Explanatory Memorandum to The Greenhouse Gas Emissions Trading Scheme (Amendment) (Extension to Maritime Activities) Order 2026

This Explanatory Memorandum has been prepared by the Directorate of Climate Change and Environmental Sustainability and is laid before Senedd Cymru in conjunction with the above subordinate legislation and in accordance with Standing Order 27.1.

Cabinet Secretary's Declaration

In my view, this Explanatory Memorandum gives a fair and reasonable view of the expected impact of the Greenhouse Gas Emissions Trading Scheme (Amendment) (Expansion to Maritime Activities) Order 2026. I am satisfied that the benefits justify the likely costs.

Huw Irranca Davies MS
Deputy First Minister and Cabinet Secretary for Climate Change and Rural Affairs

13 January 2026

PART 1

1. Description

1.1 The UK Emissions Trading Scheme ("UK ETS") was established by the Greenhouse Gas Emissions Trading Scheme Order 2020 ("the principal Order") as a UK-wide greenhouse gas emissions trading scheme, to encourage cost-effective emissions reductions from the power, industry, and aviation sectors. It was designed jointly by the Governments of Wales, UK, and Scotland, and the Northern Ireland Executive, who also jointly operate the UK ETS as the UK ETS Authority ("the Authority"). It contributes to the UK's emissions reduction targets and net zero goal, as well as the emissions reduction pathway in Wales.

1.2 In November 2024, the Authority consulted on the expansion of the UK ETS to capture emissions from maritime voyages. The final policy decisions were set out in the interim and full Authority Responses to this consultation.

1.3 The proposed amendments to be made by the Greenhouse Gas Emissions Trading Scheme (Amendment) (Extension to Maritime Activities) Order 2026 incorporate these into the ETS legislation on a 4-nation basis.

2. Matters of special interest to the Legislation, Justice and Constitution Committee

2.1 As the Order in Council will be subject to UK, Scottish and Northern Irish Parliamentary scrutiny, it is not considered reasonably practicable for this instrument to be made or laid bilingually.

3. Legislative background

3.1 Part 3 of Schedule 3 to the Climate Change Act 2008 ("CCA") states that an emissions trading scheme that applies to Wales, England, Scotland, and Northern Ireland – such as in this case – must be established by Order in Council.

3.2 The procedure for making such an Order in Council is prescribed by section 48 of the CCA.

3.3 The Greenhouse Gas Emissions Trading Scheme (Amendment) (Extension to Maritime Activities) Order 2026 ("the amending Order") contains provisions which are caught by section 48(3) of the CCA. Therefore, the draft affirmative procedure applies.

3.4 The principal Order set up the UK ETS to be operational from 1 January 2021. It runs for ten years, split into two five-year "allocation periods". The scheme works by requiring operators of energy intensive industrial installations, power generators, and aircraft operators to monitor and report on

their emissions and obtain and surrender “allowances” equivalent to their greenhouse gas emissions in each scheme year. There is a cap on the number of allowances that may be created. Some participants receive an allocation of allowances free of charge to help mitigate carbon leakage[1], details of which are published in allocation tables.

3.5 There have been several amendments[2] to the principal Order to give effect to technical changes that improve the operation of the UK ETS for both participants and regulators.

3.6 The principal Order and these amending Orders in Council were made under section 44 of the CCA**.** The amending Order is also being made under that power.

3.7 There have also been amendments[3] made to the UK ETS via subordinate legislation made under the Finance Act 2020.

4. Purpose and intended effect of the legislation

4.1 The Authority has been looking at areas to expand the scope of the UK ETS as a part of the aim to decarbonise all sectors of the UK economy to meet the UK net zero target by 2050. This instrument will require maritime operators to participate in the scheme by monitoring, reporting on, and surrendering allowances in respect of their CO2, CH4 and NO2 emissions arising from certain activities. They will have the opportunity to buy emission allowances at auction or trade them on the secondary market.

4.2 The intention of the amending Order is to require operators of ships undertaking eligible maritime activities to obtain an “emissions monitoring plan” (to document the processes through which the operator will ascertain the emissions associated with the activities of their ships) and, for each scheme year, to monitor, independently verify, and report to the regulator their maritime emissions, and to surrender a level of allowances equivalent to those emissions. This is only applicable to ships of 5,000 gross tonnage and above, and various other exemptions apply, such as for military and law enforcement ships, fish-catching and fish-processing ships, and ferries operating services to Scottish islands and Scottish remote peninsulas. Activities excluded from scope include, but are not limited to: search and rescue, firefighting and the provision of humanitarian aid or assistance.

