OCIMF's ambition and commitment to the marine environment

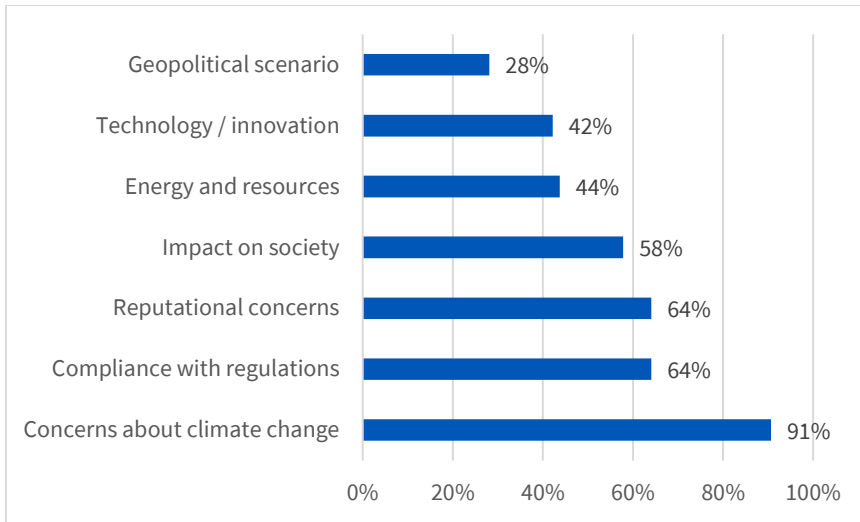
OCIMF members collective priorities in relation to the marine environmental issues are demonstrated as below.



Marine environmental issues prioritised by the OCIMF members

Overall, members would like to be supported on a number of environmental issues, proactively and in a timely manner to eliminate any regional or national regulations to be in force before an international agreement in place. They think that OCIMF should be providing a pragmatic, technically sound and problem-solving voice in the interest of safety and preserving our environment for future generations and a sustainable marine industry.

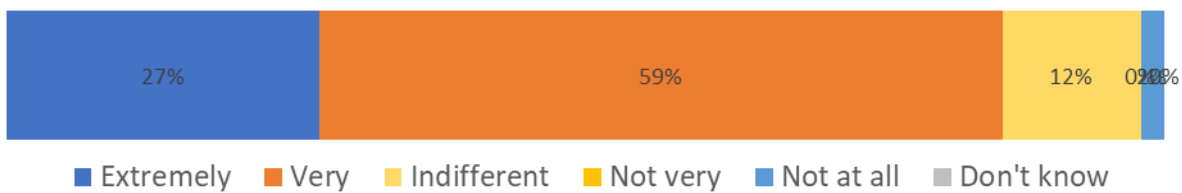
The key drivers for these priorities are mainly the concerns over climate change and this is also demonstrated in below. Knowing what drives members to decide on their priorities is very important when developing a strategic plan.



Key drivers for the priorities

Air pollution

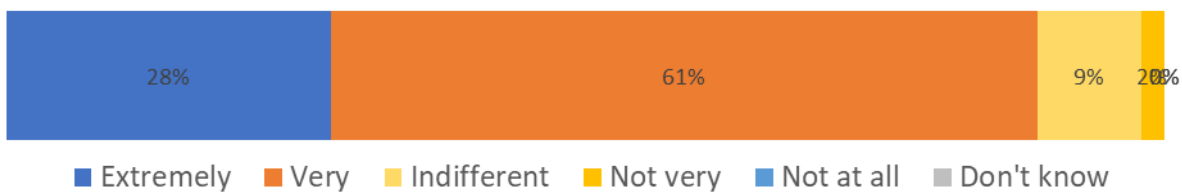
Nearly a third feel OCIMF should be more ambitious compared with IMO in respect of air pollution, whilst two thirds feel it should be the same. Air pollution is seen by the strong majority to be important to OCIMF’s vision and mission, although 14% do not agree.



Importance of air pollution to OCIMF

GHG emissions

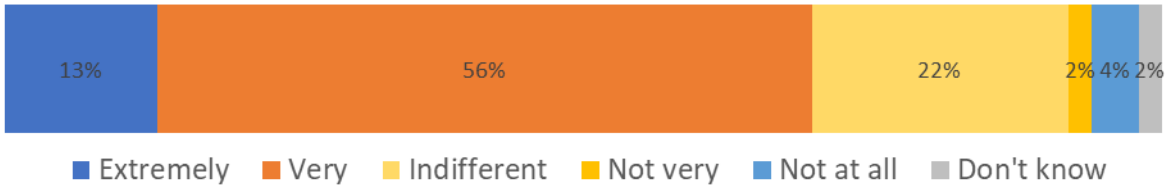
Nearly a third feel OCIMF should be more ambitious compared with IMO, whilst two thirds feel it should be the same. None feel that it should be less ambitious. GHG is seen by the strong majority to be important to OCIMF’s vision and mission, although 11% do not agree.



Importance of GHG to OCIMF

Ballast water management

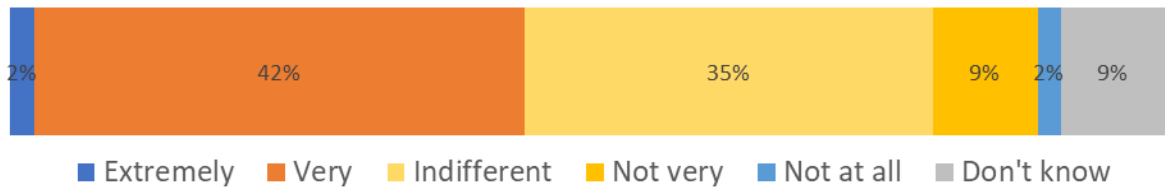
Four respondents feel OCIMF should be more ambitious compared with IMO, whilst the strong majority (89%) feel it should be the same. One feels that it should be less ambitious. Ballast water management is seen by the majority (69%) to be important to OCIMF’s vision and mission, although 28% do not agree.



Importance of ballast water management to OCIMF

Biofouling management

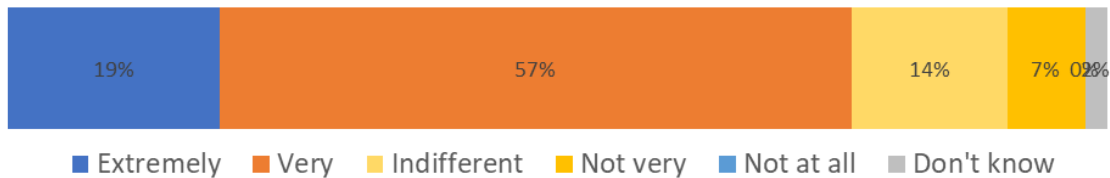
Few (3 respondents) feel OCIMF should be more ambitious compared with IMO in respect of biofouling management, most feel it should be the same. One felt that it should be less ambitious. Biofouling management is perceived to be important to OCIMF’s vision and mission, although not as important as most other issues.



Importance of biofouling management to OCIMF

Effluent discharges

One in five respondents feel OCIMF should be more ambitious compared with IMO in respect of effluent discharges, most feel it should be the same. Effluent discharges is perceived to be important to OCIMF’s vision and mission, although not quite as important as air pollution and GHG. Figure below demonstrates the importance of effluent discharges to OCIMF members.



Importance of effluent discharges to OCIMF

Ship recycling

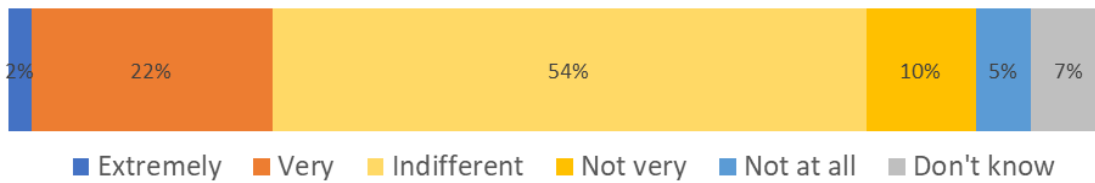
One in five respondents feel OCIMF should be more ambitious compared with IMO, most feel it should be the same. Ship recycling is perceived to be fairly important to OCIMF’s vision and mission, although it is second least important aspect.



Importance of ship recycling to OCIMF

Underwater noise

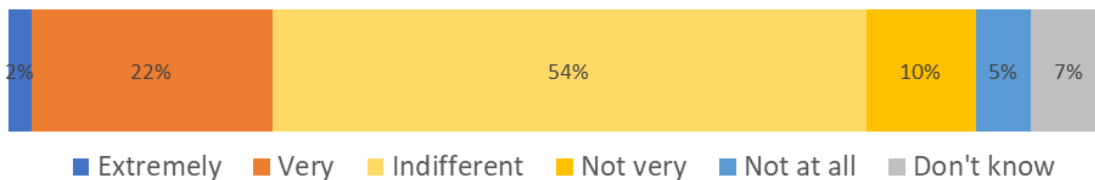
Few (15%) respondents feel OCIMF should be more ambitious compared with IMO in respect of underwater noise, most feel it should be the same. Underwater noise is perceived to be the least important of the environmental issues to OCIMF's vision and mission.



Importance of underwater noise to OCIMF

Waste management

Few (19%) respondents feel OCIMF should be more ambitious compared with IMO in respect of waste management, most feel it should be the same. Overall, members believe that the regulation on this issue is clear in terms of compliance, however OCIMF may promote best practice and training as this is considered as an important environmental issue that is faced by our industry. Waste management is perceived to be one of the most important of the environmental issue to OCIMF's vision and mission, after air pollution and GHG.



Importance of waste management to OCIMF

Actions

The participants were asked for a list of actions that should be taken to meet the objectives identified for each environmental issue. These are consolidated as below:

- OCIMF's messaging on environmental issues should be consistent with all its member.
- OCIMF should be a leader in any environmental issues in terms of best practice.
- OCIMF should form a consortium exchanging ideas with all like-minded groups.
- OCIMF should actively engage with Port States and States to ensure consistency.
- OCIMF should proactively influence policy decisions so the industry is not faced with inconsistent national, regional and international regulations.
- OCIMF members should come together cohesively around these environmental issues with the same practical and economical pace and solutions.
- OCIMF should develop an information sharing practice about available solutions, technologies and SWAT analysis to improve member's performance and compliance.
- OCIMF should participate in the main coalitions of the industry and monitor the emerging initiatives.
- OCIMF should continue to focus on and be a conduit for providing guidance and support out to the membership, particularly smaller member companies on rules, regulations and legislation that affects them.
- OCIMF should try to reduce the environmental impact as well as meeting the regulations.

- OCIMF should provide information on environmental issues that are not high priority to stay alert.

Members also provided more specific actions which are given in Appendix A under each environmental issue section.

Other issues

Both the e-survey and stakeholder consultation participants were asked to list any other marine environmental issues that were not included within the survey. They listed a number of solutions (such as slow steaming, collection of oceanographic data for research and various indexes that promote efficient ships) and consequences (such as oil spills and whale strikes). However, there were two issues that stood out from the list and these are:

- Light pollution at sea; and
- Cargo tank cleaning.

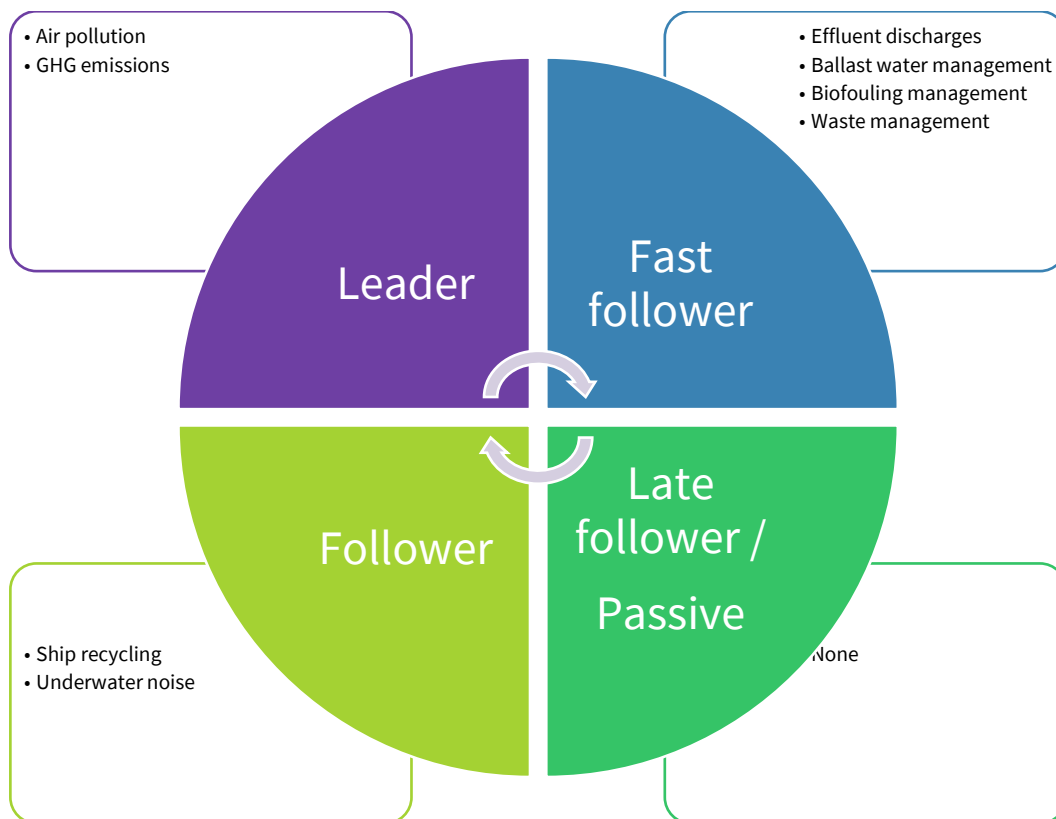
Other organisations

The participants were asked to list any other membership led associations that they feel are more advanced when compared to OCIMF in relation to marine environmental issues. Some of these organisations are BIMCO, Intertanko, Concawe, FuelsEurope and ICS.

Stakeholder consultations

Stakeholder consultations demonstrated that there are common themes amongst both priorities and actions to take across all the environmental issues. These are demonstrated as below.

Members believe that OCIMF should be prioritising their strategic position based on the matrix below.



Level of ambition for the OCIMF members

Environmental issue	Common themes
<ul style="list-style-type: none"> • Air pollution • Ballast water management • Biofouling management • Effluent discharges • GHG emissions • Ship recycling • Underwater noise • Waste management 	<ul style="list-style-type: none"> • Keep our people and assets safe • Realistic and practical change. • Provide best practice guidelines. • Maintain good reputation and lead by example. • Act as a collaborative membership, be transparent and share ideas. • Influence industry with best practice and guidelines. • Influence policy decisions so they are practical, easy to implement and consistent globally. • Collaborate with other likeminded organisations. • Invest in research and development; and scientific evidence gathering. • Invest in innovation which is sustainable, practical and economical. • Act socially responsible. • Raise awareness of OCIMF globally. <p>Be inclusive within governance of OCIMF.</p>

Members' action list from stakeholder consultation

Next steps

Stage 4: The workshop

We will undertake a workshop virtually using Microsoft Teams and run it over two days, three hours sessions with a half an hour break in the middle. During the workshop, LR will present and receive feedback on the results from previous tasks, seek to engagement and buy-in to the material environmental issues for OCIMF and identify actions for implementation. Any insights gained from this workshop that relate to the development of the strategy will be analysed.

Stage 5: Environmental plan

LR will prepare a draft environmental plan paper based on the evidence gathered in all activities described in this paper and our professional expertise. The draft plan will be sent to OCIMF Secretariat and ESC for comments and feedback. The final environmental plan paper will follow in principle the same structure as the draft plan paper while taking into account the comments and requests received from the above stakeholders.

Further details can be found throughout this report.

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Appendix A E-survey

Appendix B Stakeholder consultations

Appendix C OCIMF

1. Introduction and background

Oil Companies International Marine Forum (OCIMF) would like to develop an environmental plan that sets out its ambition(s) and planned future activities on the environment in line with its vision, mission and strategy.

OCIMF requested Lloyd's Register Advisory Services BV (LR) to assist them to develop an environmental plan paper which demonstrates their dedication to resolve environmental issues affecting the industry whilst engaging with its members [Ref 27]. LR's proposed method to develop its environmental plan is in the form of following stages:

Stage 1: Desktop review of literature and other available already captured data,

Stage 2: Online survey and stakeholder consultation,

Stage 3: Write a paper based on the results from Stage 1 and 2,

Stage 4: Workshop engagement with members,

Stage 5: Write a plan paper consolidating all activities and comments, and

Stage 6: Presentation of results.

