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**FURTHER TECHNICAL AND OPERATIONAL MEASURES FOR ENHANCING THE
ENERGY EFFICIENCY OF INTERNATIONAL SHIPPING**

**Challenges of attempting to define transport work proxies for offshore
and marine contracting vessels**

Submitted by IMCA

SUMMARY

Executive summary: The Committee is invited to consider the challenges of attempting to define transport work proxies for offshore and marine contracting vessels. This document provides information on the difficulty of defining relevant and appropriate proxies for "transport work" for offshore and marine contracting vessels, and recommends that such vessels be excluded from the current discussions on "transport work" and that the Organization could consider proposals at a future date, should an interested Party develop suitable "transport work" proxies.

Strategic direction: 7.3

High-level action: 7.3.2

Output: 7.3.2.1

Action to be taken: Paragraph 30

Related documents: MEPC 69/21; MEPC 70/6, MEPC 70/3/2; MEPC.282(70); MEPC 70/WP.1; MEPC.282(70); MEPC.70/18; MEPC.68/WP.10 and MEPC 70/WP.8

Introduction

1 This document proposes that developing appropriate proxies for "transport work" for offshore and marine contracting vessels will require extensive work and that the concept of "transport work", as currently defined, is unsuitable for such vessels.

2 The concept of "transport work" is appropriate for vessels which transport passengers or cargo between ports of departure and destination; it is not appropriate for vessels which do not transport passengers or cargo.

3 Offshore and marine contracting vessels consume energy to perform predominantly non-transport activities, such as supporting offshore energy activities, dredging, rock installation, ice-breaking, pipe laying and offshore construction/installation.

4 The offshore and marine contracting fleet is composed of a wide and diverse range of vessel types: each has its own unique operating profile and, in many cases, also a unique design. No single transport work proxy, applying to all, would be suitable. Providing suitable "transport work" proxies for each vessel type would require extensive work.

5 The global fleet of offshore and marine contracting vessels of 5,000 GT and above, excluding those already exempted under regulation 19.2 of MARPOL Annex VI, is approximately 1% of the gross tonnage of the global shipping fleet.

6 Many offshore and marine contracting vessels operate national rather than international voyages, although almost all are certificated for international voyages.

7 Very few voyages made by offshore and marine contracting vessels will fall within the scope of the Organization's requirements to submit fuel oil consumption data.

8 The activities undertaken by these vessels are often within the scope of national emissions reporting requirements for offshore activities or for marine construction projects and as such emission data are in many cases already captured.

9 Given the small number of reportable voyages, the work needed to develop appropriate "transport work" proxies and after considering that efficiency data are already being captured under national emissions reporting requirements for the construction projects, it is recommended that offshore and marine contracting vessels be excluded from current efforts to develop "transport work" proxies.

Background

10 MEPC 70 adopted resolution MEPC.282(70) on the *2016 Guidelines for the development of a Ship Energy Efficiency Management Plan (SEEMP)*. These SEEMP amendments were part of the three-step approach of data collection, analysis and decision making.

11 MEPC 70 recalled that MEPC 69 had approved draft amendments to chapter 4 of MARPOL Annex VI, adding a new regulation 22A to establish mandatory requirements for ships to record and report data on their fuel oil consumption, together with additional data on proxies for the "transport work" undertaken by the ship (MEPC 70/18, paragraph 6.1). The Committee invited interested Member States and/or international organizations to submit proposals for a proxy for transport work for ships that do not carry cargo to a future session of the Committee (MEPC 70/18, paragraph 6.10).

12 IMCA fully supports reducing the environmental impact of offshore and marine contracting vessels by improving their energy efficiency. However, efficiency indicators, including any potential "transport work" proxies applied to these vessels, must be appropriate otherwise misleading data could be collected and lead to misinformation of policy makers.

"Transport work" for offshore and marine contracting vessels

13 Offshore and marine contracting vessels undertake roles such as installation, inspection, repair and maintenance of offshore infrastructure, heavy lifting, dredging, subsea

rock installation, construction, laying subsea pipes and cables and dive support. There is a wide range of vessel types, few of which transport either cargo or passengers.