4.3 Relevant maritime operators will be assigned to a UK ETS regulator using the same approach taken for aircraft operators in the scheme, based on the location of their registered office or place of residence. For those operators

[1] Carbon leakage is the movement of production and associated emissions from one country to another due to different levels of decarbonisation effort through carbon pricing and climate regulation.

[2] See S.I. 2020/1577, S.I. 2021/1455, S.I. 2022/454, S.I. 2022/1173, S.I. 2023/850, S.I. 2023/1387, S.I. 2024/192, S.I. 2024/1366, S.I. 2025/100, and S.I. 2025/124.

[3] See S.I. 2021/484, S.I. 2021/513, S.I. 2021/561, S.I. 2021/917, and S.I. 2023/994.

registered in one of the four nations of the UK, regulatory responsibility will fall to the regulator for that nation. Where relevant maritime operators do not have a registered office or place of residence in the UK, regulatory responsibility will fall under the remit of the Environment Agency. For operators registered in Wales, the regulator will be Natural Resources Wales.

4.4 Relevant maritime operators must apply to the regulators for a single emissions monitoring plan (covering all their ships) within 42 days of first activity, apply one of four prescribed monitoring methods consistently, and file one annual emissions report by 31 March for the preceding scheme year. The annual report must be verified by an impartial, accredited verifier who checks that it is complete and consistent with Part 7 of the new Schedule 2A to the principal Order, and provides reasonable assurance that it is free from material misstatements. The verification report is submitted alongside the annual report. By 30 April, operators must surrender allowances equal to their tCO_2e emissions, with a 50% surrender deduction for GB-Northern Ireland voyages and a "double surrender" rule that makes 2026 emissions due by 30 April 2028. The "double surrender" rule means that operators can surrender allowances for emissions emitted from the scheme year 1 July 2026 – 31 December 2026 and the scheme year 1 January 2027 – 31 December 2027 together by 30 April 2028.

4.5 The territorial extent of this Order is the whole of the United Kingdom.

4.6 The main changes are summarised below:

Articles 3 and 4 and Schedule 1 – Schedule 2A to the principal Order

4.7 **Article 3** of the amending Order amends the principal Order by inserting Part 4ZA (Maritime). Part 4ZA inserts **Article 34ZA** into the principal Order, to state that Schedule 2A to the principal Order has effect.

4.8 **Article 4** of, and **Schedule 1** to, the amending Order amend the principal Order by inserting Schedule 2A.

4.9 **Paragraph 1 of Schedule 2A** explains that the UK ETS will apply to maritime activities

4.10 **Paragraph 2** defines key terms.

4.11 **Paragraph 3** defines a maritime operator as a person who performs a maritime activity in a ship, and is its registered owner or its ISM company.

4.12 **Paragraph 4** explains that when a change of responsibility between an ISM company and registered owner is made, this must be done so by notifying the regulator in writing.

4.13 **Paragraph 5** explains that Schedule 2A applies to a ship of 5000 gross tonnage or more. It also sets out a number of exceptions for certain vessels,

including military and law enforcement vessels, fishing vessels, and Scottish ferry services.

4.14 **Paragraph 6** defines a “port of call” as any port that a ship arrives or is present at and at which passengers or crew embark or disembark, or cargo is loaded onto or unloaded from the ship. It does not apply to refuelling ships, obtaining supplies, relieving the ship’s crew (unless the ship is an offshore ship), going into dry dock, obtaining repairs to the ship or its equipment, sheltering from adverse weather conditions or obtaining assistance where the ship is in distress. It also does not apply to medical emergencies, search and rescue activities or provisions of assistance to a ship in distress.

4.15 **Paragraph 7** defines “maritime activity” as a voyage or an in-port activity.

4.16 **Paragraph 8** explains that certain activities are excluded from the amending Order. These are activities performed for the exclusive purpose of: transport on official missions of a reigning monarch and their immediate family or head of state of a country other than the United Kingdom, or ministers of a national government of a country other than the United Kingdom; military activities; search and rescue; firefighting; providing humanitarian aid or assistance; and carrying out of government functions.