So far, LR has completed Stage 1 and Stage 2 of this project, and this report is the deliverable of Stage 3. Following this paper, LR will carry on with the remaining deliverables of this project as listed above.

Section 2 of this report details the method and approach used to deliver stage 1 and stage 2. Section 3 provides a summary from the desktop review. Section 4 provides insight from the online survey results looking at each marine environmental issue. Section 5 provides stakeholder consultation outcomes and Section 6 gives recommendations for the next workshop phase of the project.

Appendix A contains the online survey questions, and Appendix B contains anonymous outcomes from the stakeholder consultation. Appendix C contains information on OCIMF, its' structure and overall mission and vision.

2. Method and approach used in this project

The approach taken by LR is detailed below:

2.1. Desktop review

LR undertook a desktop review of existing OCIMF documentation, kick off meeting minutes with OCIMF's environmental sub-committee and discussions on the strategy; industry documentation [Ref 10, 13, 16, 17, 18, 19, 20]; academic research; and other sources of information agreed with OCIMF [Ref 2, 3, 4, 9]. The desktop review had also received insight from LR's various subject matter experts whom provided detailed advice on marine environmental issues, relevant regulations (national, regional, international), best practice, governance, class requirements, port state control and health and safety.

The objective of the desktop review was to:

- understand OCIMF's current activities, ambitions and concerns with regards to environmental issues; and
- identify any gaps against current and future environmental trends and issues in comparison with their vision, mission and current strategy.

Deliverables from this section fed into the preparation of an online survey and stakeholder consultation. The output provided clear evidence to the LR project team and OCIMF Secretariat on which areas the survey should be focused on and on which areas it should be pay extra attention to.

2.2. E-survey

After the desktop review, LR prepared a set of questions for the e-survey. The e-survey is a set of questions that took into consideration the outcomes from the desktop review and main objectives of the study. Questions were shared with the OCIMF Secretariat and the Environmental Sub-Committee (ESC) for their review, comment and approval.

OCIMF used a suitable online survey platform to host the survey and produce results in custom charts and dashboards [Ref 24, 25, 26]. The results were collected anonymously to protect the confidentiality of participants.

The e-survey was made available to all OCIMF members. The true representation of these members is presented below in Figures 1a, 1b and 1c where the percentages are the percentage of the total number of respondents.

Figures 1a: OCIMF membership profiles by company type that participated in the survey

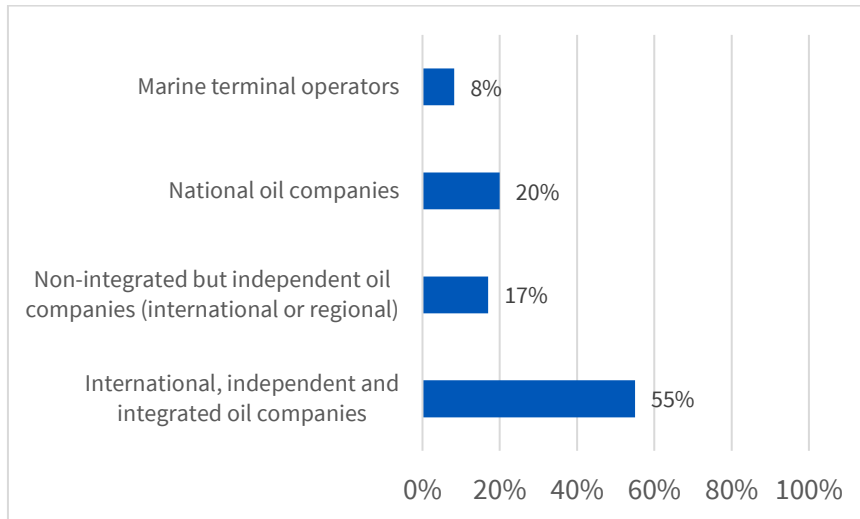


Figure 1b: OCIMF membership profiles by ship engagement type that participated in the survey

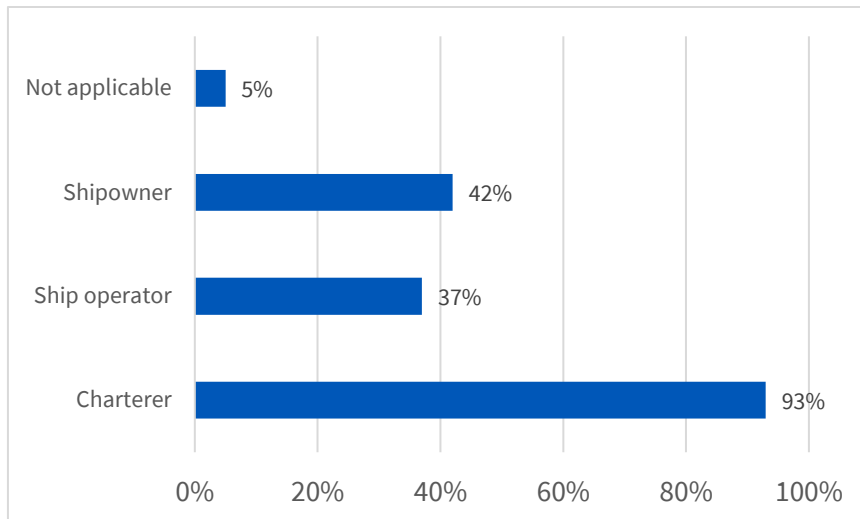
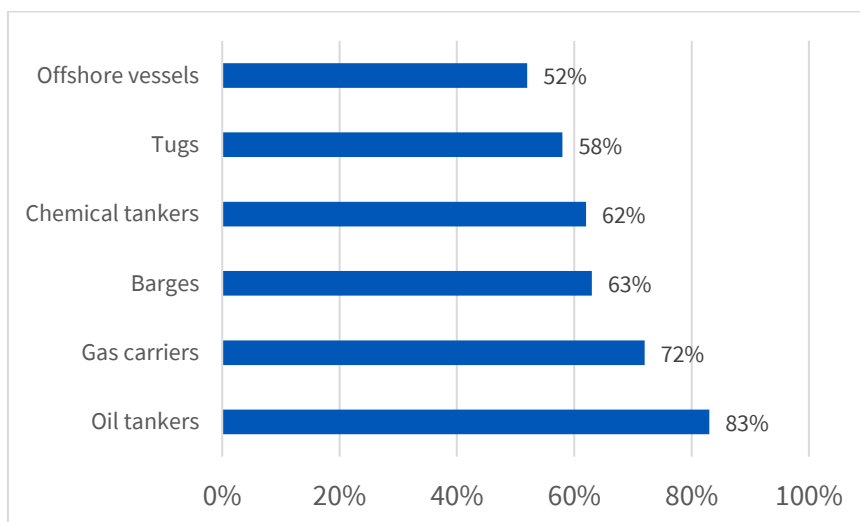


Figure 1c: OCIMF membership profiles by vessel type that participated in the survey



LR's aim was to analyse the responses and to identify trends and whether these are affected by respondent characteristics. The responses were reviewed in the context of the development of an

environmental plan compatible with the OCIMF's objectives and the impact / materiality of issues that the industry faces.

The e-survey questions are provided in Appendix A and the detailed analysis can be found in Section 4 of this report.

2.3. Stakeholder consultation

A stakeholder consultation also ran subsequently with the e-survey. Based on discussions with the OCIMF Secretariat and the ESC, a list of relevant stakeholders was identified representing varied membership groups and geographies. All members who participated in the e-survey were also given the opportunity to take part in the stakeholder consultation.

The consultations were in the form of semi-structured interviews. LR took a qualitative approach to evidence gathering and undertook 19 video conferencing interviews.

The goal of conducting the stakeholder consultation is to gather information (data, facts, and knowledge), opinions and views from a spectrum of stakeholders on the development of the environmental plan paper and the materiality of environmental impacts.

The interview process followed the steps outlined below:

- An introductory email outlining the nature of the study and explaining the purpose of the interview. OCIMF Secretariat then made follow-up contacts, where necessary, to set up the interviews. Where the primary contacts identified did not reply or were not available for an interview, alternative stakeholders were identified and contacted.
- During the interview, LR's representative used the topic guide to focus on the questions and discussion on those issues where LR wished to complement the information gathered under preceding tasks.
- After each interview, an anonymous summary of the core information from the interview was prepared. LR clarified with each interviewee that their statements and the information provided is to be considered confidential. The interview-based information was prepared into Word documents and then incorporated into the development of this paper.

Overall outcomes are given in Section 5. Consultation questions and a list of stakeholders are provided in Appendix B.

2.4. Validation process

Following the e-survey and stakeholder consultation, the LR team initiated a qualitative review and analysis. The LR team carried out a screening of the responses to establish:

- who responded, and their sector;
- what environmental issues they addressed and deemed material to OCIMF; and
- what their views and concerns are, expectations and ambition of OCIMF's environmental plan.

The project team then drafted this paper based on the desktop review, online survey and consultation activities. The discussion paper contains the key points that stakeholders would benefit from knowing before the workshop meeting, such as objectives and methodology.

Any outstanding questions that have not been answered during the e-survey and the stakeholder consultation are included in this paper as a means to elicit responses to particular topics.

2.5. Recognition

LR would like to express deep gratitude to all the participants and OCIMF Secretariat for their invaluable assistance and insight during this project. Their thoughts, recommendations, open and practical input have been and will be invaluable towards the conclusions and recommendations made within this project.

3. Desktop review outcomes

LR has received documents and reports from OCIMF Environmental Committee members and Secretariat. The below is a review of this information by specific topics.

LR's desktop review also included industry documentation and academic research (see list of References). The desktop review also had insight from LR's various subject matter experts whom provided detailed advice on marine environmental issues, relevant regulations (national, regional, international), best practice, governance, class requirements, port state control and health and safety.

Alternative fuels

In terms of alternative fuels, followings are the OCIMF's strategic directions related to GHG and air pollution reduction.

- IMO GHG initiatives, including enhancement of the EEDI and the minimum power requirements; and
- MARPOL Annex VI.

In terms of items identified as specific candidate measures, OCIMF would like to assess alternative fuels, EEDI, SEEMP, speed reduction.

CCC 5 developed the Draft technical provisions for ships using methyl/ethyl alcohol as fuel which has been reviewed by PPR 6, SDC 6, SSE 6 and HTW 6. In response to the same, OCIMF wants to monitor the discussion and to facilitate the conclusion in order to give the working group a slot for other crucial fuels such as hydrogen or ammonia for GHG reduction.

Given the environmental challenges facing the marine shipping industry to lower the GHG emissions, NO_x and SO_x, there will be changes in the mix of fuels that shippers use as they attempt to meet international and local exhaust emission requirements. And OCIMF recognises that it will no longer be "one size fits all" [Ref 1, 22].

GHG emissions

Fundamentally the vision of the IMO to decarbonise shipping in the long term presents a gamechanger to the shipping industry which will have profound impact on the OCIMF membership. These maybe short term in nature (for example voluntary short-term measures such as just in time arrival at ports) to managing the transition to new fuels/technologies delivering zero GHG emission transport. There is a need to monitor the developments at IMO and provide the membership with an overview of the discussion highlighting potential impacts.

Regarding influencing the regulatory debate, the discussion leading to the resolution was fundamentally driven by the GHG policy position of member states with very limited direct input by NGOs. The underlying principles, the impact assessment on states and how to define and address disproportionate impacts will remain dominant in the discussion on mandatory measures and as those aspects are political in nature, are outside the scope of OCIMF.

Considering the ambitions, key elements such as CO₂ emissions per transport work (or carbon intensity) and total GHG emissions have not been defined. OCIMF believe that there could be a role for OCIMF to ensure that the definitions for efficiency are appropriate for the shipping sectors OCIMF represents especially as vessels which are not performing cargo operations such as offshore vessels may be difficult to define in terms of carbon intensity. Similarly on the discussion of total GHG emissions, it has not been finalised whether these will be limited to the main GHG (CO₂, CH₄, N₂O, fluorinated gases) or also include indirect CO₂ emissions and whether it will cover tank to wake or

well to wake emissions and OCIMF believe that they may see a role in this discussion from a technical/scientific point of view.

The 4th IMO GHG study will be important datapoint to assess progress made by the industry and different sectors and in combination with the outlook will influence the discussion. Therefore, OCIMF believes that it is important that they monitor status.

Their high-level action list is to continue monitoring by attending Intersessional Meetings (ISWG-GHG) and MEPC GHG working groups; and develop a communication plan for the membership [Ref 11, 12].

Their current action plan is in line with the members expectations based on e-survey and stakeholder consultation.

EEDI

The submission document from OCIMF, is a 'Draft terms on developing OCIMF paper and positions on EEDI'. The OCIMF ESC is seeking to develop an information paper and/or position paper on key aspects of EEDI for the purpose of sharing knowledge and information with its members and the wider industry. The paper would also serve as a base document for promotion of good/best practice on EEDI through advocacy and programme [Ref 5].

Their current action plan is in line with the members expectations based on e-survey and stakeholder consultation.

Effluents

OCIMF members believe that the issues faced from Exhaust Gas Recirculation (EGR) effluents are similar to those from Exhaust Gas Cleaning Systems (EGCS) discharges with an uncertainty on the acceptable quality of the bleed-off water to be lifted by PPR in 2021. It must be noted that today discharge conditions of effluents from EGR are more stringent than the discharge conditions of EGCS [Ref 6].

Members also have concerns over Inert Gas System (IGS) which are not explicitly included in the current IMO work program, but the issue has already been raised in the past and it will inevitably come back sooner or later. Their continuous use could be considered inconsistent with the ban of open loop scrubbers already in force in some ports with potentially more to come. OCIMF's would like to launch a campaign of sampling and analysing IGS scrubbers' effluents on members' fleets in order to be proactive on this issue. They also are planning to liaise with manufacturers and investigate alternative solutions as well as investigating if burning MDO could improve the quality of discharge water in a way that it would become acceptable [Ref 7].

The usual issue of EGCS discharge and open loop bans are also a point of concern for OCIMF members. There are a few comprehensive scientific studies readily available on the composition of EGCS effluents' composition and their impact on marine environment [Ref 8].

Their current action plan is in line with the members expectations based on e-survey and stakeholder consultation.

Invasive species

In terms of biofouling management, OCIMF ESC is debating either to engage and advocate for change or improvement as the issue is environmentally critical to OCIMF members since it is likely to impact the quality of tankers/offshore marine assets; monitor with focus on key areas having selective engagement to other organisations or interested parties as issues are determined as non-critical but have the potential for escalation; or choose a combination of both needs to be made [Ref 14].

In terms of ballast water management, OCIMF is planning to address various areas within this topic and these are crew training, storm ballasting, application for exemption & exclusion; sampling and monitoring; systems commissioning; and use of pre-treated ballast provided by shore facility [Ref 15].

Their current action plan is in line with the members expectations based on e-survey and stakeholder consultation.

Ship recycling

In terms of ship recycling, OCIMF's suggested action plan is to monitor the Hong Kong Convention's implementation expectations; monitor the EU for the implementation of regulation; voice/channel membership concerns/issues/questions/queries through the IMO; review/engage ICS on work being carried out on ship recycling; and engage membership on available guidelines for the development of ship recycling plans, authorisation of ship recycling facilities, etc. [Ref 21].

Their current action plan is in line with the members expectations based on e-survey and stakeholder consultation.

Special Areas

In terms of special areas, OCIMF's suggested action plan is to:

- monitor the IMO for the following amendments;
 - Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas.
 - Special Areas under MARPOL.
 - Emission Control Areas (ECA's).
 - Use and carriage of HFO as fuel by ships in Arctic waters.
- voice / channel membership concerns / issues / questions / queries through the IMO on amendments that may create or cause issues to OCIMF membership.
- communicate decisions, timelines and guidance to OCIMF membership as appropriate [Ref 23].

