

Title: Seafarers' Wages Bill	Impact Assessment (IA)
IA No: DfT00449	
RPC Reference No: <i>(to be confirmed)</i>	
Lead department or agency: Department for Transport	
Other departments or agencies: none	
Summary: Intervention and Options	
RPC Opinion: <i>(TBC)</i>	

Cost of Preferred (or more likely) Option (in 2019 prices)

Total Net Present Social Value	Business Net Present Value	Net direct cost to business per year	Business Impact Target Status
-£0.57m	-£298.21m	£3.01m	Non-qualifying provision

What is the problem under consideration? Why is government intervention necessary?
Some seafarers who work on international routes are not in scope of United Kingdom (UK) minimum wage legislation, even though they regularly call at UK ports. This leaves them without the assurance of a fair wage, and at risk of lower welfare than shore-based workers. As UK flagged vessels and UK-resident seafarers are more likely to fall in scope of UK minimum wage legislation, UK-based agents are less cost-competitive and UK flagged vessels face a disincentive to employ UK-resident seafarers.

What are the policy objectives and the intended effects?
The policy objective is to ensure that employers pay seafarers who regularly call in UK ports wages no less than a rate equivalent to the UK National Minimum Wage (NMW) for time spent working in UK waters. This will improve pay for the lowest paid seafarers regularly calling in UK ports. This will also mitigate any competitive disadvantage faced by UK flagged vessels employing UK-resident workers and operators of domestic services. For operators in scope of the policy, access to UK ports may be made conditional on paying seafarers no less than a rate an equivalent to the UK NMW for time spent working in UK waters.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)
Non-regulatory options were not taken forward as they would not achieve the policy objective. The regulatory option considered ("the policy") is to empower Statutory Harbour Authorities (SHAs) to levy surcharges on, and ultimately suspend, operators calling regularly at their port who do not pay seafarers a rate at least equivalent to the UK NMW for time spent in UK waters. Because of limits on the UK's ability to legislate outside UK waters, this is the only regulatory option considered. Options vary by scope:
Option 0: do nothing. No services in scope.
Option 1 (*preferred*): all services calling at UK ports at least once every 72hrs in scope.
Option 2: ferry (ro-pax and ro-ro) services calling at UK ports at least weekly in scope.
Option 3: all services calling at UK ports at least weekly in scope.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** 01/2028

Is this measure likely to impact on international trade and investment?	Yes			
Are any of these organisations in scope?	Micro Yes	Small Yes	Medium Yes	Large Yes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)	Traded: No		Non-traded: No	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: 

Date: 05/07/2022

Summary: Analysis & Evidence

Policy Option 1

Description: preferred option. To empower Statutory Harbour Authorities (SHAs) to levy surcharges on, and ultimately suspend access for, services in scope who do not pay all crews no less than an equivalent of the UK National Minimum Wage (NMW) while in UK waters. All services calling at UK ports at least once every 72hrs in scope.

FULL ECONOMIC ASSESSMENT

Price Base Year 2024	PV Base Year 2024	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -0.30	High: -1.50	Best Estimate: -0.74
COSTS (£m)		Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)		Total Cost (Present Value)
Low	0.06	1	17.0		169.6
High	0.30		81.9		819.2
Best Estimate	0.13		39.1		390.7

Description and scale of key monetised costs by 'main affected groups'

The main affected group incurring costs is owners/operators of vessels in scope (all services calling at UK ports at least once every 72hrs). By far the largest cost is increased wages, as, to comply, these owners/operators will pay wages no less than an equivalent to the UK National Minimum Wage (NMW). In addition to the direct costs of raising pay for the lowest-paid workers, indirect "spillover" costs of raising pay for other workers to maintain pay differentials is also considered.

Relatively small costs from the compliance process have been monetised, including costs of declarations and of spot-checks. There are small transition costs from familiarisation and re-issuing contracts to workers whose pay is increased. These include very small costs to ports for familiarising and processing declarations, as well as a cost to the public sector body responsible for inspections.

Other key non-monetised costs by 'main affected groups'

No non-monetised costs are considered.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)		Total Benefit (Present Value)
Low	0.00	0	16.9		169.3
High	0.00		81.8		817.7
Best Estimate	0.00		39.0		390.0

Description and scale of key monetised benefits by 'main affected groups'

The main affected group incurring benefits is seafarers whose pay will be raised from the policy. The (non-equity-weighted) benefit to seafarers is equal to the labour cost because this is a transfer from employers to employees. As with costs, both direct and indirect beneficiaries are considered.

Other key non-monetised benefits by 'main affected groups'

The key non-monetised benefit is UK competitiveness. Because UK flagged vessels are in scope of NMW legislation in more circumstances than non-UK flagged vessels, the policy will reduce the disparity in costs, improving competitiveness of UK flagged vessels and reducing disincentives to employ UK-based workers.

Key assumptions/sensitivities/risks

Discount rate (%) 3.5%

A full list of inputs and assumptions is provided. Some inputs are subject to uncertainty, and most use a high/medium/low range to account for this. Inputs were tested as part of the consultation process and some have been changed due to feedback. See the "consultation response" section for details.

BUSINESS ASSESSMENT (Option 1) (impacts on UK businesses (see later discussion), 2019 prices, 2020 present value)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 3.01	Benefits: 0.00	Net: -3.01	

Summary: Analysis & Evidence

Policy Option 2

Description: Policy as in preferred option. Ferry (ro-pax and ro-ro) services calling at UK ports at least weekly in scope.

FULL ECONOMIC ASSESSMENT

Price Base Year 2024	PV Base Year 2024	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -0.34	High: -1.68	Best Estimate: -0.83
COSTS (£m)		Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)		Total Cost (Present Value)
Low	0.07	1	17.2		172.4
High	0.33		82.5		825.0
Best Estimate	0.14		39.9		399.2
Description and scale of key monetised costs by 'main affected groups' As in the preferred option, the key cost is higher wages paid by vessel owners/operators. Compliance and transition costs have also been monetised. The difference from the preferred option is the scope of the policy, which in this option is ferry (ro-pax and ro-ro) services calling at UK ports at least weekly.					
Other key non-monetised costs by 'main affected groups' As in the preferred option, no non-monetised costs.					
BENEFITS (£m)		Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)		Total Benefit (Present Value)
Low	0.00	0	17.2		172.0
High	0.00		82.3		823.4
Best Estimate	0.00		39.8		398.4
Description and scale of key monetised benefits by 'main affected groups' As in the preferred option, the key benefit is higher wages received by seafarers.					
Other key non-monetised benefits by 'main affected groups' As in the preferred option, UK competitiveness benefits have not been monetised.					
Key assumptions/sensitivities/risks As in the preferred option, some inputs are subject to uncertainty.					Discount rate (%) 3.5%

BUSINESS ASSESSMENT (Option 2) (impacts on UK businesses (see later discussion), 2019 prices, 2020 present value)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 2.94	Benefits: 0.00	Net: -2.94	14.52

Summary: Analysis & Evidence

Policy Option 3

Description: policy as in preferred option. All services calling at UK ports at least weekly in scope.

FULL ECONOMIC ASSESSMENT

Price Base Year 2024	PV Base Year 2024	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: -0.58	High: -2.87	Best Estimate: -1.43
COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)		Total Cost (Present Value)
Low	0.07	1	17.4		174.1
High	0.39		86.2		862.1
Best Estimate	0.16		41.0		409.8
Description and scale of key monetised costs by 'main affected groups'					
As in the preferred option, the key cost is higher wages paid by vessel owners/operators. Compliance and transition costs have also been monetised. The difference from the preferred option is the scope of the policy, which in this option is all services calling at UK ports at least weekly.					
Other key non-monetised costs by 'main affected groups'					
As in the preferred option, no non-monetised costs.					
BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)		Total Benefit (Present Value)
Low	0.00	0	17.4		173.5
High	0.00		85.9		859.2
Best Estimate	0.00		40.8		408.4
Description and scale of key monetised benefits by 'main affected groups'					
As in the preferred option, the key benefit is higher wages received by seafarers.					
Other key non-monetised benefits by 'main affected groups'					
As in the preferred option, UK competitiveness benefits have not been monetised.					
Key assumptions/sensitivities/risks					Discount rate (%)
As in the preferred option, some inputs are subject to uncertainty.					3.5%

BUSINESS ASSESSMENT (Option 3) (impacts on UK businesses (see later discussion), 2019 prices, 2020 present value)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 3.13	Benefits: 0.00	Net: -3.13	

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1. Policy rationale

Policy background

- 1.1. The government aims to ensure seafarers working on services regularly calling at UK ports are paid at least an equivalent rate to the UK National Minimum Wage (NMW), while in UK waters. Seafarers are at the heart of keeping UK supply chains and maritime tourism traffic moving. It is important that seafarers who regularly call at UK ports receive a fair wage.
- 1.2. This follows the recent decision of P&O Ferries to dismiss 786 employees at short notice¹. The government wishes to deter other companies from repeating what P&O Ferries did to 786 seafarers and limit the benefits that P&O Ferries gains from replacing those workers with lower-wage workers on agency contracts.
- 1.3. The government has also outlined a wider response to the P&O Ferries dismissals and the Secretary of State (SoS) delivered an oral statement to Parliament on 30 March 2022 setting out a nine-point plan². This policy is one part of the plan, and other measures will also seek to improve seafarer welfare. One measure will seek to extend the reach of this policy intervention beyond UK waters by establishing minimum wage-equivalent corridors with European partners. Another measure will ask unions and operators to agree a common level of seafarer protection on these routes. Through these mechanisms, the government is seeking to drive systematic reform for seafarer employment protections and welfare, ensuring they are paid and treated fairly, irrespective of nationality, flag state or employer.

Problem under consideration

- 1.4. Current NMW entitlement for seafarers is limited to those meeting one of these conditions³:
 - 1) workers working or ordinarily working in the UK (including the UK internal waters);
 - 2) workers working or ordinarily working in the UK territorial waters, unless they are on ships exercising the right to innocent or transit passage;
 - 3) workers on UK flagged ships, so long as they are ordinarily resident in the UK and work to at least some extent in the UK; and
 - 4) workers working or ordinarily working in connection with the seabed/subsoil of the UK sector of the continental shelf, again unless they are on ships exercising the right to innocent or transit passage.
- 1.5. Ferry workers who do not work or who ordinarily work in the UK (including internal waters) are only entitled to NMW if they work or ordinarily work in the UK territorial waters on vessels that are not on innocent or transit passage, unless those vessels are UK flagged and the workers are ordinarily resident in the UK and work to at least some extent in the UK.
- 1.6. Because the conditions do not apply to all seafarers working on ferry and freight services, some of these seafarers are at risk of being paid below the NMW. The government believes that all seafarers working on services that regularly use UK ports deserve a fair wage whilst working in UK waters when calling at a UK port, and that government intervention to address this, within the bounds of international law, is justified.

¹ See news reports such as <https://www.bbc.co.uk/news/business-60953832>.

² Transcript at <https://hansard.parliament.uk/commons/2022-03-30/debates/F7ECD289-2440-4B35-916D-7930CB438983/PAndOFerries>.

³ See respectively: s1(2)(b) National Minimum Wage Act 1998 (<https://www.legislation.gov.uk/ukpga/1998/39/section/1>); Art. 2 National Minimum Wage (Offshore Employment) Order 1999/1128 (<https://www.legislation.gov.uk/uksi/1999/1128/article/2/made>); s40 National Minimum Wage Act 1998 (<https://www.legislation.gov.uk/ukpga/1998/39/section/40>); Art. 2 National Minimum Wage (Offshore Employment) Order 1999/1128 (<https://www.legislation.gov.uk/uksi/1999/1128/article/2/made>). For supplementary guidance on NMW and seafarers, please see <https://www.gov.uk/guidance/minimum-wage-seafarers-and-other-people-working-at-sea>.

Rationale for intervention

Seafarer welfare

- 1.7. Seafarer welfare is a key rationale for intervention. As above, not all seafarers working on services calling regularly at UK ports are eligible for the UK NMW, and it is believed that a significant proportion of seafarers on these services are paid below NMW-equivalent rates. These seafarers are at risk of suffering lower welfare and spending power than some other seafarers and shore-based workers.
- 1.8. There is also evidence that relative dissatisfaction with pay is a contributing factor to seafarers experiencing poor well-being in general⁴. This policy focuses on wages, and raising pay has potential to improve overall well-being and seafarer job satisfaction.
- 1.9. Regulations, that provide an incentive for seafarers to be paid an equivalent rate to the NMW (NMWe) while in UK waters, would mitigate this inequity and risk of lower seafarer welfare, by raising wage rates for the seafarers in scope, while they are in UK waters.

UK competitiveness

- 1.10. As above, seafarers on some services are eligible for the NMW, while others are not. This means some services face higher wages than others as they are subject to different wage laws, creating an uneven playing field. This creates a rationale for intervention to improve competitiveness, by expanding the number of services who are required or incentivised to pay NMW or equivalent wages.
- 1.11. The second NMW eligibility condition above shows that all seafarers are entitled to the NMW if they ordinarily work in UK territorial waters, except on vessels on innocent passage. This means that UK flagged vessels⁵ and other vessels not on innocent passage are or may be required to pay NMW to seafarers ordinarily working in UK waters, but vessels on innocent passage are not. This reduces the cost-competitiveness of UK flagged vessels (and other vessels not on innocent passage) running this type of service compared to ships on innocent passage. This creates a disincentive for UK flagged vessels to be used to perform work in UK waters.
- 1.12. The third NMW eligibility condition above shows that UK-resident seafarers are entitled to the NMW if they work on a UK flagged vessel and work to at least some extent in the UK⁶. This means that UK flagged vessels calling regularly at UK ports are or may be required to pay NMW to UK-resident seafarers, but not to non-UK-resident seafarers. This reduces the overall cost-competitiveness of UK flagged vessels running this type of service, and also creates a disincentive for them to employ UK-resident seafarers. This may create a disincentive for vessels to become UK flagged, and may create an incentive for UK flagged vessels to become foreign flagged. There is also a disincentive for UK-resident seafarers to accept employment on foreign flagged vessels as opposed to UK flagged vessels.
- 1.13. The National Minimum Wage equivalent (NMWe) proposed by the preferred policy option is not the same as the domestic NMW and does not confer the same rights. Therefore, the policy will mitigate this lack of competitiveness rather than eliminate it. However, by providing an incentive for all services in scope to pay NMW-equivalent wage rates to all seafarers, the policy will

⁴ See the Seafarers Happiness Index (SHI) for details. The latest report (available at <https://www.happyatsea.org/wp-content/uploads/2022/04/Seafarers-Happiness-Index-Q1-2022.pdf>) shows the lowest average index result for eight years, at 5.85/10. Happiness with wages was 5.59/10, the third-lowest rated of ten categories, showing that seafarers are especially dissatisfied with pay and that this contributes negatively to overall happiness. The SHI is an international survey and these findings relate to all seafarers, so it is not clear whether or not seafarers calling regularly at UK ports are representative of overall trends (although, as per p6, ferries had the fourth-lowest overall happiness rating of eleven vessel type categories, suggesting ferry workers in general may be less happy than average). As the report notes, the poor results for the most recent quarter are partially attributable to the ongoing effects of the coronavirus (COVID-19) pandemic and to the Russian invasion of Ukraine, so the low overall ratings may not reflect a significant overall worsening of “ordinary conditions” for seafarers.

⁵ Because innocent passage applies to foreign vessels, a UK flagged vessel would not be able to claim innocent passage in UK waters.

⁶ The condition to be “working to at least some extent in the UK” is expected to be met in the case of seafarers who perform work in UK ports, as per example 3 in the guidance on seafarers’ entitlement to the NMW (<https://www.gov.uk/guidance/minimum-wage-seafarers-and-other-people-working-at-sea>).

improve the competitiveness of UK flagged vessels, and reduce the disincentives outlined, including the disincentive to employ UK resident seafarers.

Policy objective

- 1.14. The policy objective is to ensure operators pay seafarers regularly working in UK ports equivalent wages to shore-based staff while in UK waters. This will be facilitated by enabling UK ports to make access conditional on vessel operators being able to demonstrate that they are paying at least the NMWe to their staff whilst in UK waters.
- 1.15. Although the policy objective is to ensure seafarers working on vessels calling regularly at UK ports are paid a fairer wage, the policy intervention is limited to UK ports only and cannot, on its own, set a floor on wages paid during the international portion of a journey. However, this is the first step towards creating a fairer working environment for these workers and in parallel the UK is pursuing agreements with governments at a multilateral level, in keeping with international obligations under the International Labour Organisation (ILO) Maritime Labour Conventions (MLCs), which will seek to extend this intervention beyond the UK as far as possible.

Options considered

- 1.16. This section describes the options considered and appraised in the impact assessment, including doing non-regulatory options and doing nothing. The regulatory option considered is to empower Statutory Harbour Authorities (SHAs) to levy surcharges on and ultimately suspend operators calling regularly at their port but who do not pay their seafarers at least an equivalent rate to the UK National Minimum Wage (NMWe = National Minimum Wage equivalent) while in UK waters. (In this context, "UK waters" means UK internal and territorial waters.)
- 1.17. Alternative regulatory options were not considered due to limitations imposed by international law. The UK government can only legislate for UK waters, and this legislation is limited to seafarers who have close ties to the UK. Because of this, all regulatory options are the same basic policy (unless otherwise stated, references to "the policy" mean this option, described in the preceding paragraph), and differences are limited to the set of vessels the policy applies to.
- 1.18. The consultation identified two key factors on which scope could vary: frequency and vessel types. Because the policy intention is to apply to seafarers who call regularly at UK ports, scope will be limited to services calling at UK ports more regularly than a specified frequency. Explicit exclusions for vessel types have also been considered to further limit the scope of the policy.

Non-regulatory options

- 1.19. Non-regulatory measures were considered but were not taken forward as they would not have achieved the policy objective as effectively as using a legislative vehicle. Without regulation, the enforcing body would be without the necessary legal powers to incentivise any operators who did not pay their seafarers the NMWe, thereby creating no incentive for operators to apply it.
- 1.20. This policy to achieve the government's objective on ensuring fairer pay for seafarers is one part of a nine-point plan to address seafarer welfare and improve their working conditions. Other parts of the plan seek to achieve this through non-legislative measures as that has been considered the most effective route of achieving other objectives.

Option 0 (do nothing)

- 1.21. Without this intervention, seafarers working on vessels that regularly call at UK ports would remain at risk of being paid less than an equivalent of the UK National Minimum Wage for time in UK waters. This would be detrimental to the welfare of those seafarers and would fail to address the disadvantages to UK flagged vessels and UK-resident workers described above.
- 1.22. It is likely that in the absence of intervention, firms who currently choose to pay NMW-equivalent wages will aim to compete on labour costs by cutting wages. This would further worsen seafarer welfare from the *status quo* and would make it more difficult for firms paying NMWe to compete. The disadvantages to UK flagged vessels and UK-resident workers described above would

continue and may worsen. Disincentives for vessels to become UK flagged, and for UK flagged vessels to become foreign flagged, will continue and may worsen.

Option 1 (preferred option): 72hrs frequency, all vessel types

- 1.23. The preferred option implements the regulatory option described above: to empower Statutory Harbour Authorities (SHAs) to levy surcharges on and ultimately suspend operators calling regularly at their port but who do not pay their seafarers at least an equivalent rate to the UK National Minimum Wage (NMW).
- 1.24. The preferred scope is for all international services⁷ calling at a UK port at least once every 72hrs (average frequency over a year, so 120 or more calls per year) to be subject to the policy. This is a stricter frequency criterion than the preferred option at consultation stage (where the frequency criterion was weekly). Consultation responses and stakeholder engagement showed that many more stakeholders suggested a stricter frequency criterion than suggested a less strict criterion. A tight frequency criterion also better reflects the policy intention because:
- The policy intention is to focus on seafarers who regularly call at UK ports and who spend significant amount of time working in UK waters. The more regularly a seafarer calls at a UK port, the closer their ties to the UK.
 - The larger the proportion of journey time spent in UK waters, the more effective the policy will be in improving seafarer welfare. This is because the policy only applies to wage rates in UK waters, so it only has the potential to generate meaningful increases in average pay for seafarers who spend a significant proportion of time working in UK waters.
- 1.25. Analysis of past data suggests that the large majority of ferry services would be in scope of this option. DfT statistics suggest that, had the policy been in effect in 2019, approximately 98% of ro-pax voyages (which tend to call at UK ports very frequently) would have been in scope under this scope definition. Approximately 70% of (non-passenger) ro-ro voyages would have been in scope (and about 92% of the combined ro-pax and ro-ro services). Any container, bulk and other services meeting the frequency criterion would be in scope, although data suggests fewer services of these types are likely to fall in scope as these services tend to run less frequently (DfT statistics suggest that, had the policy been in effect in 2019, approximately 7% of fully cellular container and only a tiny proportion of dry/liquid bulk services would have been in scope. Data suggests that, on current patterns, no cruise services would meet the frequency criterion, and would only start to do so if service patterns changed to run an extremely large number of very short cruises consistently throughout a year.

Option 2: weekly frequency, ro-pax and ro-ro only

- 1.26. Option 2 also implements the regulatory option described above. The difference from the preferred option is the scope: Option 2 defines the scope of the policy as applying to vessels who call at a UK port weekly or more frequently (average frequency over a year), and explicitly limits scope to ro-pax and ro-ro services (ferries). This corresponds to the preferred option from the consultation impact assessment⁸. In this context, ro-pax means roll-on, roll-off services carrying accompanied freight and/or leisure passengers. Ro-ro means roll-on, roll-off services carrying unaccompanied freight, and includes hybrid container/roll-on, roll-off vessels.
- 1.27. Analysis of past data suggests that the overwhelming majority of ferry services would be in scope of this option. DfT statistics suggest that, had the policy been in effect in 2019, approximately 99% of ro-pax voyages and approximately 88% of ro-ro voyages would have been in scope under this definition (about 97% of the combined total of ro-pax and ro-ro).

⁷ Domestic and internal services are in scope of UK minimum wage law due to the The National Minimum Wage (Offshore Employment) (Amendment) Order 2020 (<https://www.legislation.gov.uk/ukxi/2020/779/made>). The policy therefore applies only to international services, including services between the UK and Crown Dependencies (Isle of Man and Channel Islands).

⁸ The consultation IA is available at the following link: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1074053/impact-assessment-harbours-seafarers-remuneration-bill.pdf. Please note this option was "option 1" in the that document, whereas it is option 2 in this document.

Option 3: weekly frequency, all vessel types

- 1.28. Option 3 also implements the regulatory option described above. It defines the scope of the policy as applying to services who call in UK ports weekly or more frequently (on average over a year) and places no limits on service or vessel types in scope. Consideration of this option reflects consultee feedback that explicit service type exclusions would be inappropriate.
- 1.29. In addition to the ro-pax and ro-ro voyages as in Option 2, DfT statistics suggest that, had the policy been in effect in 2019, approximately 16% of fully cellular container services, approximately 7% of dry/liquid bulk services and small numbers of car carriers and dredgers would have been in scope under this definition. No cruise services would have been in scope.

Other options

Less strict frequency criteria

- 1.30. If a frequency criterion less strict than weekly were to be applied, more services would be included in scope, and the economic impacts of the policy would be larger. However, frequency criteria less than weekly have not been appraised in full. Because the policy objective is to include seafarers who call regularly at UK ports and spend a significant proportion of time in UK waters, in keeping with international obligations, the intention has always been to set a fairly strict frequency criterion. The preferred option at consultation stage was a weekly frequency criterion. Consultation responses and stakeholder engagement showed that many more stakeholders suggested a stricter frequency criterion than suggested a less strict criterion. This has informed a change in the preferred option since consultation stage to include a stricter frequency criterion. As a result, all options appraised at final stage include a frequency criterion of weekly or stricter.

Proportion of port calls in the UK

- 1.31. Some consultees suggested scope definitions which focused on the proportion of port calls at UK ports, or the proportion of journey time in UK waters. If applied, these definitions would slightly narrow the scope of the policy, as vessels/services would fall out of scope. Although this precise definition has not explicitly been included in the analysis, the practical effects of the preferred option are very similar to the spirit of this approach.
- 1.32. Defining vessel-journeys in scope by service means vessels must be running the same end-to-end route (between one UK port and one non-UK port) to be included in scope. This means vessels running just a single route will be making half their port calls in the UK, and if time in port and vessel speeds are consistent, would be spending half their time on the UK side of the median journey point. It is theoretically possible for vessels running not just a single end-to-end route to be included in scope (for example, if they run a regular service calling at three ports). However, the tight frequency criterion selected in the preferred option significantly limits potential for this, because it means vessels must be running short routes (as any long routes would fall out of scope due to not calling frequently enough in the UK).
- 1.33. This means that, because of the way the preferred option has been defined, most services included in scope are ro-pax services operating a single, short-sea, end-to-end route. Therefore, any option which explicitly relied on the proportion of time in UK waters would be extremely likely to have a very similar (albeit potentially slightly smaller) set of services included in scope are ro-pax services operating a single, short-sea, end-to-end route. Therefore, any option which explicitly relied on the proportion of time in UK waters would be extremely likely to have a very similar (potentially slightly smaller) set of services in scope, and similar economic impacts to the preferred option as appraised.