4.17 **Paragraph 9** sets out that an operator must apply to the regulator for an emissions monitoring plan.

4.18 **Paragraph 10** sets out the conditions for the regulator to issue an emissions monitoring plan.

4.19 **Paragraph 11** explains that if a regulator refuses an application for an emissions monitoring plan, they must give a reason for the decision and if amendments are needed, they must state what they are. It also states that a maritime operator who has had an application refused must submit a revised application within 31 days.

4.20 **Paragraph 12** explains the process by which a maritime operator may apply to vary their emissions monitoring plan and states that they must do so when a condition of the plan requires them to do so. It also sets out the circumstances in which a regulator can vary an emissions monitoring plan.

4.21 **Paragraph 13** sets out the requirement for each operator to monitor maritime emissions in accordance with an emissions monitoring plan.

4.22 **Paragraph 14** sets out the requirement for a maritime operator to submit an annual emissions report for each scheme year, which must be submitted to regulators on or before 31 March in the year following the scheme year to which it relates.

4.23 **Paragraph 15** explains that a maritime operator must surrender allowances equal to 50% of maritime emissions for voyages between Northern

Ireland and Great Britian and 100% emissions from all other maritime activity. It also explains that the obligation to surrender allowances for the first year (2026) must be satisfied on or before 30 April 2028.

4.24 **Paragraph 16** sets out the principles by which the maritime operator must carry out their monitoring and reporting obligations.

4.25 **Paragraph 17** states that the emissions monitoring plan must contain: the name of the plan holder, details of a contact person, the IMO company and registered owner identification number, description of procedures used to monitor voyage, in-port activities and fuel consumption, and various other technical details for each ship covered by the plan.

4.26 **Paragraph 18** states that maritime operators must monitor, for each voyage: the port of departure, date and hour of departure, port of arrival, date and hour of arrival, total amount of each type of fuel consumed, emission factor for each fuel type and the amount of greenhouse gases emitted.

4.27 **Paragraph 19** states if a ship makes more than 300 voyages in a year and all its trips count as voyages under Schedule 2A, the operator doesn't need to track emissions for each individual voyage. Instead, they can report yearly totals for the number of voyages, total fuel used (by type), emission factor for each fuel type, and the amount of greenhouse gases emitted.

4.28 **Paragraph 20** states that operators must also track the total amount of each fuel type, the emissions factor for each fuel type, and the amount of greenhouse gases emitted, while ships are in port.

4.29 **Paragraph 21** explains that operators must choose and stick to a method for measuring emissions for each ship. There are four approved methods (A, B, C, D): A, B, and C use calculations based on fuel consumption. D uses direct measurement of emissions. Operators can combine methods if approved by the regulator.

4.30 **Paragraph 22** states that method A in **paragraph 21** uses fuel delivery notes (BDN) plus periodic checks of fuel tanks. It calculates the fuel used by applying the following formula: start fuel + deliveries – end fuel – any fuel removed = fuel consumed.

4.31 **Paragraph 23** states that method B in **paragraph 21** uses a daily tank measurement to show how much fuel is used.

4.32 **Paragraph 24** contains method C in **paragraph 21. Method C** uses flow meters installed on fuel lines to measure how much fuel goes into the engines.

4.33 **Paragraph 25** states that method D in **paragraph 21** measures emissions directly from the ship's exhaust.

4.34 **Paragraph 26** states that if a verifier finds a problem or suggests an improvement, the operator must submit an improvement report to regulators by

30 June stating how and when the issue was, or is planned to be, fixed and when they plan to implement recommended improvements. In the alternative, the report may justify why recommended improvements would not lead to an improvement of the monitoring methodology, or provide evidence that recommended improvements would incur unreasonable costs.

4.35 **Paragraph 27** explains that operators must identify sources of risks of errors in data, from collection to final emissions report, create and maintain a control system to ensure reports are accurate, and comply with the monitoring plan and Schedule 2A, and make the risk assessment available to regulators and verifiers. They must also create and maintain written procedures for data flow activities and control activities, include references to these procedures in the monitoring plan, and provide documentation of the procedures to the regulators and verifiers when asked.