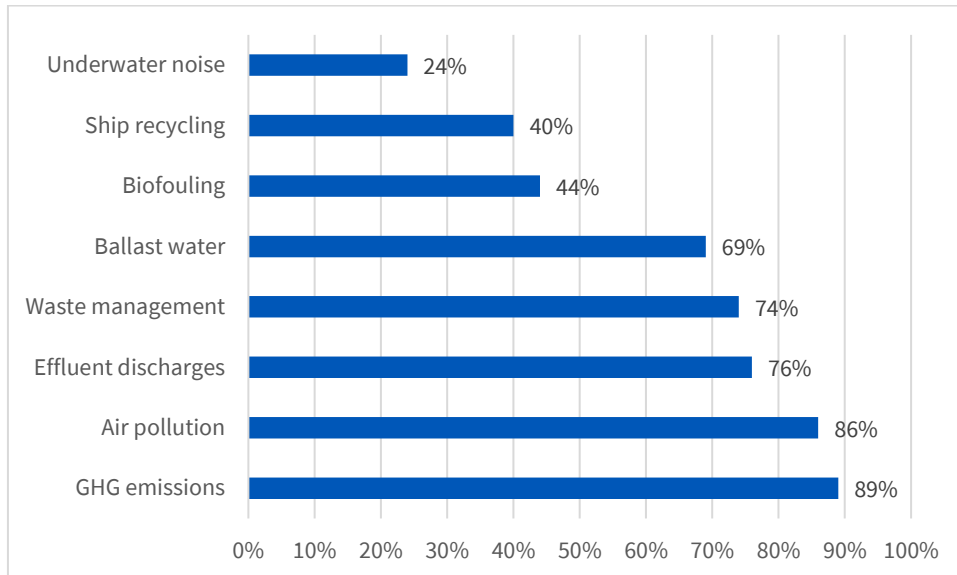
Their current action plan is in line with the members expectations based on e-survey and stakeholder consultation.

4. E-survey outcomes

OCIMF's ambition and commitment to the marine environment

OCIMF members collective priorities in relation to the marine environmental issues are demonstrated in the below Figure 2.

Figure 2: Marine environmental issues prioritised by the OCIMF members

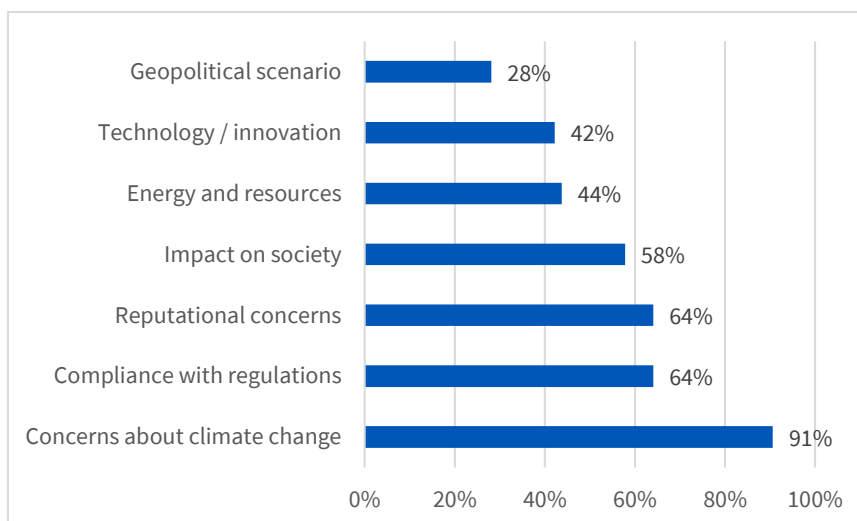


Overall, members would like to be supported on a number of environmental issues, proactively and in a timely manner to eliminate any regional or national regulations to be in force before an international agreement in place. They think that OCIMF should be providing a pragmatic, technically sound and problem-solving voice in the interest of safety and preserving our environment for future generations and a sustainable marine industry.

Drivers

The key drivers for these priorities are mainly the concerns over climate change and this is also demonstrated in Figure 3 below. Knowing what drives members to decide on their priorities is very important when developing a strategic plan.

Figure 3: Key drivers for the priorities



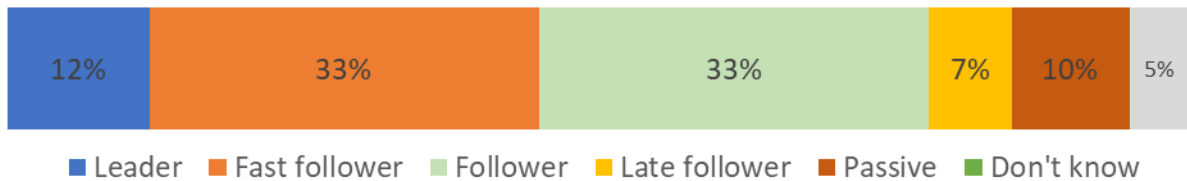
4.1. Air pollution

The regulations for the Prevention of Air Pollution from Ships (MARPOL Annex VI) seek to minimise airborne emissions from ships (SO_x, NO_x, ODS, VOCs and shipboard incineration) and their contribution to local and global air quality and environmental and health problems.

Current position

45% of respondents perceive OCIMF to be a leader or fast-follower in respect of air pollution issues. This is average response compared with other environmental issues. 17% feel OCIMF is a late follower or passive.

Figure 4: Rating of OCIMF on air pollution issues



The majority of respondents tend to feel that there is sufficient knowledge and information available about air pollution in the industry.

Figure 5: Sufficient knowledge and information about air pollution

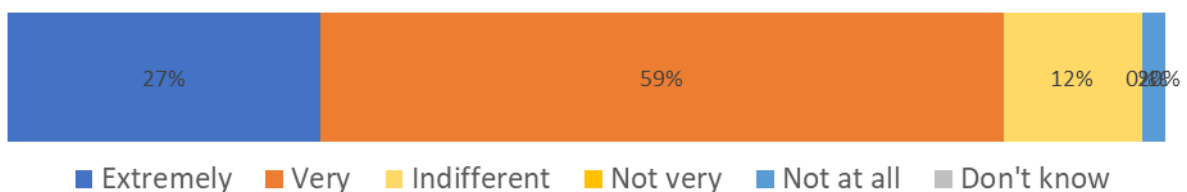


Where members wish to be

Nearly a third feel OCIMF should be more ambitious compared with IMO in respect of air pollution, whilst two thirds feel it should be the same.

Air pollution is seen by the strong majority to be important to OCIMF's vision and mission, although 14% do not agree.

Figure 6: Importance of air pollution to OCIMF



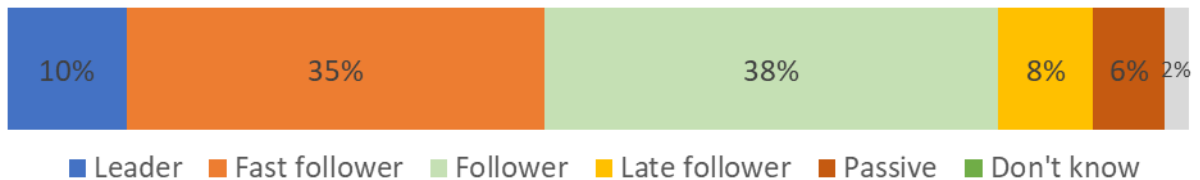
4.2. GHG emissions

The IMO's initial Greenhouse Gas (GHG) strategy represents an ambition for the shipping sector. It sets a GHG reduction pathway of at least 50% by 2050 based on a 2008 baseline.

Current position

45% of respondents perceive OCIMF to be a leader or fast-follower in respect of GHG issues. This is average response compared with other environmental issues. 14% feel OCIMF is a late follower or passive.

Figure 7: Rating of OCIMF on GHG issues



Half of the respondents feel that there is sufficient knowledge and information available about GHG in the industry, although few agree strongly; 17% disagree.

Figure 8: Sufficient knowledge or information about GHG



Where members wish to be

Nearly a third feel OCIMF should be more ambitious compared with IMO, whilst two thirds feel it should be the same. None feel that it should be less ambitious.

GHG is seen by the strong majority to be important to OCIMF's vision and mission, although 11% do not agree.

Figure 9: Importance of GHG to OCIMF



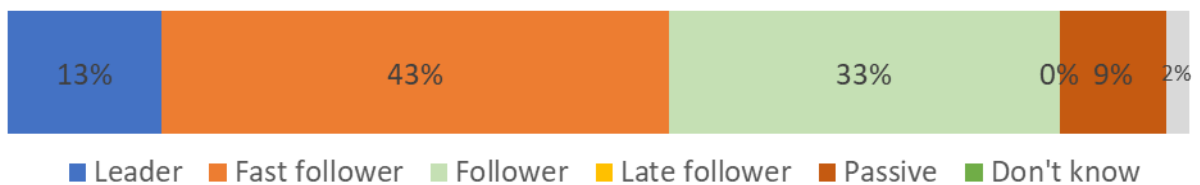
4.3. Ballast water management

The transfer of invasive marine species into new environments via ballast water has been considered a major threat to the world’s oceans. In response, the IMO and other international bodies have taken action to address the problem. The International Convention for the Control and Management of Ships’ Ballast Water and Sediments (the Ballast Water Management or BWM Convention) to regulate discharges of ballast water and reduce the risk of introducing non-native species from ships’ ballast water entered into force on 8 September 2017.

Current position

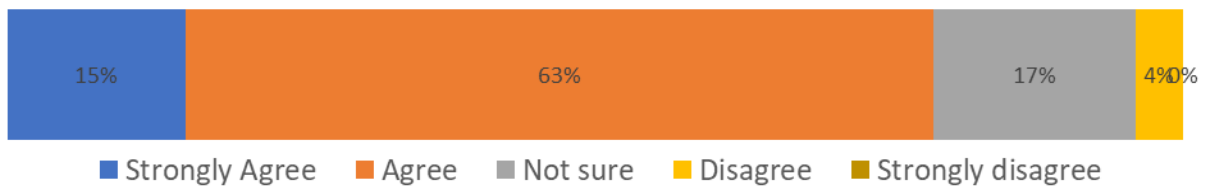
56% of respondents perceive OCIMF to be a leader or fast-follower in respect of ballast water management issues. This is above average response compared with other environmental issues. 9% feel OCIMF is a late follower or passive.

Figure 10: Rating of OCIMF on ballast water management issues



More than three quarters tend to feel that there is sufficient knowledge and information available about ballast water management in the industry; 4% disagree.

Figure 11: Sufficient knowledge or information about ballast water management

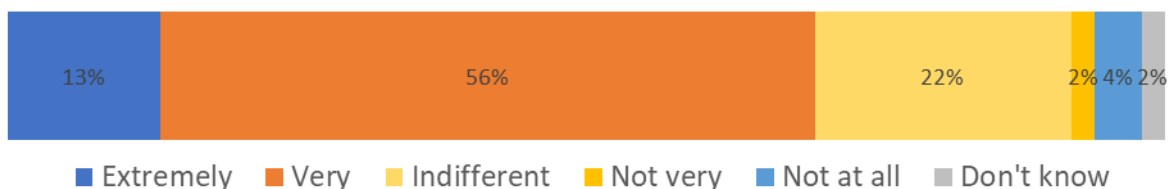


Where members wish to be

Four respondents feel OCIMF should be more ambitious compared with IMO, whilst the strong majority (89%) feel it should be the same. One feels that it should be less ambitious.

Ballast water management is seen by the majority (69%) to be important to OCIMF’s vision and mission, although 28% do not agree.

Figure 12: Importance of ballast water management to OCIMF



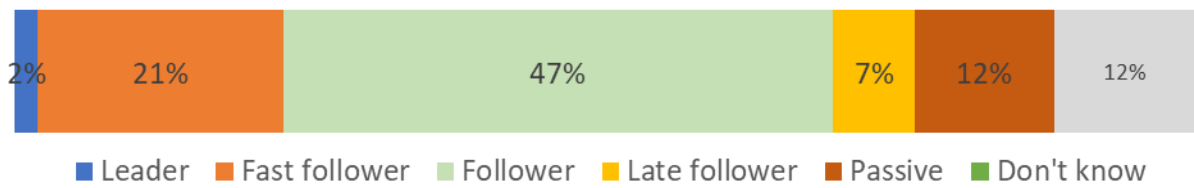
4.4. Biofouling management

The Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (Biofouling guidelines) are intended to provide a globally consistent approach to the management of biofouling. They were adopted in July 2011. The Biofouling Guidelines represent a decisive step towards reducing the transfer of invasive aquatic species by ships. Some national bio-fouling requirements are already in force.

Current position

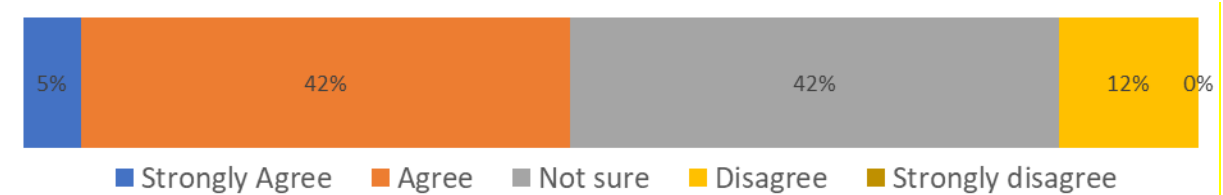
23% of respondents perceive OCIMF to be a leader or fast-follower in respect of bio-fouling management issues. This is well below average response compared with other environmental issues. 19% feel OCIMF is a late follower or passive.

Figure 13: Rating of OCIMF on biofouling management issues



Approximately half of the participants tend to feel that there is sufficient knowledge and information available about biofouling management in the industry. Nearly half are not sure, and 12% disagree.

Figure 14: Sufficient knowledge or information about biofouling management

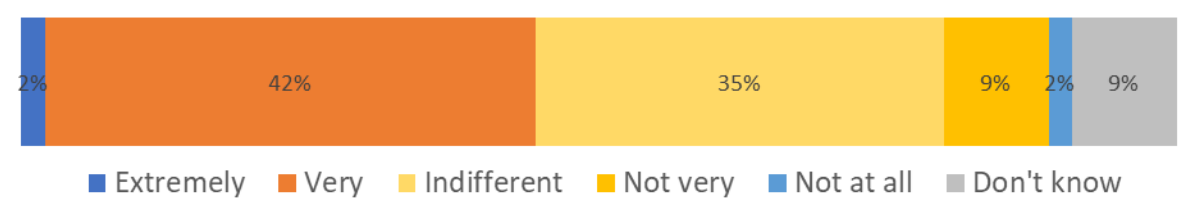


Where members wish to be

Few (3 respondents) feel OCIMF should be more ambitious compared with IMO in respect of biofouling management, most feel it should be the same. One felt that it should be less ambitious.

Biofouling management is perceived to be important to OCIMF's vision and mission, although not as important as most other issues.

Figure 15: Importance of biofouling management to OCIMF



4.5. Effluent discharges

Sewage is subject to regulation Annex IV of MARPOL. In addition to the international standard, some jurisdictions also regulate sewage discharges.

There are no international rules applying to grey water although some contend that the chemicals used in laundry, dishwashing and cleaning can be as hazardous to the marine environment.

The waste water from cleaning and cooling machinery may be contaminated by oily wastes and its disposal is regulated under MARPOL Annex I.

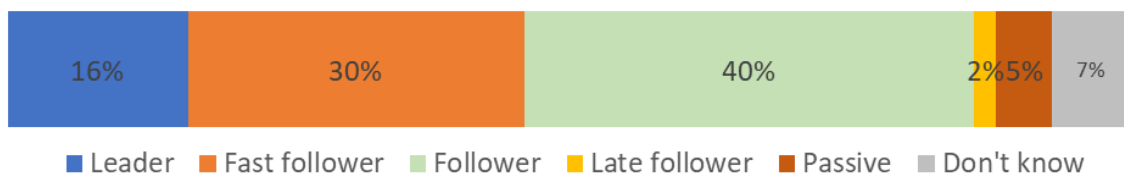
There are IMO guidelines for the wash-water from exhaust gas cleaning systems.

Finally, there is water used for hold cleaning and tank washing which may or may not be subject to special requirements. MARPOL Annex II is the international regulation for this type of waste water.

Current position

46% of respondents perceive OCIMF to be a leader or fast-follower in respect of Effluent Discharges issues. This is above average compared with the other environmental issues being reviewed. 7% feel OCIMF is a late follower or passive.

Figure 16: Rating of OCIMF on effluent discharges issue



Three in five tend to feel that there is sufficient knowledge and information available about effluent discharges in the industry. 19% are not sure, and 21% disagree.

Figure 17: Sufficient knowledge or information about effluent discharges

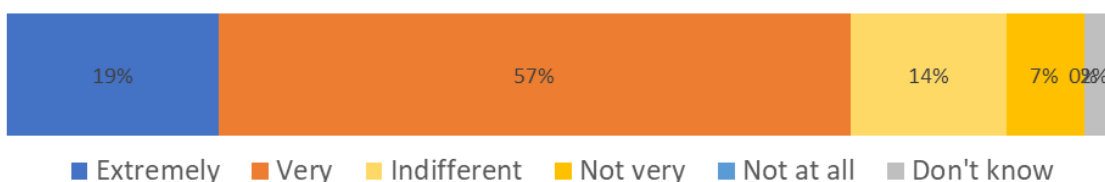


Where members wish to be

One in five respondents feel OCIMF should be more ambitious compared with IMO in respect of effluent discharges, most feel it should be the same.