2. Costs and benefits

Approach

Summary of impacts considered

- 2.1. This measure is primary legislation and some aspects of the policy may be regulated by secondary legislation. However, because the policy intention for secondary legislation has been considered alongside the primary legislation development, this impact assessment is able to provide a full assessment of the costs and benefits of the entire policy⁹. An update will be provided in the case that secondary legislation differs significantly from the intention in a way which materially affects the impacts of the policy.
- 2.2. The following costs were monetised:
- i) Direct labour costs: the costs of paying higher wages to seafarers who would be paid below National Minimum Wage equivalent (NMWe) in the counterfactual but who are paid NMWe due to the policy. The cost is split between wage costs and a non-wage uplift. This is a direct cost to business as it comes from the need for operators to comply¹⁰.
 - ii) Indirect labour costs: the costs of paying higher wages to seafarers who would be paid at or above the NMWe in the counterfactual but who are given pay rises to maintain a wage differential to the lower-paid seafarers (brought up to NMWe by the policy). As above, this cost is split between wage costs and a non-wage uplift. This is an *indirect* cost to business as it is discretionary, and the policy places no obligation to incur these costs. This is in line with the methodology used by the Department for Business, Energy and Industrial Strategy (BEIS) to appraise domestic NMW increases¹¹.
 - iii) Compliance costs: two compliance costs are assessed. Firstly, each vessel owner will need to fill in a “declaration” of compliance once a year to every port its vessel calls at. This is a direct cost to business, including both vessel owners (time to submit the form) and ports (time to process the form). Secondly, there will be “spot-checks” where vessels are inspected to check if they are indeed compliant. The inspector’s time is a cost to the public sector, as the Maritime and Coastguard Agency is expected to be the inspecting authority and is not expected to charge vessels for the inspector’s time. The time needed for an official from the vessel owner to assist the inspection is a direct cost to business.
 - iv) Transition costs: two transition costs are assessed. Firstly, the costs of firms (vessel owners and ports) familiarising with a small amount of new documentation. This is a direct cost to business. Secondly, the administrative costs to employers (vessel owners) of re-issuing contracts to workers (seafarers) whose terms of employment are expected to change due to the policy. This is a direct cost to business. All transition costs are assumed to fall in the year the policy is implemented.

⁹ Therefore, the Department’s assessment is that the impact assessment should be treated as falling under scenario 1 for RPC treatment of primary legislation impact assessments (see https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/827907/RPC_case_histories_-_Primary_legislation_August_2019.pdf). If this view changes, the Department will engage with the RPC.

¹⁰ The policy does not confer rights on seafarers, and the sole requirement introduced is that operators using UK ports should demonstrate compliance or else face a surcharge. Therefore, if the policy is construed in its narrower legal sense, it is possible to consider higher wages an indirect impact (increasing wages is in some sense the second step of the “logic chain”). However, for appraising the economic impacts of the policy, wage costs are considered a direct impact. This is because the costs (a) fall to the businesses accountable for compliance; (b) represent an increased cost of business activity; and (c) follow straight on from the key requirement (i.e. complying is linked to demonstrating compliance). This is believed to be in line with the RPC guidance on direct and indirect impacts, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/790016/RPC_case_histories_-_direct_and_indirect_impacts_March_2019_1.pdf.

¹¹ For example, see the impact assessment for the National Minimum Wage (Amendment) Regulations 2022 at <https://www.legislation.gov.uk/ukxi/2022/382/impacts>

2.3. The following benefits were monetised:

- v) Direct labour benefits: this is the benefit to seafarers who would be paid below NMWe in the counterfactual, but who are paid NMWe due to the policy. This is equal to the direct labour costs as above because this is an economic transfer from employers to employees and is a direct benefit to individuals. The non-wage uplift is included as well as wages because this amount will also accrue as a benefit, either to the workers (e.g. pension contributions) or to governments (e.g. social security contributions).
- vi) Indirect labour benefits: this is the benefit to seafarers who would be paid at or above the NMWe in the counterfactual but who are given pay rises to maintain a wage differential to the lower-paid seafarers (brought up to NMWe by the policy). This is equal to the indirect labour costs as above because this is an economic transfer from employers to employees. As above, the non-wage uplift is included as well as wages. This is equivalent to what BEIS calls “spillover benefits” in appraisal of domestic NMW policies.

2.4. The following benefits were not monetised:

- vii) UK competitiveness: the policy will mitigate disadvantages faced by UK flagged vessels in employing UK-resident seafarers. These vessels face a competitive disadvantage as they are obliged to pay the UK NMW. The policy will reduce this disadvantage by ensuring all vessels in scope pay an equivalent of the NMW while in UK waters.
- viii) Reputation: benefits to the UK as strong on seafarer rights.

Counterfactual

2.5. It is assumed that, in the absence of the policy, operators currently paying wages equivalent to the NMW will or may cut their wage rates to compete with lower-cost operators paying below the NMW while in UK territorial waters¹². Therefore, the relevant counterfactual is one in which all operators pay below the NMW, where they are legally able to do so¹³. This means that, in the absence of intervention, all seafarers may be paid below NMW, regardless of their employer. (Note that this refers specifically to maritime operators. Because Channel Tunnel operators are believed to be in scope of domestic NMW legislation, they will not be able to respond the same way. See the Competition Assessment for further discussion.)

2.6. In line with Green Book guidance, the cost-benefit analysis compares policy options to the counterfactual rather than to the *status quo* (so numeric outputs can be interpreted as the difference the policy makes compared to the situation described in the previous paragraph). Behaviour of economic agents is assumed to be the same in the counterfactual and the preferred option (see next section), so the key economic impact that the cost-benefit analysis assesses is seafarer pay being higher due to the policy than in the counterfactual.

2.7. The quantified analysis divides seafarers into the following groups:

¹² Future actions by operators are not certain. However, some information in the public domain suggests that operators see cost competition as one factor leading to wage cuts. For example, P&O Ferries told Parliament that “This is the only way for us to save this business, and we have moved to a model that is internationally recognised and widely used across the globe and by our competitors.” (see Q162 and Q163 at <https://committees.parliament.uk/oralevidence/9989/html/>). Other operators, including DFDS, have made public statements calling for steps towards a “level playing field” (see e.g. news report at <https://www.mirror.co.uk/news/uk-news/po-scandal-sparks-race-bottom-26563742>) on wages if their business model is to remain viable. Although it is not possible to predict future behaviour of operators, these statements suggest that competition is creating pressure for at least parts of the ferry sector to move towards lower-cost models in which seafarers are paid less than NMW-equivalent wages. This evidence suggests it is reasonable to believe that such competition exists and will continue, leading to wages converging at lower levels than at present in the absence of intervention. In cases where vessel flag state places constraints on minimum pay, it is assumed that operators would change flag state to allow wage cuts if it deemed them necessary. The Competition Assessment contains more detail on market structure, but to at least some extent, operators on the same route are serving a homogeneous and interchangeable good (transport is a derived demand), meaning price (and therefore cost) competition is likely. The Bertrand model (see original paper in Bertrand, J. (1883), Book review of *Theorie Mathematique de la Richesse Sociale* and of *Recherches sur les Principes Mathematiques de la Theorie des Richesses*, Journal de Savants 67: 499–508) describes a market outcome in which competitors cut prices to marginal costs and cut marginal costs as low as possible to compete. The counterfactual assumes that reality will reflect this theoretical outcome to at least some extent, as firms compete on price and have an incentive to cut costs as far as possible.

¹³ Operators currently paying NMW-equivalent or higher wages may not be able to cut wages to below NMW rates immediately and the counterfactual as described here may not occur for a few years. However, to avoid having estimate which operators currently pay the NMW, and which operators would cut wages immediately, the cost-benefit analysis is on the basis that counterfactual occurs immediately. This simplifies calculations but means there may be a slight overestimation of impacts compared to the case where there is a transition to the counterfactual.

- Low-paid ratings: assumed to be at risk of being paid below NMWe in the counterfactual. The policy will raise their pay to NMWe levels, so they benefit directly.
- High-paid ratings: assumed to be paid approximately NMWe in the counterfactual. Employers are likely to raise their pay to maintain differentials, so they benefit indirectly.
- Officers: assumed to be paid above NMWe in the counterfactual. Their pay is unlikely to vary because of the policy, so they are not affected.

Behavioural response

- 2.8. The analysis assumes that economic agents (in particular, vessel operators) do not change their behaviour in significant ways in response to the policy, other than to comply. This means that the main cost-benefit analysis is on the basis that the policy does not induce significant changes to operating models, for example, service schedules, number of seafarers employed, or proportion of vessels flagged in the UK. For reasons described below, such behavioural responses are likely to be fairly small, and are difficult to estimate. Therefore, consequences are discussed qualitatively rather than included in the quantified cost-benefit analysis. This includes description of how behavioural changes could affect impacts on UK agents.
- 2.9. The analysis further assumes that operators will comply with the policy and does not adjust for the possibility of either evasion or avoidance action. If avoidance action is successfully taken, both costs to businesses and benefits to individuals will be lower than those appraised. Section 3 on risks further discusses of behavioural responses by agents and ways this could impact policy effectiveness. Some behavioural changes have the potential to undermine or reduce effectiveness. Because it is not possible to estimate how many operators will attempt such changes, or how effective such changes would be in avoiding the impacts of the policy, these issues are considered qualitatively only. Cost-benefit analysis outputs should be interpreted as estimates of the impacts the policy will have if it is entirely effective.
- 2.10. The assumption that agents will comply¹⁴ also means the estimate of compliance costs is an estimate of the costs to operators of going through the compliance process, rather than of incurring the surcharges that may be levied (or eventual suspension of port access) in the case of non-compliance. This reflects an assumption that the surcharges will be fixed at a high enough level to deter non-compliance, i.e. it will always be more costly to pay the surcharge than to comply, so economically rational operators will comply.

Methodology

- 2.11. It is assumed that the impacts of the policy begin in 2024. Primary legislation is expected to become law in early 2023, but the compliance process will not start until secondary legislation comes into effect, which is expected to be about a year after primary legislation becomes law. Because this secondary legislation is crucial for making the policy intention “effective”, it is assumed that impacts start occurring only after it comes into effect¹⁵.
- 2.12. The standard ten-year appraisal period is applied (calendar years 2024 to 2033). The standard period is appropriate because the policy is not time-limited and not related to energy, environment, health, or other fields where longer periods are suitable, and analysis of outputs (see below) shows no very strong trend in impacts over time¹⁶. All costs are converted to 2024

¹⁴ Assuming full compliance is in line with RPC guidance to assume 100% compliance in the absence of evidence to the contrary (see p21 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/790060/RPC_case_histories_-_December_2016_volume.pdf)

¹⁵ It is theoretically possible that familiarisation (and therefore familiarisation costs) will start in 2023, when primary legislation becomes law. However, the analysis makes a simplifying assumption that all familiarisation costs are all incurred in 2024, the first year of the appraisal period. Some familiarisation will need to be done following secondary legislation, so familiarisation cannot occur in full in 2023, and estimating any split over two years would be uncertain. In addition, familiarisation costs are only a very small fraction of the total impacts, so it is in line with the spirit of the guidance to take the ten-year appraisal period as the first ten years in which the substantive impacts (labour costs and benefits) occur.

¹⁶ RPC guidance on appraisal periods is available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/922143/RPC_case_histories_-_appraisal_periods_Sep_20.pdf.

prices (based on the latest gross domestic product (GDP) deflators from the Transport Analysis Guide (TAG) data book¹⁷) and discounted from base year 2024, with subsequent years discounted at the standard Green Book rate of 3.5% per year¹⁸. This means outputs can be interpreted as the present value of impacts as at the point in time where they begin.

- 2.13. The section below (“model structure and inputs”) provides a full description of the calculations, and a full list of inputs along with data sources and assumptions used to develop inputs.
- 2.14. To account for the relatively high level of uncertainty, the analysis uses a range for most inputs. This means all calculations and outputs have three scenarios (low, medium, and high), with a wide range between them. This approach is preferred to sensitivity tests at the level of individual inputs because it better captures the range of uncertainties across the inputs.
- 2.15. The policy rationale section describes cases in which some vessels and/or seafarers may already be covered by domestic NMW legislation. This means that some of the seafarer-hours in scope of the policy are not actually affected by the higher wage rates because they are already required to pay the NMW. The analysis does not account for this, because of lack of data on the proportion of seafarer-hours covered by NMW legislation. As described below (see discussion of UK competitiveness), though the proportion cannot be estimated precisely, it is believed to be small. The costs to UK business section outlines that only a small proportion of vessels in scope are UK flagged, and the benefits to UK workers section outlines that, although no data is available on the key issue of residency, statistics suggest only a small proportion of seafarers are UK nationals. This means any adjustment for this factor would risk under-stating the actual costs and benefits of the policy. Therefore, the cost-benefit outputs assume all seafarer-hours are in scope. This means the outputs will constitute an over-estimate of the actual impacts, but this is expected to be only a small over-estimate.

Consultation response

- 2.16. The Department consulted on the Bill from 10 May 2022 to 7 June 2022. 49 responses were received. Alongside the consultation, the Department engaged stakeholders via workshops and bilateral discussions. The consultation impact assessment and the inputs and assumptions used to inform it were tested via this process. A summary and government response has been published online¹⁹.
- 2.17. Consultation responses have been taken into account when developing the analysis. From the consultation stage impact assessment, the following changes have been made to reflect stakeholder feedback from the consultation and other engagement:
 - The scope of the preferred policy option has been changed to reflect consultation feedback. In particular, the frequency criterion has been tightened from services calling at least weekly to services calling at least once every three days, and it is no longer proposed that the policy will apply only to certain types of service (see discussion above of the new preferred option). The previous preferred option is retained in the analysis as option 2, while the new preferred option is option 1. The tighter frequency criterion decreases the overall quantified impact, while the wider range of services in scope increases the overall quantified overall impact. The net effect is a small decrease, as shown below by the difference between option 1 and option 2 (because the large majority of impacts are on ro-pax services running very frequently, and these are in scope in both options, the difference is not large).

¹⁷ See Transport Analysis Guidance at <https://www.gov.uk/guidance/transport-analysis-guidance-tag> and the accompanying data book <https://www.gov.uk/government/publications/tag-data-book>.

¹⁸ See HM Treasury, The Green Book: appraisal and evaluation in central government, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1063330/Green_Book_2022.pdf.

¹⁹ The consultation and government response were both published at <https://www.gov.uk/government/consultations/conditions-for-harbour-access-and-seafarers-pay-rates-scope-and-compliance>. The consultation stage impact assessment was published at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1087840/impact-assessment-harbours-seafarers-remuneration-bill.pdf.

- Assumptions about the counterfactual have changed. It is now assumed that seafarers are at risk of being paid below NMW in the counterfactual regardless of their employer. This is on the basis that operators who currently pay NMW-equivalent wages will or may cut wages in the absence of policy action. This significantly increases the overall quantified impact.
- Indirect benefits have been quantified (previously these were mentioned but not quantified). This refers to pay for seafarers not directly in scope but who are given pay rises to maintain differentials. See details below. This significantly increases the overall quantified impact.
- The numbers of seafarers on a vessel crew have been revised. For ro-ro and container vessels, average crew sizes have been slightly reduced, whilst ro-pax crew sizes are unchanged in the central case. This slightly decreases the overall quantified impact (because ro-pax remains the same and accounts for most impacts, the effect is small).
- Counterfactual pay assumptions in the counterfactual scenario have been revised, based on feedback that the central case in the consultation stage IA was too high. The previous central case (£5.50/hr, based on P&O Ferries evidence to Parliament) is now the high case, and the central case has been reduced. In addition, a wider range has been introduced, including the ILO minimum seafarer pay rates. This somewhat increases the overall quantified impact.
- A small number of technical changes have been made to other inputs since the consultation IA. This includes adjusting the NMW rates for different age bands, rebasing to calendar years, and adjusting for seafarers' overtime payments. The definition used to select voyages in scope has been changed to an annual basis and to reflect the service aspect of the intended policy definition. Voyages data has also been adjusted over time in line with long-term trends. The total effect of these changes is to very slightly decrease the overall quantified impact.
- Due to greater clarity about the intended operation of the compliance regime, treatment of compliance costs has been updated. Although the principles (and model structure) remain the same, inputs have been updated. In addition, the cost to the public sector (the Maritime and Coastguard Agency, MCA) of compliance checks has been added to reflect the expectation that the MCA will be primarily responsible for such checks. This slightly increases the overall quantified impact.
- The cost of re-issuing contracts to seafarers whose pay is affected by the policy has been added to the analysis (as a transition cost, assumed to fall in the first year of the policy). This reflects stakeholder feedback that administrative costs had been underestimated at consultation stage. This slightly increases the overall quantified impact.
- A significant amount of material has been added on wider impacts to add to and develop points. This includes the Small and Micro Business Assessment, the Trade and Investment Assessment, the Competition Assessment, and consideration of wider labour market impacts. This responds to stakeholders raising that treatment of some wider impacts was not comprehensive enough at consultation stage. This does not affect the quantified impact, although some quantitative analysis has been added in part to support the arguments (for example, analysis of possible pass-through of costs).

2.18. The overall impact of changes to the analysis since consultation stage has been to significantly increase the estimate of the quantified impact of the policy (the list above notes factors affecting this). Overall impacts in the central case are between three times and four times larger than in the consultation IA. Although the overall change is relatively large, this is justified because the updated analysis reflects better quality inputs, changes to approach in response to stakeholder responses, and more comprehensive treatment of the impacts of the policy.

Model structure and inputs

Figure 1: model structure (labour costs)

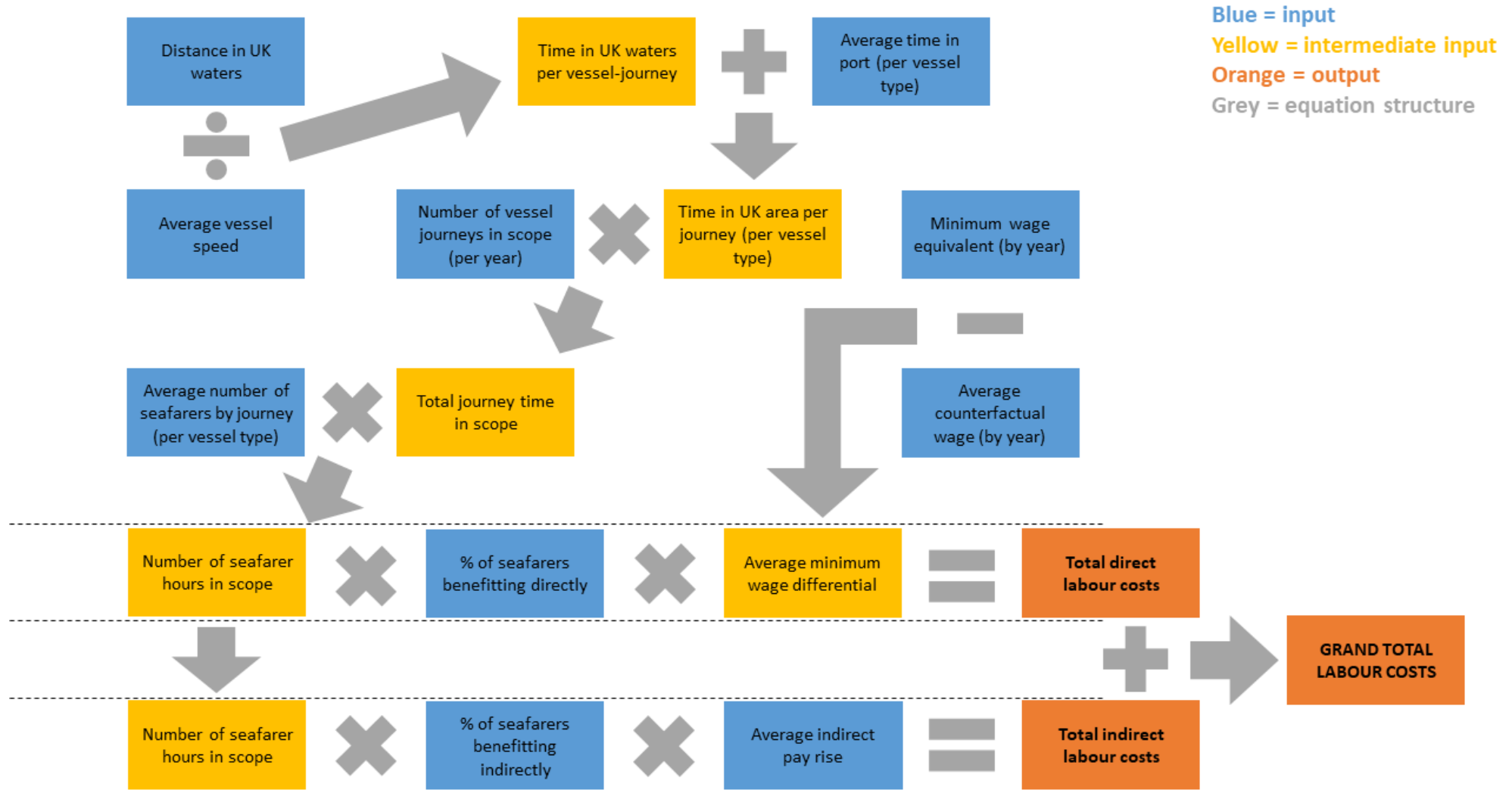


Table 2: inputs (labour costs)

Input	Data sources and description of approach	Low	Medium	High
Average counterfactual wage	<p>In the high case, this is based on P&O Ferries evidence to Parliament, saying their average wage is £5.50/hr²⁰. This appears to refer to all seafarers rather than just ratings, so it is taken as an upper bound of pay for ratings.</p> <p>In the low case, this is based on the ILO-agreed international minimum wages²¹. This is taken to be £2.78/hr after adjustments described in the footnote²².</p> <p>The central case takes the mid-point of the high and low figures²³.</p> <p>Pay is assumed to rise at 1% per year, in line with ILO agreed rises for 2024-2025 (about 0.9% from 2023 to 2024 and 1.1% from 2024 to 2025).</p> <p>A non-wage uplift of 17.9% is applied to all wages to generate total labour costs²⁴.</p>	£5.50/hr in 2022, plus 1% increase per year	(midpoint of the low and high)	£2.78/hr in 2024, plus 1% increase per year
		<i>The "High" scenario has the lowest counterfactual wage because this is the scenario with the largest gap between counterfactual and minimum wages.</i>		

²⁰ Response to Q131 at <https://committees.parliament.uk/oralevidence/9989/pdf/>.

²¹ Wages agreed by the Joint Maritime Commission of the International Labour Organisation (ILO). See https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_845493/lang--en/index.htm.

²² In particular, the calculation took the wage of 666 USD per month for able seaman for 2024 (the first year of the appraisal period). This was converted to an hourly rate (\$3.24/hr) based on a 48-hour week and a 30-day month. This was then converted to GBP (£2.57/hr) at an exchange rate of £1 = \$1.2610 as at 31 May 2022 (<https://www.exchangerates.org.uk/GBP-USD-spot-exchange-rates-history-2022.html>). This was then adjusted for overtime by assuming an average seafarer works a 72-hour week, with a contract specifying 48 hours of regular time and overtime to be paid at 1.25 times the regular rate (see summary at <https://www.itfseafarers.org/en/your-rights/wages>). This implies 1/3 of hours are paid at 1/4 above the standard rate, so 1/12 was added to the rate to get the final average rate of £2.78/hr (rounded to nearest 1p).

²³ This is approximately £4.19/hr in 2024 (the P&O evidence is from 2022, while the ILO rates are for 2024, and the midpoint is taken year-by-year after applying growth rates). Note this is lower than the lowest wage rate stated in the P&O evidence, which was £5.15/hr (see Q145 at <https://committees.parliament.uk/oralevidence/9989/html/>). As described in description of the counterfactual above, counterfactual wages are intended to reflect the level wages would converge to if employers engaged in cost-cutting competition.