4.36 **Paragraph 28** states that all measuring equipment must be calibrated, checked regularly and compared to international standards where possible. If some parts cannot be calibrated, they must be identified in the monitoring plan and alternative control activities must be proposed. It also states that if the equipment fails performance standards, the operator must take prompt necessary corrective action.

4.37 **Paragraph 29** explains that operators must review and validate data by checking completeness, comparing data across years and comparing results from different monitoring methods (if more than one is used)

4.38 **Paragraph 30** states that if data handling or controls do not function effectively or respect the rules set in the documentation of procedures, the operator must ensure that corrective action is taken and the affected data is corrected without undue delay.

4.39 **Paragraph 31** explains that if any monitoring or control work is outsourced, the operator must check the quality of the outsourced work, set appropriate requirements for the outputs of the outsourced processes and their methods, set clear requirements of methods used, verify these methods and ensure that the outsourced activities are responsive to identified risks.

4.40 **Paragraph 32** states that operators must monitor the effectiveness of the control system by carrying out internal reviews and taking into account findings of the verifier. It also states that when an operator finds the control systems are ineffective or not commensurate with identified risks, they must seek improvements and update the monitoring plan or underlying written procedures.

4.41 **Paragraph 33** states that if data for a ship's emissions is missing for one or more voyages, the operator must use alternative methods to fill the gap. If no alternative methods are listed in the monitoring plan, they must use an appropriate estimation method for determining conservative surrogate data. If technical problems temporarily prevent normal monitoring, the operator may apply a method based on alternative data sources, or an alternative method

which provides surrogate data or a conservation estimation, until normal monitoring resumes.

4.42 **Paragraph 34** explains that the operators must keep records of all data and information as per the monitoring plan, archive data so that annual emissions reports can be verified, ensure documents are available when needed for monitoring and control, and provide documents to the regulator or verifier upon request.

4.43 **Paragraph 35** sets out the formulae used to calculate maritime emissions.

4.44 **Paragraph 36** sets out the default values for emissions factors.

4.45 **Paragraph 37** explains that a maritime operator can claim an emissions reduction for carbon dioxide emissions from certain fuels, but only if all these conditions are met:

4.45.1 The fuel is eligible (in accordance with a direction from the relevant national authority to the regulator).

4.45.2 It was purchased during the scheme year, or no more than 3 months before the scheme year started.

4.45.3 It was delivered to a point of no return by 31 March of the following year.

4.45.4 The operator has not used the fuel to claim emissions reductions in another UK ETS year or to get emissions reductions or financial benefit in any other scheme.

4.45.5 The fuel has not been sold to someone else.

4.46 **Paragraph 38** sets out the information that is required in the annual emissions report.

4.47 **Paragraph 39** states that the annual emissions report must be verified.

4.48 **Paragraph 40** sets out key definitions for this Part of Schedule 2A.

4.49 **Paragraph 41** sets out general obligations applicable to verifiers.

4.50 **Paragraph 42** states that if a verifier follows the standards contained in **ISO 14065:2020** and **ISO/IEC 17029:2019**, they are assumed to meet the requirements of **paragraphs 43–70**, insofar as those standards cover the requirements.

4.51 **Paragraph 43** explains that before agreeing to verify an operator's emissions report, the verifier must do certain things to have a proper understanding the operator's activities and to assess whether they can do the job. It also states that the operator must provide all relevant information to help the verifier do this.

4.52 **Paragraph 44** states that when deciding how much time is needed for verification, the verifier must consider the complexity of the operator's fleet and

activities, the complexity of the monitoring plan, the required materiality level, the complexity and completeness of data handling and control systems, and where the data is located. They must allow extra time if needed for strategic analysis, risk analysis or other verification activities.

4.53 **Paragraph 45** sets out that the operator must supply various information to the verifier, including all monitoring plans, emissions and verification reports, certificates and other supporting evidence.

4.54 **Paragraph 46** sets out that the way in which the verifier must assess the likely nature, scale and complexity of the verification tasks.

4.55 **Paragraph 47** sets out the way in which the verifier must carry out risk analysis.

4.56 **Paragraph 48** states that the verifier must draft a verification plan, and it sets out what needs to be included in the plan.