Effluent discharges are perceived to be important to OCIMF's vision and mission, although not quite as important as air pollution and GHG. The figure below demonstrates the importance of effluent discharges to OCIMF members.

Figure 18: Importance of effluent discharges to OCIMF



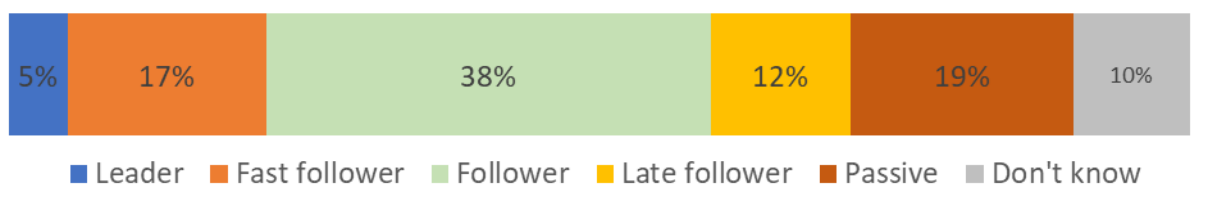
4.6. Ship recycling

The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009 (the Hong Kong Convention), was adopted in 2009. The Convention is aimed at ensuring that ships, when being recycled after reaching the end of their operational lives, do not pose any unnecessary risks to human health, safety and to the environment. The Convention will enter into force 24 months after the date on which 15 States, representing 40% of world merchant shipping by gross tonnage, have ratified it.

Current position

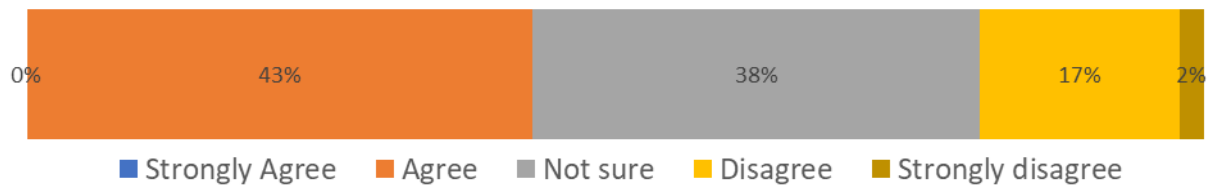
22% of respondents perceive OCIMF to be a leader or fast-follower in respect of ship recycling. This is well below average compared with other environmental issues being reviewed. 31% feel OCIMF is a late follower or passive.

Figure 19: Rating of OCIMF on ship recycling



43% of participants agree that there is sufficient knowledge and information available in the industry, although none agree strongly; 38% are not sure, and 19% disagree.

Figure 20: Sufficient knowledge or information on ship recycling

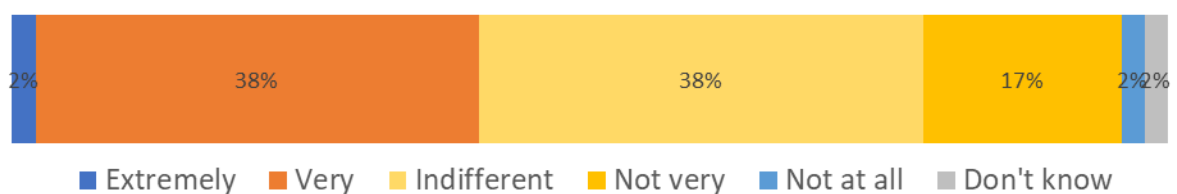


Where members wish to be

One in five respondents feel OCIMF should be more ambitious compared with IMO, most feel it should be the same.

Ship recycling is perceived to be fairly important to OCIMF's vision and mission, although it is the second least important aspect.

Figure 21: Importance of ship recycling to OCIMF



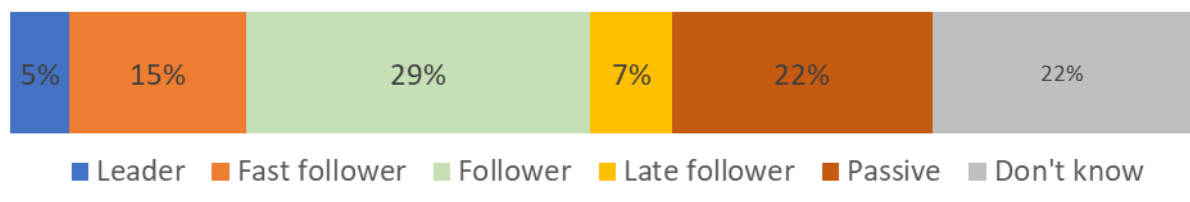
4.7. Underwater noise

Studies have shown that underwater-radiated noise from ships may have both short and long-term negative consequences on marine life, especially marine mammals. The issue of underwater noise and impact on marine mammals was first raised at IMO in 2004. It was noted that continuous anthropogenic noise in the ocean was primarily generated by shipping. Since ships routinely cross international boundaries, management of such noise required a coordinated international response. In 2008, the IMO's MEPC agreed to develop non-mandatory technical guidelines to minimize the introduction of incidental noise from commercial shipping operations into the marine environment to reduce potential adverse impacts on marine life. In 2014, IMO approved guidelines on reducing underwater noise from commercial shipping, to address adverse impacts on marine life. Given the complexities associated with ship design and construction, the guidelines focus on primary sources of underwater noise, namely on propellers, hull form, on-board machinery, and various operational and maintenance recommendations such as hull cleaning.

Current position

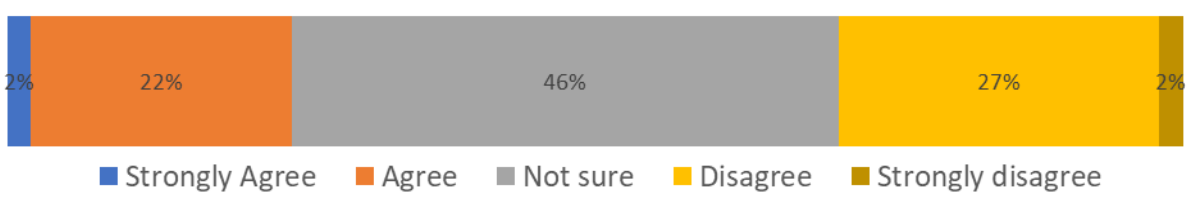
20% of respondents perceive OCIMF to be a leader or fast-follower in respect of underwater noise issues. This is the lowest rating among all the environmental issues being reviewed. More, 29%, feel OCIMF is a late follower or passive.

Figure 22: Rating of OCIMF on underwater noise



Less than a quarter agree that there is sufficient knowledge and information available about underwater noise in the industry, whilst a similar number disagree. Nearly half are not sure.

Figure 23: Sufficient knowledge or information about underwater noise

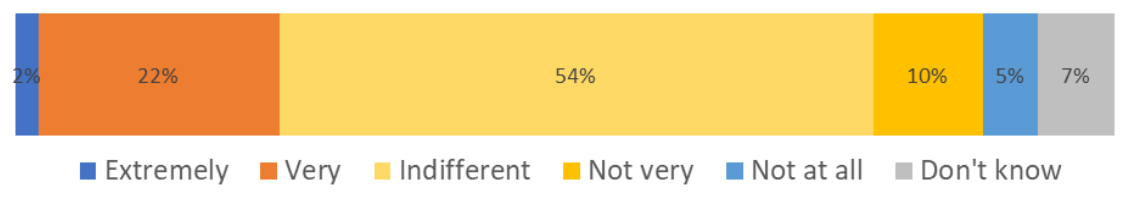


Where members wish to be

Few (15%) respondents feel OCIMF should be more ambitious compared with IMO in respect of underwater noise, most feel it should be the same.

Underwater noise is perceived to be the least important of the environmental issues to OCIMF's vision and mission.

Figure 24: Importance of underwater noise to OCIMF



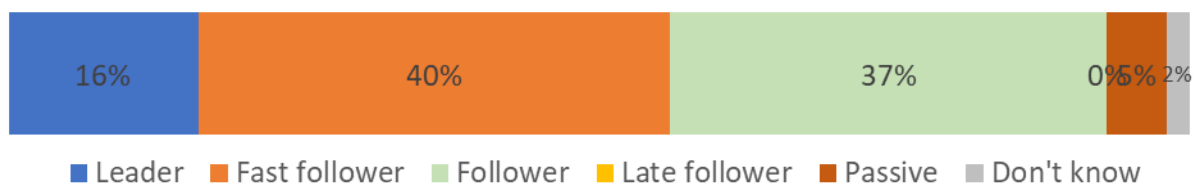
4.8. Waste management

Regulations for the prevention of pollution by garbage from ships are contained in Annex V of MARPOL. Garbage from ships can be just as deadly to marine life as oil or chemicals. The greatest danger comes from plastic, which can float for years. Fish and marine mammals can in some cases mistake plastics for food and they can also become trapped in plastic ropes, nets, bags and other items.

Current position

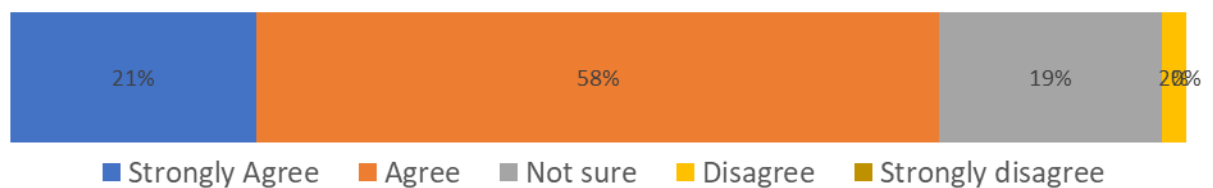
More than half of respondents perceive OCIMF to be a leader or fast-follower in respect of waste management issues. Together with ballast water, this is the joint highest rating among all the environmental issues being reviewed.

Figure 25: Rating of OCIMF on waste management issues



A very strong majority agree that there is sufficient knowledge and information available about waste management in the industry, although 19% say they are not sure.

Figure 26: Sufficient knowledge or information about waste management



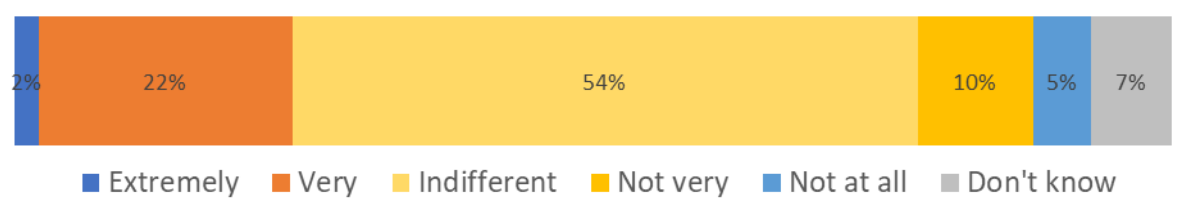
Where members wish to be

Few (19%) respondents feel OCIMF should be more ambitious compared with IMO in respect of waste management, most feel it should be the same.

Overall, members believe that the regulation on this issue is clear in terms of compliance, however OCIMF may promote best practice and training as this is considered as an important environmental issue that is faced by our industry.

Waste management is perceived to be one of the most important of the environmental issue to OCIMF's vision and mission, after air pollution and GHG.

Figure 27: Importance of waste management to OCIMF



4.9. Action list from members

The participants were asked for a list of actions that should be taken to meet the objectives identified for each environmental issue. These are consolidated as below:

- OCIMF's messaging on environmental issues should be consistent with all its member.
- OCIMF should be a leader in any environmental issues in terms of best practice.
- OCIMF should form a consortium exchanging ideas with all like-minded groups.
- OCIMF should actively engage with Port States and States to ensure consistency.
- OCIMF should proactively influence policy decisions so the industry is not faced with inconsistent national, regional and international regulations.
- OCIMF members should come together cohesively around these environmental issues with the same practical and economical pace and solutions.
- OCIMF should develop an information sharing practice about available solutions, technologies and SWAT analysis to improve member's performance and compliance.
- OCIMF should participate in the main coalitions of the industry and monitor the emerging initiatives.
- OCIMF should continue to focus on and be a conduit for providing guidance and support out to the membership, particularly smaller member companies on rules, regulations and legislation that affects them.
- OCIMF should try to reduce the environmental impact as well as meeting the regulations.
- OCIMF should provide information on environmental issues that are not high priority to stay alert.

Members also provided more specific actions which are given in Appendix A under each environmental issue section.

4.10. Other issues

Both the e-survey and stakeholder consultation participants were asked to list any other marine environmental issues that were not included within the survey. They listed a number of solutions (such as slow steaming, collection of oceanographic data for research and various indexes that promote efficient ships) and consequences (such as oil spills and whale strikes). However, there were two issues that stood out from the list and these are:

- Light pollution at sea; and
- Cargo tank cleaning.

Participants believed that one particular pollutant, light, is still permitted to flood into our seas almost unchecked. The intentional and unintentional illumination of the coastal zone and nearshore environment increases unabated. The industry still have little idea of the extent to which intertidal and sublittoral ecosystems are being affected. There is also growing concern regarding the introduction of light into the deep sea.

They also believe that cargo tank cleaning is an ongoing important environmental issue that should be high on OCIMF's priority list.

These two topics may also be included within OCIMF's environmental plan.

4.10.1. Other membership led associations

The participants were asked to list any other membership led associations that they feel are more advanced when compared to OCIMF in relation to marine environmental issues. These are listed in Table 1 below in alphabetical order. Some members also provided reasons why these organisations were considered to be more advance which are also included.

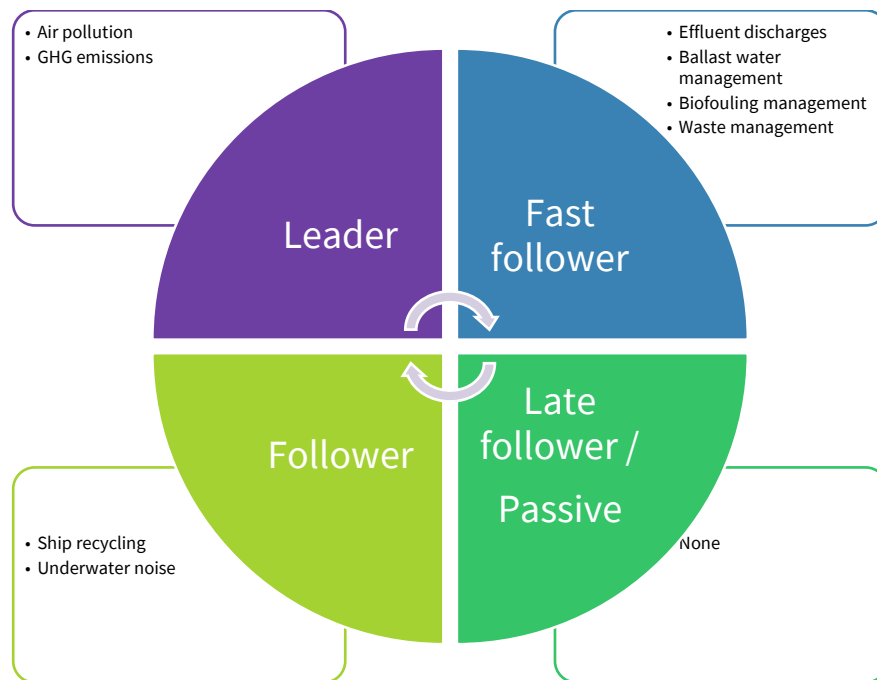
Table 1: Other membership led associations

Organisation	Reason given by members
BIMCO	BIMCO actively contribute on GHG emissions short term candidate measures from operational targets for the existing fleet perspective.
California OSPR	No comment
CDI	No comment
CLIA	No comment
Concawe	Concawe carries out research on environmental, health and safety issues relevant to the oil industry so they could be consulted.
FuelsEurope	FuelsEurope the voice of the European petroleum refining industry for both technical and advocacy issues we should work with them.
Getting to Zero Coalitions	No comment
Global Maritime Forum	No comment
Greenpeace	No comment
ICS	ICS actively contribute on GHG emissions short term candidate measures from operational targets for the existing fleet perspective.
IMO	No comment
Intertanko	Intertanko actively contribute on GHG emissions short term candidate measures from operational targets for the existing fleet perspective.
IPIECA	No comment
IPTA	No comment
ITOPF	No comment
Norwegian Shipowners' Association	No comment
Pacific States Task Force	No comment
Sea Shepherd Conservation Society	No comment
SGMF	No comment
SIGTTO	No comment
Washington DOE	No comment
WCS	No comment

5. Stakeholder consultation outcomes

Stakeholder consultations demonstrated that there are common themes amongst both priorities and actions to take across all the environmental issues. These common themes are drawn out and demonstrated in Figure 28 and Table 2 below. Members believe that OCIMF should be prioritising their strategic position based on the matrix below.

