

Title: Merchant Shipping (Prevention of Pollution by Sewage from Ships and Prevention of Pollution by Garbage from Ships) (Amendment) Regulations 2024 Date: 01/09/23 DMA No: DFTDMA301 Lead department or agency: Maritime & Coastguard Agency Other departments or agencies: Department for Transport			De Minimis Assessment (DMA)		
			Stage: Consultation		
			Source of intervention: International		
			Type of measure: Secondary		
Summary: Rationale and Options			Contact for enquiries: environment@mcga.gov.uk		
Total Net Present Value		Business Net Present Value		Net cost to business per year (EANDCB in 2019 prices)	
-£0.83m		-£0.83m		£0.10m	

Summary of Impacts – Explanatory Memorandum Impact Section

The Department for Transport (DfT) has not published an impact assessment for this measure as the direct impacts on business have been assessed at under £5m per year. Instead, light-touch internal analysis has been conducted, the findings of which are presented below.

Rationale

This policy aims to achieve better environmental protection and reduce marine pollution from plastic and other forms of garbage by lowering the threshold at which ships are required to keep a Garbage Record Book (GRB)¹ from 400 gross tons (GT) to 100 GT. This will be done by introducing an amendment to The Merchant Shipping (Prevention of Pollution by Garbage from Ships) Regulations 2020 to implement changes to the International Maritime Organization's (IMO) Regulations for the Prevention of Pollution by Garbage from Ships (MARPOL Annex V).

The IMO Assembly recognises the ongoing problem of marine plastic pollution. It had instructed its Marine Environmental Protection Committee (MEPC) to consider whether MARPOL Annex V required further development. In undertaking this instruction, IMO's MEPC adopted Resolution MEPC.310(73) (adopted on 26 October 2018), which provides an action plan to address marine plastic litter from ships ("the Action Plan"). In addition, MEPC considered amendments to MARPOL Annex V at their 79th meeting in December 2022 and for this purpose adopted resolution MEPC. 360(79)² concerning regional reception facilities within Arctic waters and rules for the Garbage Record Book (GRB) which comes into force on 1 May 2024.

The economic rationale for intervention is mitigating the market failures in the market for marine plastic disposal. There are two market failures. Firstly, the impacts of marine environment pollution represent a negative externality, since the agents who are responsible for the pollution of the maritime environment only bear a smaller share of the resulting costs to society. Secondly, there is an information asymmetry between maritime authorities and ship owners on garbage management at sea. Without the GRB, ship owners could perform unlawful garbage disposals without the knowledge of the MCA, causing damage to the marine environment. A market solution would lead to underinvestment from ship owners in pollution control measures and in garbage management recordkeeping. Government intervention is required to address and mitigate these market failures, by ensuring compliance with the internationally required standards to protect the maritime environment.

¹ <https://www.marineinsight.com/maritime-law/a-guide-to-handling-garbage-on-ships/>

² <https://www.imo.org/en/MediaCentre/MeetingSummaries/Pages/MEPC-79th-session.aspx>

Costs and benefits

The impact on industry from this intervention is low. The costs from this regulation will be the cost of purchasing the Garbage Record Book, the time required to update it, the additional inspection time of the record by surveyors, and the familiarisation costs. In addition to these costs, which will be direct costs to businesses, there will be some costs to the public sector, namely the costs to train MCA (Maritime and Coastguard Agency) surveyors. All the costs identified have been monetised. The intervention will lead to several benefits, mainly for the United Kingdom (UK) environment: preventing damage to the environment and water biodiversity by limiting illegal discharge of garbage, which reduces pollution in UK waters; reducing cleaning and maintenance costs for coastal landscapes; and reducing pollution-related sea incidents which obstruct sea routes during clean-up operations. Additionally, there will be other benefits such as avoiding “gold plating” the original text (i.e., exceeding the original requirements), reduced future familiarisation costs as a result of ambulatory referencing (AR), and avoiding the risk of losing the UK low-risk status under the IMO audit scheme, which would increase the risk of delays or detentions by Port Authorities in foreign countries. None of the benefits are monetised due to the unavailability of data.

Risks

The risks associated with this intervention are considered to be low. Direct implementation of the international requirements will meet one of the key objectives and the AR provisions will ensure the new regulations remain up to date.

Describe the policy options considered.

The following options have been considered:

Option 0 – Do nothing – this option would mean that the MARPOL Annex V amendment is not implemented in UK law. This option would not solve the issue and would leave the UK non-compliant with its international obligations as a signatory to the MARPOL convention. This would risk reputational damage, and UK flagged ships of between 100 gross tonnage (GT) and 399 GT that do not carry 15 or more persons on board on international voyages may find themselves subject to sanctions in foreign ports.

Option 1 – Advice to industry (non-regulatory) – It would be possible, with minimal resources, to publish a Marine Guidance Note (MGN) which sets out the amendments to MARPOL Annex V, highlights the associated IMO guidance and explains to industry the requirement in international law. Unlike Option 0, Option 1 would achieve a level of awareness within the industry of the new requirement. However, it would not achieve the intended outcomes of implementation into UK law, protecting the marine environment and setting a level playing field for UK flagged ships. The UK’s regulatory framework would be out of step with its international obligations, and without mandatory enforcements, especially considering the information asymmetry, a significant proportion would choose lower pollution control standards in order to achieve some levels of costs savings.

Option 2 – Amend the UK Regulations (regulatory) – This option requires amending the Merchant Shipping (Prevention of Pollution by Garbage from Ships) Regulations 2020 to implement the amendments given effect in IMO Resolution MEPC.360(79). This will achieve the desired outcomes of reducing marine debris and therefore protecting the marine environment, fulfilling the UK’s international obligations, maintaining the UK’s reputation as a responsible flag State and party to the convention and ensuring an international level playing field for UK flagged ships.

Option 2 is the preferred option.

Rationale for DMA rating

The equivalent annual net direct cost to business for this policy is £0.10m in 2019 prices and in 2020 present value, well within the +/- £5 million equivalent annual net direct cost to business (EANDCB) de minimis assessment (DMA) criteria. Even in the high scenario (worst-case scenario), the EANDCB is £0.26m, still well below the £5 million boundary.

The measure does not have contentious or novel elements, significant wider social, environmental, financial or economic impacts, distributional impacts, large gross impacts, or disproportionate impacts on small, micro and medium businesses.