²⁴ Transport Analysis Guidance (TAG) unit A4.1 recommends an alternative non-wage uplift of 26.5% <https://www.gov.uk/government/publications/tag-unit-a4-1-social-impact-appraisal>. The 17.9% uplift is recommended for use in appraisal of wage policies by the Department for Business, Energy and Industrial Strategy (BEIS) and based on Office for National Statistics (ONS) data (see <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/indexoflabourcostsperhourilchnonseasonallyadjusted>, column B divided by column C, where 17.9% is both the value for the most recent quarter and the average from 2020, the most recent year this data was published). The 17.9% uplift rate has been chosen for this IA for consistency with general government wage appraisal practice. It is known that not all employers will be in scope of UK non-wage labour costs. Although contracts vary, it is believed that vessels will generally be eligible for UK non-wage labour costs (if the worker is UK resident, or if the employer is based in the UK, regardless of vessel registration or flag), or else for non-wage labour costs such as social security contributions and minimum pension contributions according to their flag state or country the company is registered. The voyages data used in the cost-benefit analysis shows that about 89% of vessel-journeys in scope are expected to be by vessels flagged in the UK (not including Crown Dependencies) or the European Economic Area (EEA), and about 93% of vessel-journeys in scope are expected to be by vessels owned by companies based in the UK or EEA. Eurostat data (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Hourly_labour_costs) shows that European Union (EU) countries generally have similar non-wage uplifts to the UK, with the 24.6% rate equivalent to $0.246 / 1.246 = 19.7\%$ on the same basis as the UK figure. The UK figure of 17.9% is therefore applied as a simplification, and to account for the fact average rates may be slightly lower than the EU average due to the small number of vessels flagged or owned outside the UK or EEA.

<p>Minimum wage equivalent</p>	<p>The current National Living Wage (NLW) is £9.50/hr and the Low Pay Commission (LPC) estimates rates up to 2024²⁵.</p> <p>Technical adjustments are made for NMW age bands, based on the proportion of seafarers in each age group based on DfT seafarer statistics²⁶, and to rebase to calendar years through a weighted average of rates changing in April.</p> <p>Annual wage growth is 2% in the low scenario (to reflect OBR long term consumer inflation), 3.8% in the central case (to reflect OBR long term wage growth assumptions²⁷), and 5.5% in the high case (to reflect past average NLW growth²⁸).</p> <p>Wages have been adjusted by adding an additional 1/12 to account for overtime pay. This is the same adjustment as described in the previous footnote.</p> <p>As above, a non-wage uplift of 17.9% was applied to generate total labour costs.</p>	<p>£9.50/hr, +2%/yr</p>	<p>£9.50/hr,+3.8 %/yr</p>	<p>£9.50/hr, +5.5%/yr</p>
<p>Average indirect pay rise</p> <p>This input refers to the additional pay given to high-paid ratings, which, as above, is an indirect benefit. This is expressed in terms of a ratio with the direct benefits per low-paid rating. In the absence of specific evidence for the maritime sector, the ratio is expected to be less than 1, as it is for UK domestic wages (i.e. the pay rise to high-paid ratings is smaller in £/hr terms than the pay rise to low-paid ratings). This means wage differentials will reduce in comparison to the counterfactual, but some differential will be maintained, and employers will spend less than they would if matching the direct pay rise 1:1.</p>		<p>25% of direct pay rise</p>	<p>37.5% of direct pay rise</p>	<p>50% of direct pay rise</p>

Figures for the main band for Q2 2022 to Q1 2023 (as NMW changes in April). All figures are converted to annual rates, adjusted for age bands, and adjusted for overtime as described.

²⁵ Current NLW and NMW rates are available from <https://www.gov.uk/government/publications/minimum-wage-rates-for-2022>. LPC report including projected future rates is at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1065743/The_National_Minimum_Wage_in_2022.pdf/

²⁶ Dataset sfr0302, available at <https://www.gov.uk/government/statistical-data-sets/seafarer-statistics-sfr>. Adjusted row 19, with the number of seafarers in each band assumed to be distributed evenly by year. Note that because the scope of these statistics is not the same as the scope of the policy, the age distribution may not be the same, so the adjustment should be considered an approximation.

²⁷ Office for Budget Responsibility (OBR) Fiscal Sustainability Report 2020. Long term assumptions (average earnings and inflation) from Table 4.2 (<https://obr.uk/box/performance-against-the-budget-2020-fiscal-rules/>).

²⁸ Calculated from rates available <https://www.gov.uk/national-minimum-wage-rates>. Average annual increase of main rate since NLW introduction in 2016.

	<p>In the central case, the ratio is assumed to be 37.5% (3/8) of the pay rise given to low-paid ratings in direct benefits (i.e. for every £1/hr pay rise given to low-paid ratings, a 37.5p/hr pay rise is given to high-paid ratings)²⁹.</p> <p>The low and high cases assume ratios either side of this, 25% (1/4) and 50% (1/2).</p>			
Proportion of seafarers benefitting	<p>As above, it is assumed that half of ratings will benefit directly and half indirectly. Seafarer data based on data from the UK Chamber of Shipping indicates that approximately 2/3 of seafarers on ro-pax vessels are ratings, while DfT statistics³⁰ show approximately 1/2 of all seafarers are ratings.</p> <p>Therefore, it is assumed that 1/3 of all seafarers on ro-pax vessels and 1/2 of seafarers on other vessel types will benefit directly from the policy, and 1/3 and 1/2 respectively will benefit indirectly. (Because it is assumed that all operators may or will cut wages in the counterfactual, this does not vary by operator.)</p>	<p>On ro-pax vessels, 1/3 of seafarers benefit directly and 1/3 benefit indirectly</p> <p>On other vessels, 1/4 of seafarers benefit directly and 1/4 benefit indirectly.</p>		
Average number of seafarers per journey	<p>Estimates were made by synthesising:</p> <ul style="list-style-type: none"> - policy assumptions based on knowledge of the sector; - evidence provided at consultation; - Consolidated European Reporting System (CERS) data for number of people on board; and - publicly available information on crew sizes. 	<p>100 on ro-pax 20 on ro-ro 5 on container and bulk</p>	<p>120 on ro-pax 25 on ro-ro 12 on container and bulk</p>	<p>150 on ro-pax 30 on ro-ro 20 on container and bulk</p>

²⁹ This is very loosely based on domestic NMW appraisal by the Department for BEIS. For the most recent NMW rise, the impact assessment (https://www.legislation.gov.uk/ukia/2022/14/pdfs/ukia_20220014_en.pdf) estimated that about 8% of workers would benefit from direct benefits (Table 4, p28), and assumed that indirect benefits would go up to the 25th percentile of the wage distribution (para94, p22). Total direct benefits are about £899m (Table 6, p29) and total indirect benefits are about £689m (Table 7, p30). This implies that, approximately, 2 workers benefit indirectly for every 1 worker benefitting directly, and there are about £3 in indirect benefits for every £4 of direct benefits. Therefore, though no corresponding figure is explicitly calculated in the IA, the numbers and assumptions imply that the ratio of direct benefits per worker to indirect benefits per worker is very approximately between 2.5:1 and 3:1 (meaning the value of indirect benefits per worker are between 33% and 40% of the value of direct benefits per worker). It is not possible to fully replicate the methodology used for indirect benefits in domestic NMW appraisal because much less data is available on the current wage distribution and key wage rates in the sector in scope of the policy.

³⁰ Dataset sfr0101, available from <https://www.gov.uk/government/statistical-data-sets/seafarer-statistics-sfr>.

<p>Number of vessel journeys</p>	<p>Data on voyages is from DfT port freight statistics and DfT port arrival statistics³¹ (some analysis based on unpublished underlying data).</p> <p>The datasets have slightly different scope, so they have been synthesised to generate an estimate of the number of voyages (the low/mid/high range comes from differences between the two).</p> <p>All data is from 2019, with quarterly data summed to annual to reflect policy intention for the reference period of average frequency. Estimates for subsequent years are generated by applying time trends in line with the average annual change shown in DfT port arrivals statistics 2009-2019. Ro-pax and ro-ro time trends are amalgamated, with a range from either side of a data break in 2017.</p> <p>Data filtered to approximate the “service” part of the scope definition by selecting vessel-journeys where the total number of sailings by vessels owned by the same company on the same route was 120 or more in option 1, and 52 in options 2 and 3. Only international voyages are included. Only ro-pax (accompanied freight and hybrid freight/leisure passenger) and ro-ro (unaccompanied freight and hybrid container/ro-ro) vessels included in option 2.</p>	<p>Ro-pax: 44k then -1.4%/yr</p> <p>Ro-ro: 9k then -1.4%/yr</p> <p>Container/bulk: 1k then +0.0%/yr</p>	<p>Ro-pax: 51k then -0.5%/yr</p> <p>Ro-ro: 11k then -0.5%/yr</p> <p>Container/bulk: 1k then 1.3%/yr</p>	<p>Ro-pax: 59k then +0.0%/yr</p> <p>Ro-ro: 13k then +0.0%/yr</p> <p>Container/bulk: 2k then +2/9%/yr</p>
<p>Average time in port</p>		<p><i>Rounded to the nearest 1,000. Starting values refer to 2019, with time trend applied from then. Values here are in the preferred option and vary in other options.</i></p>		
<p>Average vessel speed</p>	<p>Ro-pax: analysis of published timetables, implying roughly 1hr turnaround time at Dover and roughly 3hrs at a sample of other ports; journeys data shows 60% of ro-pax vessel journeys were through Dover, so the weighted average is 1.8hrs (60% * 1 + 40% * 3).</p> <p>Ro-ro: analysis of Clarkson’s data on port stops for a sample of ro-ro vessels.</p> <p>Container: United Nations Conference on Trade and Development (UNCTAD) data³² on median time in port, average was c.20hrs (0.83 days = 19.9hrs) and it is assumed that half the crew are “on shift” at a time throughout this period.</p>	<p>Ro-pax: 1.8hrs per seafarer per port stop</p> <p>Ro-ro: 5hrs per seafarer per port stop</p> <p>Container and bulk: 10hrs per seafarer per port stop</p>		
		<p>33km/hr for ro-pax</p> <p>22km/hr for ro-ro and other vessel types</p>		

³¹ The most recent annual summary is available from <https://www.gov.uk/government/statistics/port-freight-annual-statistics-2020>. Detailed data tables are available from <https://www.gov.uk/government/statistical-data-sets/port-and-domestic-waterborne-freight-statistics-port>, including port freight statistics from port0301 and port arrival statistics from port0601. This analysis uses some underlying vessel-level data which is not published due to commercial sensitivity.

³² <https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=170027>

	Assumed average speed is a little below steaming speed due to port entry/exit. Numbers were very close to round numbers so rounded slightly to create round total time inputs (40mins for ro-pax, 60mins for other vessels).	
Distance in UK waters	United Nations Convention on the Law of the Sea (UNCLOS) article 3 ³³ defines territorial waters as 12 nautical miles ≈ 22.2km.	22km per journey

³³ https://www.un.org/depts/los/convention_agreements/texts/unclos/part2.htm

Figure 3: model structure (compliance costs)

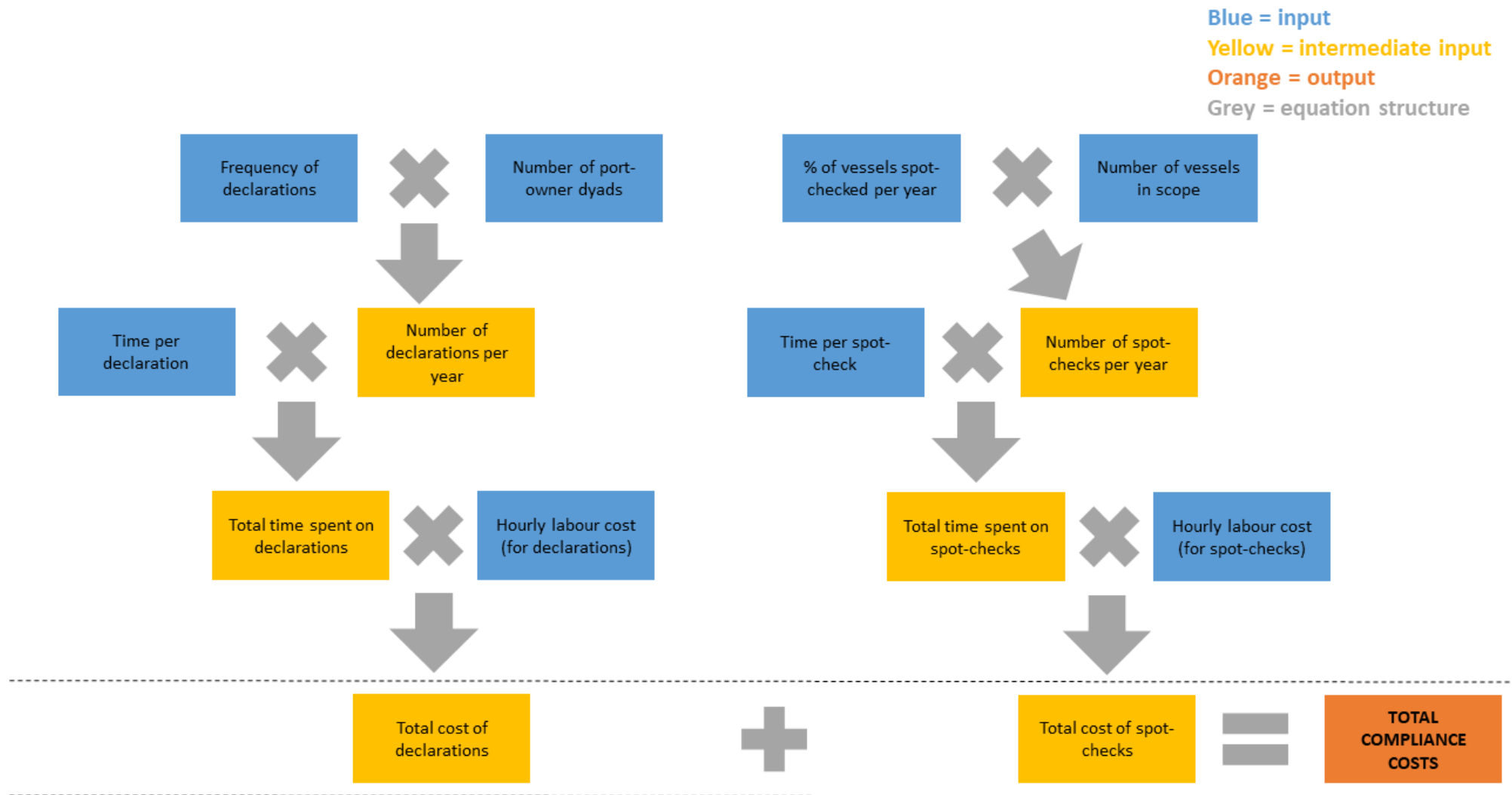


Table 4: inputs (compliance costs)

Input	Data sources and description of approach	Low	Medium	High
Number of port-owner dyads	From the voyages data (see description above). The number of dyads is the number of unique port-operator combinations in scope of the policy.	62 dyads (preferred option)		
Frequency of declarations	Based on best knowledge of the policy intention. To be confirmed in secondary legislation but not likely to vary significantly.	1 declaration per dyad per year		
Time per declaration	This is an assumption based on best knowledge of the policy intention for the declaration to be short. Note the content and process is to be confirmed in secondary legislation. Based on time for vessel owners/operators to complete the form, and time for ports/SHAs to process the forms.	30mins per vessel owner and 30mins per SHA	60mins per vessel owner and 60mins per SHA	90mins per vessel owner and 90mins per SHA
Hourly labour cost (declarations)	Wage data based on Office for National Statistics (ONS) Annual Survey of Hours and Earnings (ASHE) 2021 Table 14.5a ³⁴ for transport managers (row 26). The range is the 25/50/75 percentiles. As above, annual wage growth is 3.8% from OBR long term assumptions and non-wage uplift is 17.9% from ONS statistics.	£12.28/hr, +3.8%/yr growth, +17.9% uplift	£15.66/hr, +3.8%/yr growth, +17.9% uplift	£20.11/hr, +3.8%/yr growth, +17.9% uplift
Number of vessels	From the voyages data (see description in labour costs inputs table).	101 vessels (preferred option)		
% of vessels checked	Best knowledge of the policy intention. To be confirmed in secondary legislation, but it is likely that each vessel/service will be spot-checked at regular intervals.	1 spot-check per year per vessel		
Time per spot check	Based on BEIS advice on domestic NMW spot-checks, with 12hrs as the central scenario and a wide range to account for it being unknown how similar this regime will be. It is assumed that each check requires the time of one inspector employed by the MCA and one official employed by the company owning the vessel.	6hrs per inspector, 6hrs per vessel owner	12hrs per inspector, 12hrs per vessel owner	18hrs per inspector, 18hrs per vessel owner
Hourly labour cost (spot-checks)	For inspectors, wage data based on ASHE Table 14.5a for HR managers (row 21). The range is the 25/50/75 percentiles. As above, annual wage growth is 3.8% from OBR long term assumptions and non-wage uplift is 17.9% from ONS statistics. For vessel owners, inputs are as above (for declarations).	£19.31/hr, +3.8%/yr growth, +17.9% uplift	£24.33/hr, +3.8%/yr growth, +17.9% uplift	£31.86/hr, +3.8%/yr growth, +17.9% uplift

³⁴ <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/occupation4digitsoc2010ashtable14>

Figure 5: model structure (transition costs)

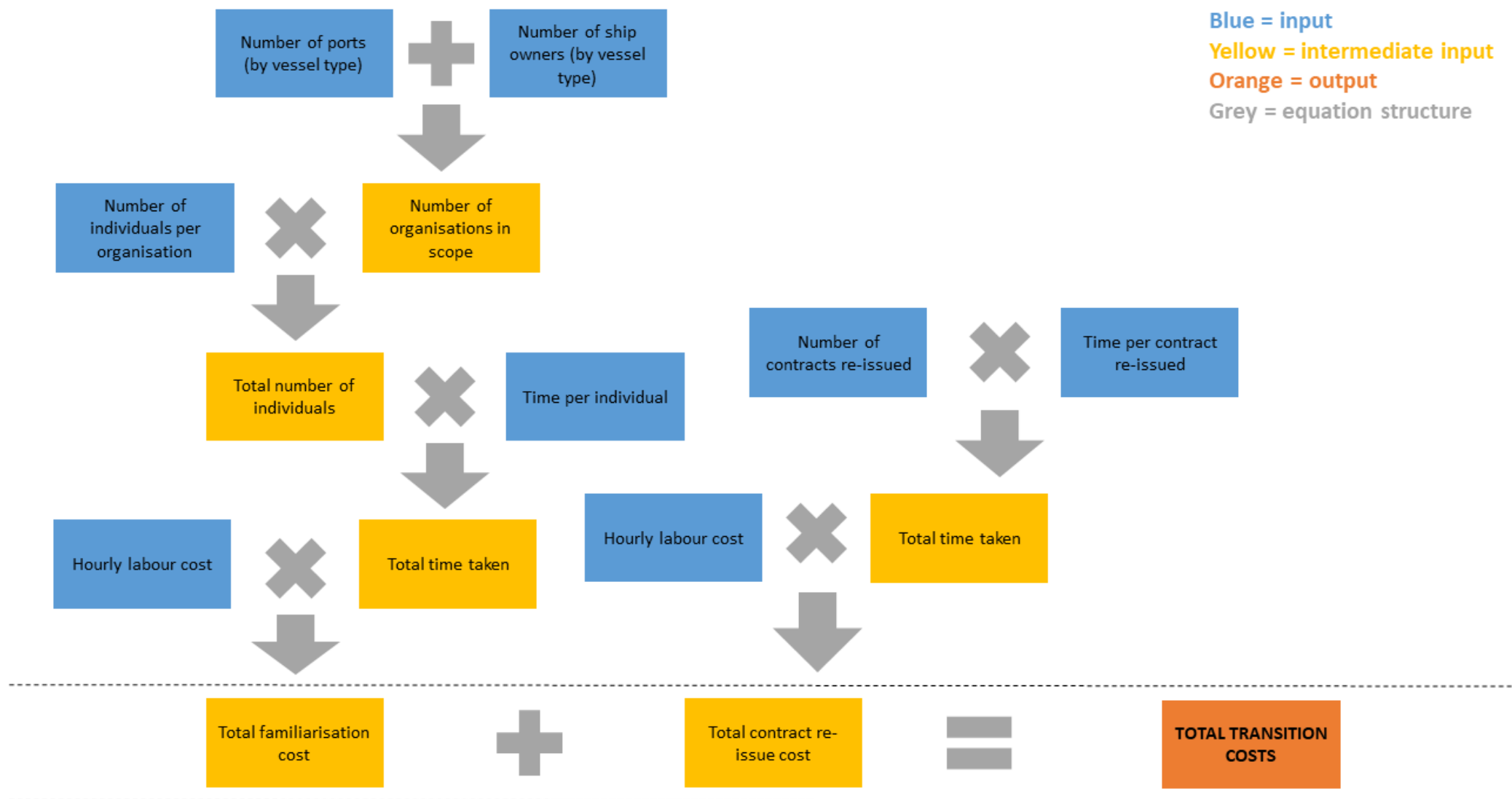


Table 6: inputs (transition costs)

Input	Data sources and description of approach	Low	Medium	High
Number of organisations	Based on every port and every company owning a vessel in scope familiarising.	18 ports and 47 operators (preferred option)		
Individuals per organisation	This is an assumption based on organisations ensuring more than one individual knows about the policy.	2	2	2
Time to familiarise per individual	This is an assumption based on there being a relatively small amount of documentation to read.	1hr	2hrs	3hrs
Number of contracts re-issued	From the voyages data used (see description in labour costs inputs table). The crew size inputs for each vessel type were multiplied by the number of individual vessels in scope. The total was doubled to reflect staff off duty at any one time (with this ratio informed by consultation evidence).	c.3,600 plus off duty staff (preferred option)	c.4,400 plus off duty staff (preferred option)	c.5,500 plus off duty staff (preferred option)
Time to re-issue a contract	<p>Based on a 2009 report from Department for Business, Enterprise and Regulatory Reform (BERR), the predecessor of BEIS, which found the time taken to amend a contract of written particulars was about 73.75 minutes³⁵.</p> <p>Familiarisation time (25%) was excluded to avoid double counting familiarisation costs, and time to gather information (25%) was excluded on the assumption that it the information would be the same or similar for all employees and would need to be done only once, rather than on a per-contract basis.</p> <p>This leaves a total time of 36.9 minutes. This was rounded to 40 minutes in the central case to adjust for fixed costs of “gathering” time. A range was introduced to reflect uncertainty due to the age of this report.</p>	30mins per contract	40mins per contract	60mins per contract
Hourly labour cost	<p>As above, this comes from ASHE data on wage costs of transport managers, plus a standard non-wage uplift. Adjusted to 2024 but no further year-on-year increase is applied as costs are incurred in the year of implementation.</p> <p>The same rate is applied for both familiarisation and contract re-issue.</p>	£12.28/hr, +17.9% uplift	£15.66/hr, +17.9% uplift	£20.11/hr, +17.9% uplift

³⁵ p40, <https://webarchive.nationalarchives.gov.uk/ukgwa/20090609035041/http://www.berr.gov.uk/files/file49199.pdf>

Summary of impacts by option

2.19. The following tables summarise the estimated impacts of each option. All figures are in 2024 prices, discounted from 2024 (the year costs/benefits begin). Figures refer to the total impact over ten years (the standard appraisal period)³⁶.

Table 7: estimated impacts of option 1 (72hrs frequency, all services, preferred option)

<i>Cost/benefit</i>	<i>Incurred by</i>	<i>Low (£)</i>	<i>Medium (£)</i>	<i>High (£)</i>
Direct wage cost	Operators	114,878,008	240,552,010	462,347,756
Direct non-wage cost	Operators	20,563,163	43,058,810	82,760,248
Indirect wage cost	Operators	28,719,502	90,207,004	231,173,878
Indirect non-wage cost	Operators	5,140,791	16,147,054	41,380,124
TOTAL PAY COST		169,301,465	389,964,877	817,662,006
Declarations	Operators	4,637	11,825	22,779
Declarations	Ports	4,637	11,825	22,779
Spot-checks	Operators	90,636	231,167	445,285
Spot-checks	Public sector	142,524	359,151	705,459
TOTAL COMPLIANCE COSTS		242,433	613,969	1,196,301
Familiarisation	Operators	1,524	3,886	7,485
Familiarisation	Ports	583	1,488	2,867
Contract re-issue	Operators	58,877	121,757	293,566
TOTAL TRANSITION COSTS		60,984	127,131	303,918
TOTAL COSTS		169,604,881	390,705,977	819,162,225
Direct labour benefits	Seafarers	135,441,172	283,610,820	545,108,004
Indirect labour benefits	Seafarers	33,860,293	106,354,057	272,554,002
TOTAL BENEFITS		169,301,465	389,964,877	817,662,006
Net present social value		-303,417	-741,100	-1,500,219
Net impact on business		-169,462,358	-390,346,826	-818,456,766

³⁶ Note that "Low" and "High" scenarios refer to the impacts being lower and higher. Because net present value (NPV) figures are negative, the least negative (and therefore technically the highest) NPV occurs in the "Low" scenario. Values are not switched to avoid confusion, and this approach is consistent throughout the document.