Figure 28: Level of ambition for the OCIMF members



Members' action list that can be implemented practically is listed below.

Table 2: Members' action list from stakeholder consultation.

Environmental issue	Common themes
<ul style="list-style-type: none"> • Air pollution • Ballast water management • Biofouling management • Effluent discharges • GHG emissions • Ship recycling • Underwater noise • Waste management 	<ul style="list-style-type: none"> • Keep our people and assets safe • Realistic and practical change. • Provide best practice guidelines. • Maintain good reputation and lead by example. • Act as a collaborative membership, be transparent and share ideas. • Influence industry with best practice and guidelines. • Influence policy decisions so they are practical, easy to implement and consistent globally. • Collaborate with other likeminded organisations. • Invest in research and development; and scientific evidence gathering. • Invest in innovation which is sustainable, practical and economical. • Act socially responsible. • Raise awareness of OCIMF globally. <p>Be inclusive within governance of OCIMF.</p>

6. Next steps

6.1. Workshop

Prior to the Covid 19 pandemic, our aim was to facilitate a two-day workshop to present and discuss the study findings from the desktop review, online survey and stakeholder consultation; and to implement OCIMF's ambition on environment. Due to current travel and; health and safety restrictions, our proposal is to undertake this workshop virtually using Microsoft Teams and run it over two days, one three-hours sessions with a half an hour break in the middle.

The purpose of the workshop is:

- to agree on OCIMF's ambition on environment;
- to agree on actions OCIMF should take in the next 1-5 years leveraging the contents of this paper;
- to present findings from undertaken tasks to elicit responses to particular topics;
- to seek feedback and insight from the members; and
- to provide inputs for the draft environmental plan paper.

LR will adopt a pragmatic approach to undertake the workshop by actioning the following:

- LR will draft an agenda drawing on the work conducted, our experience of running previous workshops and, in particular, providing sufficient and realistic time for discussion.
- The workshop will present and receive feedback on the results of the tasks previously undertaken, seek engagement and buy-in to the material environmental issues for OCIMF and identify actions for implementation. Any insights gained from this workshop that relate to the development of the strategy will be analysed.
- During the two-day workshop, LR will capture the feedback given by note taking which will be used to develop the draft environmental plan.

6.2. Environmental plan

LR will prepare a draft environmental plan paper based on the evidence gathered in all activities described in this paper and our professional expertise. The draft plan will be sent to OCIMF Secretariat and Environmental sub-committee for comments and feedback.

The final environmental plan paper will follow in principle the same structure as the draft plan paper while taking into account the comments and requests received from the above stakeholders.

The final environmental plan paper's structure will be as below:

Our message to stakeholders

Our business

- About OCIMF
- Our members
- Our governance
- Our stakeholders
- Our partners

Our marine environmental priorities

- One
 - Introduction (why is this in our environmental plan?)
 - Progress (what have we done so far? Where are we?)
 - Next steps (where do we want to get to and how are we going to get there?)
- Two
 - Introduction
 - Progress
 - Next steps
- Three
 - Introduction
 - Progress
 - Next steps
- Four
 - Introduction
 - Progress
 - Next steps
- Five
 - Introduction
 - Progress
 - Next steps

Our declaration

Sources

Definitions

Contacts

Abbreviations and definitions

Abbreviations	Definitions
BIMCO	Baltic and International Maritime Council
BWM	Ballast Water Management
California OSPR	California Department of Fish and Wildlife: Office of Spill Prevention and Response
CDI	Chemical Distribution Institute
CLIA	Cruise Lines International Association
Concawe	A group of leading oil companies to carry out research on environmental issues relevant to the oil industry.
EEDI	Energy Efficiency Design Index
EGCS	Exhaust Gas Cleaning Systems
FuelsEurope	A division of the European Petroleum Refiners Association
Getting to Zero coalitions	The Getting to Zero Coalition is a partnership between the Global Maritime Forum, the Friends of Ocean action, and the World Economic Forum.
GHG	Greenhouse Gas
Global Maritime Forum	An international not-for-profit organization committed to shaping the future of global seaborne trade to increase sustainable long-term economic development and human wellbeing.
Greenpeace	A movement of people who are passionate about defending the natural world from destruction.
IACS	International Association of Classification Societies
ICS	International Chamber of Shipping
IMO	International Maritime Organization
Intertanko	International Association of Independent Tanker Owners
IPIECA	International Petroleum Industry Environmental Conservation Association
IPTA	International Parcel Tankers Association
ITOPF	International Tanker Owners Pollution Federation Ltd
LCA	Ad-hoc Working Group on Long-Term Cooperative Action
LNGC	Liquefied Natural Gas Carrier
LR	Lloyd's Register Advisory Services BV
MARPOL	The International Convention for the Prevention of Pollution from Ships
MEPC	Marine Environment Protection Committee
OCIMF	The Oil Companies International Marine Forum
Sea Shepherd Conservation Society	A non-profit marine conservation organization.
SGMF	The Society for Gas as a Marine Fuel
SIGTTO	Society of International Gas Tanker & Terminal Operators Ltd

VIQ	Vessel Inspection Questionnaires for Oil Tankers, Combination Carriers, Shuttle Tankers, Chemical Tankers and Gas Tankers as part of the Ship Inspection Report (SIRE) Programme.
Washington DOE	Washington State Department of Ecology
WCS	Wildlife Conservation Society
WSPA	World Animal Protection

References

No	Description
1	Alternative Fuels in Shipping Industries by OCIMF
2	A.P. Moller - Maersk Sustainability Report 2019
3	Cargill Ocean Transportation Sustainable Development Report 2019
4	China Navigation Company Sustainable Development Report 2018
5	Draft Terms of Reference on developing an OCIMF paper and positions on EEDI
6	OCIMF' position on Effluent_EGR
7	OCIMF' position on Effluent_IGS
8	OCIMF' position on Effluent_scrubber
9	Environmental strategy - Norwegian Ship Owners Association
10	Example of an OCIMF Strategic plan on environment - draft for discussion only
11	OCIMF' position on GHG -SEEMP
12	OCIMF' position on Greenhouse Gas Emissions
13	OCIMF's IMO task prioritisation list (Ver 7.1).xls
14	OCIMF' position on Invasive Species - Bio Fouling
15	OCIMF' position on Invasive Species - BWM
16	OCIMF Comment Section_Structured (002)
17	OCIMF Member Survey Results_draft version (002) - 2018
18	OCIMF Strategy narrative
19	OCIMF Strategy on the International Maritime Organization (IMO)
20	OCIMF Annual Report 2019
21	OCIMF' position on Recycling - Ship Recycling - 11062019
22	OCIMF' position on SOW_Alternate Fuels
23	OCIMF' position on Special Areas - ECAs - PSSAs - 11062019
24	OCIMF Environmental Strategy Survey summary report
25	OCIMF Environment data final - verbatim comments expanded
26	OCIMF members survey on the Environmental Strategy V2
27	1911-0010 - Proposal 1v6

Appendix A E-survey

A.1 List of participants

Representatives from all OCIMF members were invited to take part in the e-survey and the survey was sent to 110 potential participants. The survey was completed by 85 participants by 13th July 2020. The representation of these members is presented in Figure 1 in Section 2 of this report.

A.2 Questions

A.2.1 Classification

Q1 - Which of these OCIMF membership profiles is most applicable to your company?

- a. International, independent and integrated oil companies
- b. Non-integrated but independent oil companies (international or regional)
- c. National oil companies
- d. Marine terminal operators

Q2 - Does your company own, operate and/or charter ships?

- a. Charter
- b. Operate
- c. Own
- d. Not applicable

Q3 - What type(s) of ships does your company own, operate and/or charter?

- a. Oil tankers
- b. Gas carriers
- c. Barges
- d. Chemical tankers
- e. Tugs
- f. Offshore vessels
- g. Not applicable

Q4 - If you are a tanker operator, how many vessels do you operate?

- a. Up to 10
- b. 11 to 50
- c. More than 50
- d. Not applicable

A.2.2 Ambition and commitment to the marine environment

Q5 - In the context of OCIMF's vision and mission, please indicate how these environmental issues should be prioritised?

For each, please indicate priorities by giving a rating number from 1 to 10, where 1 = Not at all important, 10 = The most important

- a. Air pollution
- b. GHG emissions
- c. Ballast water
- d. Biofouling
- e. Effluent discharges (sewage, grey water and exhaust gas cleaning system effluent)
- f. Ship recycling
- g. Underwater noise
- h. Waste management
- i. Other aspects

Q6 - Do you have any comments on priorities?

Q7 - Considering those environmental issues which you have identified above as being most important, why do you feel they are more important than other issues, what are the key drivers of your priorities?

- a. Concerns about climate change
- b. Geopolitical scenario
- c. Technology/innovation
- d. Compliance with regulations
- e. Reputational concerns
- f. Impact on society
- g. Energy and resources
- h. Other

A.2.3 Environmental issues

The questions listed below have been repeated for each area listed in Section 3 of this report.

Q8 - How would you rate the current activities of OCIMF in relation to *Environmental* issues?

- a. Leader
- b. Fast follower
- c. Follower
- d. Late follower

- e. Passive
- f. I don't know

Q9 - Where do you think OCIMF's ambition in relation to *Environmental* issues should be compared to IMO's?

- a. More ambitious
- b. Same
- c. Less ambitious
- d. I don't know

Q10 - If you said "More ambitious" or "Less ambitious" to the last question, please tell us why you said this?

Q11 - To what extent do you agree with the statement: 'I feel that there is sufficient knowledge and information available about *Environmental* in the industry':

- a. Strongly Agree
- b. Agree
- c. Not sure
- d. Disagree
- e. Strongly disagree

Q12 - How can OCIMF improve the level and quality of information in respect of *Environmental* in the industry?

Q13 - How important do you think the *Environmental* issues are to OCIMF's Vision and Mission?

Extremely important

- a. Very
- b. Indifferent
- c. Not very
- d. Not at all important
- e. I don't know

Q14 - What do you think OCIMF's actions should be in relation to addressing *Environmental* issues?

Please list separately in terms of short (2020s),

Q15 medium (2030s),

Q16 long term (2040s).

Q17 - What do you see as the benefits of OCIMF addressing *Environmental* issues? Please list.

A.2.4 Finally

Q88 - Finally, please list any other membership led associations that you feel are more advanced when compared to OCIMF in relation to marine environmental issues?

Q89 - Do you have any other comments on environmental issues in our industry and on how OCIMF can help?

A.3 Results

Detailed results are discussed in this section:

A.3.1 Air pollution

The actions for OCIMF to take are given by the members as below:

- Having early discussions with environmental experts, equipment manufacturers and innovators;
- Influencing all parts of the value chain including interface between terminals and ships;
- Working with other industry bodies such as IACS, Intertanko, SIGTTO to ensure that the regulators are well informed about the full details of the impacts from future regulations, changes in technology and the implementation time;
- Maintaining its position in terms of leading improvements to safety standards;
- Producing papers, research, books etc on environmental matters to change the perception of society as being a pollutant industry and to be a leader on improvements in environmental standards;
- Influencing policy discussions to ensure achievable targets have been set for the solutions to environmental issues.

A number of respondents made some comments about how OCIMF could improve the level and quality of information in respect of air pollution and these are listed below:

- Align and aggregate available information;
- Advise regulators proactively to avoid any future problems;
- Produce seminars and updates on environmental issues such as having a dedicated section within their monthly newsletter;
- Share any developments from Environmental Sub-Committee activities;
- Collaborate with various organisations such as expert working groups, research organisations to publish research on air pollution such as statistical evidence;
- Maintain collaboration with IPIECA and SIGTTO on topics of common interest;
- Change behaviour as a collective membership to highlight the air pollution issue;
- Communicate with the industry by using mass communication tools;
- Contribute towards data collection and studies to assist on transparency and standardisation;
- Revise existing program information to align with industry changes;
- Engage or partner with other industry groups such as Intertanko, WSPA, API, BIMCO, ICS to share information, gather data, publish studies in areas of joint importance;
- Commission projects/studies on environmental data and science to ensure there is significant scientific evidence regarding mitigation of pollution prior to mandatory requirement such as exhaust gas cleaning system solutions and the concerns over their wash water;

- Develop best practice guidelines and pocket guides giving all the facts on air pollution regulations and way of compliance;
- Focus not only on ship owners and operators but also including other members such as terminal operator;
- Share information on the progress and outlook ahead towards creating industry awareness;
- Communicate through seminars, webinars, workshops and publications;
- Create a dedicated web portal, either to collect or to display relevant information;
- Disseminate OCIMF's efforts in respect of the subject;
- Standardise methodologies for reporting of pollutant indices and include in collected data; thereby making available to membership for their usage;
- Summarise of the various international regulations on the OCIMF webpage;
- Work on publications, surveys and best practices amongst OCIMF members. Also, assess what other related sectors are working on this issue, e.g. refining, fuels Europe and Concawe are very important European Refining Associations, for both technical and advocacy issues, so that they could be consulted.

Short term actions

Short term actions that are provided for/by? the members in relation to air pollution are listed below:

- Continue to monitor and advocate.
- Ensure broad coalition is built to support and educate to ensure that any change to the regulations are fit for purpose and do actually have long term benefit.
- Inform membership
- Focus on safety of alternative fuels, scrubber technology, reduction of carbon, methane slip and fugitive emissions.
- Communicate the role of marine industry for the global economy and in particular oil and gas industry in relation to air pollution.
- Highlight challenges and probable solutions to assist members and wider community to choose a better strategy.
- Undertake impact assessments of the potential and upcoming regulations that IMO is going to introduce, assessing both implementation costs and technical feasibility of those regulatory changes. Technical publications should include these impact assessments and feasibility reports.
- Assist members in the enforcement strategy and inspection criteria for standardisation across all members.
- Share available solutions and technology, SWAT analysis (Pros/Cons), to help members improve their performance and being compliant with regulations. That includes as well frequent regulatory and technology watch that should be synthesised and spread between the members. In the short terms, focus on SO_x and NO_x in line with Tier 3 NWE (NECA) soon to be implemented.

- Remain engaged on implementation and compliance issues, potentially affecting ship operations.
- Work proactively with IMO on the development of a comprehensive roadmap to achieve air pollution reduction and provide clear information to its members about the goals and roadmap development as they are put together.
- Engage pro-actively with other industry associations (e.g. SIGTTO; SGMF; IPIECA) to avoid duplication of effort and to work on areas which fit in to a high priority category within the new OCIMF strategy.
- Maintain a consistent and harmonised approach on global issues.
- Lead the engagement with relevant agencies and other stakeholders to support international progress on air Pollution issues.
- Engage operator/owner in dialogue.
- Set up a timeline for the gradual implementation of existing industry regulations that would drive compliance. This should allow a block phase-in period, which should not go beyond 2020.
- Contribute to data collection on emissions in the value chain, emissions from cargo and from ship energy consumption.
- Cleaner and more efficient is better and our organisation should be supportive of striving as an industry in that direction. OCIMF should be a pragmatic voice to temper overly ambitious/not well-defined policy that is not technically feasible in a realistic time frame
- Industry focus areas: fuel renewable energy solutions engine technology improvements efficiency targets/shortened supply chains emission capture technology.
- Education and planning.
- Continue current advocacy work. Ensure that IMO is aware of what can/cannot be achieved in order to meet Paris Agreement levels.
- Put strategy into action: Implement strategic plans/road maps into action plans with defined and smart objective and deliverable.
- Continue to champion and create industry awareness with measures to address air pollution with key stakeholders.
- Create a task working team/group to set up the strategic plan and road map to define what is needed, who will get the job done in addressing air pollution issues.
- Draw up 10/20 strategic plan to be implemented with key stakeholders, with strong alignment of key regulators to drive air pollution agenda globally.
- Engage at the port level to gauge where countries are going and spend efforts to ensure consistency.
- Develop the best practice guideline.
- Keep the focus on safety.
- Apply more items on this regard into the VIQ. Increasing controls Industry would react focusing on that and not only follow the arrow.

- A few terminals worldwide using vapour return. All ships are fitted with this system.
- In SOx related matters, as this is fuel related, IPIECA should lead. However, OCIMF should remain engaged on implementation and compliance issues, potentially affecting ship operations.
- In NOx related matters, emissions are determined by engine design features therefore IPIECA is not engaging, but OCIMF can probably leverage with other shipping industry associations to engage at IMO.
- In relation to VOC emissions from cargo, this is an issue where OCIMF should take the lead, in line with OCIMF's new prioritisation strategy.
- OCIMF to work with stakeholders, industry trade associations and regulatory bodies on sustainable emission reduction efforts that promote economic seaborne trade to meet the needs of a growing global population.