Will the policy be reviewed? Yes		If applicable, set review date: 07/2025		
Are these organisations in scope?	Micro Yes	Small Yes	Medium Yes	Large Yes

Senior Policy Sign-off: ✓ Date: 01/09/2023

Peer Review Sign-off: ✓ Date: 01/09/2023

Better Regulation Unit Sign-off: ✓ Date: 01/09/2023

1.0 Policy Rationale

- 1.1 Regulations for the prevention of pollution by garbage from ships are contained in MARPOL Annex V. Annex V generally prohibits the discharge of all garbage into the sea, except as provided otherwise in specific circumstances relating to food waste, cargo residues, cleaning agents and additives, and animal carcasses. Under Annex V, garbage includes items generated during the normal operation of a ship and that is liable to be disposed of continuously or periodically.
- 1.2 Regulation 10.3 of Annex V³ currently requires all ships of 400 gross tonnage (GT) and above, every ship which is certified to carry fifteen persons or more engaged in voyages to ports and offshore terminals under the jurisdiction of another Party to the Convention, and every fixed or floating platform to provide a Garbage Record Book (GRB) and to record all discharges and incineration operations. The date, time, position of the ship, description of the garbage and the estimated amount incinerated (amongst other information) must be logged and signed. The GRB must be kept for a period of at least two years after the date of the last entry.
- 1.3 The GRB makes it easier to check that regulations on garbage are being adhered to as it means that ship personnel must keep track of the garbage and what happens to it. It can also prove advantageous to a ship when local officials are checking the origin of discharged garbage, as it will provide a route through which ship personnel can account for all their garbage, reducing the chance of being wrongly penalised for discharging garbage when they have not done so.
- 1.4 In the UK, MARPOL Annex V is implemented by the Merchant Shipping (Prevention of Pollution by Garbage from Ships) Regulations 2020. These came into force on 22 July 2020.
- 1.5 The issue of marine plastic litter has received substantial political and media attention⁴. This is an area of policy where the UK has a high ambition stance to ensure marine plastic litter is eliminated from the world's oceans⁵. Although MARPOL Annex V prohibits the discharge of garbage, including plastics, into the sea, garbage in our oceans is still an issue.

³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/899797/MGN_632_-_R0720.pdf

⁴ <https://www.bbc.co.uk/news/science-environment-64889284>

⁵ <https://www.gov.uk/government/news/uk-backs-ambitious-global-action-to-tackle-plastic-pollution>

- 1.6 In connection with the United Nations 2030 Agenda for Sustainable Development⁶, in particular Sustainable Development Goal (SDG) 14: Conserve and Sustainably Use the Oceans, Seas and Marine Resources for Sustainable Development⁷, the International Maritime Organization (IMO) Assembly recognises the ongoing problem of marine plastic pollution. It had instructed its Marine Environmental Protection Committee (MEPC) to consider MARPOL Annex V required further development. In undertaking this instruction, IMO's MEPC adopted Resolution MEPC.310(73) (adopted on 26 October 2018)⁸, which provides an action plan to address marine plastic litter from ships (the Action Plan).
- 1.7 The Action Plan builds on existing policy and regulatory frameworks and identifies opportunities to enhance these frameworks and potential of introducing new supporting measures to address the issue of marine plastic litter from ships. The Action Plan identified 30 actions with many falling to MARPOL Annex V.
- 1.8 In addition, MEPC considered amending MARPOL Annex V at their 79th meeting in December 2022 and adopted resolution MEPC.360(79) Concerning Regional Reception facilities within Arctic Waters and rules for the GRB with an agreed entry-into-force date of the amendments to MARPOL Annex V on 1 May 2024.

Rationale for intervention

- 1.9 The main purpose of this intervention is to mitigate the effects of the ongoing problem of marine plastic pollution, by diminishing the impact of the market failures at stake, namely the negative externality of pollution and the information asymmetry around garbage disposal. Additionally, this intervention will ensure that the UK maintains its international reputation and place in the IMO. It will also reduce the risk of losing its low-risk status under the IMO scheme, which could lead to delays or detentions by foreign Port Authorities.
- 1.10 This intervention is required because the existing regulations have fallen behind in the implementation of the UK's obligations under MARPOL Annex V and government intervention is needed to bring the regulations up to date with international standards of the Prevention of Pollution by Garbage from Ships, protecting the UK waters, the environment, and the safety of ships.
- 1.11 The main economic rationale for this intervention is to mitigate the effects of a market failure, the negative externality of pollution, meaning that the pollution from shipping activities impose costs on others without compensation made by ship owners to those impacted by the pollution they have created. Indeed, ship owners responsible for the pollution of the marine environment only bear a smaller share of the costs than society as a whole. Ship owners do not face the full costs of pollution, and therefore under-invest in methods which facilitate environmentally considerate waste disposal and discharging at sea. For instance, the illegal disposal of garbage at sea could damage the biodiversity of the UK waters, without compensation from the ship owners. Without regulation, incentives to ensure the best possible precautions against degradation of the maritime environment are suboptimal, since firms do not incur the full social costs associated with such practices and therefore are not sufficiently incentivised to take steps to reduce the impact as disposal of garbage at sea could be a cost saving for them while creating costs for the rest of society and other ship owners. Without regulations, there is a risk that other solutions (e.g., market-led solution, subsidies for incentivisation) would lead to some stakeholders not following all protocols for the safety of the maritime environment in order to save costs, increasing the probability of incidents of inadequate waste disposal and illegally discharging of garbage overboard. Hence, the market failure would not be fully addressed. Government intervention is required to address this negative externality, by ensuring compliance with the internationally required standards with respect to the safety of the maritime environment.

⁶ <https://sdgs.un.org/2030agenda>

⁷ <https://sdgs.un.org/goals/goal14>

⁸ <https://www.mlit.go.jp/common/001312164.pdf>

- 1.12 The intervention would also solve the information asymmetry with respect to garbage recording. Without the GRB, ship owners and crews have more information on what actually happens to garbage on ships than maritime authorities. Indeed, it would be very difficult for the MCA to control garbage management for ships at sea. Ship owners could therefore use this informational advantage to dispose of their garbage unlawfully, damaging the marine environment without the knowledge of the MCA. The pollution negative externality is a direct consequence of the information asymmetry on garbage management. Hence, the recording and recordkeeping of garbage disposal would solve this information asymmetry by enforcing the sharing of information between the parties, preventing unlawful garbage disposal.

Policy objective

- 1.13 There are a number of overarching policy objectives linked to this intervention. These are the alignment of UK legislation with international standards to ensure unified standards of regulations and a level playing field between UK-flagged ships and other vessels, meaning no competitors would have an advantage due to a lack of enforcement of international standards. In addition, it would ensure fair competition within the UK flag, making sure that ships between 100GT and 399GT competing with ships of 400GT or above do not have an advantage over them due to fewer regulations. It would ensure a level playing field for those operating in the maritime sector as well as assurance that the UK's international obligations are met providing effective environmental protection.
- 1.14 The intended outcomes of this measure are to:
- Fulfil our obligations under MARPOL Annex V.
To fulfil the UK's obligations under MARPOL Annex V, the MCA needs to implement the amendment reducing the gross tonnage threshold for the GRB from 400GT to 100GT. The introduction of this amendment by virtue of UK regulations will ensure that we can enforce the prohibition.
 - Protect UK waters.
Implementing the amendment will mean more ships will be required to use a GRB. This will provide greater accountability for garbage discharges, reducing the prospects of illegally discharged garbage and thus helping to keep UK waters and coastal environments clean.
- 1.15 Without regulation, incentives to ensure the best possible safety precautions are suboptimal. Thus, government intervention is necessary to correct these problems through regulatory provision, to ensure that the UK is compliant with the latest standards and that these are enforceable. The proposed regulations would allow the UK to maintain its reputation under the mandatory IMO audit scheme. A poor performance, due to insufficient transposition, could result in the loss of the UK's "low risk status"; this could increase the frequency of inspections for UK flagged ships in foreign ports and hence increase cost to UK industry. As this is an international convention signed by the UK which therefore needs to be implemented, the goal of the DMA is to assess the impact of the new regulations which will be implemented into UK law.

Options considered.