4.57 **Paragraph 49** explains that the verifier must implement the verification plan and, on the basis of the risk analysis, verify whether the monitoring and reporting systems, as described in the emissions monitoring plan, exist in practice and are properly implemented. It then sets out the processes that the verifier must consider carrying out, and the matters which the verifier must verify.

4.58 **Paragraph 50** sets out the analytical procedures the verifier must use to assess the plausibility and completeness of data where the inherent risk, the control risk and the aptness of the maritime operator's control activities show the need for such analytical procedures. It then sets out what the verifier must do to comply with this.

4.59 **Paragraph 51** explains that the verifier must verify the data contained in the annual emissions report by: detailed testing, cross-checking, reconciliations, threshold checks and recalculations. It states that verifiers must also confirm that the report includes all ships under the operator's responsibility, that all emission sources listed in the monitoring plan are covered, that data is complete and consistent with supporting documents, that fuel consumption matches fuel purchase records or fuel supplied to the ship, that data is reliable and accurate, and that calculations leading to aggregated emissions data are correct.

4.60 **Paragraph 52** states that if the operator has used methods from the monitoring plan to fill data gaps under **paragraph 33**, the verifier must check if those methods were appropriate and correctly applied. If no pre-approved method was used, the verifier must check whether the approach ensures that emissions are not underestimated and that it doesn't lead to material misstatements.

4.61 **Paragraph 53** defines the materiality level, for the purpose of verifying fuel consumption and maritime emissions data, as 5% of the respective total

reported for each item in a scheme year. Where the sum of all ships' total aggregated emissions to be reported under this Part of Schedule 2A, exceeds 500,000 tonnes of carbon dioxide, then the materiality level is 2% of the emissions data in the scheme year. Where the sum does not exceed 500,000 tonnes, then the materiality level is 5% of the emissions data in the scheme year.

4.62 **Paragraph 54** states that verifiers must visit the operator's site during verification. They must determine what activities to perform and how much time is needed for the visit. It also states that the operators must provide access to its sites, including relevant onshore locations and its ships.

4.63 **Paragraph 55** states that a virtual visit can replace a physical one if the operator agrees and the regulator approves. Before applying to make a virtual visit, the verifier must do a risk analysis that includes measures to keep the verification risk to an acceptable level.

4.64 **Paragraph 56** states that if a verifier finds misstatements, non-conformities or non-compliance with the monitoring and reporting requirements during verification, they must inform the operator without undue delay, and request corrections within a reasonable deadline. It states that the operator must correct these issues. If the operator does not correct the issue, the verifier must ask for an explanation before issuing the report. The verifier then must assess whether the uncorrected errors affect the total reported emissions or other relevant information (and whether that impact leads to material misstatements), and whether the uncorrected non-conformity affects reported data (and whether that leads to material misstatement).

4.65 **Paragraph 57** explains what the verifier must do to complete the verification of the emissions report.

4.66 **Paragraph 58** states that the verifier must give the operators recommendations for any uncorrected errors or non-conformities not leading to material misstatement, for improving risk assessment, data flow activities, control activities and systems, and procedures; and for monitoring and reporting emissions, including reducing risks and enhancing efficiency. It states that it must, in due course, verify whether these have been implemented and if not, whether that increases or may increase the risk of misstatements.

4.67 **Paragraph 59** states that after completing verification, the verifier must issue a verification report for each annual emissions report. The verification report must contain an opinion as to whether the emissions report is satisfactory or unsatisfactory. It also sets out the information that must be included in the verification report.

4.68 **Paragraph 60** states that the verifier may conclude that the emissions report is unsatisfactory due to the scope of the verification being limited. This can occur in the following situations: missing data preventing the gathering of enough evidence to reduce the verification risk to the level needed to obtain reasonable assurance, the monitoring plan not being issued by the regulator,

the monitoring plan lacking clarity or scope, or the operator failing to provide enough information.

4.69 **Paragraph 61** states that an independent reviewer must verify that the verification process was done correctly, that professional care and judgment were exercised, and that enough evidence exists to enable the verifier to issue a verification report with reasonable assurance. It also states that the reviewer must not have been involved in the verification work and that the review covers all steps from **paragraphs 45–59.**

4.70 **Paragraph 62** states that the UK ETS verifier must establish, document, implement and maintain a continued competence process to ensure that all personnel entrusted with verification activities are competent for the tasks that are allocated to them. It also sets out the process by which this should take place.