Medium term actions

Medium term actions that are provided by the members in relation to air pollution are listed below:

- Continue efforts from short term actions.
- Analyse different options such as low carbon fuel vessels, hydrogen vessels, etc.
- Investigate on how well member collaborators are doing on new technologies and whether promoting the development of new technologies.
- Govern implementation of ZEV as part of IMO regulations in addition to LNG as transitional maritime fuel (LNG is still a fossil-fuel; controlling methane slip is a challenge reduces only 20% of CO₂ as compared to oil and it is almost same as methane slip is around 3.5%).
- Set clear objectives and target plan on the pollution reduction and timeline.
- Conduct regular engagement and awareness with members and industry players.
- Implement best/new technologies to reduce pollution catch up with new energy sources (e.g. hydrogen, ammonia, methanol).
- Focus also on particulate matters.
- Convene the industry to identify and promote good practices in operations, joint ventures and the supply chain.
- Target reduction by 40%.
- Target dates to be set for existing assets to gradually work towards compliance with existing IMO regulations through either retrofit or renewal of existing onboard equipment.
- Highlight factual alternatives based on new technologies to the membership.
- Get proactive feedback from members on new technology being used/trialled and share this information (without breaching Anti-Trust/Competition law).
- Strategic plans/road maps/plans implementation should be visible. A direction should be set for the next 10 years with key deliverable, challenges and issues to be address in different sector of the marine environmental domain.
- Help to drive change consistently and encourage implementation.

- Work with IMO to ensure minimising vapour emission from terminals.
- Drive continuous improvement

Long term actions

Long term actions that are provided by the members in relation to air pollution are listed below:

- Continue efforts from short and medium term actions.
- Highlight role of technology and innovation and prepare the industry for changes in the way of working.
- Advise and assist IMO in mandating ZEV (Zero Emission Vessel) and analysing performance of ZEV.
- Identify and establish environmental committee, members, experts and partners in spearheading the OCIMF objective and target.
- Set OCIMF vision and mission for renewal and green energy with objective for clean combustion by 2040.
- Promote (near) zero emission on board ships.
- Leverage member expertise and collaborate with external stakeholders to enable companies to address local and global risks and opportunities associated with air pollution.
- Vet safety aspects and environmental impact of new technologies.
- Target reduction by 80%.
- Black list the operator/owners.
- New build marine asset to be in compliance of existing IMO regulations from the on-set.
- Promotion of alternative energy within the marine sector.
- Vision for consistent reduction in all regions

Benefits

Members identified what they see as the benefits of OCIMF addressing air pollution issues and these are:

- We are seen as a polluting industry therefore we should try to address this issue.
- Ensure that any changes to existing or new regulations are fit for purpose, achievable in the timeline, and do actually have long term benefit.
- Stakeholders educated correctly instead of potentially being misled.
- Proactive steps bring long term gains by staying ahead of the curve, ensuring member buy in, fit for purpose regulations enacted, and earning the trust of the public that the shipping Industry is taking effective actions to minimise air pollution.
- Supporting membership aspirations recognition of OCIMF as an expert group in this field.
- Setting clear goals to the industry.
- Representing the members voice.

- Providing guidelines advocacy to IMO setting targets provide info and create awareness.
- Global industry reputation.
- Improving the global air quality.
- Fulfilling OCIMF's vision and mission to benefit the members and the whole industry.
- Influencing consistent and rational regulation globally that can be complied with and serves purpose specifically suitable for oil and gas industry.
- Gaining positive reputation for OCIMF's long term existence and maintaining itself as leading industry body for seaborne transportation of energy and commodities.
- Demonstrating social responsibility.
- Strategic gain when OCIMF members can demonstrate competence in resolving such stringent issues.
- Demonstrating leadership to conserve and sustain the use of marine environment and human life.
- Standardisation of safe practices to improve social and environmental impact.
- Sustainable and safe economic growth for developing countries.
- Rulemaking will reflect safe and effective emissions reductions that are beneficial to society and our industry.
- Improves and helps on new regulation implementation from a "neutral technology" and "cost-efficient" criteria, based on impact assessments, surveys and best practices amongst OCIMF members.
- Supports members' understanding and development of their contributions to low emission future.
- OCIMF will rank amongst peers globally.
- Leader in maritime environment regulation implementation.
- Applying a strong collective technical expertise.
- Ensuring consistent and rational regulation globally that can be complied with.
- Being a credible industry voice on issues/gaining a seat at the table.
- Showing our industry as wanting to be part of the solution.
- Ensuring tanker safety is not sacrificed by flawed operational mandates.
- Enable OCIMF members to advance prevention of the air pollution, minimise and mitigate risks and impacts from operations and products.
- This would demonstrate OCIMF commitment and alignment with internal best practice organizations towards salvaging the globe from the impact and decay from global warming, environmental degradation with associated impact on the environment and the inhabitants.

A.3.2 GHG emissions

The actions for OCIMF to take are given by the members as below:

- If a more proactive and coordinated stance is not taken then regulations may be imposed that are not fit for purpose, leading to increased costs, potential non-compliance and long drawn out implementations.
- OCIMF should be aligned to IMO's ambitions, but in setting the revised ambition should align itself with forward leaning countries and not the "doubters".
- The industry needs to stay ahead, be informed, transparent, follow trends in society and educate the stakeholders of such.
- Oil companies influence all sides of the value chain, including interface between terminals and ships therefore should take an active stand.
- OCIMF should be proactively researching, discussing and leading the topic - along with IACS, Intertanko, and SIGTTO to ensure that IMO are also well briefed on what can/cannot be done by shipowners and charterers to better manage GHG, further to ensure that an unrealistic timeline or target is not set.
- We should drive continuous improvement and set best practice marine industry standards.
- OCIMF has been changing the industry conduct for years. The entire industry recognises and applies what OCIMF develop. An organisation with this level of influence should be more ambitious than the minimum standard. In our vision and mission we use the word "leading" not following.

A number of participants think that OCIMF can improve the level and quality of information by doing the following:

- Continue to work at IMO and with other NGOs to develop opportunities to reduce GHG and support our enterprise.
- Collect data, invest in research and development, work on publications, surveys and best practices amongst OCIMF members.
- Undertake impact assessments about potential regulatory changes. Also, assessing how other related sectors are working on this issue such as refining. Fuels Europe and Concawe are very important European Refining Associations for both technical and advocacy issues, so that they could be consulted.
- Create an on-line forum to further address the subject, gather opinions in the form of an engagement and awareness program.
- There is a lack of knowledge of candidate measures discussed at the IMO such as setting operational efficiency targets for the existing fleet. OCIMF needs to keep member companies informed of the debate, not only that it happens but also the content' and analyse the potential impact to members.
- Encourage OCIMF to continue to work closely with IPIECA on topics of common interest.
- Collaborate in relevant working group, consolidating findings and guidance in a publication
- Invest in research and development on technologies to cut GHG emissions and publish papers to knowledge with industry.
- Invest in more focused studies and dissemination of information through forums, seminars and discussions within industry.

- Ensure information is shared with members, taking into account countries common but differentiated responsibilities and respective capabilities, in the light of different national circumstances, and in the context of sustainable development and efforts to eradicate poverty.
- Start working and building a broad coalition including Intertanko and SIGTTO to ensure that
 - i) The subject is better understood
 - ii) Data gathering is commenced to understand what the baseline information is
 - iii) Work with others to ensure a Global Model is built similar to the EU Thetis model, such that all voyages can be captured.
 - iv) Once the baseline is established work with regulators to ensure that any pending regulations are fit for purpose, give an adequate timeline for implementation and actually bring benefit to climate change.
- Educate regulators on unique constraints faced by tanker operators such as hazardous areas and volumes of emissions at dockside in consideration of safety aspects.
- Involve more questionnaires in VIQ.
- The focus of OCIMF's publications on GHG emissions should be to influence practical and sustainable solutions that achieve IMO's 2030/2050 emissions goals and promote economic seaborne trading. Similar to other safety initiatives, the emissions solutions need to meet the ALARP risk principle of being both effective and economic.
- Develop a marine industry best practice guideline regardless of trade.

Two in five respondents make some suggestion as to actions OCIMF should take in addressing GHG issues, particularly in the short term and these are listed below:

Short term actions

Short term actions that are provided by the members in relation to GHG emissions are listed below:

- Continue to work in working groups as subject matter experts for tanker emissions reductions at IMO.
- Provide best practice guidance on how to better manage GHG emissions regardless of trade during both design and operational phases.
- Provide proactive stance on developments in alternative engine/battery fuels and power.
- Provide a summary of GHG activities on the OCIMF website.
- ICS, Intertanko and BIMCO actively contribute on short term candidate measures from operational targets for the existing fleet perspective but view of charterer is missing from the debate therefore this should come via OCIMF.
- More data is needed to set realistic baselines and targets and OCIMF should contribute for tanker and LNGC segments actively participate in EEDI Phase 4 correspondence group, BC correspondence group and join expert group on LCA.
- Collect data for carbon reduction methane slip.
- As a group of members, we should be more engaged with each other's actions on this topic.
- Avoid emerging of under-powered vessel posing risk of accidents during heavy weather or ice conditions.
- Elaborate impact assessments of the potential and upcoming regulations that IMO is going to introduce, assessing both implementation costs (no matter if you are the vessel owner or

not) and technical feasibility of those regulatory changes. Technical publications should include these impact assessments and feasibility reports.

- Strengthening EEDI policy (currently considers only calm sea conditions; it should also consider actual sea condition).
- Advocacy for a better consideration of biofuels and future alternative fuels into IMO efficiency index. Actions shall go towards information sharing to the members about available solutions and technology, SWAT analysis, to help them improving their performance and being compliant with regulations. That includes frequent regulatory and technology watch that should be synthesised and spread between the members.
- Remain engaged on implementation and compliance issues, potentially affecting ship operations.
- Work proactively with IMO on the development of a comprehensive roadmap to achieve GHG reduction and provide clear information to its members about the goals and roadmap development as they are put together.
- Engage in developing robust lifecycle GHG/carbon intensity guidelines for all types of fuels including the alternative fuels.
- Promote the work of OCIMF members and the IMO to the international community.
- Engage in developing technical and operational energy efficiency measures for both new and existing ships.
- Ramp up effort towards attainment of at least 50% compliance by 2023.
- Develop best practice guide on energy efficient ship design for tanker and offshore vessels.
- Ensure level playing field for tanker segment by securing international framework development.
- Enable use of low and zero carbon fuels and energy sources, contribute to the development of rules and regulations
- Ensure safety is preserved throughout the implementation of new fuels and/or energy sources.
- Influence practical and sustainable solutions that achieve IMO's 2030/2050 emissions goals and promote economic seaborne trading.

Medium term actions

Medium term actions that are provided by the members in relation to GHG emissions are listed below:

- Continue efforts from short term actions.
- Actively engage and support development of market-based measures.
- Promote low carbon fuels for vessels, as it is difficult to implement battery/gas/hydrogen in vessel. European Commission have established very demanding targets on GHG emissions for 2030 and 2050 (40% and 70% GHG reductions), and it highly depends on low carbon fuels development or different technologies. As a result of this, OCIMF milestones should be aligned with 2050 Vision Concawe and FuelsEurope.

- Implement best/new technologies to reduce pollution catch up with new energy sources (e.g. hydrogen, ammonia, methanol).
- Identify operational energy efficiency measures for both new and existing ships including indicators in line with three-step approach that can be utilised to indicate and enhance the energy efficiency performance of ships.
- Enhance technical cooperation and capacity-building activities.
- Work on development of a feedback mechanism to enable lessons learned on implementation of measures to be collated and shared through a possible information exchange on best practice.
- Ramp up effort towards attainment of at least 70% compliance by 2030.
- Ensure adoption of alternate fuel sources.
- Proactive stance on technology on what works/doesn't. More engagement with technology and shipyards to assess the potential ships of the future - circulate outcomes.
- Influence practical and sustainable solutions that achieve IMO's 2050 emissions goals and promote economic seaborne trading.
- Drive development of alternative or non-polluting energy systems.

Long term actions

Long term actions that are provided by the members in relation to GHG emissions are listed below:

- Continue efforts from short and medium term actions.
- Showcase successes and work in progress using trends.
- Pursue the development and provision of zero carbon fuels and alternative propulsion systems.
- Advise and assist IMO in mandating ZEV (Zero Emission Vessel) and analysing performance of ZEVs.
- Vet safety aspects and environmental impact of new technologies.
- Ramp up effort towards attainment of 100% compliance by 2040.
- Influence practical and sustainable solutions that achieve IMO's 2050 emissions goals and promote economic seaborne trading.

Benefits

Members identified the benefits of OCIMF addressing GHG emissions issues and these are:

- Fulfilling OCIMF's vision and mission to benefit the members and the whole industry.
- Influencing consistent and rational regulation globally that can be complied with and serves purpose specifically suitable for oil and gas industry.
- Gaining positive reputation for OCIMF's long term existence and maintaining itself as leading industry body for seaborne transportation of energy and commodities.
- Demonstrating social responsibility.

- Strategic gain when OCIMF members can demonstrate competence in resolving such stringent issues.
- Demonstrating leadership to conserve and sustain the use of marine environment and human life.
- Standardisation of safe practices to improve social and environmental impact.
- Sustainable and safe economic growth for developing countries.
- Rulemaking will reflect safe and effective emissions reductions that are beneficial to society and our industry.
- Improves and helps on new regulation implementation from a "neutral technology" and "cost-efficient" criteria, based on impact assessments, surveys and best practices amongst OCIMF members.
- Supports members' understanding and development of their contributions to low emission future.
- OCIMF will rank amongst peers globally.
- Leader in maritime environment regulation implementation.
- Preservation of the globe through the reduction of the impact of global warming
- Promoting a common standpoint in the industry to focus on reduction of GHG emissions.
- Applying a strong collective technical expertise.
- Ensuring consistent and rational regulation globally that can be complied with.
- Being a credible industry voice on issues/gaining a seat at the table.
- Showing our industry as wanting to be part of the solution.
- Ensuring tanker safety is not sacrificed by flawed operational mandates.

A.3.3 Ballast water management

The actions for OCIMF to take are given by the members as below:

- Monitor and take action when impact is direct to tankers and tanker safety.
- OCIMF to encourage member states to continue to share their experiences in ballast water treatment plants.

A number of respondents made some comment about how OCIMF could improve information in respect of ballast water management and these are listed below:

- Maintaining collaboration with other industry bodies in educating and advocating various items around the ballast water management issue;
- Developing information and safety papers;
- Promoting and strengthening inspection scope of surveys and best practices amongst members such as elaborating technical reports and sharing projects that have been carried out;

- Promoting knowledge-exchange sessions; workshops; etc. between relevant committees and subcommittees;
- Remaining engaged on implementation and compliance issues, potentially affecting ship operations;
- Keeping members well informed on the most recent studies and its magnitude in relation to the ballast water management;
- Providing latest information on ballast water treatment systems including their pros and cons, whether those installed onboard ships or other means.
- Working towards standardisation of regulations, requirements, procedures and alignment of various global regulations.
- By issue of related information papers and publications as well as review of existing program specific questions to drive compliance.
- Including question on ballast water management in VIQ;
- Staying connected with bodies such as Intertanko, port states, classification societies on data and finding in terms of experience with various system types, new technologies, and their future application in the industry;
- Developing a basic one page "laminated card" available to download from the website giving all of the details on the who/how/what of ballast water management from international perspective;
- Publishing an industry performance review;
- Investigating into the possibility of having on board indicative ballast water test kit for oil content in ballast water;
- Developing a marine industry best practice guideline
- Improving the information related to the available technologies, on board testing regarding the limitations and cares to be taken as well as commissioning a study to research the efficiency of the systems and the management applied.