- 1.16 A few potential options for approaching the implementation of the new amendments to MARPOL Annex V have been considered. These are:
- 1.17 **Option 0 – do nothing.** This option would mean that the MARPOL Annex V amendment is not implemented in UK law. This option would not solve the issue and would leave the UK non-compliant with its international obligations as a signatory to the MARPOL convention. This would risk reputational damage. UK flagged ships of between 100 GT and 399 GT that do not carry 15 or more persons on board on international voyages may find themselves subject to sanctions in

foreign ports such as port state control deficiencies or detentions causing unnecessary delays and costs to industry and further reputational damage to the UK. Overall costs/benefits would not be realised. It would also leave UK waters unprotected as there would be no way to enforce the international requirements within the UK.

- 1.18 **Option 1 – non-regulatory – publish guidance to industry.** It would be possible, with minimal resources, to publish a Marine Guidance Note (MGN) which sets out the amendments to MARPOL Annex V, highlights the associated IMO guidance and explains to industry the requirement in international law. Unlike Option 0, Option 1 would achieve a level of awareness within the industry of the new requirement. However, it would not achieve the intended outcomes of implementation into UK law, protecting the marine environment and setting a level playing field for UK flagged ships. The consequential result and the risks associated with this option would be the same as for Option 0 (do nothing).
- 1.19 **Option 2 (preferred option): regulatory – amend the 2020 regulations to implement the amendments as set out in resolution MEPC.360(79).** This is the only option that will provide clarity and certainty. This will achieve the desired outcomes of reducing marine debris and therefore protecting the marine environment, fulfilling the UK's international obligations, maintaining the UK's reputation as a responsible flag state and party to the convention and ensuring an international level playing field for UK flagged ships. This will also be an opportunity to introduce ambulatory referencing in order to facilitate the introduction of future amendments into UK law.
- 1.20 **Our preferred option is Option 2 for the reasons set out above.** Option 2 will require policy lead, economic and legal resource and parliamentary time in order to achieve implementation. However, regulatory intervention (Option 2) is the only way that this amendment to MARPOL Annex V can be fully implemented into UK law and ensure that all of the intended outcomes can be achieved. The ramifications of inaction are summarised above in Option 0. Option 2 would address all of those ramifications.

2.0 Rationale for De Minimis Rating

DMA Rating

- 2.1 This regulatory measure satisfies the de minimis assessment (DMA) threshold as the amendments being made are expected to have a low-cost impact and are not likely to directly result in additional net costs to industry above £5 million which is the total cost averaged over a ten-year appraisal period, which is the standard timeframe for regulatory impact assessments according to RPC guidance⁹. In this case, the EANDCB is approximately £0.10m the central scenario, in 2019 prices and 2020 present value, following existing guidance¹⁰. In addition, in the high scenario the EANDCB is below the £5 million threshold, as it is around £0.26m in 2019 prices and 2020 present value. It should be noted that the net costs to business in practice, would be smaller. Indeed, multiple benefits have been identified, but none of them have been monetised due to the unavailability of data. If these benefits were monetised and included in the calculation of the net costs to businesses then the measures of net costs would be smaller. It should also be noted that, even if the benefits were significant, the net impact of the regulations on businesses would still be limited, so that a full impact assessment would not be needed.
- 2.2 None of the changes are controversial or contentious, given that the 2024 Regulations implement an internationally agreed convention signed by the UK and ambulatory referencing is now an established approach for international conventions such as IMO conventions¹¹. An ambulatory reference is a reference in domestic legislation to an international instrument which is interpreted as a reference to the international instrument which allows regular modification of the national

⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/922143/RPC_case_histories_-_appraisal_periods_Sep_20.pdf

¹⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1128456/impact-assessment-calculator-guide.pdf

¹¹ See for example <https://www.legislation.gov.uk/uksi/2021/1316/contents> or <https://www.legislation.gov.uk/uksi/2022/1169/contents>

law without the need to pass a new statutory instrument¹². These amendments also do not put any disproportionate impact on any market participants, specifically those classified as small or micro, thus not impacting on competition in the market. The measure does not have significant gross effects, distributional effects or wider effects. It is deemed proportionate to carry out a DMA, and a full impact assessment is not necessary.

- 2.3 Through this intervention, the UK will also introduce AR provision in the new SI which will enable UK legislation to automatically give effect to the latest version of mandatory international standards in the future. This will ensure standards are unified and maintained with no discrepancy between UK and international regulations. The cost associated with future amendments cannot be monetised at this stage as there is currently no indication of what form future amendments may take. These costs are therefore not reflected in this impact assessment. It is proposed that regular Post Implementation Reviews (PIR) will be undertaken to evaluate whether the use of ambulatory reference to MARPOL Annex V as achieved its goal and is still valid, and to estimate the costs and benefits of all the technical amendments enacted since this assessment.

3.0 Costs and Benefits

Baseline (alternative counterfactual)

- a. The costs and benefits for Option 0 are not included in the analysis following the RPC guidance on the appraisal of international measures¹³. Option 0 is not the baseline against which the other options are compared. A constructed counterfactual is used instead to assess the impact of the international measure, if no prior compliance exists (contrary to the actual counterfactual, Option 0, which is the current situation where compliance is already high). Without an alternative counterfactual, the actual state of play would be used, which means that, as most ships on international voyage are already applying the regulations, the costs and benefits would be significantly lower. Hence, using the actual counterfactual would mean that the costs and benefits for most ships when the international measure came into force, before being implemented into UK law, would not be evaluated in any assessment. The whole impact of the regulations would not be evaluated, which would also create issues with respect to comparability with the impact assessments of domestic measures.
- b. Maintaining the status quo would create uncertainty for operators, and the inability to make UK-flagged ships and all ships in UK waters comply with the international regulation would prevent the creation of a level-playing field. Doing nothing would see UK legislation remain as it currently is with no updates or amendments. Although this would require no resources to achieve, it would leave discrepancies between UK law and international standards and, over time, the regulations would become further and further out of sync with international requirements. This would be a cause for confusion and would create a two-tier regulatory system as UK operators would have to abide by the international standards when outside of the UK and outdated UK regulations when in the UK. It could also cause difficulties for example with mandatory ship certificates, as UK-issued certificate may not meet the international expectations, causing delays in port and possible Port State Control sanctions. It could also create reputational damage to the UK.
- c. Indeed, even if in the actual counterfactual compliance was high within the industry, some vessel owners could apply lower standards due to the absence of transposition of the international measure into UK law. Due to an information asymmetry between ship owners and the MCA, it is hard for the MCA to control ship owners' garbage management. In the worst-case scenario, it could create

¹² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/650190/Consultation_Outcome_Report_-_Load_Line_Regulations.pdf

¹³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/922150/RPC_case_histories_-_counterfactuals_Sep_20.pdf#:~:text=This%20document%20provides%2C%20in%20particular%2C%20guidance%20on%20how,inclu ding%20t he%20treatment%20of%20E2%80%98voluntary%2C%80%99%20action%20by%20businesses.

incidents endangering the maritime environment. In the constructed counterfactual, an even larger base of ships owners could apply lower standards, increasing the probability of a worst-case scenario (e.g. significant damage to the environment or damage to other ships if operating in the polluted maritime space). In terms of benefits, actual high compliance would mean that few ships owners would benefit from the absence of enforcement, and the costs savings for companies implementing lower standards would not compensate the increased costs and risks they would impose on other ships and the rest of society. In the constructed counterfactual, a larger proportion of ship management companies would benefit from costs savings with the application of lower standards, but the increased risks of extreme negative events would nullify this cost saving benefit to the ship management companies, leading to a worse social outcome.