Table 8: estimated impacts of option 2 (weekly frequency, ro-pax and ro-ro services only)

<i>Cost/benefit</i>	<i>Incurred by</i>	<i>Low (£)</i>	<i>Medium (£)</i>	<i>High (£)</i>
Direct wage cost	Operators	116,719,430	245,745,683	465,567,914
Direct non-wage cost	Operators	20,892,778	43,988,477	83,336,657
Indirect wage cost	Operators	29,179,858	92,154,631	232,783,957
Indirect non-wage cost	Operators	5,223,195	16,495,679	41,668,328
TOTAL PAY COST		172,015,261	398,384,470	823,356,856
Declarations	Operators	5,683	14,496	27,922
Declarations	Ports	5,683	14,496	27,922
Spot-checks	Operators	101,405	258,633	498,190
Spot-checks	Public sector	159,457	401,822	789,276
TOTAL COMPLIANCE COSTS		272,229	689,446	1,343,310
Familiarisation	Operators	1,880	4,795	9,237
Familiarisation	Ports	551	1,406	2,707
Contract re-issue	Operators	65,157	133,801	320,109
TOTAL TRANSITION COSTS		67,589	140,002	332,054
TOTAL COSTS		172,355,078	399,213,918	825,032,219
Direct labour benefits	Seafarers	137,612,209	289,734,160	548,904,571
Indirect labour benefits	Seafarers	34,403,052	108,650,310	274,452,285
TOTAL BENEFITS		172,015,261	398,384,470	823,356,856
Net present social value		-339,818	-829,448	-1,675,363
Net impact on business		-172,195,621	-398,812,096	-824,242,944

Table 9: estimated impacts of option 3 (weekly frequency, all services)

<i>Cost/benefit</i>	<i>Incurred by</i>	<i>Low (£)</i>	<i>Medium (£)</i>	<i>High (£)</i>
Direct wage cost	Operators	117,742,842	251,902,818	485,827,242
Direct non-wage cost	Operators	21,075,969	45,090,604	86,963,076
Indirect wage cost	Operators	29,435,711	94,463,557	242,913,621
Indirect non-wage cost	Operators	5,268,992	16,908,977	43,481,538
TOTAL PAY COST		173,523,514	408,365,955	859,185,478
Declarations	Operators	8,226	20,981	40,414
Declarations	Ports	8,226	20,981	40,414
Spot-checks	Operators	189,349	482,934	930,248
Spot-checks	Public sector	297,747	750,305	1,473,780
TOTAL COMPLIANCE COSTS		503,549	1,275,199	2,484,856
Familiarisation	Operators	2,950	7,524	14,493
Familiarisation	Ports	648	1,654	3,185
Contract re-issue	Operators	69,128	150,006	372,134
TOTAL TRANSITION COSTS		72,727	159,183	389,811
TOTAL COSTS		174,099,789	409,800,338	862,060,145
Direct labour benefits	Seafarers	138,818,811	296,993,422	572,790,318
Indirect labour benefits	Seafarers	34,704,703	111,372,533	286,395,159
TOTAL BENEFITS		173,523,514	408,365,955	859,185,478
Net present social value		-576,276	-1,434,382	-2,874,667
Net impact on business		-173,802,042	-409,050,033	-860,586,365

Costs

Direct labour costs

2.20. Direct labour costs consist of additional pay to seafarers who would have been paid below NMWe in the counterfactual, but who are paid NMWe because of the policy. In the preferred option, these costs are estimated to be £283.6m³⁷. This consists of £240.6m in wage costs (going directly to seafarers) and £43.1m in non-wage costs (social security and pension contributions).

Indirect labour costs

2.21. Indirect labour costs consist of additional pay to seafarers who would not have been paid below NMWe in the counterfactual, but who receive an increase in pay following the policy to maintain pay differentials. In the preferred option, these costs are estimated to be £106.4m. This consists of £90.2m in wage costs (going directly to seafarers) and £16.1m in non-wage costs (social security and pension contributions).

Compliance costs

2.22. Total compliance costs are estimated to be £614k in the preferred option. Declarations are estimated to cost a total of £12k to operators and £12k to ports. Spot-checks are estimated to cost a total of £231k to operators and a total of £359k to the Maritime and Coastguard Agency (MCA), the public authority carrying out the spot-check regime.

2.23. Total costs to the private sector are therefore estimated to be £255k, including £243k to operators and £12k to ports. In addition, there will be a cost to the public sector of £359k.

Transition costs

2.24. Transition costs are estimated to be £127k in the preferred option. Familiarisation is estimated to cost a total of £4k to operators and £1k to ports. Re-issuing contracts is estimated to cost a total of £122k to operators.

2.25. Taking compliance and transition costs together, the total cost to ports is estimated to be £13k. The total cost to the public sector is £359k. The remainder of the overall cost is estimated to fall on operators³⁸, a total of £390.3m in the preferred option.

Discussion

2.26. In the preferred option, total labour costs are £390.0m. Calculations (not shown in the tables above) shows that this consists of £361.6m to ro-pax services (93%), £26.1m to ro-ro services (7%) and £2.3m to container and bulk services (1%). According to the voyages data used in the cost-benefit analysis, about 63k vessel-journeys would have been in scope of the preferred option had it been in effect in 2019. Of these, about 51k (82%) would have been ro-pax, 11k (17%) would have been ro-ro and 1k (2%) would have been container or bulk. This shows that ro-pax accounts for a larger share of costs than of vessel-journeys, meaning labour costs fall both largely and disproportionately highly on ro-pax services. This is because ro-pax services have the highest cost per vessel-journey as a result of being the most heavily crewed vessel type (and this outweighs the shorter time in port per port call), as per the inputs listed above.

³⁷ Throughout discussion of costs and benefits, figures are typically rounded to the nearest £0.1m (for figures in millions) or the nearest £1k (for figures in thousands). This means some breakdowns of aggregate figures sum imprecisely due to rounding.

³⁸ Note that the number of individual operators in the cost-benefit analysis is based on the number of registered vessel owners. In some cases, the manager of a vessel is a different company to the owner, so the analysis assumes that in these cases costs to operators will ultimately fall to the owners, even if managers are responsible for implementing parts of the policy.

- 2.27. Costs are larger the wider the scope of the policy, with option 2 (weekly frequency, ro-pax and ro-ro only) having larger costs than option 1 (72hrs frequency, all vessel types), and option 3 (weekly frequency, all vessel types) having larger costs than option 2. This is as expected, because wider scope on either frequency or vessel type criteria brings a larger share of services and vessel-journeys into scope. However, differences between the three options are only small, about £8.5m between option 2 and option 1 and £10.5m between option 3 and option 2. The reason for this is also because of the large and disproportionate share of costs falling on ro-pax services, as above. Because the overwhelming majority of ro-pax services run at an average frequency of 72hrs or more, the overwhelming majority of ro-pax services are expected to be in scope of all three options. This means the £361.6m labour cost to ro-pax vessels in the preferred option are also incurred in the other options. Option 2 has higher costs than option 1 because the number of ro-ro (and ro-pax) services brought into scope by extending frequency to weekly outweighs the number of container and bulk services left out of scope by imposing an explicit vessel type criterion. Option 3 has higher costs than option 2 because container and bulk services are brought into scope, and there are no services in scope of option 2 that are not also in scope of option 3 (the difference in cost between the options, therefore, is equal to the cost to container and bulk services). As above, no cruise services are expected to be in scope of any options, because they call far less frequently at UK ports (on average over a year).
- 2.28. Direct labour costs account for the large majority (73%) of costs, with indirect labour costs accounting for almost all the rest (27%) and compliance and familiarisation together making up only a fraction (less than 1%) of costs. This shows that the administrative burden of the policy, while non-trivial, is not expected to be a significant factor in costs when compared to the substantive labour costs of raising pay. The range shows that, overall impacts are just over twice as large in the high case as in the medium/central case, and just over twice as large in the medium/central case as in the low case. There is a slightly wider range for indirect than for direct labour costs, due to the inputs, reflecting greater uncertainty in indirect impacts.
- 2.29. There is no significant trend in costs per year over the ten-year appraisal period. Nominal undiscounted costs show an upward trend as the wage differential increases (and this outweighs the slight decrease in number of vessel-journeys). However, adjusted figures (real prices and discounted) show a very small decrease as adjustments slightly outweigh the nominal upward trend. For example, total labour costs in the preferred option are about £40.6m in the first year of the policy and £37.0m in the tenth year: only a small variation around the average of £39.0m per year. Therefore, outputs from annual costs to business calculations will reflect (or very slightly overestimate) the ongoing cost to business incurred on a permanent basis after the standard ten-year appraisal period ends.
- 2.30. The labour costs reported are a total across all companies. In practice, costs will fall only on employers who would otherwise pay low wages. In theory, an employer currently paying all its seafarers wages equivalent to the UK NMW would face no direct labour costs from the policy compared to the *status quo*. However, as in the counterfactual, it is assumed that in the absence of policy action, wages converge at low rates. Therefore, the policy is not expected to create uneven costs (on a per-worker basis) compared to the counterfactual. Due to uncertainty about the breakdown of seafarers by employer as well as the current employment arrangements of employers, no company-by-company breakdown is provided.

Pass-through of costs

Background and approach

- 2.31. It is possible that vessel owners/operators will respond to the costs of the policy by passing costs through in the form of price rises for their consumers. This section estimates the likely scale of the impact of this response. Note this is an indirect impact which is subject to significant

uncertainty. Therefore, outputs in this section do not inform the headline cost-benefit analysis outputs and are provided to clarify expectations of the scale of any pass-through of costs³⁹.

- 2.32. In the case of ro-pax vessels, which carry both leisure passengers and freight, operators may choose to allocate price rises to freight or to leisure sections, and it is not known how this decision will be made. Although leisure passengers may be more cost-intensive to serve (due to greater provision of on-board services), they may also be more price-sensitive due to the greater number of options ferries compete with (while ferries compete with other modes for freight, they arguably compete at least to some extent with the wider leisure industry for leisure passengers, especially those travelling for holiday). To account for this uncertainty, three cases are considered: one where the entire cost is passed through to leisure passengers, one where the entire cost is passed through to freight, and one where the cost is passed through on a per-unit basis (with the price increase the same for leisure passenger and freight units). In the absence of evidence as to whether freight or passenger units will be more targeted for pass-through, the case with the even per-unit cost increase is taken as the central case.
- 2.33. The analysis further assumes that costs are passed through evenly between units regardless of direction (i.e. whether they are imported to or exported from the UK). This represents the case that operators pass costs through in proportion to the additional costs incurred. If there are features of the market which mean it is easier to pass costs through to goods travelling in a certain direction, it is possible that this assumption would not hold. The figures below would overestimate actual costs passed through in one direction and underestimate actual costs passed through in the other direction. Due to lack of evidence suggesting whether cost pass-through is more likely to target UK imports or UK exports, this is not explicitly analysed.
- 2.34. All figures are indicative and must be treated as subject to significant uncertainty. Their purpose is to provide an idea of the likely scale of the *average* impact the policy may have on freight rates and passenger prices if operators pass through all additional costs to customers. In particular, the figures should be interpreted as an indicative average which does not necessarily reflect the actual increase in price for any given transaction. There are two main ways in which the actual increase for a given transaction may differ from the average:
- Heterogeneity between operators: some operators may face larger costs from the policy than others due to current pay rates or labour share of costs. This means that, if all operators were to pass through the additional costs they faced, the increase in freight rate would vary by operator around the average.
 - Different abilities to pass costs through: the market structure is a key determinant of operators' ability to pass costs through. Economic theory suggests that the more competitive a market an operator is in, the less price-setting power it has, and therefore the less it will be able to raise prices. As discussed in the Competition Assessment, at least some parts of the ferry market face some competitive pressures, especially cross-Channel operators who compete with Channel Tunnel rail freight. This means that operators, particularly cross-Channel operators, are likely not to pass the entire additional costs through to higher prices. This means that the actual average increase in freight rate is likely to be lower than the calculated indicative average, and the numbers below are likely to be an overestimate of actual knock-on impacts.
- 2.35. All outputs presented in this section are average real values over ten years. Year-by-year analysis shows no significant time trend in costs per unit by year across the appraisal period⁴⁰.

³⁹ See RPC guidance on direct and indirect costs and pass-through (section 4.1.4 at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/790016/RPC_case_histories_-_direct_and_indirect_impacts_March_2019_1_.pdf). Costs are counted as direct costs to business if they incur to business in the first instance, and any pass-through of costs would be a subsequent, indirect impact.

⁴⁰ Costs per unit rise very slightly in the first half of the ten-year appraisal period and then fall very slightly in the second half, so that the average per-unit increase in 2033 is almost the same as in 2024. This reflects slightly lower costs of the policy (a slight upward trend in nominal costs by year is more than offset by adjusting for inflation and Green Book discounting), together with a very small downward trend in freight volumes based on past trends.

In addition, all outputs are calculated based on the central case of the cost-benefit analysis and may be lower in the low case or higher in the high case.

Summary of outputs

Table 10: maximum pass-through of costs, option 1 (72hrs frequency, all services, preferred option)

	Even per unit		All costs freight		All costs passenger	
	£/unit	%	£/unit	%	£/unit	%
Dover freight	3.61	1.4%	6.61	2.6%	0.00	0.0%
Other freight	3.71	0.7%	6.64	1.2%	0.00	0.0%
Dover passenger	3.61	3.6%	0.00	0.0%	7.94	7.9%
Other passenger	3.71	1.2%	0.00	0.0%	8.42	2.8%

Table 11: maximum pass-through of costs, option 2 (weekly frequency, ro-pax and ro-ro services only)

	Even per unit		All costs freight		All costs passenger	
	£/unit	%	£/unit	%	£/unit	%
Dover freight	3.61	1.4%	6.61	2.6%	0.00	0.0%
Other freight	3.03	0.6%	4.75	0.9%	0.00	0.0%
Dover passenger	3.61	3.6%	0.00	0.0%	7.94	7.9%
Other passenger	3.03	1.0%	0.00	0.0%	8.37	2.8%

Table 12: maximum pass-through of costs, option 3 (weekly frequency, all services)

	Even per unit		All costs freight		All costs passenger	
	£/unit	%	£/unit	%	£/unit	%
Dover freight	3.61	1.4%	6.61	2.6%	0.00	0.0%
Other freight	3.16	0.6%	4.95	0.9%	0.00	0.0%
Dover passenger	3.61	3.6%	0.00	0.0%	7.94	7.9%
Other passenger	3.16	1.1%	0.00	0.0%	8.72	2.9%

Freight rates

2.36. Freight pricing varies by contract and is difficult to estimate precisely. A range of available data⁴¹ suggests that the price of transporting a heavy goods vehicle (HGV) on a cross-Channel ro-ro service is approximately £210-£250 plus bunker adjustment factor (BAF). On other routes, accompanied ro-ro services tend to be priced at an average of £530-£570 plus BAF, and unaccompanied ro-ro services at about £490-£530 plus BAF. Non-BAF-adjusted base prices tend to be relatively consistent over time. Therefore, analysis assumed that the price of transporting a freight unit is £250 on routes into Dover, and £550 on average on other routes. This takes a value at the top end of the non-BAF-adjusted price range, which means it is likely to be an overestimate of actual prices when fuel prices are low (and BAF low) and likely to be an underestimate of actual prices when fuel prices are high (and BAF high). Prices are assumed to be constant in real terms from data source year throughout the appraisal period.

2.37. The analysis divides the total cost to business of the policy (including indirect costs), as calculated in the cost-benefit analysis above, by the number of freight units on vessels expected to be in scope, as taken from DfT port freight statistics (matched to the voyages data used in

⁴¹ Indicative figure taken from an overview of several sources, including government contract information, a report by Oxera for DfT, and analysis of publicly available prices on ferry company websites and third-party sellers.

the cost-benefit analysis⁴²). It is assumed that a freight unit refers to an HGV carrying 2 TEUs (Twenty Equivalent Units, 20-foot containers). This is how freight units are typically transported and counted on ro-pax and ro-ro vessels, which account for the large majority of units transported in all options (as ro-pax and ro-ro account for the large majority of services expected to be in scope). However, this is not necessarily uniformly the case, and one “unit” may be larger or smaller in some cases. There may also be variations for some container and bulk services, but these account for only a small minority of the total number of units in each policy option. Therefore, the simplifying assumption that one unit refers to 2 TEUs is considered reasonable and unlikely to lead to systematic error in the estimates.

- 2.38. The outputs suggest that, in the preferred option, the maximum pass-through of costs would add an average of about £3.61/unit to freight rates on Dover and about £3.71/unit on other routes. According to the freight rate inputs described above, this is equal to an increase of very approximately 1.4% on Dover routes and 0.7% on other routes. This increase is not negligible, but it is not expected to be significant enough to create major shifts in demand. See further discussion in the Trade and Investment Assessment and Competition Assessment.
- 2.39. Dover has been separated out because of its importance (accounting for about 47% of vessel-journeys expected to be in scope in the preferred option) and data availability. The non-Dover figure is an average and may mask variation between different routes. No other route accounts for enough services or has granular enough data to provide more specific breakdown. Note that the maximum increase in freight rate is the same for Dover in all options considered. This is because essentially all freight services calling at Dover are high-frequency ro-pax services and would therefore be included in scope under all policy options considered.
- 2.40. The largest source of uncertainty in the outputs in the summary table is the freight rate inputs, and the % outputs (but not £/unit outputs) would change in direct inverse proportion to any error. For example, if freight rates were actually half the price of those used in the analysis (i.e. £125/unit on Dover routes and £275/unit on average on other routes), the % increase in freight rates would be double the outputs above (approximately 2.8% on Dover routes and 1.2% on other routes). Conversely, if freight rates were in fact double the price used in the analysis, % increases would be half the outputs above (approximately 0.7% on Dover routes and 0.3% on other routes). The outputs also take costs to business from the central outputs: the low and high cases respectively have approximately half and double the costs of the central case, so costs per unit would be approximately half and double the outputs in the table in these cases. This shows there is uncertainty around the central outputs shown above. As above, though differences could be significant in case of very small operating margins, the % increases remain small in all scenarios, which allows a degree of confidence that there will not be very large % increases in freight rates.

Leisure passengers

- 2.41. Leisure passenger pricing also varies significantly by route, season, and type of ticket. An analysis of current prices⁴³ suggests that the price of a ticket for one passenger unit is approximately £100 on cross-Channel routes and £300 on average on other routes. % figures are based on these rates and are therefore very approximate. (In this context, one passenger unit is one passenger vehicle, which will often be carrying multiple individual passengers.)
- 2.42. The outputs suggest that, in the preferred option, the maximum pass-through of costs would add an average of about £3.61/unit to passenger prices on Dover routes and about £3.71/unit on other routes (the same as freight rates because the central case assumes an even-per-unit increase). According to the passenger price inputs described above, this is equal to an increase of very approximately 3.6% on Dover routes and 1.2% on other routes. As with freight rates, this

⁴² There were about 10.7m units on services that would have been in scope had the preferred policy option been in effect in 2019, including 4.7m passenger units and 6.0m freight units. Annual growth rates applied to these numbers were the same as the central growth rates used to adjust the number of vessel-journeys, as per the labour costs inputs table above.

⁴³ Indicative figure taken from publicly available price lists and offers on ferry company websites and third-party sellers. Based on a standard-size car carrying two adults and two children. Prices of the cheapest single ticket for a summer morning weekday.

increase is not negligible, but is not expected to be significant enough to create major shifts in demand.

- 2.43. Similarly to freight rates, the largest source of uncertainty is the passenger price inputs. If there was an error, % outputs (but not £/unit outputs) would change in direct inverse proportion to any error (e.g. doubling if prices were half as expensive as the input, and halving if prices were twice as expensive as the input). The range also varies with the low and high costs to business outputs presented above. As with freight rates, the outputs in the higher end of the range could be significant in case of very small operating margins, but the range allows a degree of confidence that there will not be very large % increases in leisure passenger prices.

Consumer prices

- 2.44. If the policy results in higher freight rates, there is a chance costs may be passed on one step further in the form of higher prices for consumers. As above, this effect is mitigated by variation around the average and by constraints imposed by market structure. Because the goods involved are heterogeneous, no general conclusions can be drawn about the extent to which sellers are likely to face constraints on raising prices. The effects calculated here are an upper bound because they assume full pass-through of costs through at least two distinct steps: from transport operators to importers, and from importers to consumers (and in some cases there are likely to be additional transactions in the retail chain before goods are sold to final consumers).
- 2.45. Data from MDS Transmodal indicates that, on average, the contents of freight units imported to the UK are worth approximately £37,000 per TEU⁴⁴, which equates to £74,000 per freight unit. There is no evidence on whether or not the freight units in scope of the policy are representative of that average, but ro-ro services are preferred to container services primarily in cases of time-sensitive goods, so the value of the units in scope of the policy is considered more likely to be above average than below average. This suggests using the £74,000 figure is more likely to overestimate than to underestimate impact on consumer prices, but the extent is unknown.
- 2.46. Using the MDS statistic, in the preferred option, the maximum pass-through of costs to consumers is approximately 0.005% with an even per-unit split, and approximately 0.009% with all costs passed onto freight. (As above, this uses the central cost-benefit outputs, and assumes that costs are passed through evenly per unit, regardless of direction. There are no significant differences between Dover routes and other routes.)
- 2.47. This means that, even if consumer prices increase by the full cost to business of the policy, there would be no meaningful increase in consumer prices as a result of the higher freight rates (note the policy covers only a proportion of goods imported to the UK, meaning the average increase across all imports would be even lower, and the average increase across all goods sold would be even lower still). Although the precise numbers are subject to significant uncertainty, the order of magnitude and the conservative assumptions used to generate it allow a high level of confidence that the policy will not make any noticeable difference to general price levels or to headline measures of inflation.

Costs to UK business

- 2.48. Due to the international nature of the maritime sector, it is not always obvious how to define businesses as being UK-based. Because Business Impact Target (BIT) analysis estimates impacts on UK GDP, the BIT section below contains discussion of the merits of different options and presents full BIT outputs under different definitions of “UK business”.
- 2.49. In all options, most vessels affected are neither UK flagged nor UK-owned. If either of these criteria is taken as the definition of a UK business, the costs of the policy fall largely on non-UK business. By contrast, because the scope of the policy is limited to UK internal and territorial

⁴⁴ This statistic is courtesy of MDS Transmodal's World Container Database, which shows the average value per maritime loaded TEU imported into the UK in 2021 was approximately 50,000 USD (\$). Converting at the exchange rate of £1 = \$1.3532 as at 31 December 2021 <https://www.exchangerates.org.uk/GBP-USD-spot-exchange-rates-history-2021.html>, this is equal to approximately 37,000 GBP (£).

waters, if all vessels operating in UK waters are considered UK businesses regardless of other connections to the UK, the cost to UK business is equal to the total costs of the policy.

2.50. The table shows costs UK business under three possible definitions of UK businesses in the central case of the preferred option (see BIT analysis section for further discussion):

Table 13: costs to UK business, option 1 (72hrs frequency, all services, preferred option)

	Total	Direct
(a) UK-owned	£46.5m	£33.9m
(b) UK flagged	£83.9m	£61.1m
(c) all vessels in UK waters	£390.3m	£284.0m

2.51. The comparatively low costs to UK-owned and UK flagged vessels in comparison to the case including all vessels shows the relatively low proportion of these vessels in the vessel fleet calling regularly at UK ports. In the central case of the cost-benefit analysis, it is estimated that approximately 23% of ro-pax vessel-journeys in scope and no journeys of other types are accounted for by UK flagged vessels. Approximately 11% of ro-pax vessel-journeys in scope, 24% of ro-ro vessel-journeys in scope and 81% of container vessel-journeys in scope are accounted for by vessels with an element of UK ownership (directly owned or parent-owned by a company located in the UK). These figures are based on the 2019 voyages data and are subject to change over time if more or fewer companies flag vessels or locate in the UK.