Short term actions

Short term actions that are provided by the members in relation to ballast water management ambition are listed below:

- Monitoring current activities within the industry to understand present status of implementation of the BWM Convention and risk emerging out of it including life cycle cost of ballast water management;
- Supporting members with informational papers on ballast free alternative construction methodologies;
- Encouraging more R&D in the area of ballast water treatment methods and systems
- Collecting data from members such as surveys, best practices, projects
- Undertaking detailed inspections during Ballast Water Treatment Plant Reviews
- Clarification to the industry, setting goals, structures, investigate best technologies

- Sharing information about: available solutions and technologies; ballast water treatment systems, treatment efficacy, quantity of invasive species in some areas, etc;
- Remaining engaged on implementation and compliance issues, potentially affecting ship operations
- Taking the lead on specific areas which other industry associations are not engaged and which fit in to a high priority category within the new OCIMF strategy
- Maintaining a consistent and harmonised approach on global issues
- Exploring the option of exchange of Ballast Water and its feasibility against the treatment, keep all options available and continue sharing best practices and lessons learned with members;
- Continuing assisting members in implementing the BWM Convention;
- Focusing on the safe operations of the various types of ballast water management technologies;
- Developing a marine industry best practice guideline; compliance; and operation of ballast water treatment systems; and ballast water management plans in line with OCIMF's new prioritisation strategy.
- Reviewing and inclusion of relevant ballast water management regulations in OCIMF programs to drive compliance;
- Standardisation and safe practices of the large volumetric capacities of tankers' ballast systems. Educating terminals to understand that operation of ballast water treatment systems may require additional time at berth as constrains ballast rates.

Medium term actions

Medium term actions that are provided by the members in relation to ballast water management ambition are listed below:

- Monitoring and advocacy around any new potential regulations and requirements;
- Research on ballast free alternative construction methodologies enhanced treatments systems and improvements in technical ship design;
- Undertaking impact assessments on regulatory changes and short-term actions;
- Working on toxicology risk assessment of the chemicals used in ballast water treatment systems on invasive species and suggesting sustainable methods out of all the available methods;
- Engaging regularly with members via seminars for awareness and compliance;
- Implementing best/new technologies to reduce pollution;
- Exploring alternative technological and operational solutions including sampling methods and mechanisms;
- Engaging in developing further guidelines if deemed necessary;
- Evaluating new technologies for realistic safe implementation and provide design, safety recommendations as they become relevant.

- Reviewing available ballast water management options and recommend most reliable options;
- Investigating into more control of ballast water in respect of oil content;
- Driving continuous improvement and setting best practice marine industry standards.

Long term actions

Long term actions that are provided by the members in relation to ballast water management are listed below:

- Monitoring and advocacy around any new potential regulations and requirements;
- Investigating into ballast free alternative construction methodologies and enhanced treatments systems;
- Emphasising the importance of zero waste from ships to the marine environment;
- Promoting more countries to participate as signatories for ballast water management requirements;
- Exploring other alternatives to eliminate the negative impacts from ballast water;
- Working towards zero (or near zero) pollution;
- Pursue the development of Zero-Ballast Water solution to enable shipping sector preventing the transfer of invasive species around the globe.
- Evaluating new technologies for realistic safe implementation and provide design, safety recommendations as they become relevant;
- Reviewing improvement initiatives and suggest and incorporate in existing programs and regulations as may be applicable;
- Continuing to raise accepted best practice or standards.

Benefits

Members identified some benefits of OCIMF addressing ballast water management issues and these are:

- Ballast water management systems are currently well-regulated and benefit will come from thoughtful and proactive actions to future changes to regulations.
- Fulfilling OCIMF's vision and mission to benefit the members and the whole industry.
- Influencing consistent and rational regulation globally that can be complied with and serves purpose specifically suitable for oil and gas industry.
- Gaining positive reputation for OCIMF's long term existence and maintaining itself as leading industry body for seaborne transportation of energy and commodities.
- Demonstrating social responsibility.
- Controlling the spread of invasive marine species therefore preventing negative impact to the marine environment and global economy.

- Strategic gain when OCIMF members can demonstrate competence in resolving such stringent issues.
- Demonstrating leadership to conserve and sustain the use of marine environment and human life.
- Standardisation of safe practices to improve social and environmental impact.
- Sustainable and safe economic growth for developing countries.

A.3.4 Biofouling management

The actions for OCIMF to take are given by the members as below:

- Increase awareness in this field amongst the members
- Provide advice and guidance specific to our industry

The participants think that OCIMF can improve the level and quality of information by:

- Provide summary regulatory updates and technology improvements on OCIMF's website.
- Provide and share information on the link between biofouling and fuel consumption; optimisation of hull cleaning, selecting suitable paint.
- Data collection on efficiency and contamination.
- Collaborate with other experts and NGOs such as BIMCO with knowledge-exchange sessions; workshops; and joint projects.
- Collaborate between different committees within OCIMF governance.
- Frequently provide engagement and awareness program with all members.
- Share latest information and best practices and how to implement them in a timely and efficiently manner.
- Develop a marine industry best practice guideline.
- Promote surveys and reports amongst members.
- Include this topic in VIQ.

Short term actions

Short term actions that are provided by the members in relation to biofouling management are listed below:

- Monitor and assist when tanker specific assistance is required for safe tanker operations
- Promote investigations and developments in biofouling management via data collection and information papers.
- Share information amongst members about available solutions, upcoming technologies and SWAT analysis to improve performance and compliance.
- Remain engaged and share information on implementation and common issues potentially affecting ship operations.
- Conduct workshops to build-capacity and benefit from the GloFouling project.

- Increase advocacy effort and partner with other organisations for better knowledge.
- Remain abreast of regional policies, discussions and published studies.
- Provide a summary of recent regulations on OCIMF's website.
- Work towards standardisation of safe cleaning stations and technologies by ensuring ports demonstrate responsible operations and by vetting for safe techniques.
- Develop a marine industry best practice guideline

Medium term actions

Medium term actions that are provided by the members in relation to biofouling management are listed below:

- Continue efforts from short term actions.
- Drive development of alternative biofouling hull coatings or technology.
- Drive alignment of industry knowledge with IMO strategy or aspiration.
- Fine tune best practices in consideration of new technologies, regulations and equipment design.
- Leverage member expertise and collaborate with external stakeholders to enable companies to address local and global risks and opportunities associated with biofouling.
- Ensure actions are taken on this issue are parallel to EEDI/GHG reduction strategy due to their interrelation.

Long term actions

Long term actions that are provided by the members in relation to biofouling management are listed below:

- Continue efforts from short and medium term actions.
- Emphasise efforts on importance of zero waste from ships to the environment.
- Seek new alternative solutions to minimise or prevent biofouling.

Benefits

Members identified some benefits of OCIMF addressing biofouling management issues and these are:

- Helping on new regulation implementation from a neutral technology point of view and under cost-efficient criteria, based on impact assessments, surveys and best practices amongst OCIMF members.
- Fulfilling OCIMF's vision and mission to benefit the members and the whole industry.
- Improve common understanding among members to improve efficiency therefore reducing fuel consumption and associated air pollutants.
- Reducing the risk of regulations that are not fit for purpose, leading to increased costs, potential non-compliance and long drawn out implementation.

- Influencing consistent and rational regulation globally that can be complied with and serves purpose specifically suitable for oil and gas industry.
- Gaining positive reputation.
- Demonstrating social responsibility.
- Strategic gain when OCIMF members can demonstrate competence in resolving such stringent issues.
- Demonstrating leadership to conserve and sustain the use of the oceans, seas and human life.
- Standardisation of safe practices to improve social and environmental impact.
- Level playing field to operate.
- Cleaner environment.
- Sustainable and safe economic growth for developing countries.

A.3.5 Effluent discharges

Comments on OCIMF's ambitions are listed below:

- Regulations are likely to be brought in sooner rather than later covering all grey water. If a more proactive and coordinated stance is not taken then regulations may be imposed that are not fit for purpose, leading to increased costs, potential non-compliance and long drawn out implementation.
- Discharge from inter gas generator plant scrubber units might come under the scope by regulatory authorities. This will have a significant impact on operations. As OCIMF members, we should be more ambitious so that we can control development at strategic level as there is a scope to regulate grey water discharges.

Some respondents made additional comments about how OCIMF could improve the level and quality of information in this area, and these are listed below:

- Oil and gas operation specific effluent discharges such as inert gas generators should be driven by OCIMF members.
- A short summary of international, regional and national regulations should be developed and shared with all members.
- Good quality data should be collected and shared amongst the members for research and development; and scientific studies to support suitable policy decisions.
- OCIMF members should remain engaged on any developments at the IMO and its implementation to minimise the commercial impact.
- OCIMF should partner with experts, other NGOs and regulatory bodies to publish joint papers and undertake studies.
- VIQ questionnaires should include this topic.
- OCIMF should develop a marine industry best practice guideline on this topic.

Short term actions

Short term actions that are provided by the members in relation to effluent discharges are listed below:

- Actively engage at the IMO level on any effluent discharges that are specific to oil and gas industry to improve safety and reduce the environmental impact.
- Promote best practices to oil and gas industry.
- Monitor and advocate to get global alignment on regulations instead of allowing national and regional entities to bring in more localised regulations that may not be fit for purpose over a longer time frame.
- Collect data on abatement technologies to be used in research and development.
- Share best practices amongst members to improve and develop advance technologies.
- Develop a marine industry best practice guideline for compliance.
- Improve engagement and awareness amongst the members.
- Remain engaged on any developments at the IMO and its implementation to minimise the commercial impact.
- Improve engagement and awareness with other experts and NGOs such as Intertanko.
- Provide advice on concern over older ships not being able to comply in the short term.
- Take the lead on specific areas which other industry associations are not engaged, and which fit in to a high priority category within the new OCIMF strategy.

Medium term actions

Medium term actions that are provided by the members in relation to effluent discharges are listed below:

- Continue efforts from short term actions.
- Improve operational practices and technologies to achieve zero or near zero-discharge operation.

Long term actions

Long term actions that are provided by the members in relation to effluent discharges are listed below:

- Continue efforts from short and medium term actions.
- Drive to a safe and practical zero or near zero-discharge operation.

Benefits

Members identified some benefits of OCIMF addressing effluent discharges related issues and these are:

- Reducing the risk of regulations that are not fit for purpose, leading to increased costs, potential non-compliance and long drawn out implementation.

- Influencing consistent and rational regulation globally that can be complied with and serves purpose.
- Gaining positive reputation.
- Demonstrating social responsibility.
- Strategic gain when OCIMF members can demonstrate competence in resolving such stringent issues.
- Demonstrating leadership to conserve and sustain the use of the oceans, seas and human life.
- Standardisation of safe practices to improve social and environmental impact.
- Level playing field to operate.
- Cleaner environment.
- Sustainable and safe economic growth for developing countries.

A.3.6 Ship recycling

Comments on OCIMF's ambitions are listed below:

- OCIMF members need to be very active in this area considering our exposure with FSO and FPSO hulls.
- OCIMF members should be on the forefront of best recycling practices, the incremental cost should be able to get absorbed by the nature/value of oil and gas projects.
- OCIMF members should promote ratification of the Hong Kong Convention and support the principles behind it.
- OCIMF members should promote responsible ship recycling for social, environmental and economic benefits of developing countries.
- OCIMF members should feel responsible for the entire life cycle of the vessels including end of life.

Some respondents made additional comments about how OCIMF could improve the level and quality of information in this area, and these are listed below:

- We need those that are recycling to take a more active role than the groups that are simply looking to stop ship recycling.
- Develop a summary page of the international, regional and national regulations on OCIMF's website.
- Promote responsible ship recycling for tankers.
- Develop a database of relevant EU Regulation and a list of approved ship recycling yards.
- Collect information amongst members about the end-of-life of owned and operated ships.
- Increase participation in MEPC proceedings and attend to respective workshops and working group programs.
- Promote engagement and awareness programs with all OCIMF members.

- Remain engaged on implementation and compliance issues, potentially affecting ship operations.
- Share knowledge on best practices of ship's recycling process and its implications on human health and environment.
- Engage with external stakeholders to capture and share proposed regulation, development of safe best practices and influence standardisation of regulations and requirements.
- Promote a common approach and increased transparency.
- Issue information paper or publication.
- Involve this within VIQ.
- Develop a marine industry best practice guideline
- Develop and maintain environmental support methods especially in ship recycling nations.

Short term actions

Short term actions that are provided by the members in relation to ship recycling are listed below:

- Lobby for responsible ship recycling proactively.
- Promote best practices that reduce environmental impact while allowing sustainable recycling.
- Invest in innovative vessel design for sustainable ship recycling practices.
- Maintain a good level of understanding of the status of Hong Kong Convention and challenges associated with it.
- Remain engaged on implementation and compliance issues, potentially affecting ship operations.
- Update the Industry Code of Practice on Ship Recycling (1st edition issued in 2001).
- Develop standard safe practices for social responsibilities and to minimise the environmental impact.
- Support the implementation of Hong Kong Convention
- Contribute to information sharing and development of best practices
- Develop a marine industry best practice guideline.

Medium term actions

Medium term actions that are provided by the members in relation to ship recycling are listed below:

- Continue to monitor and advocate.
- Promote for maximum reduce/recycling/reuse.
- Develop and maintain more engagement and awareness program with all OCIMF members.
- Remain engaged on implementation and compliance issues, potentially affecting ship operations.

- Maintain and update best practices and guidelines.
- Continue to raise accepted best practices or standards; and drive new ways of managing waste.

Long term actions

Long term actions that are provided by the members in relation to ship recycling are listed below:

- Promote for zero-waste (100% diversion from landfill).
- Remain engaged on implementation and compliance issues, potentially affecting ship operations.
- Continue enhancing knowledge on more effective solutions in a more sustainable manner.
- Drive continuous improvement and set best practice marine industry standards.

Benefits

Members identified some benefits of OCIMF addressing ship recycling issues and these are:

- Reducing the risk of regulations that are not fit for purpose, leading to increased costs, potential non-compliance and long drawn out implementation.
- Influencing consistent and rational regulation globally that can be complied with and serves purpose.
- Gaining positive reputation.
- Demonstrating social responsibility.
- Strategic gain when OCIMF members can demonstrate competence in resolving such stringent issues.
- Demonstrating leadership to conserve and sustain the use of the oceans, seas and human life.
- Standardisation of safe practices to improve social and environmental impact.
- Level playing field to operate.
- Cleaner environment.
- Sustainable and safe economic growth for developing countries.

A.3.7 Underwater noise

The actions for OCIMF to take are given by the members as below:

- Investing into research and scientific evidence gathering;
- Influencing proactively to shape the regulatory landscape to avoid any unwieldy regulations being enforced on the industry.

A number of respondents provided comments about how OCIMF could improve the level and quality of information in respect of underwater noise, and these are listed below:

- Providing technical input on tanker operations;

- Coordinating an industry paper with other organisations such as SIGTTO and Intertanko;
- Collecting data to promote research;
- Promoting best practices and surveys about ship design and maintenance;
- Collaborating between relevant committees and subcommittee in the form of knowledge-exchange sessions; workshops etc;
- Engaging with members regularly on emerging regulations;
- Influencing regulatory development proactively to minimise impact on members;
- Staying abreast of developments and studies published.

Short term actions

Short term actions that are provided by the members in relation to underwater noise are listed below:

- Providing SME support as needed for regulators to develop sustainable regulations
- Coordinating with other parties on a fact-finding exercise and publishing results and also associated best practices covering operations and design considerations.
- Promoting research and sharing results on public domain
- Working towards setting underwater noise targets
- Involving proactively in the industry and IMO discussions
- Remaining engaged on implementation and compliance issues, potentially affecting ship operations
- Assisting OCIMF members on how they contribute to the reduction of underwater noise
- Focusing, following and influencing on the development of emerging regulations to minimise impact to the industry
- Engaging with organisations and regional industry advocates such as WSPA
- Developing guidelines.

Medium term actions

Medium term actions that are provided by the members in relation to underwater noise are listed below:

- Continue evolving noise impact studies and publishing results. Use these to ensure that any potential regulations are global and fit for purpose.
- Improving ship design and maintenance best practices
- Selecting suitable mitigation measures
- Establishing clear objective and target
- Remaining engaged on implementation and compliance issues
- Developing best practices.

Long term actions

Long term actions that are provided by the members in relation to underwater noise are listed below:

- Encouraging noise abatement regulations
- Leading in the discussions
- Aligning with OCIMF members on the enhancement of their management of noise underwater.

Benefits

Members identified some benefits of OCIMF addressing underwater noise related issues and these are:

- Reducing the risk of regulations that are not fit for purpose, leading to increased costs, potential non-compliance and long drawn out implementation
- Influencing consistent and rational regulation globally that can be complied with and serves purpose
- Gaining positive reputation
- Strategic gain when OCIMF members can demonstrate competence in resolving such stringent and complex issues
- Demonstrating leadership to conserve and sustain the use of the oceans, seas and marine resources

A.3.8 Waste management

Overall, members believe that the regulation on this issue is clear in terms of compliance, however OCIMF may promote best practice and training as this is considered as an important environmental issue that is faced by our industry.