Option 1: non-regulatory – publish guidance to industry

- 3.4 This option will not correct the current regulatory gaps, nor will it achieve the policy objectives or bring about the benefits from the specific updates being introduced. Mandatory amendments could not be introduced through this option for example, reducing and enforcing the gross tonnage threshold for the GRB from 100GT to 399GT. This would increase the risks of the implementation of lower standards by UK ship owners, the risks to the environment, the risk of Port State Control sanctions and the risk of reputational damage to the UK, which are still high with this option. Without enforcement, this option would lead to a suboptimal outcome like the status quo. As such, it was concluded not to be a viable option.

Option 2 (preferred option): regulatory – amend the 2020 regulations to implement the amendments as set out in resolution MEPC.360(79)

- 3.5 This option is considered to be an effective option in addressing the market failure. This option will facilitate the implementation of mandatory amendments relating to considerate waste disposal, deterrence from illegally discharging of garbage overboard and the reduction of marine debris, therefore protecting the marine environment. The aim is to fulfil the UK's international obligations and internalise the social costs associated with pollution by ships at sea. This is considered to be the most effective option in achieving the main policy objectives of protecting the environment and also fulfilling our obligations under MARPOL Annex V by implementing the amendment to reduce the gross tonnage threshold for the GRB from 400 to 100 gross tons. The introduction of this amendment by virtue of UK regulations will ensure that we can enforce the prohibition.

Options assessment

- 3.6 For the assessment of the costs and benefits of the regulations, the rest of the section is focusing on Option 2 as it is considered the preferred option. Option 2 is evaluated against the baseline, which is the constructed counterfactual, replacing the Option 0 (do nothing), following the RPC guidance on counterfactuals¹⁴. This means that all the costs and benefits of Option 2 are compared against this baseline. For instance, some ships started applying the international measure as soon as it came into force, but we assume no compliance prior to implementation in the UK law for the ships in scope for costs and benefits for Option 2. Regarding Option 1, as is mentioned before, it is a non-viable option and would not fulfil the policy objectives (especially fulfilling the UK's obligations under MARPOL Annex V), so it is not assessed. As it is a non-regulatory option, an assessment of this option would be based on the evaluation of Option 2, and the costs and benefits of Option 1 would be the same types of costs and benefits as this option, but their levels for Option 1 would only represent a share of the level of costs and benefits of Option 2. In other words, as only a fraction of ship owners would follow the new non-mandatory guidance documents, the costs and the benefits of the new practice would only be, proportionally, a fraction of what they represent in the case of mandatory regulations. The specific ratio would be hard to assess, but based on the fact that it would be strictly below 100% of the costs and benefits of Option 2, it shows that even in the case of Option 1, the EANDCB threshold would not be attained.

¹⁴ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/922150/RPC_case_histories_-_counterfactuals_Sep_20.pdf

Summary

- 3.7 The costs and benefits that have been identified for Option 2 for the new amendments will be outlined in the section below. Each bullet point features a cost or a benefit followed by whether they have been monetised or unmonetised for the duration of this analysis. Generally, more costs are monetised than benefits due to complexity in extracting data which accurately reflect the scale of the benefits.

Costs

- MCA surveyors training costs (direct, monetised) – cost to government
- Familiarisation costs (direct, monetised) – cost to business
- Purchase of Garbage Record Book (direct, monetised) - cost to business
- Time to update the record book (direct, monetised) – cost to business
- Additional time for inspection of the record book (direct, monetised) – cost to business

Benefits

- Reduced impacts of marine pollution from ships (direct, unmonetised)
- Reduced costs required to clean and maintain coastal landscapes (direct, unmonetised)
- Reduction of costs to other ships affected by incidents of sea pollution which can disrupt movements (direct, unmonetised)
- Elimination of the risk of gold plating (direct, unmonetised)
- Maintaining the UK's low risk status, minimising inspections of UK-flagged ships in foreign ports (direct, unmonetised)
- Maximising cost saving to the public sector through ambulatory referencing (indirect, unmonetised)

Ships in scope

- 3.8 The ships impacted by the proposed regulations are detailed in Table 1 and Table 2 below. The UK Ships Register database was used for the number of existing ships of between 100GT and 399GT (in 2023). According to the UK Ships Register, there are 509 registered ships of between 100 and 399 GT. However, these include ships that are certified to carry fifteen or more persons on board and so will already be required under the existing regulations to follow the requirements detailed in the new regulations. As a conservative assumption, following the Department for Transport Better Regulation Unit advice, a wider array of ships has been used for the monetisation of the costs involving ships (familiarisation, GRB purchases, time to update the record book and additional time for inspection of the record book). A +/- 50% range has been used on the number of ships to account for uncertainty, meaning it will be 50% higher in the high scenario and 50% lower in the low scenario. The goal of this conservative assumption is to ensure that costs are not underestimated and that the EANDCB in this case is truly below the £5 million threshold. The ships with the right tonnage certified to carry fifteen or more persons are included throughout the analysis, in all scenarios (with the low scenario also called the best-case scenario, central scenario, and high scenario also called the worst-case scenario, which are used to account for uncertainty). Table 1 only focuses on existing ships in scope.
- 3.9 Based on information from the MCA policy team, the international convention is already in application in a large proportion of the IMO member states. Hence, it is reasonable to assume that foreign-flagged ships which are operating in UK waters are already compliant with the proposed regulations. Therefore, they can be excluded from the analysis, which is why Table 1 only focuses on UK-flagged ships. However, UK-flagged ships operating in foreign waters where the international convention has

already been made law are not excluded. Indeed, some of the UK-flagged ships would be considered already compliant under the alternative counterfactual as their activities take place or are the property of owners in countries already compliant with the international regulation. Nevertheless, following the principle of erring on the side of conservative assumptions where issues are not clear cut, they are not excluded from the analysis. This is also carried out to ensure that the full cost of the regulation imposed by the UK is sufficiently captured in the analysis.

Table 1: existing ships in scope of the regulations (UK ships register)

Regulations	Scenario	Number of ships (2023)	Type of ships
All regulations	Low scenario	255	All ships in the register between 100GT and 399GT
	Central scenario	509	
	High scenario	764	

3.10 Table 2 provides information on the new ships in scope of the regulations. Seaweb is used to estimate the number of new UK-flagged ships every year which will be in scope of the new regulations. Seaweb provides detailed information on the UK fleet, including on gross tonnage and build date. To account for ships leaving and joining the UK flag every year, the total number of ships in the UK fleet is used to estimate the evolution of the number of ships in the UK flag over the years. The yearly UK-flagged ships growth rates are calculated using Seaweb data for the period 2013-2023. The period chosen is sufficiently long to have an accurate estimation of the future growth rate of the number of ships in the UK fleet. The average yearly growth rate of the total number of ships in the UK fleet is used in the central, while the maximum yearly growth rate and the minimum yearly growth rate are used respectively in the high and low scenarios. These yearly growth rates will be used to estimate the number of new ships in scope of the regulations.