14 This diversity of vessel types and activities would necessitate a wide range of "transport work" proxies. No single parameter would be suitable for all vessel types.

15 Offshore and marine contracting vessels are optimized for completing their intended purpose at a work location safely and efficiently, rather than for efficient passage between ports.

16 Many offshore and marine contracting vessels are provided with dynamic positioning (DP) systems and spend much of their time operating on location in DP mode to either maintain the vessel in a static position or to follow a dynamic track accurately. When operating in DP mode, vessels are often required to maintain position close to offshore installations and other vessels, including those engaged in high-hazard activities such as hydrocarbon extraction. The dependability of position keeping is critical to safe operation; improving efficiency must not jeopardize safety by compromising position keeping dependability.

17 The Organization's guidelines for DP vessels, MSC/Circ.645 (currently under review), require redundancy in power and manoeuvring systems for DP equipment classes 2 and 3, which are applied where dependability is essential. Operating engines and thrusters with this redundancy is less efficient than if operating without redundancy.

18 Conventional passenger or cargo carrying vessels will generally operate their power and propulsion systems at stable loads on passage. The power and propulsion loads of offshore and marine contracting vessels can vary greatly and are determined by the local wave, wind, tide/current and soil condition as well as by surrounding traffic. These conditions vary between being benign and being extremely hostile.

19 The industrial mission systems of marine contracting and offshore vessels – such as cranes, pipe laying systems and dredging systems – consume a significant proportion of the vessel's power output and, in some cases, most of the power being generated. These industrial loads may be both variable and intermittent as they are a function of the industrial/mission activities, further complicating efforts to define "transport work" proxies.

20 Some marine contracting and offshore vessels operate with intermittent or constant slow movement (for example, if laying pipe or dredging) further complicating consideration of "transport work" proxies.

21 Certain marine contracting and offshore operations such as anchor handling or hopper dredging demand high levels of thrust. Installed engine power is very high relative to vessel size, with actual output being determined by operational factors. Propellers may use devices such as Kort nozzles, which improve low speed thrust but reduce cruise efficiency.

22 The clients of offshore and marine contracting vessel operators generally require vessel operators to demonstrate environmental impact reduction measures as part of bid evaluation processes. Apart from the vessel efficiency, the civil design combined with the working/constructing method is evaluated on energy efficiency. Marine contracting and offshore vessel designers and operators are investing in energy efficient vessels and technologies, including the use of clean alternative fuel oils, predictive DP systems, diesel – battery hybrid power and fuel cells. However, some of the most effective techniques for improving efficiency such as high-efficiency propellers, low friction coatings, hydrodynamic hull optimization and aerodynamic optimization of top sides are of lesser gain to marine contracting and offshore vessels.

Conclusion

23 Since offshore and marine contracting vessels are not providing transportation, the concept of "transport work" is not appropriate.

24 Defining "transport work" proxies will require extensive research to develop a wide range of ship type specific proxies. Some vessels are unique and may even require a unique proxy.

25 Any "transport work" proxies or other efficiency indicators which may be applied to the sector must not compromise safety.

26 Marine contracting and offshore vessel designers and operators are already using innovative technologies, civil designs and working/constructing methods to improve efficiency.

27 The number of reportable voyages made by these vessels is very small. Given the Organization's heavy existing workload and the negligible benefit, it is recommended that offshore and marine contracting vessels should be excluded from the present efforts to develop "transport work" proxies.

28 Many offshore and marine contracting vessels operating domestically are required to report emissions data to national authorities under requirements for offshore energy and construction activities.

29 IMCA also recommends that the Organization should encourage those countries which capture emissions from activities, such as offshore energy under national reporting requirements, to share their experiences with the view to assisting IMO to develop appropriate "transport work" proxies at a future date. The nature of marine contracting and offshore activities means that emissions reporting and control strategies can both be most effectively managed at project level rather than considering vessels in isolation.

Action requested of the Committee

30 The Committee is requested to consider the issues discussed in this document and act accordingly. The Organization is invited to put consideration of "transport work" proxies for offshore and marine contracting vessels into abeyance at this time.