4.71 **Paragraph 63** states that for each verification engagement, the verifier must assemble a verification team capable of performing the verification activities referred to in **paragraphs 43 to 61**.

4.72 **Paragraph 64** sets out the competence requirements for UK ETS auditors and UK ETS lead auditors, including the skills and sector-specific knowledge required.

4.73 **Paragraph 65** states that independent reviewers must have the appropriate authority to review the draft conclusions on the draft verification report and internal verification documentation, and that they must meet the competence requirements applying to UK ETS lead auditors. It also sets out other competence requirements.

4.74 **Paragraph 66** states that verifiers can use technical experts for specialist knowledge to support auditors. It explains that if the independent reviewer lacks expertise on a specific issue, they must request the support of a technical expert. It states that technical experts must have the required competence and expertise to support the auditor effectively on the subject matter and have sufficient understanding of the issues referred to in **paragraph 65**. They must also work under the direction and responsibility of the lead auditor or independent reviewer.

4.75 **Paragraph 67** explains that verifiers must establish, document, implement, and maintain procedures and processes for all verification activities stated in **paragraphs 45–61** and follow **ISO 14065:2020** and **ISO/IEC 17029:2019** standards. It also sets out the requirements of a quality management system.

4.76 **Paragraph 68** states that verifiers must keep internal records of all verification documents. It also sets out the requirements of the documentation that must be retained.

4.77 **Paragraph 69** explains that verifiers must maintain records proving compliance with this Part of Schedule 2A, including staff competence and impartiality, and regularly share information with the maritime operator (as per ISO standards). It also explains that they must safeguard confidential information.

4.78 **Paragraph 70** states that verifiers must be independent and impartial. It also sets out the parameters of this independence and impartiality.

4.79 **Paragraph 71** explains that if this Part of Schedule 2A doesn't specify accreditation rules, the relevant provisions of EU Regulation (**EC) No 765/2008**[4] apply. It also states that with respect to the minimum requirements for accreditation and the requirements for accreditation bodies, the standard under **ISO/IEC 17011:2017** applies.

4.80 **Paragraph 72** states that the scope of accreditation must cover the verification of annual emissions reports under this Part of Schedule 2A.

4.81 **Paragraph 73** states that during the accreditation process and the annual surveillance of accredited verifiers, the national accreditation body must assess whether the verifier and its staff are competent, whether they are verifying reports according to this Part of Schedule 2A, and whether they meet the requirements for verifiers under **paragraphs 62-70**, including requirements for impartiality and independence.

4.82 **Paragraph 74** states that requests for accreditation must include the information required by **paragraph 71(2)**. It also sets out the information that an applicant verifier must provide to the national accreditation body before the assessment under **paragraph 75**.

4.83 **Paragraph 75** sets out what the assessment team must do for the

purposes of an assessment. It also sets out what the verifier applicant must do in respect of any non-conformities identified by the assessment team.

4.84 **Paragraph 76** states that when deciding whether to grant, extend, or renew accreditation, the accreditation body must take into account ISO standards. If granted or renewed, an accreditation certificate must be issued. Certificate details follow ISO requirements and are valid for up to 5 years.

4.85 **Paragraph 77** states that the accreditation body must carry out annual surveillance on accredited verifiers. This includes an on-site visit and observing and assessing staff competence. The first check will occur within **12 months** of accreditation. If verification occurs in another country, the national accreditation body can ask that country's body to perform surveillance on its behalf and under its responsibility.

[4] Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93.

4.86 **Paragraph 78** sets out that verifiers must be reassessed before their accreditation expires, to determine whether the validity of the certificate can be extended.

4.87 **Paragraph 79** explains the national accreditation body can conduct an extraordinary assessment at any time to check a verifier's compliance with this Part of Schedule 2A. It also states that verifiers must inform the accreditation body without undue delay about any significant changes relevant to its accreditation concerning their status or operations.

4.88 **Paragraph 80** states that the accreditation body can suspend, withdraw, or reduce the scope of accreditation if the verifier fails to meet the requirements of this Part of Schedule 2A, and must do so where the verifier requests it. It also sets out other circumstances in which the body must suspend a verifier's accreditation, reduce the scope of an accreditation, or withdraw a verifier's accreditation.