3.11 In practice, not all UK-flagged ships will have business activities in the UK. Depending on the definition of UK businesses in the maritime sector, they might be excluded from this definition, and therefore excluded from the analysis. According to the RPC guidance on UK businesses definition¹⁵, “economic activity located in the UK” is the defining characteristic to decide if a business is considered to be a UK business. However, Seaweb only provides limited information on the location of the economic activity of the future ship. The main information provided is the UK flag, and some of the ships will not be used for economic activities in the UK. Following the principle of erring on the side of conservative assumptions where issues are not clear cut, belonging to the UK flag is used as a proxy for economic activity in the UK.

Table 2: new ships (yearly) in scope of the regulations (UK ships register)

Regulations	Scenario	Yearly growth rate estimate	Type of ships
All regulations	Low scenario	3.73%	Yearly growth rate for UK-flagged ships between 100 and 399GT
	Central scenario	5.02%	
	High scenario	7.19%	

Monetised Costs

3.12 Table 3 summarises the costs which have been identified for the regulations in this international measure. All costs in the tables below will be monetised and are direct costs to UK businesses, except costs related to the familiarisation of MCA surveyors. Familiarisation costs for businesses or MCA surveyors are the transition costs in this appraisal, as individuals will only need to perform these tasks once (one-off costs). It is assumed that new ships and new MCA surveyors will not have to get familiarised with the new legislation. Indeed, as there are no specific and new tasks (e.g. specific training) for new businesses or surveyors from the regulations, the additional texts to be read is insignificant compared to existing maritime regulations that the new businesses and surveyors would have to read anyway. Hence, monetisation of the familiarisation costs for newcomers is insignificant and therefore it is excluded based on proportionality. The

¹⁵https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/858862/Issues_around_defining_a_business.pdf

other costs (purchase of Garbage Record Books, the time to update the Garbage Record Books and the additional time for inspection) are all ongoing annual costs.

- 3.13 The RPC guidance on UK businesses definition¹⁶ appears unambiguous that the key test to include businesses activities in the monetisation of the costs to UK businesses is to focus on “economic activity located in the UK”, which can be complicated to apply in the maritime sector. For instance, in the case of this legislation, some of the ship management companies included in the table above are not UK owned and/or not located in the UK. However, they are still included in the monetisation exercise for costs to UK businesses as all the activities related to the legislation and their subsequent costs are performed in the UK and as the UK flag is used as a proxy for the location of economic activities in the UK. In addition, this follows the principle of erring on the side of conservative assumptions where issues are not clear cut, as excluding foreign-based or foreign-owned companies would reduce some of the monetised costs.
- 3.14 Values will be expressed as 2023 constant prices (following Green Book guidance¹⁷). For the EANDCB, the total net present social value, and the business net present value, they will be expressed in 2019 constant prices with the present value base year being 2020, following the EANDCB calculator guidance¹⁸. The latest edition of the EANDCB calculator¹⁹ (April 2023 version) has been used for the analysis.

Table 3: Costs identified for the international measure

Costs associated	Type of costs
Familiarisation costs	One-off (transition)
MCA surveyors additional training (not a cost to business)	One-off (transition)
Purchase of Garbage Record Book	Ongoing (annual)
Time to update Garbage Record Book	Ongoing (annual)
Additional time for inspection	Ongoing (annual)

Familiarisation costs

- 3.15 The main idea behind familiarisation costs is that it takes time away from the daily activities of crew, Masters and ship owners, who could be employed elsewhere (i.e. the opportunity cost). It should be noted that the tasks do not seem to change on the ship types, as they will have to perform the same type of tasks, with the same guidance documents to read. The list of documents to read are listed in Table 4. The relevant employees will have to read the statutory instrument (SI), which is 19 pages long, but they will also have to read the MGN (9 pages long), which is part of the process of familiarisation with the 2024 Regulations. It must be assumed in the alternative counterfactual that the relevant employees are not familiar with the regulations. Based on the information available to the MCA, for each ship, the Master and the officer in charge of the vessel will need to be familiarised with the new regulations in order to understand changes with respect to the regulations. Table 4 provides details on the assumptions used for the monetisation of the familiarisation costs.
- 3.16 Based on estimates used in previous DMAs and IAs produced in the MCA²⁰, it is estimated that the time spent on reading one page of complex information is 3 minutes. This will be the central estimate, the low estimate being half of that reading time per page (1 minute and 30 seconds per page) and the high estimate being 50% higher than the central estimate (4 minutes and 30 seconds per page).
- 3.17 Table 4 provides information on the familiarisation costs for the proposed regulations. Based on length and proportion of changes for each relevant document, the total time for familiarisation for

¹⁶https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/858862/Issues_around_defining_a_business.pdf

¹⁷<https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

¹⁸<https://www.gov.uk/government/publications/impact-assessment-calculator--3>

¹⁹https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1150244/impact-assessment-calculator-april-2023.xlsx

²⁰https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1087840/impact-assessment-harbours-seafarers-remuneration-bill.pdf

each document is calculated and presented in the table, rounded to the nearest minute. It is assumed that managers, directors and senior officials' pay is similar to the pay of the management used to run a shipping operation. Regarding wage costs, Annual Survey of Hours and Earnings (ASHE) hourly gross wage data²¹ on "managers, directors and senior officials" is used to calculate the familiarisation costs to a ship owner. It should be noted that even though the ASHE estimates are provisional for the year 2022, the estimates selected here are considered precise by the Office for National Statistics (i.e. with a coefficient of variation under or equal to 5%). The median will be used in the central scenario, and the 25th percentile wage and 75th percentile wage will be used in the low and high scenarios, respectively.

- 3.18 According to the Office for Budget Responsibility (OBR) in their Fiscal Sustainability report (published in July 2022)²², an annual increase in average earnings of 3.8% is expected in the long term, which means that the provisional hourly gross wage for 2022 used for transition costs applicable in 2024 will need to be adjusted using this expected average earning growth rate, which is a nominal growth rate. This is then deflated using the Transport Analysis Guidance (TAG) databook²³ Gross Domestic Product (GDP) deflator to obtain costs in real 2023 prices. In addition, the wage data will be uplifted by 26.5% in line with Transport Analysis Guidance²⁴ to account for non-wage labour costs to business such as national insurance and employer pension contributions. All the labour costs in this DMA, except for MCA surveyor's costs (see the section below), will follow the same process (TAG non-wage labour costs uplift, OBR average earnings growth update over the appraisal period and application of GDP deflator to express costs in 2023 prices). The familiarisation costs can be found in Table 4, with the total being for the whole appraisal period.

Table 4: Familiarisation costs

Familiarisation	Low scenario	Central scenario	High scenario
Statutory Instrument familiarisation time	29 minutes	57 minutes	86 minutes
MGN familiarisation time	14 minutes	27 minutes	41 minutes
Number of employees required to familiarise for each ship	2	2	2
Type of relevant employees	Management	Management	Management
ASHE hourly gross wage percentile	25 th	50 th	75 th
ASHE hourly gross wage (2022)	£15.07	£22.08	£33.61
Adjusted hourly labour cost, 2024 (2023 prices)	£20.15	£29.53	£44.95
Ships in scope, 2024 estimate	265	535	819
Total familiarisation costs (2023 prices) over the whole appraisal period	£7,463.80	£44,200.29	£154,614.81

MCA surveyors training costs

- 3.19 MCA surveyors will still need familiarisation to ensure that they are aware of the changes and the regulations. Using the constructed counterfactual, as no prior compliance is assumed, the assumptions of no prior knowledge of the new amendments is used. Hence, additional costs for MCA surveyors related to the regulations need to be monetised. Time estimates from the familiarisation costs will be used here as the tasks required in familiarisation are essentially the same. Based on the MCA internal human resources (HR) data on MCA surveyors labour costs, the average hourly labour cost for one MCA surveyor is £50.27 in 2022. This includes costs to MCA related wages, non-pensionable allowances, pensions, and National Insurance. It is actually more precise data than using the wage labour costs and adding the 26.5% uplift from the TAG, which is why the actual labour costs from HR data are used instead of wage costs with the TAG uplift.