Benefits

Direct

2.52. The direct benefits of the policy consist of additional pay to seafarers who would have been paid below NMWe in the counterfactual, but who are paid NMWe because of the policy. This is equal to the direct labour costs above, as this amount is a transfer from employers to employees. Therefore, these benefits are estimated to be £283.6m. This consists of £240.6m in wages, which will go directly and immediately to seafarers, and £43.1m in non-wage benefits, which will either benefit seafarers non-immediately (e.g. pension contributions) or else accrue as benefits to governments (e.g. social security contributions) and therefore be passed on to society.

Indirect

2.53. In addition, there will be indirect “spillover” benefits to seafarers who have not been paid below NMWe but who receive an increase in pay following the policy to maintain the pay differentials. This is equal to the indirect labour costs above, as this amount is a transfer from employers to employees. These benefits are estimated to be £106.4m. This consists of £90.2m in wages and £16.1m (such as social security and pension contributions).

Benefits to UK workers

2.54. Because of the international nature of the maritime sector, it is highly likely that many of the seafarers benefitting from higher pay will not be UK nationals or UK resident. For example, DfT seafarer statistics show that, over the past ten years, an average of about 17% of ratings in the

UK shipping industry have been UK nationals⁴⁵. No further data is available on seafarer residency, which is the key determinant of effects on UK GDP. On the assumption that nationality and residency are somewhat correlated, 17% figure suggests that the large majority of the benefits will accrue to non-UK-resident workers (and not be indirectly reinvested into the UK economy in the form of higher spending). As there is no data on seafarer residency, the quantified analysis does not explicitly adjust for residency of workers. Therefore, the benefits outputs above should be interpreted as a best estimate of the total benefit to all workers, not the total benefit to UK workers or to the UK economy.

2.55. As above, most costs fall to vessels which are not UK flagged and not UK-owned. Therefore, on these definitions of UK business, the policy would result in a direct transfer from (mostly) non-UK businesses to (mostly) non-UK workers, with only a small impact on the UK economy. By contrast, if the additional costs to business are passed on to UK-based businesses and consumers in the form of higher prices, the policy may indirectly result in a transfer from (mostly) UK business and consumers to (mostly) non-UK seafarers. This would show a negative net present social value to the UK economy in indirect terms. The net impact on the UK economy is not monetised because the effect and its scale are uncertain, due to uncertainty about the proportion of costs to UK businesses and the proportion of benefits to UK workers, as well as the extent to which costs will be passed through.

UK competitiveness

Competitiveness of UK-flagged vessels

2.56. The policy is expected to improve the competitiveness of UK flagged vessels. As described above, UK flagged vessels must pay a broader range of workers the NMW than non-UK flagged vessels. In particular, UK flagged vessels are required to pay the NMW to UK-resident workers who work to at least some extent in the UK, but non-UK-flagged vessels are not. In addition, UK flagged vessels (and other vessels not on innocent passage) are required to pay the NMW to workers who ordinarily work in UK waters. Because of these broader NMW requirements on UK flagged vessels, UK flagged vessels are less cost-competitive than foreign flagged vessels to the extent they employ seafarers falling into these categories.

2.57. As the policy will apply to all vessels regardless of flag, it will expand the number of seafarers on non-UK-flagged vessels who have an incentive to pay NMW-equivalent wages. This will create a more level playing field between UK flagged and non-UK flagged vessels and will increase the competitiveness of UK-flagged vessels. In turn, this will increase the attractiveness of the UK flag to vessels with a choice of which state to flag to.

2.58. However, impacts on UK competitiveness are likely to be limited, due to the following factors:

- It is not certain what proportion of workers fall into the relevant category, i.e. workers who are currently in scope of NMW legislation on UK flagged but not on non-UK flagged vessels. The major criterion involves UK residency; as above, although evidence suggests most seafarers affected will not be UK-based, no specific data is available on residency. Nevertheless, on the assumption that only a small proportion of seafarers affected by the policy are UK-resident, the extent of the improvement in UK competitiveness would be fairly small.
- Even among those workers affected, the improvement in competitiveness of UK flagged vessels will be partial. The policy will not confer NMW rights to workers on non-UK flagged vessels, but it will create an incentive for vessels in scope to pay NMW-equivalent wages while in UK waters. This means that, among the set of workers

⁴⁵ See sfr0303 (<https://www.gov.uk/government/statistical-data-sets/seafarer-statistics-sfr>) sheet adjusted, row 24 as a proportion of row 28. As in the cost-benefit analysis above, it is assumed that ratings and not officers are likely to be receive higher pay because of the policy. The average rate from 2012-2021 was 17%. Rates were below the longer-term average in 2020 (14%) and 2021 (12%), but it is not clear whether the dip is due to factors specific to the coronavirus (COVID-19) pandemic, or reflective of longer-term trends. The data comes from MCA registration data and UK Chamber of Shipping returns, which do not account for all companies and therefore may not be representative of the specific vessels and types in scope of the policy. Therefore, this figure is illustrative only and is used simply and only to demonstrate the low proportion of UK workers in the industry.

currently in scope of NMW legislation if they work on UK flagged vessels, UK flagged vessels will still face a more expansive set of duties than non-UK flagged vessels would. Differences in minimum pay rates will also remain outside UK waters for workers who do not ordinarily work in UK waters. Therefore, the policy will mitigate rather than eliminate the difference in competitiveness of UK flagged vessels.

- 2.59. The scale of the effect on UK competitiveness is uncertain and is not quantified due to lack of data. However, taken together, the low proportion of UK-resident workers and the fact the policy only mitigates the lack of competitiveness suggest the effect is likely to be small.

Incentives for vessels to employ UK-resident seafarers

- 2.60. The policy could make it relatively more attractive for UK flagged vessels to employ UK-resident seafarers. Currently, as above, seafarers on some types of UK flagged vessels are in scope of NMW legislation if they are UK-resident but not if they are non-UK-resident. This creates an incentive for these vessels to employ non-UK resident rather than UK-resident seafarers.
- 2.61. Because the policy will apply to all workers regardless of residency, it will expand the number of non-UK-resident seafarers receiving NMW-equivalent wages. This will create a more level playing field between UK-resident and non-UK-resident workers and will reduce the disincentive for UK flagged vessels to employ UK-resident workers. If this led to more UK-resident seafarers being employed, there would be a positive impact on UK workers and on the UK economy. Conversely, if it meant substituting away from non-UK-resident seafarers, there would be a negative impact on these workers (so the global welfare impact would be ambiguous, but the UK welfare impact would be positive).
- 2.62. However, as above, the difference in competitiveness is reduced but not eliminated. UK-resident workers will still be entitled to broader NMW protections that non-UK-resident workers are not. In some cases, UK-resident seafarers will still be entitled to the NMW outside UK waters, but the policy does not affect payment of non-UK-resident seafarers outside UK waters. This means that the effect, although uncertain, is likely to be small.
- 2.63. It is also possible that there will be effects in the other direction. If it were assumed that (a) operators respond to pay increases for low-paid seafarers by cutting pay for other seafarers; and (b) operators pay UK-resident seafarers more than non-UK-resident seafarers for reasons not affected by this policy, then the policy could create an incentive to employ fewer UK-resident seafarers or to pay existing UK-resident seafarers less. The second assumption may hold in cases of operators who pay different wages to employees of different nationalities. The first assumption, that other seafarers will be paid less as a result of this policy, is not the assumption used in the cost-benefit analysis, where it was assumed that seafarers not directly affected by the policy would be paid more to maintain pay differentials (these were the indirect costs/benefits). Therefore, although this effect is uncertain, it is unlikely to occur in scenario representing the central case from the cost-benefit analysis.

Incentives for UK-resident workers to work as seafarers

- 2.64. The policy could make working as a seafarer relatively more attractive to UK-resident workers. The policy will increase pay for seafarers, which will encourage more UK workers to enter the seafarer sector. In addition, by making pay levels equivalent to the domestic NMW for a part of the journey, seafaring jobs will become more alternatives to other minimum-wage jobs, which will encourage more UK workers to include seafaring jobs in their job search. Any effects would increase the number of UK-resident workers benefitting from the policy and would increase the proportion of the additional wages spent in the UK economy, creating wider indirect benefits.
- 2.65. In the absence of any evidence, it is not possible to estimate this effect. However, it is not expected to be material. This is because the policy will mitigate rather than eliminate the lack of attractiveness of seafarer jobs. As above, the policy will not confer full NMW rights on workers, and higher pay will apply only in UK territorial waters and not to other parts of journeys. This means average pay will remain at risk of being below the UK NMW on most international services. In addition, the seafarer labour market will retain the barrier to entry of training requirements, which reduces the extent to which seafarer jobs are substitutable for other

minimum-wage jobs even if they become more attractive. This means any effect on employment of UK nationals is uncertain but not expected to be large. Therefore, the effect is not quantified.

Reputation

- 2.66. The policy is expected to create reputational benefits to the UK from restating a commitment as a leading maritime nation as being strong on seafarer rights. This may make the UK a more attractive location to invest and to do maritime business, although any effects directly attributable to this policy are not expected to be significant and cannot be quantified.
- 2.67. On the other hand, there is also a reputational risk that the UK may be seen to be moving unilaterally on seafarer welfare issues rather than seeking improvements exclusively via multilateral channels. This is mitigated by the UK's clear commitment to working with partner countries, both through bilateral agreements and through multilateral International Maritime Organisation (IMO) and International Labour Organisation (ILO) negotiations.

Taxation

- 2.68. Most of the benefit of higher pay will accrue to individuals, i.e. to the seafarers receiving higher pay. However, some of the additional to pay will go to governments. A share of the wage component of the additional labour cost will be paid in direct taxation. For example, Brewer and De Agostini (2017)⁴⁶ found that domestic workers receiving the UK National Living Wage face marginal effective tax rates of approximately 40%, comprising income tax, employer national insurance, and benefits withdrawals. This indicates that 40p of tax is paid to government for every £1 additional pay received. This figure is illustrative because many of the seafarers benefitting from this policy are not expected to be eligible to pay UK income tax or national insurance (or to receive UK benefits). Because the large majority of vessels in scope are believed to be European flagged or European-owned, it is believed many of the seafarers will be paying direct taxes in other European countries, where there are broadly similar or even higher rates of direct taxation and social security contributions⁴⁷.
- 2.69. In addition to direct taxation of the wage component, a large share of the non-wage component is also accounted for by tax in the form of employer social security contributions (in the UK, this is employer national insurance; as above, broadly similar schemes exist in most European countries, where most employers are believed to be eligible to pay tax).
- 2.70. Illustratively, if all individuals benefitting from the policy faced a marginal effective tax rate of 40% on additional wages, the post-tax wage increase for workers (direct and indirect, total £330.8m in the preferred option, as above) would be about £198.5m, with £132.3m going back to governments (this figure does not include non-wage impacts, which would also generate tax revenue). However, this figure should be interpreted as illustrative only because it is not possible to determine what proportion of seafarers and employers pay tax in which countries. It is also not clear how applicable whole economy average marginal tax rates are to this sector. It is also not possible to estimate what share will go to the UK government, although it is expected that most of the additional taxation will accrue to foreign governments rather than the UK government because only a minority of seafarers benefitting are UK-resident, and only a minority of vessels affected are UK-owned or UK flagged.

⁴⁶ Brewer, M. and De Agostini, P. (2017) "The National Minimum Wage, the National Living Wage and the tax and benefit system" https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/661867/BrewerEdAgostiniI SERNLWtaxandbenefits_FINAL_2017_Report.pdf See discussion of marginal effective tax rates from p23 and summary of average rates on p27.

⁴⁷ The voyages data used in the cost-benefit analysis shows that about 89% of vessel-journeys in scope are expected to be by vessels flagged in the UK (not including Crown Dependencies) or the European Economic Area (EEA), and about 93% of vessel-journeys in scope are expected to be by vessels owned by companies based in the UK or EEA. Therefore, although there is variation in tax arrangements, it is likely that a large share of workers will be on vessels liable to pay income tax and social security contributions either in the UK or in the EEA. Eurostat data https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=earn_nt_taxwedge&lang=en shows the average tax wedge on low wage earners in the European Union (EU) is 39%. For the reasons expressed above, this does not necessarily express the marginal tax rate of individuals in scope (for example, note the historic UK data shows lower tax rates than those found by the NMW review) but this indicates marginal tax rates are expected to be very roughly similar across UK and EEA vessels.

Equity

- 2.71. The seafarers who benefit from higher pay are expected to be very poor by UK standards, with pay rates well below the National Minimum Wage in the absence of this policy. Therefore, the policy is expected to have significant and positive distributional effects. A method for distributional analysis is set out on p97-99 of the Green Book which recommends an equity weighting of 2.42 when beneficiaries are in the bottom quintile of the UK income distribution⁴⁸.
- 2.72. If this figure was used, the total wage transfer in the preferred option would have an equity-weighted value of approximately £800.4m (this does not include non-wage impacts). This suggests an equity-weighted analysis of this policy has the potential to show a large positive net present social value (NPSV) on the basis that it delivers significant benefits to very poor people. However, this figure must be treated as indicative only and is not used for the main NPSV, for the following reasons. These factors suggest a full and precise distributional analysis is neither possible nor proportionate, although it is expected that equity weighting would increase benefits above the headline (non-equity-weighted) benefits shown:
- It is not clear exactly where on the income distribution the individuals are. Not all low-paid seafarers will be at the bottom of the household income distribution, depending on other earners in their household. As above, it is believed that most of the seafarers in scope are not UK-based, and some are likely to be from countries with significantly lower average wage rates. This means that there may be seafarers whose wage would put them at the bottom of the UK income distribution, but who are much higher up the income distribution of their own country of nationality and/or residence. This means applying UK-based equity weightings is highly unlikely to accurately capture the full distributional consequences, but it is not clear how the actual distributional consequences could be captured or calculated.
 - The illustrative equity-weighting figure from the Green Book also assumes that those bearing the cost of the policy are in the middle of the UK income distribution. This is also very unclear: most of the companies paying the higher wages are not UK-owned, meaning it is hard to estimate their place in either the UK or international income distribution (although company shareholders, who would bear the cost of pay increase through reduced profits, would in general be expected to be well above the middle of the income distribution, increasing the equity weighting of the benefits). It is also uncertain to what extent cost increases will be passed on to consumers through higher prices, and if so, which consumers will face the highest price increases, or where those consumers fall in the income distribution. Therefore, it is not possible to accurately determine who bears the cost of the policy. This means it is not possible to provide fully comprehensive quantified distributional analysis according to the Green Book methodology, and this qualitative discussion is provided as an alternative.
 - It is also the case that, as above, a significant share of the benefits is likely to accrue to governments, although the exact share is unknown and cannot be estimated. As revenue to government cannot be equity-weighted, this would have to be excluded. Together, these three points make it very difficult to provide a full distributional analysis of the policy, and it is not proportionate to attempt to do so. Therefore, all summary figures provide non-equity-weighted benefits, although it is noted that the policy is likely to have a positive distributional impact because it benefits very low-paid workers.

⁴⁸ This is based on the equivalised disposable income quintiles on p99 of the Green Book 2020 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1063330/Green_Book_2022.pdf, with the ratio of median to bottom-quintile income raised to the power of 1.3 to account for the marginal utility of income. Please note the analysis here is indicative only, hence it deliberately uses the baseline Green Book case rather than constructing more specific assumptions.

Business Impact Target (BIT) analysis

Net present value

- 2.73. The policy will result in a transfer from employers to employees. The labour costs represent a transfer to seafarers, and the non-wage costs are largely a transfer to either seafarers (e.g. pensions) or governments (e.g. social security contributions). Therefore, in net, non-equity-weighted terms, these values cancel out and the net present social value of the policy is almost neutral (close to zero). The costs of the policy that are not a transfer are the transition costs and compliance costs. In 2024 prices and 2024 present value, the net present social value (NPSV) of the policy is a cost of about £741k, reflecting the total compliance and transition cost (see details and breakdown above). Almost half this amount (£359k) constitutes compliance costs to the public sector. NPSV ranges from £303k to £1.5m in the low and high scenarios, approximately half and double the central scenario respectively. It is higher with more expansive scope, at about £829k in option 2 and £1.4m in option 3.
- 2.74. Business net present value (business NPV) counts only costs to businesses. Because the transfer is a cost to businesses and a benefit to individuals, the benefits do not cancel out the costs. The business NPV is therefore the total cost of the policy except compliance costs to the public sector. As above, in 2024 prices and 2024 present value, this is a total cost of £390.3m in the central case of the preferred option, with a range from £169.5m to £818.5m in the low and high cases. With more expansive scope, it is £398.8m in option 2 and £409.1 in option 3.

BIT reporting (recommended case)

2.75. The following Business Impact Target (BIT) outputs are reported:

- The net present social value (NPSV) is the best estimate of the total economic impact of the regulations. It includes costs and benefits, to businesses, individuals, and the public sector. It is appropriate to estimate the NPSV on the basis of total economic impact rather than the UK-economy impact because the explicitly policy intention is that the regulations apply to all services calling at UK ports, regardless of any other connection to the UK economy. The total economic impact can also be interpreted as the upper bound on the total direct and indirect cost to the UK economy, as there may be knock-on impacts to the UK economy if non-UK businesses pass costs through to UK-based customers. Note that because higher wages net out as costs to business and benefits to individuals, the NPSV is equivalent to the sum of compliance and transition costs.
- The business net present value (business NPV) is the best estimate of the total economic impact of the regulations *on businesses*. It includes costs and benefits to businesses only (and because the costs of higher wages fall on business while benefits fall on individuals, this effectively means it counts only the costs listed above). For the same reasons as described above for the NPSV, the business NPV estimates total economic impact on all businesses, rather than specifically UK businesses.
- The equivalent annual net direct cost to business (EANDCB) is the best estimate of the total cost to the private sector of the UK economy and is calculated to comply with legal duties to account for the impact of regulation on business. This includes costs to businesses whose activity forms part of UK gross domestic product (GDP) only, as per Better Regulation Framework Guidance. The Department's assessment is that the closest approximation to this impact for EANDCB calculation is to look at vessel owners located in the UK. However, due to the inherently international nature of this policy, creating complexities in defining and assessing "businesses whose activity forms part of UK GDP", EANDCB scores are calculated for alternative approximations of this set of businesses. Please see the following section on assessing UK economy impacts. Direct costs to business are the sum of direct labour costs (not indirect), all compliance costs to business (not costs to the public sector) and all transition costs.

- The Business Impact Target score (BIT score) is the equivalent cost to business across the length of a Parliament. This is assumed to be five years, so the BIT score is calculated by the EANDCB multiplied by five.

2.76. The table reports outputs for the preferred option. Following standard practice and guidance⁴⁹, all BIT outputs are reported in 2019 prices and 2020 present value. (This means figures are slightly lower than equivalent figures above in 2024 prices, 2024 present value.) Discounted costs are annualised over ten years by dividing by the annuity rate of 8.608⁵⁰.

Table 14: Business Impact Target outputs, option 1 (72hrs frequency, all vessels, preferred option)

	Low	Medium	High
NPSV	-£0.23m	-£0.57m	-£1.15m
Business NPV	-£129.46m	-£298.21m	-£625.26m
EANDCB	£1.50m	£3.01m	£5.57m
BIT score	£7.51m	£15.03m	£27.84m

2.77. In the central case, the policy has an EANDCB of £3.01m. This is below £5m, which means that, under the Better Regulation Framework, it is considered to have a low impact on businesses whose activity forms part of UK GDP. Where this is the case, the BIT score is not independently verified and reported in the annual Business Impact Target report, making this measure a *de minimis* “non-qualifying regulatory provision” for BIT reporting purposes⁵¹. (This is somewhat uncertain because the high case has an EANDCB just above the threshold.)

Assessing UK economy impacts

Background and options considered

2.78. Appraisal in government typically considers impacts on UK society⁵². In the context of Business Impact Target (BIT) analysis, this means the equivalent annual net direct cost to business (EANDCB) metric should represent the Department’s best estimate of the impact of the policy on businesses whose activity forms part of UK GDP⁵³.

2.79. The international nature of the maritime sector means it is more difficult to distinguish clearly between UK businesses and non-UK businesses than in typical regulatory contexts. This section discusses different approaches to the question of defining a UK business for the purposes of BIT analysis, considering RPC guidance and precedent in the maritime sector.

2.80. As at consultation stage, the following three ways of defining UK businesses were considered. The three possible definitions were selected based on fields for which high-quality data is

⁴⁹ See the government impact assessment calculator and accompanying guidance at <https://www.gov.uk/government/publications/impact-assessment-calculator-3>. The ten-year annuity rate comes from sheet “EANDCB Calculations”.

⁵⁰ In addition, the table presents the “High” case as the one with the highest costs and highest benefits. This is despite the fact that this is the scenario with the lowest present value, because all NPV values are negative. This follows presentation of the impacts of each option as above.

⁵¹ For further detail and guidance on *de minimis* measures, see the Better Regulation Framework at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/916918/better-regulation-guidance.pdf.

⁵² See section 5.2 on the Green Book at <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government/the-green-book-2020>.

⁵³ See RPC guidance on defining a business at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/858862/Issues_around_defining_a_business.pdf.

available, and for which there is some precedent for considering as reasonable. The remainder of the section discusses the same three possible options for defining UK businesses.

- a) UK-owned vessels
- b) UK flagged vessels (synonymous with UK-registered vessels)
- c) Vessels operating in UK waters

Precedent from previous IAs

- 2.81. Many of the UK's maritime regulations apply only to UK flagged vessels, whereas this policy applies to all vessels in UK waters regardless of flag. This means that learnings on how UK businesses have been defined in previous impact assessments (IAs) may be limited.
- 2.82. BIT analysis has been conducted for five merchant shipping IAs since 2019. Of these, two⁵⁴ used the UK flag as the main criterion for defining UK business. Two⁵⁵ use vessels owned or operated by UK companies. One⁵⁶ uses UK-flagged vessels with some element of UK ownership. All assessments were rated green or fit-for-purpose by the RPC.
- 2.83. Older IAs typically consider UK flagged vessels, but this is often accompanied by discussion of differences between UK flagged and UK-owned definitions. Some IAs describe data limitations around ownership and business location, and therefore focus on UK flagged vessels due to higher-quality data being available on these vessels. This means learnings from older precedents is limited.

Precedent from economic statistics

- 2.84. Many economic statistics or calculations involving the maritime sector require some definition of which vessels and vessel activities should be counted as part of impacts on the UK economy. As far as possible, consistency with these approaches should be considered.
- 2.85. Because the policy's major economic impact is on seafarer wages, it affects the seafarer labour market. DfT statistics on seafarers in the UK define the "UK shipping industry" as all companies whose crew is managed from the UK (or the Isle of Man or the Channel Islands)⁵⁷. This definition does not match or correspond perfectly to either the UK-owned or the UK flagged definition, and data limitations mean the definition used in the seafarer statistics cannot be reliably applied to the policy. However, this definition does suggest that some element of connection to the UK beyond merely operating in UK waters is generally considered necessary for employment of seafarers to qualify as part of the UK shipping industry.
- 2.86. For the purposes of value added tax (VAT), passenger transport is defined as being in scope of UK VAT to the extent the transport takes place within the UK (though international passenger voyages are zero-rated). Freight transport is defined as being in scope of UK VAT if it is supplied to a customer in business in the UK or supplied to a customer not in business and the

⁵⁴ The Merchant Shipping (Ballast Water Management) Regulations 2021 (RPC reference 4428, IA available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/971505/S_13B_-_ANNEX_D_Impact_Assessment.pdf) and the Small Fishing Vessel Code 2020 (RPC reference 4429, IA available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/909407/ANNEX_C_Small_Fishing_Vessel_Code_2020_Impact_Assessment_Final.pdf).

⁵⁵ "Bringing Safety Requirements in key areas on all Passenger Vessels on Domestic Voyages in line with modern Technical Standards" (RPC reference 4284, see consultation stage opinion at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/788096/RPC-DFT-4284_1_Grandfather_Rights.pdf) and "Ship safety: Small Passenger Ship Bridge Visibility" (RPC reference 4360, consultation stage opinion available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810571/RPC-4360_1_-DFT-MCA_-_Ship_safety_Small_Passenger_Ship_Bridge_Visibility_-_IA_f_-_opinion.pdf).

⁵⁶ The Merchant Shipping (Prevention of Air Pollution from Ships) (Amendment) Regulations 2021 (RPC reference 4483, IA available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/989793/draft-impact-assessment-merchant-shipping-regulations-2021.pdf).