Few respondents made any comment about how OCIMF could improve the level and quality of information in respect of waste management and these are listed below:

- Assisting on subject matter expertise specific for tanker operations;
- Developing a summary of international regulations on OCIMF's website to remain aligned with the IMO requirements;
- Providing regular updates to members via newsletter;
- Providing training and information on marine plastic;
- Providing a platform to engage with global members;
- Developing standard survey and best practice guidelines;
- Developing award schemes for best practices;
- Working closely with ICS and other NGOs collaboratively such as knowledge-exchange sessions, workshops etc; and

- Working collaboratively between committees and sub-committees via knowledge-exchange sessions, workshops etc.

Short term actions

Short term actions that are highlighted by the members in relation to waste management are listed below:

- Developing guidelines for compliance or beyond compliance specifically for tankers
- Providing regular monitoring and updates on the current regulations
- Providing supporting material to help companies reduce plastic use
- Encouraging and setting a requirement for all members to engage to work groups
- Undertaking impact assessments of the potential and upcoming regulations that IMO is going to introduce by assessing both implementation costs and technical feasibility of those regulatory changes; and including these impact assessments and feasibility studies within OCIMF technical publications.
- Providing updates on the implementation status of MARPOL Annex V amendments to ensure compliance
- Involving in the industry and IMO discussions proactively
- Providing clarification to the industry in terms of setting goals, structures and best technologies
- Remaining engaged on implementation and compliance issues, potentially affecting ship operations
- Taking the lead on specific areas which other industry associations are not engaged and which fit in to a high priority category within the new OCIMF strategy
- Maintaining a consistent and harmonised approach on global issues
- Collaboration among OCIMF members to have a common position and strong representation at the IMO
- Influencing the industry towards standardisation of the regulations
- Developing marine industry best practice guideline

Medium term actions

Medium term actions that are highlighted by the members in relation to waste management are listed below:

- Maintaining the short term actions
- Pushing towards maximum reduce/recycling/reuse
- Establishing clear objective and targets
- Implementing best / new technologies to reduce pollution
- Assisting to address the issue of adequate port reception facilities
- Investing into new technologies as continuous improvement effort

- Continuing to raise accepted best practice or standards

Long term actions

Long term actions that are highlighted by the members in relation to waste management are listed below:

- Maintaining short and medium term actions
- Pushing for zero-waste (100% diversion from landfill)
- Becoming a leader during the discussions
- Continuing collaboration with all members to enhance their positive contributions towards waste management
- Working towards to eliminate or greatly reduce waste streams to lessen
- Providing guidelines to reduce waste produced and disposed onboard
- Continuing to raise accepted best practice or standards

Benefits

Members identified some benefits of OCIMF addressing waste management issues and these are:

- Creating opportunities to reduce damaging waste such as plastic
- Long term reputational benefits
- Setting positive example as we are perceived as a pollutant industry
- Influencing new regulations to protect environment
- Driving industry towards elimination or reduction of waste streams while minimising impact to vessel and terminal efficient operations
- Being seen as a competent sector in resolving complex issues at a strategic level
- Demonstrating social responsibility for a cleaner world.
- Seen as a helpful sector by sharing best practice and information with industry
- Providing sustainable environmental benefits with proactive messaging
- Seen as the good advocate by helping on new regulation implementation from a neutral technology and cost-efficient criteria based on the impact assessments, surveys and best practices.

Appendix B Stakeholder consultations

The questions for the stakeholder consultations were the same for each stakeholder and these were influenced by the survey results at the time of the interview.

B.1 Questions

Q1 - Large number of participants believe that air pollution and GHG emissions are a very or extremely important environmental issues for OCIMF. What do you think about this? and how could this be achieved practically by OCIMF? In which way this can be a part of your action plan?

Q2 - Large number of participants also believe that effluent discharges, waste management and ballast water are very important issues for OCIMF? What do you think about this? and how could this be achieved practically by OCIMF? In which way this can be a part of your action plan?

Q3 - Survey results demonstrate that participants don't think that underwater noise and ship recycling are environmental issues that should be high on OCIMF's agenda? Why do you think this is? What are your thoughts?

Q4 - Should the OCIMF influence the industry? If so, how can this be achieved practically? If not, which area they should channel their action towards?

Q5 – Have you got any other comments you would like to share in relation to OCIMF's environmental plan?

B.2 List of participants

All OCIMF members were given the opportunity to take part in the stakeholder consultations. 19 representatives were happy to participate, and these individuals were interviewed by LR representative between 25th June and 17th July 2020. The participants are listed below in alphabetical order. We would like to extend our gratitude for their invaluable time and insight.

- Anton Chekmazov
- Arvanitis Kostas
- Brian Mackay
- Captain Idoia Ibanez
- Cory Quarles
- Doug Lamson and Vance Webb
- Dr Waddah Ghanem
- Ekpenyong Etor
- Gonzalo Mera Truffini
- Guy Nicholls
- Joao de Almeida
- Kevin Mulholland
- Kiyoshi Nogami
- Luis Tamarga
- Marc Bayer
- Mark Ross
- Nick Potter
- Noor Ismail
- Sachin Matwankar.

B.3 Results

Highlights from the stakeholder consultations are listed below in no particular order. They are in four groups in light of the e-survey results:

B.3.1 Air pollution and GHG emissions

1. Commercial advantages are as important to have realistic targets and ambitions.

2. We should keep our people and assets safe and this should be our main priority.
3. The change should be realistic and practical.
4. There should be a balance between new technology, new ships and realistic retrofitting when we are implementing new regulations.
5. OCIMF can help us to understand endless requirements by developing guidelines.
6. If we act as a whole OCIMF, we will be able to influence the regulatory change as OCIMF has a good reputation. This is also practical as a whole value chain as it is very powerful.
7. We need to collaborate with other organisations such as IPICA as both air pollution and GHG emissions are too big to handle on our own.
8. We should invest in innovation as just energy efficiency measures and alternative fuels will not work to meet IMO's ambition.
9. Investments need to be operational, practical, sustainable and economical.
10. OCIMF should not endorse a specific technology or fuel, this is not their role. They should provide evidence based on independent research.
11. We do not want regulations that are hard to meet and apply by our crew onboard. OCIMF collectively provide guidelines to help us.
12. Safety is our main concern and it should stay this way. We are already influencing the industry with our best practices and guidelines.
13. Vetting inspection criteria on this topic will help to improve matters in the right direction.

B.3.2 Effluent discharges, ballast water, biofouling and waste management

14. Lack of consistency amongst various national, regional and international regulations could be avoided with early intervention by OCIMF members.
15. We should share information and best practice ideas amongst the members to help with compliance issues.
16. We should develop effective best practice guidelines for the industry to use so we can influence the industry.
17. We need to be more proactive on the effluent discharges related regulatory changes especially on the areas that effects oil and gas industry (such as inter gas effluent) to prevent commercial disadvantage.
18. Plastic waste is very important therefore we should avoid the single use plastics on board our assets.
19. We should invest in research and development in the field of biofouling as there is a clear correlation between hull fouling and air pollution due to increase fuel consumption.
20. We do lead by example, but we are not leaders and in this group it is acceptable to not be a leader, we just need to comply.
21. We do not need to worry about well regulated topics such as waste management and we should put our resource and energy on other areas such as effluent discharges.

22. Although the onboard crew do their best to manage the waste onboard in the correct manner, we see this being lost when they are landed ashore. OCIMF members should influence the port reception facilities to comply with regulations properly.

B.3.3 Ship recycling and underwater noise

23. OCIMF members should be meeting the IMO requirements and be responsible for their assets' whole life cycle.
24. We need to be realistic as this is also a commercial decision.
25. Lessons learned should be shared amongst members about certain yards and practices used.
26. Little known on the field of underwater noise and it does not affect all OCIMF members, however we should be kept informed of any changes and keep up to date with any progress made.
27. We should be mindful of early scrappage scheme due to some regulations as scrapping could be a less harmful to the environment than new construction.
28. We should invest in design studies to reduce the impact of underwater noise to marine mammals.
29. OCIMF members should recycle their ship on time, we see a lot of very old and inefficient ships trading in some parts of the world.

B.3.4 Overall

30. Safety and environmental issues are costly and have reputational consequences. These standards are already quite hard to comply to so we should be careful not to set too high targets.
31. We should invest in data collection and; research and development to gather scientific evidence.
32. Although it is hard to go beyond compliance as this can be a commercial issue, sometimes, we see this being a commercial advantage too.
33. Practical advice sharing should be encouraged amongst OCIMF members. Smaller organisations would benefit from this which also means we can act as a unified organisation.
34. Technical advocacy is what we need to keep up to date. Technical group needs to be brought in.
35. Investing in research, communicating what is practical, what is non-economic, what is more doable. Policy needs to have a technical ground and OCIMF can actually have this. It is all very well to have the political agenda, it needs to be feasible. Research contribution, member companies can input, most members can be a part of that.
36. We need to balance and prioritise. We need to understand our resources and be realistic on what we can achieve in short, medium and long term.
37. OCIMF has been very successful influencing industry in terms of safety and we remain to be a credible organisation. We can use our current position to influence on policy development early on.
38. We should be in line with the sustainable development goals.
39. OCIMF has a lot of powerful members and they can influence the industry bearing in mind the specific challenges that the oil and gas industry are facing with.

40. Members should be open and transparent amongst OCIMF for the greater good.
41. We would like ESC to provide all members with updates from their meetings.
42. It would be good to have invites to committee meetings especially from small members.
43. OCIMF is already influencing the industry with their safety best practices but it would be good if all members were more visible and their inputs were included. There should be representations from regions and size of the companies.
44. We should raise awareness of OCIMF and its activities in each member's region which will help to influence the policy decisions in the long run.
45. OCIMF is doing a great job with publications but the Secretariat should try to raise awareness of their activities as some members are missing out.
46. All of the issues mentioned in the survey are equally important and we should as OCIMF members do our best to comply and lead by example.
47. OCIMF should be recognised by the major players and strategic regional influencing; but at the same time the smaller members also need to be visible which would help towards regional drive.
48. OCIMF should be undertaking development programs, attending to different working groups.

Appendix C OCIMF

OCIMF was formed in April 1970 in response to the growing public concern about marine pollution, particularly by oil, after the Torrey Canyon incident in 1967.

In the early 1970s, a variety of anti-pollution initiatives were starting to emerge nationally, regionally and internationally, but with little coordination. Through OCIMF, the oil industry was able to play a stronger, coordinating role in response to these initiatives, making its professional expertise widely available through cooperation with governments and intergovernmental bodies.

OCIMF was granted consultative status at the IMO in 1971 and continues to present oil industry views at IMO meetings. Since then, its role has broadened to take account the changing maritime activities of its membership. Its remit now covers safety, health, security and the environment pertaining to tankers, barges, offshore vessels and terminal interfaces.

The current membership of OCIMF comprises well over 100 companies worldwide.

Today, OCIMF is widely recognised as the voice of the oil industry providing expertise in the safe and environmentally responsible transport and handling of hydrocarbons in ships and terminals and setting standards for continuous improvement. Membership is extensive and includes every oil major in the world along with the majority of National Oil Companies.

OCIMF has much to be proud of. Not only has it contributed to a substantial quantity of regulation at the IMO aimed at improving the safety of tankers and protecting the environment, but it has introduced important new guidance on pressing current issues such as piracy and Arctic shipping. With the process of introducing new Internationally-accepted regulation necessarily slow as it crosses many individual countries and jurisdictions, OCIMF is in the unique position of being able to leverage the expertise of its membership to press ahead with much needed guidance on important industry issues. This provides the means to improve practices in the membership and in the wider industry and serves as a valuable reference for developing regulation.

In addition to its extensive publications library, OCIMF has a rich portfolio of tools including its Ship Inspection Report (SIRE) programme and Tanker Management and Self Assessment tool (TMSA), both of which have gained worldwide recognition and acceptance. It continues to develop new tools, with OVID the latest to be launched in January 2010, and a new Terminals inspection tool in development.

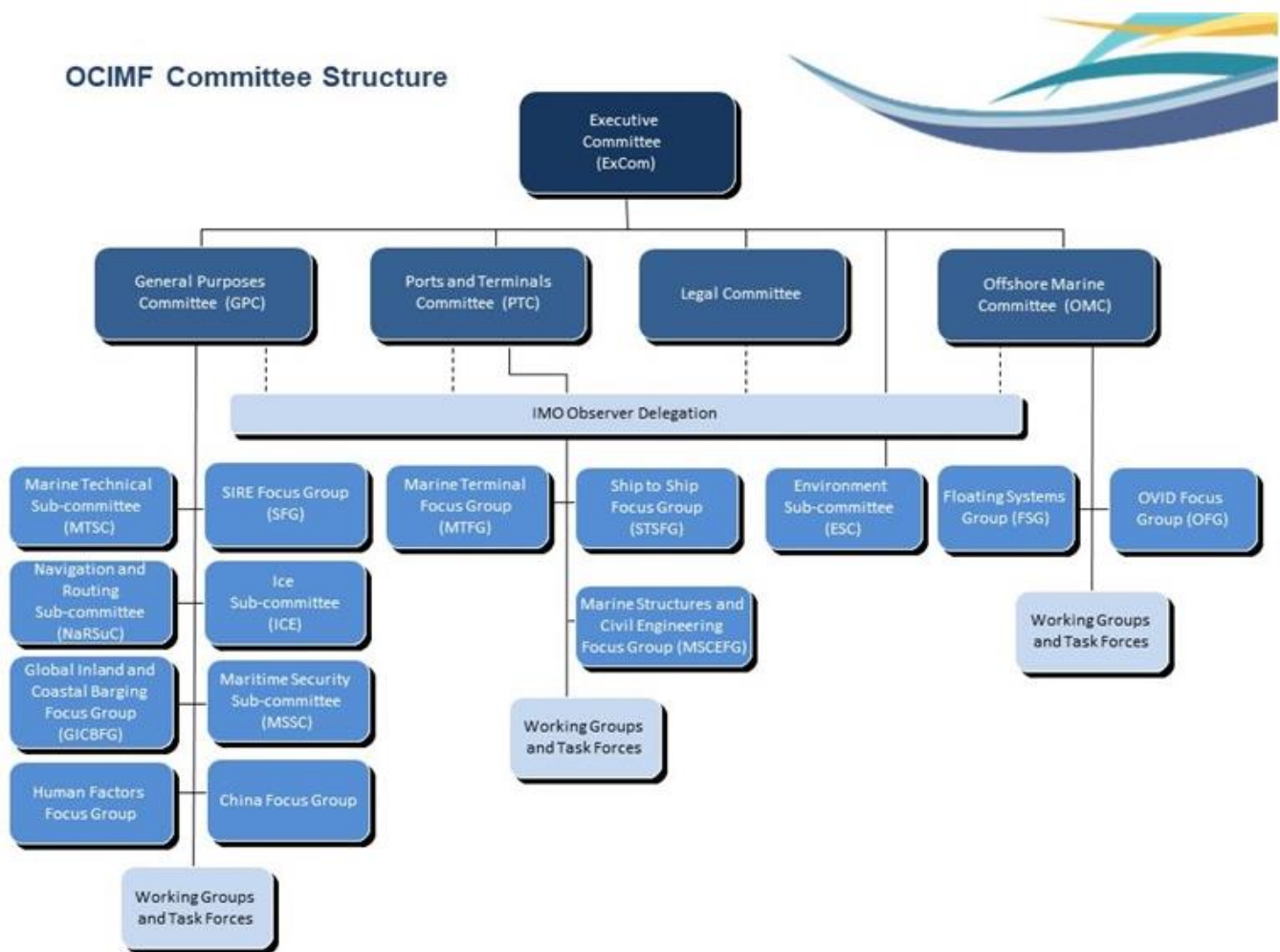
C.1 Structure

OCIMF's committee structure comprises the Executive Committee at its head and four senior standing committees with the power to establish sub-committees or forums as necessary.

These committees are the drivers of all the change projects championed by OCIMF's membership, from the development of OVID to the terminal review programme. Active participation in the various committees is one of the best ways for OCIMF members to influence policy development, share best practice and contribute to new standards promoting continuous improvement in the standards of design and operation of tankers, terminals and offshore support vessels. The committees are listed below:

- Executive Committee
- General Purposes Committee
- Ports & Terminals Committee
- Offshore Marine Committee
- Legal Committee

OCIMF's committee structure is shown in below organogram:



C.2 Vision

A global marine industry that causes no harm to people or the environment.

C.3 Mission

To lead the global marine industry in the promotion of safe and environmentally responsible transportation of crude oil, oil products, petrochemicals and gas, and to drive the same values in the management of related offshore marine operations.

We do this by developing best practices in the design, construction and safe.

operation of tankers, barges and offshore vessels and their interfaces with terminals and considering human factors in everything we do.



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