²¹ 2022 provisional, Table 14.5a. See <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/occupation4digitsoc2010ashtable14>

²² https://obr.uk/docs/OBR_FSR_July_2020-1.pdf

²³ <https://www.gov.uk/government/publications/tag-data-book#full-publication-update-history> – latest version used (31/05/23 update).

²⁴ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1120686/TAG_Unit_A4.1_-_Social-impact-appraisal_Nov_2022_Accessible_v1.0.pdf

- 3.20 According to the MCA HR, there are currently 144 MCA surveyors in 2023. It is assumed that no retraining is needed for MCA surveyors who have been trained as the checks performed by MCA surveyors for these regulations are relatively simple requirements which are quite constant. This is not a cost to businesses as this will be paid by the MCA; therefore, it will not be included in the EANDCB. The total costs in Table 5 are for the whole appraisal period.

Table 5: MCA surveyors training costs

Familiarisation	Low scenario	Central scenario	High scenario
Total familiarisation time per surveyor	42 minutes	84 minutes	126 minutes
Number of surveyors: existing surveyors (2024 estimate)	152	152	152
Labour cost per surveyor, hourly in 2024 (2023 prices)	£53.15	£53.15	£53.15
Total costs for additional surveyors training (2023 prices) over the whole appraisal period	£5,654.95	£11,309.89	£16,694.84

Purchase of Garbage Record Book

- 3.21 In addition to familiarisation costs, it is assumed that ship owners will need to purchase the paper version of the Garbage Record Book as it will be mandatory to buy the Garbage Record Book. The Garbage Record Book may also be part of the ship's official logbook, or an electronic record book approved by the administration. The printed version of the book will need to be replaced periodically, but timing will depend on the ship and the journeys it undertakes. Based on the knowledge of MCA policy contacts, there is anecdotal evidence of ships keeping the same book for five years, whilst others need new books on a monthly basis. Even if there is a large variance in frequency of record book purchases, it is assumed that it will be bought every six months in the central scenario, as a conservative assumption, with a +/- 50% range used in the high and low scenarios. Following existing guidance from RPC on counterfactuals, no prior compliance is assumed, meaning that the costs to purchase the Garbage Record Book need to be included in the analysis. The book is available in printed form for £12.50 excluding VAT or £15.00 including VAT according to TSO (MCA publisher)²⁵, due to the VAT rate in the UK being 20%²⁶. The price of the record book is assumed to be nominal across the period. Table 6 displays information on the costs of the GRB²⁷. The total costs in Table 6 are for the whole appraisal period.

Table 6: Costs of the purchase of the Garbage Record Book

Purchase of the GRB	Low scenario	Central scenario	High scenario
Garbage Record Book (VAT not included) 2023 price	£12.50	£12.50	£12.50
UK VAT rate	20%	20%	20%
Garbage Record Book price (VAT included) (2023 prices)	£15	£15	£15
Frequency of GRB purchase (annual)	1	2	3
Ships in scope in 2024	265	535	819
Ships in scope: net new ships in scope annual growth rate	3.73%	5.02%	7.19%
Total costs of purchasing GRB (2023 prices) over the whole appraisal period	£47,047.66	£108,979.11	£195,861.75

Update of the Garbage Record Book

- 3.22 The Garbage Record Book will need to be updated frequently to record changes in ship and Garbage disposal operations. According to the information available from the policy team, the

²⁵ <https://www.tsoshop.co.uk/?DI=648940>

²⁶ <https://www.gov.uk/vat-rates>

²⁷ <https://indd.adobe.com/view/a21a12ad-3de5-42c2-86d4-6cf890ae7ac2>

amendments each time will be short, which means the update ongoing process should be relatively quick, it would not take more than one person (the Master) to update the GRB. The same method, based on opportunity costs, was applied to compute the costs to update the GRB.

- 3.23 In the central scenario, it is assumed that it will take 1 hour to update the record book every year, while in the low and high scenarios, a +/- 50% range is used to account for uncertainty. Hence, in the low scenario it will only take 30 minutes to update the book, and in the high scenario it will take 1 hour and 30 minutes to update the book.
- 3.24 The 2023 ASHE hourly gross wage, which was calculated for familiarisation costs using the non-wage labour costs uplift from TAG and the 3.8% annual average earnings long term growth from the OBR Fiscal Sustainability report, will also need to include the annual earnings growth every year of the appraisal period, to account for growing wages. Otherwise, labour costs would be underestimated. As only a few lines should be updated yearly, the following costs can be found in Table 7.

Table 7: Costs to update the Garbage Record Book over the whole appraisal period

Update of the Garbage Record Book	Low scenario	Central scenario	High scenario
ASHE hourly gross wage percentile (2022)	25 th	50 th	75 th
Total time to update GRB every year	30 minutes	60 minutes	90 minutes
Labour cost for 2024 for managers (2023 price)	£20.15	£29.53	£44.95
Number of ships in 2024	265	535	819
Ships in scope: net new ships in scope annual growth rate	3.73%	5.02%	7.19%
Total update costs for the GRB (2023 prices) over the whole appraisal period	£34,844.40	£219,485.07	£852,634.31

Additional time for inspections

- 3.25 In addition to the costs of updating the record book there are also cost for additional time for inspections by MCA surveyors, the costs are presented in Table 8. The MCA standard hourly fee is £147²⁸ in 2023. The fee is assumed constant in nominal terms, so it is adjusted into real 2023 terms using the GDP deflators. It is assumed that the additional time for inspection at the central scenario will be 1 hour annually in the central scenario, and +/- 50% range is used in the low and higher scenarios.

Table 8: Costs due to the additional time for inspection

GRB inspection costs	Low scenario	Central scenario	High scenario
Assumptions on additional time for inspection (annually)	30 minutes	1 hour	1 hour 30 minutes
MCA fee (nominal)	£147	£147	£147
Number of ships in 2024	265	535	819
Ships in scope: net new ships in scope annual growth rate	3.73%	5.02%	7.19%
Total additional inspections costs (2023 prices) over the whole appraisal period	£208,587.58	£893,398.39	£2,265,994.01

Non-monetised costs

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/749572/Maritime_Coastguard_Agency_fees_2018.pdf

- 3.26 The 'do nothing' option risks reputational damage to the UK and maritime environment, which is difficult to quantify with enough precision and reliability. This could have potential implications on maritime trade/shipping routes, adversely affecting the safety of UK ships, as well as the wider UK maritime sector.
- 3.27 Future amendments to international regulations on carriage of cargoes may lead to further costs to UK businesses, which through ambulatory referencing will automatically come into force. However, for the reasons discussed in Section 2.0, it is expected that any future amendments to the international regulations will continue to be implemented by UK ship owners and that any associated costs will continue to be incurred under the Do Nothing scenario in order for them to continue operating internationally.
- 3.28 The cost associated with future amendments cannot be monetised at this stage as there is currently no indication of what form future amendments may take. These costs are therefore not reflected in this DMA. It is proposed that regular Post Implementation Reviews (PIR) will be undertaken to evaluate whether the use of ambulatory reference has achieved its goal and is still valid, and to estimate the costs and benefits of all the technical amendments enacted since this assessment.