⁵⁷ See p13 of DfT statistics on seafarers in the UK shipping industry at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/964225/seafarers-in-the-uk-shipping-industry-2020.pdf.

transport takes place primarily in the UK⁵⁸. This suggests that journeys in UK waters (for passenger vessels) and importing freight to the UK (for freight vessels) are considered part of the UK economy, to the extent the scope of VAT reflects the scope of the UK economy. In their accounting for the water transport industry, the Office for National Statistics (ONS) considers all ferries operating in the UK⁵⁹. These considerations tend to suggest the UK waters definition is the closest analogy to the definition of the UK economy used for fiscal purposes.

- 2.87. In the context of greenhouse gas (GHG) emissions, UK international emissions are calculated based on bunker fuel sold in the UK⁶⁰. This does not appear to correspond to any of the three definitions proposed above, although it suggests that no connection to the UK in terms of flag or ownership is necessary to qualify as part of the UK if a vessel is conducting economic activities in the UK.
- 2.88. The precedents from economic statistics are not directly applicable to the policy and do not provide a clear-cut indication of which definition is most appropriate. Insofar as the precedents can be matched to the definitions considered in this section, fiscal accounting points towards definition (c), activity in UK waters, while seafarer labour market consideration points towards either (a) or (b), UK ownership or UK flag.

Location of economic activity

- 2.89. The key principle of the RPC guidance is that impacts on UK business should be assessed in line with the location of economic activity⁶¹. This reflects the approach of assessing impacts on UK gross domestic product (GDP).
- 2.90. Definition (a) on UK ownership is the best proxy for economic activity conducted by companies located in the UK. In this way this definition appears to be the most straightforward interpretation of the RPC guidance on location of activity. This is because this definition provides the best representation of the set vessels owned by companies who are located in the UK. (In particular, note that UK ownership in the context of the voyages data means the company owning the vessel is UK-based. This means this definition does not conflict with RPC guidance that ownership in the sense of shareholders being UK nationals or UK residents should not generally be considered.) Although not overlapping with the definition used, it also has some fit with the way seafarers are counted as part of the UK shipping industry, which is a key comparison point given this policy affects the seafarer labour market.
- 2.91. Definition (b) on UK flag is the best proxy for economic activity on vessels under UK jurisdiction. The set of UK flagged vessels is the set of vessels registered in the UK and is generally considered to be the set of vessels which makes up the UK Merchant Navy (for example, many of the arguments around UK competitiveness in the impact assessment focus on UK flagged vessels due to UK regulations applying to these vessels). The UK flag definition provides some degree of consistency with other UK maritime regulations, some of which apply only to UK flag and therefore only assess impacts on UK flagged vessels, though description of precedents in previous IAs suggests this is not a consistent or necessarily a preferred approach.
- 2.92. Definition (c) on activity in UK waters is the best proxy for economic activity on vessels geographically located in the UK. International maritime law states that sovereignty extends to territorial waters⁶², and in this sense it is possible to interpret the act of employing a seafarer on

⁵⁸ See section 3 of VAT notices on passenger transport at <https://www.gov.uk/guidance/the-vat-treatment-of-passenger-transport-notice-744a> and freight transport at www.gov.uk/guidance/vat-on-freight-transport-and-associated-services-notice-744b.

⁵⁹ See the 2016 review of ONS accounting for the water transport industry available at <https://www.ons.gov.uk/economy/economicoutputandproductivity/output/methodologies/watertransportindustryreview2016>.

⁶⁰ See the Climate Change Committee's report on shipping at <https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Shipping.pdf>.

⁶¹ See the RPC guidance on defining a business at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/858862/Issues_around_defining_a_business.pdf, in particular p3 on location of economic activity.

⁶² See Part II of the UN Convention on the Law of the Sea at https://www.un.org/depts/los/convention_agreements/texts/unclos/part2.htm.

a vessel in UK waters as itself constituting an economic activity located in the UK. However, UK labour market regulation does not apply to territorial waters in general (for example, see the policy rationale section for discussion of how UK minimum wage legislation does and does not apply to UK territorial waters). In addition, many of the vessels passing through UK waters have little other connection to the UK; for example, the majority are non-UK-owned (meaning the companies they are not based in the UK) and/or non-UK flagged (meaning they are not subject to UK maritime regulations). This means that this definition includes many vessels whose owners would not generally be considered part of the UK economy. In this way it may go against the spirit of RPC guidance to focus on impacts in scope of UK GDP.

Recommended option

2.93. The Department has considered precedents and RPC guidance, and has engaged with the RPC through seeking an informal opinion at consultation stage. The conclusion is that, in the Department’s view, definition (a), UK ownership, provides the best way to assess costs to UK businesses. Therefore, it is recommended that the BIT outputs based on this definition of UK businesses should be considered the central set of outputs. (Please note that the Department’s recommendation has changed since the consultation IA, which assessed all three definitions but suggested focus on definition (b), UK flag, as the central case.)

2.94. However, the Department acknowledges that the decision is not clear-cut, and that all three of the approaches outlined above have some merit. Therefore, the full range of EANDCB outputs for each definition is shown below. Readers are advised to judge each definition on its own merits (and the Department will engage with the RPC when seeking an opinion).

BIT outputs for all options

2.95. For consistency with BIT reporting, figures are in 2019 prices, 2020 present value. (This means figures are a little lower than the figures reported above in 2024 prices, 2024 present value.)

Table 15: EANDCB with different definitions of UK business, option 1 (72hrs frequency, all vessels, preferred option)

	Low	Medium	High
(a) UK-owned	£1.50m	£3.01m	£5.57m
(b) UK flagged	£3.03m	£5.42m	£8.98m
(c) all vessels in UK waters	£12.04m	£25.21m	£48.45m

2.96. The table shows that, on the central estimate of the EANDCB, the measure falls comfortably below the *de minimis* threshold of £5m⁶³ with the Department’s recommended definition. Therefore, the Department recommends validation as a de minimis (and consequently non-BIT-qualifying) measure. The EANDCB falls slightly above the threshold with the UK flagged definition and far above the threshold in the most expansive definition.

⁶³ As discussed above. See section 1.2 of the Government’s Better Regulation Framework for more detail on the de minimis threshold https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/916918/better-regulation-guidance.pdf

3. Risks and unintended consequences

Reduction in service provision

- 3.1. If ferry routes became unable to be served in a viable business model, there is potential for significant negative consequences for the UK economy due to reduced flows of critical goods. However, the risk of any significant consequences from this policy is low.

Changes to current service

- 3.2. Taking that market as a whole, because the policy will increase the overall costs of serving the market, it may lead to a small decrease in quantity (due to a leftward shift in the supply curve), which may mean a reduction in the number or capacity of services offered. To the extent this occurs, the choice available to consumers may be reduced. Because the overall costs to business are expected to be fairly small (as above, the central pass-through scenario estimates the policy will increase freight rates by very approximately £3.61/unit or 1.4% on Dover routes and £3.71/unit or 0.7% on other routes, and leisure passenger prices by very approximately £3.61/unit or 3.6% on Dover routes and £3.71/unit or 1.2% on other routes), any reduction in quantity would likely be small.
- 3.3. Because any effect is likely to be small, it is unlikely that the decrease in supply would take the form of operators withdrawing all together, which would correspond to a large decrease in quantity, and more likely that existing operators would run fewer services on existing routes. For some service types, such as ro-pax, this may be somewhat constrained by inability to fine-tune capacity due to each vessel having large capacity. This is not expected to create significant disruption or problems for customers, especially on cross-Channel routes, where some operators believe there is currently overcapacity⁶⁴, and modelling around cost of disruption is not provided in this impact assessment. To the extent this effect occurs, a small decrease in services without withdrawal of operators may lead to a quantity closer to the market equilibrium.
- 3.4. Issues around ways in which different costs may fall on different operators, and any short-term disruption this may cause, are addressed in the Competition Assessment below.

Viability of business model

- 3.5. In the long term, if it is possible to run a viable business model, it is expected that the market will continue to be served at an adequate level of provision (either incumbent operators will continue to serve the market, or that any withdrawal of operators will be replaced by new profit-seeking entrants). Therefore, longer term risks to the resilience of supply chains will occur only in the case that cost increases make it impossible to run a profitable ferry business.
- 3.6. It is believed that multiple operators currently run ferry and freight services while paying wage rates equivalent to the NMW⁶⁵. This suggests that it has been possible for companies to run a viable business while incurring the costs of paying NMW-equivalent wages. Therefore, there is no reason to believe that this policy will prevent operators running a viable business. Instead, by mitigating the threat of competitors undercutting NMW-equivalent wage rates, the policy will improve the extent to which paying NMW-equivalent wages can form a viable business model.
- 3.7. Operators may be able to offset cost increases by cutting costs in other areas. If this is not possible, and margins are so small that wage cost increases mean it is no longer possible to generate a profit, firms would be expected to respond by raising prices. As below (see Competition Assessment), the ferry market exhibits some features of an oligopoly and some features of a competitive market. Price rises are likely to be a viable option to some extent, and

⁶⁴ See, for example, news report including claims by DFDS at <https://www.ft.com/content/e5b941bf-ed76-44bd-8c62-bf67667bd100>.

⁶⁵ For example, see news reports referring to the cost models of DFDS (<https://www.ft.com/content/b8564168-36c5-4f0c-8c4b-1e196ca9e217>) and Brittany Ferries (<https://www.connexionfrance.com/article/French-news/P-O-Enforce-French-or-UK-employment-law-to-Channel-ferries-says-union>). In addition, ferry services to Northern Ireland are in scope of domestic NMW legislation.

the low per-unit costs expected to result from the policy suggest it is unlikely that these prices would create a large contraction in demand.

- 3.8. However, there are competitive aspects of the market which place meaningful constraints on the ability of operators to impose significant price rises. This is especially the case for cross-Channel ferries, which compete with Channel Tunnel rail services (which are not affected by this policy and hence will not face the same pressure to raise prices). This means that cost increases are likely to put some level of pressure on the operating margins of cross-Channel operators that cannot be fully offset by price increases. However, the per-unit cost increases are expected to be small (as above, freight rates and leisure passenger prices are expected to rise by very approximately up to 1.4% and 3.6% on Dover routes). Although this makes a difference in the case of extremely small profit margins, it is small enough that any pressure on operating margins is likely to be able to be absorbed without forcing companies out of business. The Channel Tunnel faces capacity constraints given the infrastructure and the local road networks, which means it is not able to take on the entire market for cross-Channel freight or passengers, so there is likely to be continuing demand for ferry services even in the case they become slightly less price competitive. Together with the current operation of operators paying wages equivalent to the NMW, these factors provide a basis to believe the policy will not itself create any fundamental threats to the existence of a viable business model on cross-Channel routes.
- 3.9. Operators on routes other than the Dover Strait are not affected by the constraint of competition from international rail and are therefore somewhat more likely to be able to pass higher costs through in the form of price rises. Increases are expected to be small (as above, in the central case, freight rates and leisure passenger prices are expected to increase by very approximately up to 0.7% and 1.2% on average on non-Dover routes), meaning any pressure on operating margins is not expected to be large and is unlikely to fundamentally change the ability of firms to run a viable business model.

Land bridge

- 3.10. Because the policy is expected to increase the costs of vessels using UK ports, it has potential to make use of the “land bridge” (operators moving goods between continental Europe and the Republic of Ireland via Great Britain) less attractive.
- 3.11. Therefore, the policy may reduce the number of services using UK ports, which is expected to have negative consequences for UK ports and the UK economy. There would also be knock-on impacts on demand for road freight and the labour market for HGV drivers, as reduced use of the land bridge will lead to reduced demand for road freight within the UK.
- 3.12. The extent of potential reduction in use of the land bridge is uncertain, but would be limited by the fairly small per-unit cost increases (see above) expected to be imposed, meaning any behavioural response will be to only a small increase in costs. Because the effect is small and uncertain, it is not accounted for in the quantified cost-benefit analysis.
- 3.13. The policy is also expected not to impact the cost of transporting freight to the Republic of Ireland on ferry routes via Northern Ireland. Domestic ferry routes from Great Britain to Northern Ireland are not affected by the policy (and are already in scope of domestic NMW legislation).

Effectiveness of the policy

- 3.14. As above, the cost-benefit analysis is on the basis that the policy is effective and that businesses do not significantly change behaviour in response. However, in practice, there remains a risk around the efficacy of the intervention. Behavioural changes by operators may undermine the policy. Limitations of the regulation and potential impacts have been considered, as well as actions to minimise these. Overall, the legislation has been crafted to capture the policy intention as best as possible and ensure that the policy objective is wholly achieved.

Adjusting wages outside UK waters

- 3.15. On a voyage including time outside UK territorial waters, there is scope for employers to adjust the overall wage-rates in such a way that the efficacy of any limit on the rate attributable to the

portion of time spent in UK waters could be largely or wholly nullified⁶⁶. For example, operators could pay the NMW equivalent rate for the portion of the journey spent in UK waters, and then adjust pay downwards (to below rates that would be paid the absence on the policy) from when outside UK waters to offset additional costs.

- 3.16. Because the preferred policy option includes vessels calling at UK ports at least once every 72hrs, the services in scope are likely to be short journeys, mostly those serving a single end-to-end route between a UK port and a foreign port. For these services, a high proportion of journey time will be in UK waters, which limits the effect of potential wage adjustments outside UK waters. Illustratively, under the counterfactual wage rates used in the cost-benefit analysis, paying NMW-equivalent wages (at £9.50/hr⁶⁷) for half the voyage time and ILO minimum wages for half the voyage time (at £2.78/hr) would result in an average wage of £6.14/hr, which is £2 more than the assumed counterfactual wage of about £4.14/hr. These calculations are illustrative, but they show that even in the worst-case scenario, pay rises in UK waters could not be fully offset on a large share of services in scope. The analysis above approximates the maximum possible response on an end-to-end route for which half the journey is in UK waters: this is the situation on cross-Channel services, which account for about half of vessel-journeys expected to be in scope of the policy. This shows that the policy is very unlikely to be fully undermined by this response on a large share of the journeys affected. The response would be more effective on routes spending a smaller proportion of time in UK waters, such as longer routes, or services calling at multiple ports. Although some such services are expected to be in scope, the tight frequency criterion limits the number of these services in scope.
- 3.17. The government is exploring bilateral agreements with other countries, including some which may lead to agreements on minimum wage-equivalent corridors, which would nullify, mitigate, or partially mitigate this response by limiting ability to cut pay in other countries' waters.
- 3.18. The policy only affects wages paid inside UK waters, are there are limited options to regulate pay outside UK waters. However, the risk will be monitored. Where it is clear that steps are being taken to avoid or reduce the effect of the legislation, the government would actively seek out constructive dialogue with the parties concerned and issue an appropriate response.

Amending service schedules

- 3.19. Another possible behavioural response would be to amend service schedules so that services do not meet the frequency criterion of calling at a UK port at least once every 72 hours on average over the year. This would be a legal way to avoid the NMWe requirement, as services calling less frequently would not be in scope of the policy. As part of the monitoring and evaluation of this policy, government and other public-sector enforcement agencies will be able to observe scheduling and actual operational activity (see monitoring and evaluation of risks section below for more detail). If it became clear that improper adjustments were being made to circumvent the regulations, the government would seek to take swift action. For example, if actual sailings did not match published schedules, enforcement powers may contain an option to suspend port access to any services exceeding the annual threshold of 120 port calls well before the end of the year, regardless of schedules. If legal avoidance action was being taken, options to prevent avoidance would be more limited, but government will continue to engage with operators to understand their behaviour and to work to improve seafarer welfare.
- 3.20. The voyages data used in the cost-benefit analysis shows that approximately 70% of all vessel-journeys which would have been in scope of the preferred option in 2019 were ro-pax services calling daily or more frequently. This suggests that, for most services in scope, schedules could only be reduced to avoid the threshold by disrupting and very significantly reducing frequency of

⁶⁶ There is no evidence on whether this has occurred in similar situations in the past. However, in the domestic context, employers making non-wage aspects of contracts less generous is a known risk of minimum wage policies, discussed for example in paragraphs 2.38 to 2.43 of the Low Pay Commission's National Living Wage Review (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1076517/NLW_review.pdf). The risk described here is somewhat analogous to this risk.

⁶⁷ As this is for illustrative purposes only, the NMW rate is not adjusted. The cost-benefit analysis adjusts NMW rates for age bands and overtime and rebases to calendar years. In addition, the starting years of the two wages are different.

services. This has the potential to cause large wider supply chain disruption, but such a large reduction in service is unlikely to be profitable for operators, meaning the response is unlikely. (This suggests most of the benefits of the policy are likely to be preserved against this risk.) The data suggests the option may be more viable for operators of other vessel types: about 10% of all ro-ro vessel-journeys and 5% of container vessel-journeys in the dataset made between 120 and 140 UK port calls in 2019, suggesting that for this proportion of services, schedules could be adjusted to just avoid the frequency criterion while becoming only slightly less frequent, therefore minimising disruption and increasing the likelihood that operators will attempt to adjust schedules in this way.

3.21. Options 2 and 3 use a weekly frequency criterion. Only a very small number of vessel-journeys in the 2019 data (about 2% of ro-ro and 3% of container) were on services operating with frequency between six and seven days, suggesting scope for schedules to be amended to just miss the criterion would be limited. In addition, a very small number (about 1% of ro-ro and 2% of container) were on services operating with frequency between seven and eight days, suggesting that moving just outside the weekly boundary would mean adopting service patterns which are currently unusual. Moving away from weekly frequency may also cause issues for parts of the supply chain running to a weekly schedule. Therefore, amending service schedules appears to be a low risk in the options with a weekly frequency criterion.

Other risks

3.22. There are also other actions that operators could take which would reduce the effectiveness of the policy by allowing operators to offset any loss of revenue/profit through increased costs. One such action would be cutting non-wage benefits for seafarers whose pay will increase due to the policy. To the extent that employers provide (non-statutory) non-wage benefits, they may be made less generous to compensate for the increased wage costs to employers resulting from the policy.

3.23. Operators may also seek to cut wages for those who were already paid above the NMW-equivalent rate to the NMW equivalent rate, which would be detrimental for those seafarers. Although there may be potential for this in some cases, the central expectation is that seafarers paid around the UK NMW would have their pay *increased* to maintain pay differentials. This is reflected in the cost-benefit analysis as the indirect labour cost.

3.24. Operators could reduce the number of staff on a ship to cut labour costs, which again would be determinantal for seafarer welfare, creating unemployment and worsening working conditions. As discussed below (see wider labour market impacts), there may be some potential to reduce employment, but this is limited by safety and other regulations which mean crew sizes cannot reasonably be cut below a certain level.

3.25. Where it became known that these or other actions were being taken in response to the regulation, the government would seek out dialogue with the relevant parties. Alongside this policy, the government is working with industry and social partners to improve the long-term working conditions of seafarers through a framework to advance protections for seafarers relating to employment and welfare⁶⁸.

⁶⁸ For details of measures the government has announced, see the Hansard transcript of the Secretary of State's speech setting out a nine-point plan at <https://hansard.parliament.uk/commons/2022-03-30/debates/F7ECD289-2440-4B35-916D-7930CB438983/PAndOFerries>.

4. Wider impacts

4.1. The following wider impacts are considered: Small and Micro Business Assessment; Trade and Investment Assessment; Competition Assessment; wider labour market impacts. Other wider impacts (such as an innovation test, an environmental impact test or a health impact assessment) were not considered because the policy is not expected to create any relevant impacts, or any impacts would be very indirect and difficult to appraise. Material has been significantly expanded in response to consultation responses and stakeholder feedback. An equalities impact assessment and a justice impact test have been produced separately.

Small and Micro Business Assessment (SaMBA)

Number of small businesses in scope

4.2. It is not expected that many small or micro businesses will be impacted by the policy. The cost-benefit analysis (see above) worked on the basis that ro-pax vessels have an average crew of 120. It is unlikely that a ro-pax vessel would employ so many fewer seafarers than average that it would itself fall below the threshold of 50 crew: no consultation responses suggested or provided evidence for ro-pax vessels having crew sizes smaller than 50, and there are safety and other regulations which limit minimum crew sizes. Other vessel types were assumed to have an average crew size of 25 (ro-ro) and 12 (container/bulk), meaning they could in theory fall below the threshold of 50 in cases where a company owned very few vessels.

4.3. The voyages data used in the cost-benefit analysis contains some limited information on the ownership of vessels. This suggests that a few companies might own a single vessel: 15 entities are listed as owning a single ro-ro or container vessel which would have been in scope had the policy been in effect in 2019. No vessel owners or operators counting as a small or micro business responded to the consultation. Companies owning a single vessel may be small businesses (but not micro businesses), as the crew sizes do not automatically take them above the 50-person threshold. However, the actual number of small businesses in scope is believed to be below 15, for the following reasons:

- some companies registered as owning vessels will be subsidiaries of, or ultimately controlled, by larger companies owning multiple vessels⁶⁹ (the data does not fully make clear to what extent this is the case, though there are some owners of a single vessel whose name is a variation of the name of another company, suggesting this very possibly does occur to some extent);
- the data covers vessels calling at a UK ports, and some companies with only one vessel in this set may also own additional vessels that did not call at a UK port in this period;
- the figure of 25 crew per ro-ro vessel is intended as an average, meaning larger-than-average vessels are expected to employ more crew than this;
- the number of crew on a vessel at one time does not necessarily reflect the total number of crew associated with a vessel, as there will also be off-shift or backup crew members (consultation responses reflected this, with some operators saying they employ more than two seafarers for every one crew position, though numbers vary by vessel type and individual operator, making generalisation difficult); and
- companies owning vessels also employ shore-based staff, and, in some cases, this is likely to be enough individuals to take companies above the 50-person threshold (though the data does not allow this to be estimated precisely).

⁶⁹ In *Seahorse Maritime Ltd vs Nautilus International* (<http://www.bailii.org/ew/cases/EWCA/Civ/2018/2789.html>), the Court of Appeal ruled that a single vessel can be counted as an “establishment” for the purposes of certain aspects of employment law. However, this ruling related specifically to employee consultations for redundancies under s.188 of the Trade Union and Labour Relations (Consolidation) Act 1992, and did not affect the definition of a “small business” as used in the Better Regulation Framework (defined by the Small Business, Enterprise and Employment Act 2015). Therefore, the entity in question for the SaMBA is taken to be the owner of the vessel rather than the individual vessel (so seafarers on a vessel with a small crew, but owned by a company with multiple vessels, would not count as employees of a small business for this purpose).

- 4.4. Due to these factors, it is believed likely that in practice there will be fewer than 15 small vessel-owning businesses in scope of the policy. However, there is no data that would allow a precise estimate of the number of small businesses in scope. No consultation responses provided evidence around the number of small businesses who might be affected by the policy.
- 4.5. As well as vessel owners, Statutory Harbour Authorities (SHAs) will be impacted by the policy. It is possible that some SHAs may be sufficiently small to be classed as small businesses. It is thought to be unlikely that any SHAs for major ports would be small businesses, but no data is available that would allow a precise estimate of the number of SHAs which are small businesses. In addition, some SHAs are not private-sector businesses but are local authorities and would therefore fall outside the definition of a “small business”.
- 4.6. The analysis above assumed that the number of employees employed by a vessel is determined by its crew size. However, there is potential for crew sizes not to match the number of employees in cases of non-standard employment practice, for example where vessels employ crew indirectly or via agencies. Any such employment agencies may supply only part of the crew of an individual vessel, meaning there might be agencies with fewer than 50 employees. Without access to commercially sensitive details of employment practices and contracts, it is very difficult to assess the extent to which this occurs in the sector at present, or to which it might occur. It is also unclear what, if any, proportion of employment agencies would fall below the 50-employee threshold, and what, if any, proportion of agencies would be UK businesses (see discussion above on challenges around defining a UK business).
- 4.7. If employment via small agencies was or became a widespread practice in the sector, the regulations would have an impact on these agencies. However, it is very likely that the cost of employing seafarers would still ultimately fall on the vessel owners rather than on these agencies, so an exemption for agencies would be unlikely to benefit them. (Indeed, if an agency charged employers in proportion to the wages paid to agency staff, the policy would be expected to benefit these agencies, meaning that exempting agency staff would mean both small businesses and their employees missing out on a benefit from the preferred option.) No further information was received on this at consultation.