Monetised Benefits

- 3.27 No benefits were monetised for these regulations. This is due to a lack of available data and complexity. For instance, data on costs and frequency of inspections of UK-flagged ships in foreign ports, in the case of "low risk status" and under other status, are not available. Regarding complexity, the frequency of new Conventional amendments, the process for transposition into UK law, or the probability of losing the "low risk status" for the UK are unknown and very variable. This is also the case for GRB, as the monetisation of benefits in terms of garbage pollution would need data on incidents and their actual consequences. Previous monetisation exercises adapted to the maritime sector are scarce. The impact of the contamination of UK waters by pollution from waste disposal examined above has never been monetised based on existing knowledge. Comprehensive ship pollution incident cost data in the UK waters is also limited, which prevents the monetisation of the benefit of incident prevention through better practices. Hence, no benefits could be monetised, but they are qualitatively assessed below.

Non-monetised benefits

- 3.28 All the benefits considered below are direct benefits to businesses, and would have been included in the EANDCB if they were monetised, except for the benefits regarding costs savings for the public sectors (e.g. costs and resource savings from the AR). For the assessment of the benefits below, the constructed counterfactual is used, following the RPC guidance on counterfactual. In the constructed counterfactual, the benefits depending on compliance are going to be larger than in the actual counterfactual. Indeed, in the alternative counterfactual, no prior compliance is assumed, leading to higher levels of change of practice and behaviours by ship owners, compared to the actual counterfactual where some of the ship owners would already be complying. Ambulatory referencing and eliminating the risk of gold-plating are benefits not related to the behaviour of ships owners, and therefore there is no difference between the constructed counterfactual and the actual counterfactual.
- 3.29 The main benefit of Option 2 compared to the baseline (i.e. constructed counterfactual where compliance is assumed to be non-existent) is that the regulations eliminate the risk for the UK of losing its "low risk status" under the IMO audit scheme. Losing its "low risk status" would mean an increase in the frequency of inspections of UK-flagged ships in foreign ports. Hence, Option 2 provides a potential cost and resource saving to the UK industry compared to the baseline scenario by preventing further inspections, which represent costs to the UK industry during international travels. UK ships will be in line with international requirements and will not be penalised by other contracting states. This also represents a reputational benefit for the UK. It will also create for them a level-playing field. In the case of Option 1, as it is based on a non-

regulatory intervention, mandatory amendments would not be introduced and only a fraction of the impacted companies would follow the new guidance, not eliminating completely the risks for the UK.

- 3.30 It would also result in some cost savings to government from implementing future amendments regarding MARPOL, due to the ambulatory referencing, as some of these amendments would automatically apply. There would be a resource saving from not having to transpose the amendments into UK legislation, with the associated cost savings to government in respect of time spent by policy officials, economists, lawyers and MPs, and not having to produce additional legislation. This is a moderate benefit, based on the time and costs of the process to transpose international law into UK legislation.
- 3.31 Another benefit of the new regulations is the traceability of garbage, which is directly related to the information asymmetry. This minimises the chance of being wrongly penalised for incidents of discharging garbage when they are not the parties responsible. This is a small benefit as wrong convictions would be rare.
- 3.32 The risk of “gold plating” the original text (i.e. exceeding the requirements of the original measure) would also be eliminated, as it would be the original text which would be incorporated into UK law. It is hard to assess qualitatively the size of this benefit, but it is expected that this is a small benefit, as “gold plating” is not a common issue.
- 3.33 This ambulatory reference option, by efficient implementation of Convention amendments, also supports the UK status not only as host to the IMO, but also as a Category A member of the IMO Council, which is important to the UK’s influence as a maritime nation. The specific contribution of implementation of Convention amendments to UK’s influence is difficult to assess, but overall the benefit should have a small to medium impact.
- 3.34 In a scenario where future amendments to the international regulations on the GRB are implemented in UK law via new regulations, ambulatory referencing would result in cost savings to industry as shipowners would only have to consult the changes in the future amendments and not the whole regulations in their entirety. Familiarisation costs resulting from future amendments will therefore be lower although as it will require less time for shipowners and other relevant employees to familiarise with any future amendments. The UK government will provide guidance and clarification of the international text in M notices, where necessary.
- 3.34 Generally, the proposed regulations will implement higher standards in the protection of the marine environment in UK waters and beyond, by limiting the impact of the market failures, namely the negative externality and the information asymmetry. This will protect the coastal environment by reducing the costs required to clean and maintain coastal landscapes. It will also reduce incidents which can obstruct sea routes causing delays and additional costs for shipowners and businesses. As such by minimising the effects that incidents relating to the discharge of garbage have on the marine environment, the regulations provide protection to the UK environment, indirectly benefiting UK population health and economy. This benefit is expected to have a medium impact.

Business Impact Target Calculations

- 3.35 The regulatory provisions that implement new or changed obligations from international commitments and obligations are excluded from the Business Impact Target (BIT). In addition, as the EANCB is within the DMA threshold, this policy is a non-qualifying regulatory measure, and outside the scope of BIT reporting. Although these regulations are excluded from the scope of the BIT, in this section, we have estimated the costs to UK business of complying with the international requirements, that are not already incorporated into UK legislation, to demonstrate the impact businesses will have faced from these international obligations. This why an alternative counterfactual has been used. A proportionate approach has been adopted to estimate the costs to UK businesses.

Summary of the monetised costs and benefits

- 3.36 The monetised costs are summarised in table 9 for the whole appraisal period (2023 prices). The net social present value in 2019 prices and 2020 present value for Option 2 is -£832,000 in the best estimation over the 10-year appraisal period. The discount rate applied was 3.5%, in line with Green Book²⁹ guidance.
- 3.37 This leads to an EANDCB of £96,000 in the central scenario, in 2019 prices and 2020 present value. It should be noted that the net costs to business and the net value to society could be over-estimated, as the benefits identified in the analysis have not been monetised and included in these measures. A break-even analysis or the use of switching values have not been assessed as proportionate, as conservative assumptions and high/central/low scenarios have been used whenever possible throughout the analysis, and as the EANDCB in the high scenario is still below the +/- £5 million EANDCB threshold.

Table 9: Summary table for costs and benefits

Costs in 2023 prices (for the whole appraisal period)	Low scenario	Central scenario	High scenario
Total familiarisation costs	£7,463.80	£44,200.29	£154,614.81
Additional time for inspections	£208,587.58	£893,398.39	£2,265,994.01
Total MCA surveyors familiarisation costs (not a cost to business)	£5,654.95	£11,309.89	£16,964.84
Purchase of Garbage Record	£47,047.66	£108,979.11	£195,861.75
Time to update record book	£34,844.40	£219,485.07	£852,634.31
Total costs	£303,598.39	£1,277,372.77	£3,486,069.72
Total costs for businesses	£297,943.44	£1,266,062.87	£3,469,104.89
Total net present social value (2019 prices, 2020 present value)	-£198,267.77	-£832,230.64	-£2,260,279.47
Business net present value (2019 prices, 2020 present value)	-£193,979.23	-£823,653.55	-£2,247,413.84
EANDCB (2019 prices, 2020 present value)	£22,535.58	£95,688.14	£261,093.83

Sensitivity Analysis

- 3.38 In providing information on costs and benefits, assumptions had to be made due to a lack of applicable data; these assumptions have some uncertainty around them as they are dependent on many factors. To take into account this uncertainty, a high/central/low range has been provided for many assumptions used throughout to present a range of different possible cost and benefit impacts that could arise, which will all be checked at consultation. Whenever possible, conservative assumptions and ranges have been used in order to avoid underestimating costs, especially in the case of the most critical assumptions of the model which are the number of ships and the number of shippers in scope.

Risks and unintended consequences

- 3.38 There are no significant risks associated with this amendment.
- 3.39 As this amendment is an amendment to international regulations, the UK, as a signatory, should ensure domestic implementation. Failure to do so could result in the UK being out of sync with other parties to the regulations and UK ships may risk being non-compliant with international requirements when they trade internationally.

²⁹ <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government/the-green-book-2020>

- 3.40 No unintended consequences have been identified. UK ships will continue to be surveyed and to have their levels of compliance checked through the current survey and certification regime.

Wider considerations

Competition assessment

- 3.41 The new measures apply equally ships in the UK operating at between 100 to 399 GT. Issues would not arise in respect of competition as MARPOL Annex V applies internationally and equally to all companies involved. Considering the costs per company are quite low and the compliance of ships and companies in scope is already quite high, the regulations are not expected to create significant barriers to entry to commercial operations necessitating international voyage. The enforcement of the international measure will ensure that there is a level playing field between operators, especially as the regulations extend existing requirements to ships between 100 and 399 GT. Indeed, as the requirements with respect to garbage disposal and recording was less costly for ships between 100 GT and 399 GT before these regulations, they had an advantage in terms of operating costs with respect to larger ships when competing with them. The new regulations will ensure that competition is on a more equal footing with the same requirements for garbage disposal and recording.

Small and Micro Business Assessment (SaMBA)

- 3.42 Based on internal MCA analysis and fleet data from Clarksons' data and the UK Register, the companies affected by the GRB amendments could be small, medium as well as large, multinational or subsidiaries of multinationals and would therefore fall within scope of the small firms' impact test. It is unlikely that the reduction in the gross tonnage threshold for the regulations would impact micro businesses, as they are not likely to own ships of at least 100GT. For small and medium businesses, it is different. They are more likely to own ships of at least 100GT, which means that they would be impacted by the regulations. Based on Clarksons' database on UK ships orders, the UK orderbook, a company in scope (i.e. which ordered a ship between 100 and 399 GT) orders on average 1.5 ships within the orderbook period (from 2023 to 2026). This is quite a low level of orders, which could be possible for medium businesses. Hence, it cannot be ruled out that the regulations will have an impact on small and medium businesses, but the impact is unlikely to be disproportionate. It should also be noted that the number of ships impacted will be limited.
- 3.43 These regulations pose little to no risk to disproportionately affect any businesses, specifically small, micro and medium businesses. Indeed, smaller vessels are expected to have less garbage due to multiple factors (e.g., less economic activity, smaller crew). Hence, the number of GRB purchases will be smaller, the time to record garbage management will be shorter, and the cost due to GRB inspections will be shorter too, compared to larger ships. The impact on smaller businesses is not disproportionate. No exemptions are in place for micro or small businesses, so if any small, micro or medium businesses were in scope then they would have to comply with the regulations in the same way large businesses do. However, costs are related to the number of ships a company has so the costs on small, micro and medium businesses are not likely to be disproportionate. An exemption has not been considered as business exemptions would not be compliant with the GRB amendments and the same safety standards need to be met regardless of firm size.

Equalities Impact Assessment

- 3.44 The MCA considers that there are no effects, positive or negative, on outcomes for persons in relation to their age, disability, gender assignment, pregnancy and maternity, race, religion or belief, sex, sexual orientation and marriage or civil partnership.

Justice Impact Test

3.45 The MCA will liaise with the Ministry of Justice on the Justice Impact Test.

Trade Impact

3.46 The MCA considers that there will be no trade impact from the introduction of this amendment.

3.0 Post implementation review

1. **Review status:** Please classify with an 'x' and provide any explanations below.

<input type="checkbox"/>	Sunset clause	<input checked="" type="checkbox"/>	Other review clause	<input type="checkbox"/>	Political commitment	<input type="checkbox"/>	Other reason	<input type="checkbox"/>	No plan to review
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Regulations to be reviewed every five years to ensure continued suitability.

2. **Expected review date** (month and year, xx/xx):

0	7	/	2	5
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Five years from when the Regulations come into force

3. **Rationale for PIR approach:**

This SI amends provision(s) of The Merchant Shipping (Prevention of Pollution by Garbage from Ships) Regulations 2020. The 2020 Regulations include a requirement to conduct a post implementation

review (PIR) by 22 July 2025^{30,31}. The amendments contained in this SI will be taken into consideration as part of that PIR. Hence, the PIR plan here does not differ from the PIR plan set up for the 2020 Regulations. A summary of the original PIR plan can be found below.

Will the level of evidence and resourcing be low, medium or high?

The level of evidence and resourcing for this review will be low.

What forms of monitoring data will be collected?

The review will include analysing data contained on the Ship Inspection and Surveys (SIAS) and THETIS databases to identify non-compliances with the requirements of MARPOL Annex V established through Port State Control inspections.

What evaluation approaches will be used? (e.g. impact, process, economic)

Aspects of impact, process and economic evaluation processes will be used. The review will engage with industry and classification societies to better understand the actual costs experienced. The Maritime & Coastguard Agency (MCA) will check whether the shipping industry is complying with the new Regulations and, where possible, also whether they are having the desired effect on improving safety.

How will stakeholder views be collected? (e.g. feedback mechanisms, consultations, research)

Officials from the MCA regularly host and/or attend meetings with stakeholders – their feedback on whether measures have had the desired effect or problems encountered is sought as part of ongoing stakeholder engagement.

Annex A: Consultation Questions

- Do you consider the assessment of the impacts and costs of the changes resulting from the proposed 2024 Regulations compared to the current regulations to be accurate? Yes / No. If no, how would you expect the impact to vary? Please provide a brief explanation of why/why not.
- Are you/do you know of a small and/or micro business(es) that will be disproportionately affected by any of the measures outlined? If yes, please provide relevant details and evidence.
- Do you foresee any unintended consequences of the proposed 2024 Regulations that have not been mentioned in the consultation documents? If yes, please provide any relevant insights and/or evidence.
- The proposed 2024 Regulations will extend powers to enforce breaches of the Garbage Record Book requirements which currently apply to ships of 400 GT or above to ships of 100 GT or above. Do you agree with this approach? If no, please provide a brief explanation.
- Do you have any additional comments to add to the response?

³⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/862537/ANNEX_B_-_MARPOL_V_DMA_Consultation.pdf

³¹ <https://www.legislation.gov.uk/ukxi/2020/621/made>