Impact on small businesses and disproportionality

- 4.8. If small businesses are in scope of the policy, they are expected to account for a disproportionately small share of costs. Taking the maximum number of small businesses that might be in scope, the entities account for only a small share of overall costs. The 15 vessels owned by the entities described above account for fewer than one sixth of the total number of 98 vessels which would have been in scope had the preferred option been in force in 2019.
- 4.9. The voyages data used in the cost-benefit analysis⁷⁰ also provides some evidence suggesting that any small businesses would account for a disproportionately small share of vessel-journeys: despite being 15% of the number of vessel owners, the data shows that the 15 entities owning a single vessel in scope account for just 7% of vessel-journeys which would have been in scope had the policy (preferred option) been in effect in 2019. In addition, as discussed above, costs per vessel-journey are lower on ro-ro and container vessels than on ro-pax due to the smaller crew sizes, so the share of total costs is even lower than 7%. This shows that, even though there are potentially as many as 15 small businesses in scope in the highest possible case, they account for only a very small share of the overall costs of the policy.
- 4.10. The policy is intended to apply to costs per seafarer hour. This means that if any small or micro businesses are impacted, they will have the same requirements for their staff costs as medium or large firms. The overwhelming majority of the total costs (over 99% in the preferred option) consists of wage costs. These scale linearly with number of seafarer hours (so, for example, a firm employing ten times more seafarer-hours than another while paying the same wage rates would face ten times higher additional pay costs). A small degree of disproportionality may arise from the fact that vessels have limited numbers of the most senior crew regardless of size (e.g. all vessels have one skipper), but this means low-paid seafarers may be a slightly smaller

⁷⁰ See description in the model inputs section above. Data is from a synthesis of DfT port freight statistics and DfT port arrivals statistics.

proportion of the overall crew on smaller vessels; so if there is any disproportionality from this, it would be that larger vessels may be disproportionately affected as a proportion of overall wage costs. Costs would not be expected to fall disproportionately on small businesses in this sense.

- 4.11. Although this shows that firms with fewer employees will not be disproportionately affected relative to size, it is possible that they may be disproportionately affected relative to profits, if small firms make lower profits per vessel. No data is available on the revenue or profits made by companies owning a single vessel, so it is not possible to verify whether or not they are less profitable than large firms. However, if this was the case, small businesses may be less able to absorb additional costs as a reduction in profits. This may make them more likely to attempt to pass costs on to consumers in the form of higher prices, although their ability to do so may be constrained by broader market conditions. Given data limitations in this area, it is not possible to be certain to what extent this may occur.
- 4.12. Compliance and transition costs may affect smaller businesses somewhat disproportionately relative to size. This is because one part of the compliance regime is expected to take the form of a requirement on companies to declare their compliance with the policy, which will be the same in absolute terms for all companies regardless of size. Familiarisation costs are similarly likely to affect small businesses disproportionately: the cost-benefit analysis above assumed the same absolute burden regardless of size. However, these are the smallest two costs (see cost-benefit analysis above), and the larger compliance and transition costs are less disproportionate. Because vessel spot-checks are expected to occur once per vessel per year, they scale linearly in proportion to the number of vessels a business owns (which does not necessarily mean not disproportionate to number of staff, but it suggests small businesses will face a small burden). The transition cost of re-issuing contracts scales linearly with number of staff affected, so, as above, if there is any disproportionality in costs, it is more likely to fall on larger vessels with a larger proportion of junior staff. This suggests, that although there is potential for disproportionality for the smallest cost lines, these costs are a tiny proportion of the overall costs, and although it is not certain, there is some potential for the largest cost line to be slightly disproportionate on larger vessels. Therefore, the overall effect of the policy is highly unlikely to be significantly if at all disproportionate on small businesses.
- 4.13. Overall, the consultation did not suggest that small businesses would be disproportionately impacted by these measures, suggesting the Department's assessment is reasonable.

Exemptions for small businesses

- 4.14. The possibility of exempting small and/or micro businesses from the policy has been considered. As above, the scope of the policy does not include all vessels. A small business exemption could work either by applying to small vessels (i.e. vessels with fewer than a certain number of crew on board) or to small businesses (i.e. vessels owned by a company employing fewer than a certain number of people or owning a certain number of vessels). It would likely be feasible to take either of these approaches as part of the compliance process. However, the Department has decided not to pursue exemptions for small and/or micro businesses, for both equity and efficiency reasons.
- 4.15. On equity, small business exemptions would leave some seafarers out of scope and undermine the policy objective. Improving seafarer welfare is a key policy objective, and it is unfair to deny wage benefits to some workers based on the size of the company employing them (this is a different kind of limitation to frequency criterion, because focus on seafarers calling regularly in UK ports is an explicit part of the policy rationale). Exempting small businesses would undermine the ability of the policy to deliver its objective of improving standards and welfare for all seafarers on services in scope. As above, the number and proportion of small businesses, and the number of seafarers working for small businesses, are unknown due to lack of data, although it is thought to be a small proportion of the overall total. However, because benefits are equal to (labour) costs, small business exemptions would mean sacrificing benefits of the policy in direct proportion to any cost savings, cancelling out the advantages of the exemption in net present social value terms (if not in business net present value terms).
- 4.16. On efficiency, small business exemptions may risk distorting the market or creating perverse incentives. Exempting small businesses would allow them to pay lower wages and hence incur

lower costs per unit of labour. This may create unfair competition in cases where small businesses compete against larger businesses, thereby undermining competition. In addition, an exemption would create a (relatively) very large marginal cost at the point at which businesses expand from being a small to a medium sized business, as this threshold would trigger the ability of ports to levy surcharges on services not paying at least an equivalent of the UK National Minimum Wage. This would provide a disincentive to business growth. In addition, this marginal cost may provide an incentive for businesses in the sector to pursue non-standard practices as a way of avoiding the regulations, either via agency employment or via breaking a large business into multiple small subsidiaries. As well as posing a risk to policy effectiveness, such actions would also be inefficient because they create administrative costs that are not reflected in higher economic output.

- 4.17. In addition to equity and efficiency reasons for not exempting small operators, there is a strong case against exemptions for small SHAs. Because the compliance regime depends on SHAs enforcing conditions of entry, exempting small SHAs from this duty would pose a serious risk to the effectiveness of the policy. There would also be risk of market distortion as ports with a small SHA would become more attractive destinations than nearby ports with larger SHAs.
- 4.18. The Department's considered view is that these reasons are sufficient to justify not pursuing exemptions for small businesses (and this is believed to be in line with RPC guidance on small and micro business assessments⁷¹). This is especially the case given the small degree of disproportionality that would be faced by any small businesses in scope. This is further justified by the fact the consultation responses did not suggest that there should be an exemption for small businesses.

Equalities Impact Assessment

- 4.19. The policy is not expected to have a negative impact on any groups with protected characteristics. A full equalities impact assessment (EIA) has also been produced and is available alongside this impact assessment.

Justice Impact Test

- 4.20. Four new criminal offences are being proposed to ensure the successful implementation of the Bill. The proposed criminal offences have been assessed as minimal on their impact for the legal system. A full justice impact test (JIT) has also been produced and is available alongside this impact assessment.

Trade and Investment Assessment

- 4.21. The impact of the policy on trade and investment is uncertain but is expected to be low. The policy will not create or affect any barriers to trade or investment, nor will it impose any differential costs on UK and non-UK businesses, nor will it affect any free trade agreements. However, the policy may indirectly affect trade and investment via an effect on prices.
- 4.22. In theory, measures which increase labour costs (at the lower end of the wage distribution) of operating in the UK would be expected to create an incentive for operators to substitute towards alternative factors of production, either capital or higher-skill labour (wages at the higher end of the wage distribution are not affected by the policy)⁷². Because the UK's competitive

⁷¹ See RPC guidance at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/827960/RPC_Small_and_Micro_Business_Assessment_SaMBA_August_2019.pdf

⁷² For more detail on the theory of minimum wages and international trade, please see Brecher (1974): Minimum Wage Rates and the Pure Theory of International Trade (https://econpapers.repec.org/article/oupqjecon/v_3a88_3ay_3a1974_3ai_3a1_3ap_3a98-116..htm).

advantages in international trade are in skilled labour and technology⁷³, any further encouragement to specialise in these areas is unlikely to undermine UK competitiveness.

- 4.23. The cost-benefit analysis above showed an indicative increase in freight rates of £3.61/unit or 1.4% on cross-Channel routes and £3.71/unit or 0.7% on average on other routes. Because transport is a derived demand created by demand for traded goods, it tends to be price inelastic⁷⁴. This means a small behavioural response to a small increase in price is expected: therefore, any impact on trade volumes would be very small.
- 4.24. By increasing costs, the policy may deter investment in new short sea shipping capacity, including new routes. As above, any effect is expected to be very small due to the small per-unit cost increases. In addition, because transport is a derived demand, the key determinant of the need for capacity is demand for traded goods, rather than the cost of transporting goods by sea. This means it is unlikely that impacts on the cost of maritime transport, especially small effects, would make any meaningful difference to investment in capacity.
- 4.25. The reputational impacts of the policy may impact trade and investment. Reputational benefits from action to improve seafarer welfare may make the UK be seen as a more attractive place to invest. Alternatively, reputational damage from unilateral action (as opposed to purely multilateral action) may make the UK be seen as a less attractive place to invest. These impacts are hard to measure and hard to quantify, so further analysis has been considered disproportionate.

Competition Assessment

Background

- 4.26. Regulatory Policy Committee (RPC) guidance⁷⁵ advises that a detailed Competition Assessment is appropriate when a “significant impact on competition” is expected. The “competition checklist” in the guidance contains four key areas to examine. This policy may have some potential to limit the number or range of suppliers (point 1) and/or limit the ability of suppliers to compete (point 2) and may have slight potential to limit information or choice available to consumers (point 4). It is not expected to limit the incentives for suppliers to compete (point 3). The assessment examines whether and to what extent these are the case through its focus on potential for substitution between suppliers and potential to impose uneven minimum labour costs on competitors.
- 4.27. In addition, the need to provide a more thorough assessment of competition impacts was a key theme in stakeholder engagement and consultation responses. The significant extension of material on competition since consultation stage is partly a response to this feedback.
- 4.28. This Competition Assessment considers different ways of defining the market: the ferries market (competition between different operators of the same type of vessel), the maritime market (competition between operators of different types of vessel) and the travel market (competition between different modes of transport). In each case, it considers both the extent to which the policy may create substitution between competitors, and the extent to which the policy is expected to distort the market by creating differential minimum labour costs. The key factor in

⁷³ See p32 of Global Trade Outlook 2021

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1036243/global-trade-outlook-september-2021.pdf), published by the Department for International Trade (DIT), for details of sectors where DIT has found the UK to have a comparative advantage. These are predominantly services, including financial and business services, aerospace, IP, digital services, public services, and life sciences. These are all sectors which employ high-skilled workers, using or developing technology.

⁷⁴ See, for example, the World Bank evidence review at <https://documents1.worldbank.org/curated/en/573201468766481035/pdf/multi-page.pdf>. Although this paper is from 1990, the fundamental economic theory has not changed. Illustratively, taking the 0.5 central elasticity estimate for ocean shipping of general cargo (p27), the freight rate increases estimated above would be expected to lead to a fall in demand of about 0.7% on Dover routes and about 0.3% on average on other routes. These are very rough figures which should be treated as illustrative only, showing that a large fall in demand for transport is not expected.

⁷⁵ See RPC guidance and case histories on competition at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/923710/RPC_case_histories_-_competition_assmts_Oct_20.pdf, and competition impact assessment guidance available from <https://www.gov.uk/government/publications/competition-impact-assessment-guidelines-for-policymakers>.

potential for substitution between competitors is taken to be prices, as these determines customer mode choice. The key factor in potential for market distortion, by contrast, is taken to be per-worker labour costs, with market distortion taken to mean government action imposing differential minimum labour costs on firms in competition with one another.

The ferries market

- 4.29. As above, ro-pax and ro-ro services constitute the majority of voyages expected to be in scope of the policy, and account for the large majority of costs. Therefore, this section focuses on the market for “ferries”, even though some services of other types are expected to be in scope.
- 4.30. The market for ferries exhibits some features of a competitive market and some features of an oligopoly. All key routes are served by very small numbers of operators, and there are fairly high barriers to entry (as any new entrant would need to buy or procure a suitable vessel and secure sufficient port berths). These are features of an oligopolistic market. However, there are also factors which suggest firms lack the freedom to set prices, which is the key feature of a competitive market. Because transport is a derived demand (demand is for freight and passengers to travel from a start-point to an end-point, rather than specifically for ferries on a particular route), the “product” on offer has features of a commodity product. The product is highly interchangeable, which limits firms’ ability to compete on non-price factors and means competition is likely to be on price. In addition, most customers attach no intrinsic value to freight (or passengers) being transported by a particular mode on a particular route. This means that each ferry route is substitutable for other ways of reaching the same end-point via different routes and/or different modes. Products across these contexts are less homogeneous, which allows differentiation based on non-price factors such as travel time and frequency of services. This creates a degree of monopoly/oligopoly power for incumbent firms on any given route, but the availability of these substitutable services means they face competitive pressures, constraining their ability to set prices and meaning there may be a greater degree of price competition than in a pure oligopoly.

Potential for substitution between competitors

- 4.31. See the above section (withdrawal of routes) for discussion of the risk the policy will lead operators to reduce services. If this occurs, consumer choice may become more limited than at present. Because any effect is expected to be small, this is more likely to take the form of a reduced service on current routes, rather than withdrawal of operators or entire routes. Therefore, though there may be some reduction in consumer choice, it is unlikely to be significant. Because the policy is not expected to undermine the viability of business models, it is not likely that it will itself force operators out of business (which would have more serious implications for consumer choice).
- 4.32. The Department believes that some ferry operators currently pay wages equivalent to the National Minimum Wage (NMWe) while others do not (see further discussion and references in “viability of business model” above). To the extent this is the case, the policy will have different effects on different operators compared to the *status quo*: only those currently paying less than the NMWe will face the substantive costs of higher wage costs. This means that some operators are likely to face increased costs because of the policy, but others are not. Therefore, in the short term, some firms may face increased costs while others do not. This could limit the ability of some firms to compete on costs, which may lead to different levels of pass-through into prices, and therefore to substitution between firms.
- 4.33. However, in the longer term, the policy is *not* expected to lead to any substitution between competitors that would not be present in the counterfactual. This is because the counterfactual scenario (see above) assumes that all operators will or may cut wages below NMWe levels (this is partly due to the market structure assessment above: competing on price creates an incentive to cut costs). Therefore, in the long term, ferry operators will not be able to gain competitive advantage over direct competitors through wage costs, either in the counterfactual or following implementation of the policy. This means that in the long term, the policy will not limit the ability of firms to compete, not the incentives firms have to compete. The policy is expected to lead to

increased costs throughout the sector as minimum wage levels for time in UK waters are fixed at NMWe rates, rather than determined by international seafarer labour markets.

- 4.34. Because the policy is expected to (slightly) increase the costs of serving the ferries market, it may increase barriers to entry by deterring new market entrants. In the long term, this has some potential to limit the number of firms competing, and therefore also to limit consumer choice, if it reduces the number of new firms able to serve the market. There is no evidence on the extent to which this may occur, but any effect would be likely to be fairly small. This is because the market already has somewhat high barriers to entry, due to the need to procure an expensive real asset (a suitable vessel) and to secure port berths to run a service. Therefore, a small increase in the cost of operating in the market would be expected to make a relatively small difference to the contestability of the market, meaning effects would be limited.

Potential for market distortion

- 4.35. The policy is not expected to distort the market because it will apply to all operators. As above, it is expected that in the counterfactual without government action, there would be competition on wage costs, as operators currently paying NMWe would cut wages to compete with lower-cost operators. In the preferred option, all operators will be constrained in their ability to compete on wage costs by paying below NMWe. This creates a “level playing field” between all operators. The scope of the policy is limited to wages and will not impact other costs.
- 4.36. Given the fact the policy will not create different minimum wages for different operators, there is no direct reason to believe that it will force some operators and not others to withdraw completely. In the long run, if the market can be served with a viable business model, there is no reason to believe competition would be more limited than at present, and any operator withdrawals would be followed by new firms entering the market to chase profits. However, because the policy may increase costs for some operators and not others, there is some potential for disruption in the shorter run, as operators facing cost increases may reduce or even withdraw services. This may lead to a reduction of choice available to consumers in the short term, but long-term issues are not expected (see risks section above on withdrawal of routes above for further discussion).
- 4.37. The policy is also expected to maintain “competitive neutrality” (defined by the Competition and Markets Authority (CMA) as meaning “no firm should have a significant competitive advantage purely as a result of its ownership or control”⁷⁶). This is because the policy will apply the same way to all vessels in scope, with no differences by ownership, including no differences by the flag of registration or the country of ownership. There are some companies who own or control both a port/SHA and a ferry operator and may therefore be levying surcharges on both their own company and on competitors. However, this is not expected to lead to risks to competitive neutrality, because the surcharge regime will be underpinned by the Secretary of State retaining the power to direct surcharges if necessary.

The maritime market

- 4.38. As well as direct competition within the ferries market, there is also competition between different types of maritime operator, which may be impacted by the policy. This section discusses these issues. The greatest focus is on competition between roll-on, roll-off (ro-ro) freight services and lift-on, lift-off (lo-lo) container services, as this was the key issue raised in consultation feedback and stakeholder engagement.

Potential for substitution between competitors

- 4.39. The preferred policy option specifies scope based on service frequency only and does not limit scope to only certain types of vessel or service. As above, a greater proportion of ro-ro than of

⁷⁶ See paragraph 3.34 on p23 of the competition impact assessment guidance available https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/460787/Competition_impact_assessment_Part_2_-_guidelines.pdf.

lo-lo services are expected to fall into scope of the preferred option, because ro-ro services tend to run much more frequently. However, many less frequent lo-lo services are on longer, deep-sea routes, and therefore do not compete with ro-ro services, which run on short-sea routes. Therefore, the focus of the discussion is potential shifts between ro-ro and lo-lo services where those services are broadly equivalent. This is taken to mean lo-lo services running the same or similar routes, and at the same or similar frequency to ro-ro services.

- 4.40. Ro-ro and lo-lo services compete to some extent but are imperfect substitutes. The European Commission has previously considered but left open the question of whether ro-ro and lo-lo services constitute the same product market⁷⁷, reflecting the fact there is some substitutability but that it is limited. The Department does not model cross-price elasticities for different types of maritime transport, which means it is not possible to specify the exact extent to which substitution may occur, but previous work has found some degree of substitutability between ro-ro and (short sea) lo-lo services. Some external sources describe the fact that the services compete for similar business and are therefore somewhat substitutable⁷⁸.
- 4.41. On the other hand, the different types of vessel are specialised in different ways. In general, because ro-ro vessels tend to be more management-intensive and allow for less efficient stowage, they are generally less price-competitive and compete on other factors, which means that price may not be a key determinant of mode choice. One key factor driving choice is the cargo, with time-sensitive goods being especially likely to use ro-ro. This means that substitutability is limited by the type of good carried, and some shippers/hauliers are not likely to switch because of price. Another key consideration is port facilities, with some ports being specialised for one type or another. This means that operators' ability to substitute between types is constrained at least in the short- to medium-run, as switching would have broader supply chain implications. There are also issues around port capacity, which may impose additional constraints on operators' ability to switch to lo-lo at least in the short run. Therefore, ro-ro and lo-lo are believed to be imperfect substitutes. Further evidence of this is provided by the DfT statistics used for voyages in the cost-benefit analysis, which shows far fewer fully cellular container services than ro-ro services call frequently at UK ports, suggesting the two types of vessel largely run different service patterns and schedules.
- 4.42. Despite all services meeting the frequency criterion being in scope, the preferred option is expected to create a slightly larger cost burden on ro-ro than on lo-lo services on a per-voyage basis (about 20% more per vessel-journey). This is because ro-ro vessels are more heavily crewed (and this outweighs container vessels spending longer in UK waters per journey). This means it is possible that, if there is no difference in constraints on pass-through of costs, ro-ro services raise prices by slightly more than lo-lo services running at equivalent frequency. Although in theory this might create some shift towards lo-lo, both the scale of any difference (as above, indicative assessment of impacts on freight rate showed an average increase of approximately 0.6% on non-Dover routes) and the scale of any behavioural response (due to the modes being imperfect substitutes, as above) are expected to be limited, meaning significant negative impact on ability of firms to compete is unlikely. This means that the practical effect of the policy would be only an extremely small shift between ro-ro and lo-lo services running at the same frequency, and the policy is not expected to limit the number or range of suppliers in any significant way. No effect on incentives to compete is expected.
- 4.43. Because the policy applies to services calling in the UK frequently (once every 72hrs), there could be some goods for which the policy creates an incentive to move to services calling less frequently (to reduce the chance of them falling in scope of the policy). This does not in itself favour one type of service, but because lo-lo services tend to run less frequently than ro-ro, the practical effect of this could be some degree of shift towards lo-lo, at least in the short term. It is not known exactly to what extent this may occur, but the small freight rate increase (approximately 0.7% on non-Dover routes, with Dover being specialised for very frequent

⁷⁷ See paragraph 22 and the footnoted references of Case M.9319 - DP WORLD / P&O GROUP (https://ec.europa.eu/competition/mergers/cases/decisions/m9319_110_3.pdf).

⁷⁸ See, for example, discussion of lo-lo on p38 of the Irish Maritime Transport Economist (<https://www.imdo.ie/Home/sites/default/files/IMDOFiles/14298%20IMDO%20IMTE%20Vol%2019%202022%20%28003%29.pdf>).

services) suggests the incentive to switch would likely be only small. In addition, any such shifts would be constrained by consumer demand: some goods need to be transported quickly due to short shelf-life, so for some types of good delaying transport by running less frequent services is unlikely to be a realistic option. Therefore, although the extent of this is unknown, the factors described here suggest it is not likely to be a highly significant effect.

- 4.44. In addition to direct effects on ro-ro and lo-lo operators, a large-scale shift from ro-ro towards lo-lo may have knock-on implications for ports. There could be impacts on which ports experience demand (i.e. ports such as Dover, which are specialised for ro-ro, would be expected to experience less demand, while ports such as Felixstowe, which are specialised for lo-lo, would be expected to experience higher demand). There could also be effects on the way ports operate, for example, needing to make space for more containers. Because demand for short-sea shipping is inelastic in the short term, any effects would be likely to be over the longer term, meaning ports would have at least some time to adjust and plan for the changes. Neither of these effects on ports is expected to occur to any significant extent because, as above, any substitution from ro-ro to lo-lo is expected to be extremely small.
- 4.45. No significant substitution toward bulk and tanker services is expected. As with container, the cost-benefit analysis shows slightly larger increases per vessel-journey for ro-ro than for bulk services. However, the services are very imperfect substitutes because they are optimised for different types of cargo, with bulk services carrying non-unitised, homogeneous (dry or liquid) cargo. The voyages data used in the cost-benefit analysis shows that very few bulk services run at similar frequencies to the majority of ro-ro services, which tend to run much more frequently. Therefore, a very slightly larger price rise for ro-ro, which could theoretically create an incentive for customers to use bulk services instead of ro-ro, is not expected to create any meaningful impact on dry bulk or tanker services⁷⁹.

Potential for market distortion

- 4.46. The policy is not expected to distort the market to a significant extent. This is because all maritime services meeting the frequency criterion will be in scope of the policy, regardless of type of service. All services running at the same frequency will face the same regulation affecting per-worker wage costs, so no types of vessel or service will be disadvantaged against competitors running an equivalent service because of different minimum wage costs. (As with ferries, in the sense that all operators will be constrained in their ability to compete on wage costs by paying below NMWe, the policy will create a “level playing field” on wage costs. The scope of the policy is limited to wages and will not impact other costs.)
- 4.47. As with ferries, there is therefore no reason to believe that some types of operator are more likely than others to withdraw or reduce services in the long term. Therefore, consumer choice should not be more limited than it is at present (in this context, “consumer” means customers of freight companies, rather than final consumers). Subject to the same caveats around surcharges as in discussion of the ferries market, the policy is also not expected to undermine “competitive neutrality” in the broader maritime sector.
- 4.48. The same arguments around barriers to entry apply to the maritime freight market as to the ferry market: because the policy is expected to (slightly) increase the costs of serving the market, it may increase barriers to entry by deterring new market entrants, and in the long term, this has some potential to limit the number of firms entering the market, and therefore also to limit consumer choice. However, a small increase in the cost of operating in the market would be expected to make a relatively small difference to the contestability of the market due to barriers to entry already being fairly high.
- 4.49. Option 2 explicitly limits scope to ro-ro and ro-pax services, and therefore treats ro-ro services differently to lo-lo services running equivalent schedules. For the reasons described above, to the extent that ro-ro and lo-lo operators compete, this approach to scope would risk market distortion. This is one of the reasons why this option is no longer the preferred option.

⁷⁹ This is consistent with previous European Commission cases, which have found that containerised shipping is a distinct market to non-containerised shipping such as bulk services (see e.g. paragraph 20 of Case M.9319 - DP WORLD / P&O GROUP at https://ec.europa.eu/competition/mergers/cases/decisions/m9319_110_3.pdf).

The transport market

4.50. Maritime services also compete against other modes as part of the wider international travel market. Therefore, measures which increase costs for some shipping services but not for other modes may impact the wider transport market. This section considers competition in both the freight (air and rail) and passenger (air and rail) markets.

Potential for substitution between competitors

- 4.51. On the freight side, ro-ro ferry services compete with air freight. There are not expected to be any significant effects on mode choice between sea freight and air freight. In 2009, the World Bank found that air freight is typically around 12-16 times more expensive than sea freight⁸⁰. This suggests that, unlike international rail, the modes do not compete on price in any meaningful way, which means a small increase in short-sea freight prices (as above, average freight rates are expected to increase by approximately 1.4% on Dover routes and approximately 0.7% on other routes) is extremely unlikely to cause a modal shift towards air freight. Furthermore, only 1% of total UK exports and 0.5% of total UK imports are by air⁸¹: this shows that air freight is not a significant competitor to sea freight by market share. This is especially the case for shorter-distance international freight, which competes directly with short-sea shipping, as air freight does not have such an advantage in terms of reduced travel time.
- 4.52. Cross-Channel ro-pax ferries, which account for almost half (approximately 47%) of vessel-journeys in the preferred option, also compete with international rail freight services. This is far more direct competition than air freight; as above, competition from Channel Tunnel operators, including on price, exerts a significant impact on the short straits ferry market, constraining their ability to set prices. The price of transporting a container is much lower on Dover-Calais routes than on other routes: this is largely due to this being the shortest ferry route, but the fact is also consistent with the hypothesis that competition from Channel Tunnel operators also contributes to low pricing on the short straits. Both British and European competition regulators have established that cross-Channel ferries form part of the same market as Channel Tunnel rail⁸², showing that the modes compete very closely.
- 4.53. The policy is expected to increase costs for at least some cross-Channel ferry operators but will not affect Channel Tunnel operators. Therefore, if, as expected, ferry operators respond by raising prices (as an alternative to accepting lower profits), the policy may lead to modal shift away from ferries to international rail as ferries become a little more limited in their ability to compete. Although the price elasticity is thought to be fairly high, the follow-through effect on demand is expected to be constrained by the fact the price increases by ferry operators are expected to be relatively small. As above, in the preferred option, freight rates on Dover routes are expected to increase by very approximately 1.4%. The Department does not model cross-price elasticities of demand, but, illustratively, with unitary elasticity, the shift to international rail would be expected to be approximately 1.4%. (This assumes all costs to ferry operators are passed through; in reality, the fact of competition from rail is a factor limiting their ability to do so.) This scale of shift is not negligible, but it is also unlikely to be significant enough to fundamentally alter the competitive balance on cross-Channel routes, meaning the number of suppliers or the choice available to consumers are not expected to be affected. In addition, although the Channel Tunnel has some ability to run extra services, it does face some capacity limits that constrain its ability to absorb a large amount of additional demand in the event of

⁸⁰ This report is more than a decade old, but the key principle is the same: air freight is many times more expensive than sea freight. <https://www.worldbank.org/en/topic/transport/publication/air-freight-study>.

⁸¹ See chart 10 at <https://www.gov.uk/government/statistics/transport-statistics-great-britain-2021/transport-statistics-great-britain-2021>.

⁸² See paragraph 73 of decision ME/5570/12 on “Completed acquisition by Groupe Eurotunnel S.A. of certain assets of former Seafrance S.A.” (<https://assets.publishing.service.gov.uk/media/555de2e6ed915d7ae500003c/Eurotunnel.pdf>), para 18 of decision ME/5500/12 on “Anticipated acquisition by DFDS of certain routes between the UK and continental Europe operated by Louis Dreyfus Armateurs SAS” (<https://assets.publishing.service.gov.uk/media/555de2e9e5274a74ca000049/DFDS.pdf>) and para 14 of Case No COMP/M.2838 - P & O STENA LINE (HOLDING) LIMITED (https://ec.europa.eu/competition/mergers/cases/decisions/m2838_en.pdf).

significant mode shift from cross-Channel ferries. Ferry operators on routes other than the short straits will not be affected by direct competition from international rail.

- 4.54. On the passenger side, ferries compete with short-haul aviation. DfT does not currently model the cross-price-elasticity of international transport modes, but DfT's models of domestic travel indicate that pricing is not a major determinant of the decision to travel by air, with frequency of service and travel time being much stronger factors in the mode choice decision. Additional factors in the aviation/maritime mode choice decision include starting point (airports all over the country offer flights to France and the Republic of Ireland, but only ports in certain parts of the country offer ferries); form of travel (ro-pax services allow passengers to take their own vehicle with them, while flights do not); and segmentation between business and leisure travel (airlines typically offer business class travel). Considering this expected low cross-price elasticity of demand alongside the small average price increases on ferries in the preferred option, any significant mode shift to aviation resulting from the policy is expected to be very small.
- 4.55. Ferries also compete with passenger international rail services on cross-Channel routes. As above, these are expected to be a much closer substitute than short-haul aviation: Channel Tunnel offers a similar service which also allows passengers to take their own vehicles. Therefore, price rises on ferries would be expected to lead to some modal shift from ferries towards international rail. As above, this is not expected to be large because the price rises in the preferred option are not expected to be significant (as above, per-unit passenger prices are expected to rise by approximately 3.6% on Dover routes). Eurostar rail services also compete in the cross-Channel passenger market. As with aviation, key determinants of mode choice are believed to be starting point, travel time and frequency of service. Therefore, Eurostar is not a close substitute for ferries⁸³, meaning any modal shift is expected to be very limited.
- 4.56. There is also some potential for indirect effects on the road freight sector. This is because, although the modes do not compete directly, they tend to form different legs of the same journey. Therefore, if the costs of ferries were to increase relative to costs of road freight, there are some cases in which there may be an incentive for operators to change the balance between journey legs. For example, some operators may choose to transport freight units longer on land to facilitate a shorter sea voyage. The same effect may also occur for domestic rail freight, although this is more limited by rail access to ports and by type of good. This may increase in demand for road freight (with further knock-on implications for freight driver labour markets, and for the carbon emissions of the entire journey) and may cause a shift in demand from ports further away from the European mainland towards the ports closest to it. Most notably, this may increase demand at Dover for accompanied ro-ro services. It is also possible that, because the policy increases wage costs for seafarers but not HGV drivers, there may be some incentive for companies to substitute between seafarers unloading vessels in favour of freight drivers unloading vessels. However, there is no robust evidence on the extent of these behavioural responses. It is unclear to what extent longer term cost savings would outweigh the costs of short-term supply chain disruption. The responses would also increase demand for HGV drivers, which may be difficult and expensive in the current context of a shortage⁸⁴. These factors mean suggest that, even though the policy may induce some shift, it is unlikely that this will be large in response to an expected small per-unit increase in the cost of maritime freight. Therefore, impacts on other domestic freight modes is expected to be limited.

Potential for market distortion

- 4.57. The policy is not expected to distort the market because it is not likely to lead to maritime operators facing significantly higher minimum wage cost requirements than competitors on other modes. As shore-based employers, Channel Tunnel operators are believed to be in scope of domestic UK minimum wage legislation for at least the time spent working in the UK and the

⁸³ This assessment is in line with the opinion of the European Commission, which has found that Eurostar services are not a substitute for ferry services: see section 4.2.2 of case IV/36.253 – P&O Ferries and Stena Line (<https://eur-lex.europa.eu/legal-content/SL/TXT/?uri=CELEX:31999D0421>).

⁸⁴ The government has acknowledged that there is currently a shortage of HGV drivers and is taking action. A tight labour market increases wage rates and is a factor that reduces the extent of potential cost savings available from substituting towards employing more road freight drivers. See <https://www.gov.uk/government/topical-events/hgv-driver-shortage-uk-government-response> for more details.

UK side of the Tunnel, and in scope of French wage legislation for any time not covered by UK legislation⁸⁵. This means that maritime operators will not face higher minimum wage costs than international rail operators; indeed, the policy will level the playing field by reducing the ability of ferry services to undercut international rail operators on wage costs. (As above, it is the Channel Tunnel which is believed to be a close competitor with ferries, and which has been assessed as such in previous competition cases, so this is the key comparison.) This means that, although in the short term there may be disruption to some suppliers but not others as a result of the policy impacting ferries but not international rail, in the long term, the policy is not expected to negatively impact the number of suppliers, or the ability of suppliers to compete, or the choice available to consumers. No impacts on incentives to compete are anticipated.

4.58. Minimum wage costs on airlines are thought to be determined by minimum wage legislation in their country of registration (air operators' certificate, AOC)⁸⁶. Currently, passenger services that operate between the UK and the same countries as ferries are almost all run by airlines registered in the UK, France, or the Republic of Ireland⁸⁷. Both France and the Republic of Ireland have minimum wages slightly lower than the UK's⁸⁸, but they are broadly in line, suggesting any wage-cost undercutting that may take place would likely be small. Though cross-mode substitutability is believed to be limited, even to the extent that aviation and maritime compete, it is not believed that the policy will place undue burden on ferry operators in a way which limits their ability to compete. The contestability of these air routes by hypothetical market entrants registered in much lower-wage jurisdictions is thought to be very limited. Cabotage rules place restrictions on which countries' AOCs are eligible to fly certain routes, and the need to secure airport slots is a barrier to entry. In addition, total wage bills are affected by factors other than minimum wages, with airlines having different numbers of crew and facing different regulations around working time⁸⁹. Therefore, it is very unlikely that the policy would disadvantage the maritime sector against other modes through a differential in wage costs.

⁸⁵ According to Section 1 (2) of the National Minimum Wage Act 1998 (<https://www.legislation.gov.uk/ukpga/1998/39/section/1>), workers are eligible for the NMW if they are working in the UK or if they are ordinarily working in the UK. The Department is not aware of specific case law testing the status of the Channel Tunnel for minimum wage legislation. However, time spent working in the UK is believed to be in scope of NMW legislation and as such, it is believed that time spent on UK land and in the UK side of the Tunnel would be eligible for the NMW. This is believed to be the relevant comparison as the closest analogue to NMW in UK territorial waters. However, it is additionally believed that the entirety of Channel Tunnel workers' time would be eligible for NMW in the case of workers whose contract or place of residence meant they would be ordinarily working in the UK. Any workers not covered by UK domestic wage legislation would be covered by French legislation. The French minimum wage is currently €10.85/hr (<https://www.welcometofrance.com/en/increase-of-the-minimum-wage-in-france>). Converting using the exchange rate of £1 = €1.1744 (<https://www.exchangerates.org.uk/GBP-EUR-spot-exchange-rates-history-2022.html>) as at 31 May 2022, this is equal to £9.24/hr, within 36p of the main UK rate of £9.50/hr. This means it is very likely that Channel Tunnel operators will face the same minimum wage costs in the UK part of the Tunnel as maritime operators in UK territorial waters and will not be able to significantly undercut wages on other parts of their journey.

⁸⁶ The Department is not aware of specific case law testing this, but in the case of peripatetic workers, it is expected a worker would be eligible for the domestic NMW if ordinarily working in the UK, or if their employment is based in the UK. Because an AOC can be issued only to an airline by the regulator of its home country (see e.g. Civil Aviation Authority guidance at <https://www.caa.co.uk/consumers/guide-to-aviation/how-airlines-are-licensed-and-inspected/>), an airline with a UK AOC would be considered to be based in the UK. Therefore, it is expected that workers on airlines with a UK AOC would be considered eligible for the UK NMW, and it is assumed that the same applies for countries with similar minimum wage laws. This allows a tentative conclusion that airlines in scope will be bound by minimum wages in their country of AOC.

⁸⁷ According to DfT aviation statistics, in May 2022, 96.5% of scheduled short-haul flights to France are on airlines with UK, France or Republic of Ireland (RoI) air operator's certificate (AOC) (and 100% on airlines with UK or EU AOC). 100% of scheduled short-haul flights to the Republic of Ireland are on airlines with UK or RoI AOC.

⁸⁸ The French minimum wage is currently €10.85/hr (<https://www.welcometofrance.com/en/increase-of-the-minimum-wage-in-france>) and the Irish minimum wage is currently €10.50/hr (https://www.citizensinformation.ie/en/employment/employment_rights_and_conditions/pay_and_employment/pay_inc_min_wage.html). Converting using the exchange rate of £1 = €1.1744 as at 31 May 2022 (<https://www.exchangerates.org.uk/GBP-EUR-spot-exchange-rates-history-2022.html>), these were equal to £9.24/hr and £8.94/hr respectively, both within 56p of the main UK rate of £9.50/hr. The UK's minimum wage is lower than France's in nominal terms for any exchange rate below £1 = €1.142, which is less than 2% lower than the average rate in 2021 of £1 = €1.1633 (<https://www.ons.gov.uk/economy/nationalaccounts/balanceofpayments/timeseries/thap/mret>).

⁸⁹ For example, whereas seafarers are guaranteed 77hrs of rest per 7-day period, leading to a maximum duty time of 91hrs per week (see MSN 1842 (M) at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/440232/1842.pdf), air crew cannot be assigned to more than 60hrs of duty time per week (see Regulation ORO.FTL.210 at <https://www.legislation.gov.uk/eur/2014/83>).

Wider labour market impacts

Unemployment

- 4.59. Economic theory suggests that interventions imposing minimum wages above the competitive market rate are associated with increased unemployment. In a competitive labour market, wage rates are determined by the marginal revenue product of labour, so imposing a higher minimum wage rate than this forces employers to pay more for labour than the value they derive from labour. This means that demand for labour contracts and cannot return to equilibrium due to the minimum wage. This creates unemployment as labour supply is greater than labour demand.
- 4.60. This situation is different in cases where employers hold monopsony power in labour markets (monopsony markets have one buyer, so monopsony power in labour markets derives from one or more employers being large enough to control a substantial share of the market). In this case, employers face a higher marginal cost than average cost in employing labour and consequently the market outcome is for less employment at a lower wage than the competitive market outcome. The monopsonistic employer pays the lowest wage sufficient to attract the workers it needs. In this context, minimum wage policies do not create unemployment and may even reduce it, because they shift the wage rate closer to the competitive equilibrium, forcing the monopsonistic employer to offer higher wages and attracting more workers⁹⁰. There is a significant body of evidence that domestic National Minimum Wage legislation has *not* created unemployment in the UK, which is attributable to these labour market imperfections⁹¹.
- 4.61. The extent to which these factors and arguments apply to the maritime context is not clear. No real-world market is perfectly competitive, and employers do enjoy some degree of monopsony power. However, the most salient feature of the market for seafarer labour is that it is globally integrated, with employers competing to employ seafarers from many different countries, and seafarers being highly substitutable regardless of nationality. The equilibrium wage rate, though low by UK standards, is high in a global context⁹². These factors suggest the seafarer labour market may be closer to competitive than to a pure monopsony. This means that the force of the monopsony arguments above is weak, which means economic theory provides some basis to expect some kind of increase in unemployment in the seafarer labour market to result from this policy. The extent to which this will be reflected in reality is uncertain.
- 4.62. However, despite theory suggesting an increase in unemployment, there are practical reasons to believe that any effects the preferred option has on employment will be limited:
- The policy only applies to a segment of journeys, i.e. only time in UK waters among vessels in scope and does not affect general wage rates in the seafarer labour market. Because the policy only applies to parts of journeys (time in UK waters), the overall average increase in wage rates resulting from the policy will be lower when considering other parts of journeys. This means any contraction in demand due to higher wages is unlikely to be very large, limiting effects on equilibrium employment.
 - Demand for labour in the seafarer market is further distorted by regulations which impose minimum crew requirements⁹³. This means that employment cannot be cut lower than a certain point as operators would then be breaching safety and other regulations.
 - Due to the relatively competitive nature of both the seafarer labour market and the consumer market operators are serving (see Competition Assessment), it is expected

⁹⁰ This is discussed in Annex A of the Department for BEIS impact assessment of domestic National Minimum Wage changes (https://www.legislation.gov.uk/ukia/2022/14/pdfs/ukia_20220014_en.pdf#52).

⁹¹ See, for example, the evidence and links given in chapter 4 of the Low Pay Commission's National Living Wage Review, 2020 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1076517/NLW_review.pdf#50).

⁹² ILO statistics (<https://ilostat.ilo.org/topics/wages/>) show the monthly minimum wage of \$658 per month (https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_845493/lang-en/index.htm) is well above average monthly wages in the majority of African and Asian countries for which the data exists. International comparisons of wages are always constrained by data limitations.

⁹³ See, for example, IMO safe manning regulations and requirements (<https://www.imo.org/en/OurWork/HumanElement/Pages/PrinciplesOnSafeManning.aspx>).

that operators will already be at or near the minimum number of crew in order to control labour costs and compete. This means that in practice, potential for further cuts to number of crew is highly likely to be very limited.

4.63. These factors point to the effects on employment being uncertain: it is possible there will be some reduction in equilibrium seafarer employment, but the extent is uncertain, and it is expected to be limited based on the considerations above. Reflecting this, the cost-benefit analysis above assumed that employment will not be affected in the central case. If there are effects on employment, costs to business and benefits to employees will both be a little lower than the main outputs above.

Other labour market impacts

4.64. Minimum wage policies are among the most-evaluated government interventions. The Low Pay Commission's National Living Wage (NLW) Review 2015-2020⁹⁴ found that:

- The NLW does not seem to have reduced opportunities to progress from minimum wage jobs, although it may have reduced the share of workers moving between employers. Lower staff turnover is a benefit for employers as it reduces recruitment and training costs but may reduce the chances of workers gaining larger pay rises from moving jobs.
- There is limited evidence that some firms, especially smaller firms, have raised prices in response to NLW increases, although these have been concentrated in particular industries and have been too small to affect headline measures of inflation. Firms have more commonly responded by accepting lower profits.
- Effects on productivity are hard to measure and are uncertain, but there is no strong evidence of either increases or decreases in labour productivity because of the NLW. Some employers responded by trying to increase worker effort, despite this being difficult to generate productivity gains from.
- There is some evidence that a minority of employers compensated for additional wage costs by reducing the generosity of their non-wage benefits package (e.g. reducing overtime pay, breaks and subsidised food). This effect has not been large on aggregate.

4.65. As above, it is not clear to what extent domestic trends can be extrapolated to the international seafarer labour market, so it should not be assumed that the same will automatically apply to the labour market affected by this policy. However, in the absence of specific evidence on the seafarer labour market, these findings serve as a reasonable baseline to set expectations for the likely impacts of wage legislation in the maritime sector in general terms. The findings do not point to a high chance of large labour market impacts beyond the direct effect on wage rates.

4.66. Minimum wage policies also distort whole-economy labour markets by changing incentives. At the extensive margin, if work pays more, it is relatively more attractive to enter the labour force. At the intensive margin, if the hourly rate is higher, it is relatively more attractive to work longer hours. For sector choice, if pay increases in one sector, it is relatively more attractive to work in that sector relative to others. However, this policy is expected to have extremely small effects in all three of these areas. At the extensive margin, seafarer jobs are a tiny proportion of the overall total, meaning general wage rises are barely changed and any behavioural response will be negligible. At the intensive margin, seafarer hours of work tend to be dictated by employers' requirements, meaning seafarers will have extremely limited flexibility to voluntarily increase their working time. For sector choice, as discussed above, the policy will not affect other barriers to entry to the seafarer labour market (i.e. the need for professional qualifications) and other non-wage aspects of employment which may prevent or deter workers from substituting between other minimum-wage jobs and seafarer jobs. Therefore, the policy is not expected to have any meaningful effect on general labour market incentives, either in the UK or globally.

⁹⁴ See the Low Pay Commission's National Living Wage Review 2015-2020 (<https://www.gov.uk/government/publications/the-national-living-wage-review-2015-2020>).

5. Monitoring and evaluation

Post implementation review

<p>1. Review status: Please classify with an 'x' and provide any explanations below.</p>			
<input type="checkbox"/>	Sunset clause	<input type="checkbox"/>	Other review clause
<input type="checkbox"/>	Political commitment	<input checked="" type="checkbox"/>	Other reason
<input type="checkbox"/>	No plan to review		
<p>Regulations to be reviewed every five years to ensure continued suitability.</p>			
<p>2. Expected review date (month and year):</p>			
0	1	/	2
			8
<p>Five years from when the Regulations come into force</p>			
<p>3. Rationale for Post Implementation Review (PIR) approach:</p>			
<p>A PIR will be conducted to evaluate the impact of these regulations. The level of resourcing will be low.</p>			
<p>Key Objectives, Research Questions and Evidence collection plans</p>			
Key objectives	Key research questions to measure success of objective	Existing evidence	Any plans to collect primary data to answer questions?
<p>Increase wages for seafarers in scope of the regulations.</p>	<p>Primary research will not be carried out to evaluate the effectiveness of the policy.</p> <p>Compliance data from inspection authority will be used to indicate levels of compliance.</p> <p>Informal stakeholder consultation to gather views on the impact on firms and seafarers.</p> <p>Any market adjustments on routes, and any proactive industry statements/actions.</p>	<p>N/A</p>	<p>There are no plans currently in place for DfT to collect primary data. Compliance data will be collected through the relevant inspection authorities.</p>

Monitoring

- 5.1. Overall, the Department will be able to assess whether the policy objective has been achieved through careful monitoring and engagement with the relevant authorities. Compliance data from the authorities empowered to enforce the regulations will be used by DfT on a regular basis to monitor the scale of compliance, as well as where non-compliance has been flagged. Cases of non-compliance will be followed up as per the agreed process.

Evaluation of impact

- 5.2. Alongside collecting and analysing the relevant compliance data, informal consultations with stakeholders will also be held within the first year of the legislation coming into force (in conjunction with regular ongoing stakeholder engagement) in order to understand whether and to what extent the objectives of the policy change have been met.

Monitoring and evaluation of risks

- 5.3. Section 3 above described number of risks and possible unintended consequences: withdrawal of routes, use of the land bridge, and risks to policy effectiveness.
- 5.4. Withdrawal of routes will be monitored. Because most service schedules are published, any significant changes or reductions in service would be made known to the public, and any withdrawal of entire operators or routes would be public knowledge. It is also expected that operators seeking to withdraw service because of the policy will be willing to raise this with the government through regular ongoing engagement.
- 5.5. The government will also be able to monitor use of the “land bridge” for freight travelling to the Republic of Ireland through its own and other organisations’ statistics and publications. It is likely to be difficult to attribute any changes specifically to this policy, but, as above, operators citing the policy as a reason for changing patterns are expected to be willing to raise this with the government through regular ongoing engagement.
- 5.6. Similarly, it is expected to be possible to monitor risks to policy effectiveness due to amended service schedules through keeping track of published schedules. These will be kept track of and any concerns about larger-than-typical numbers of services moving to a frequency just outside the scope of the policy will be recorded. If concerns are raised about services not following published schedules, it may be possible to follow up these concerns by performing checks on a representative sample of vessels using publicly available tracking technology.
- 5.7. Risks to policy effectiveness arising from adjusting wages outside UK waters are likely to be harder to monitor. To the extent that employment contracts are private, it may in many cases be difficult to determine with certainty wage rates paid for time outside UK waters. However, there are a number of ways information about this can be gathered, including:
 - Engagement with operators: although some operators may not be willing to reveal details of their employment practices, the behaviour is not illegal, so some may be willing to be open about it in routine engagement.
 - Compliance process: some specific details of the compliance process are to be set at secondary legislation, but it is very likely to involve spot-checks by public-sector (MCA) inspectors, who will be empowered to access to a certain amount of information about employment contracts. If this reveals that many contracts specify different wage levels inside and outside UK territorial waters, this will be noted in an appropriate way.
 - Trade unions: for vessels where there is a trade union agreement, union representatives may raise any issues through routine engagement. On vessels without trade union representation, there may be informal sources of information, such as chaplains and port visitors, who may approach government to raise concerns.
- 5.8. Information surrounding risks – especially around avoidance action – will be gathered and recorded appropriately and in a way that does not breach commercial sensitivity (especially for less formal ways the government may become aware of issues). Because the behaviour is not illegal, no formal action would be taken against any operators, and the information would be recorded for the purposes of evaluating policy effectiveness. As above, the government will continue to seek to engage pro-actively with operators on issues around seafarer welfare, as part of a framework to advance protections for seafarers relating to employment and welfare.