4.89 **Paragraph 81** explains that accreditation tasks must be carried out by the national accreditation body.

4.90 **Paragraph 82** states that the accreditation body must be fully independent from verifiers it assesses and that it must be fully impartial in carrying out its accreditation activities.

4.91 **Paragraph 83** sets out that the accreditation body must appoint an assessment team for each accreditation assessment. The team must include a lead assessor, and, where necessary, a suitable number of assessors or technical experts with relevant knowledge and experience. It also prescribes the necessary skills for the team.

4.92 **Paragraph 84** sets out the competence requirements of accreditation assessors.

4.93 **Paragraph 85** states that the national accreditation body may include technical experts in the assessment team to provide detailed knowledge and expertise on a specific subject matter needed to support the lead assessor or assessor. It also sets out specific criteria for technical experts.

4.94 **Paragraph 86** sets out procedure to follow where the national accreditation body has received a complaint concerning the verifier from the regulator, the maritime operator, or other interested parties.

4.95 **Paragraph 87** explains that the national accreditation body must keep a record of every person involved in accreditation, including those related to relevant qualifications, training, experience, impartiality and competence necessary to demonstrate compliance with this Part of Schedule 2A.

4.96 **Paragraph 88** states that the accreditation body must regularly publish and update information about itself and its accreditation activities. It also must

safeguard confidential information obtained during accreditation, as required by EU Regulation (EC) 765/2008.

4.97 **Paragraph 89** states that the UK ETS authority must establish an effective exchange of appropriate information and cooperation between the national accreditation body and the regulator. The Environment Agency, or another regulator as designated by the UK ETS authority, is to be the focal point for this.

4.98 **Paragraph 90** states that by 31 December each year, the accreditation body will send the regulator an accreditation work programme listing all accredited verifiers and containing certain information on each. It also states that by 1 June each year, the accreditation body must send a management report to the regulator containing certain information on accredited verifiers.

4.99 **Paragraph 91** states that if the accreditation body must inform the regulator if: it has imposed administrative measures on a verifier, if the suspension of a verifier's accreditation has been terminated, or if a decision on appeal has reversed its decision to impose administrative measures.

4.100 **Paragraph 92** states the information that the regulator must share with the accreditation body annually.

4.101 **Paragraph 93** sets out that the accreditation body must set up and maintain a public database showing verifiers' names, accreditation numbers and addresses; the scope of their accreditation; their accreditation grant and expiry dates; and information on any administrative measures imposed.

4.102 **Paragraph 94** states that for the purposes of enabling the national accreditation body to draft the accreditation work programme and the management report referred to in **paragraph 90**, by 15 November each year, verifiers must inform the accreditation body of any planned verification dates and locations; contact details of maritime operators whose emissions reports are being verified; and the names of verification team members and scope of work.

4.103 **Paragraph 95** states that an operator must ensure that any analyses, sampling, calibrations and validations for the determination of emissions factors are carried out by applying methods based on corresponding EN standards. When these standards are not available, operators must use ISO or national standards. If no standards exist, they must use suitable draft standards, industry best practice guidelines, or other scientifically proven methods, limiting sampling and measurement bias.

4.104 **Paragraph 96** states that if emissions factors are determined by analyses, operators must submit a sampling plan, in the form of a written procedure, to regulators for approval. It also sets out what the sampling plan must contain.

4.105 **Paragraph 97** states that where laboratories are used for emission factor analyses, the laboratory used must be accredited with EN ISO/IEC 17025 for the relevant analytical methods. If such a laboratory cannot be used because of technical unfeasibility or unreasonable cost, non-accredited laboratories may be used if they meet equivalent requirements and the regulator agrees.

4.106 **Paragraph 98** sets out the minimum frequencies for analyses for relevant fuels that maritime operators must apply. It also sets out circumstances in which these can be departed from, with permission from the regulator.

Article 5 and Schedule 2 – Further amendments to the principal Order

4.107 **Article 5** of, and **Schedule 2** to, the amending Order amend the principal Order.

4.108 **Paragraph 1 of Schedule 2** states that amendments will be made to the principal Order.

4.109 **Paragraph 2** states that in **Article 4** of the principal Order, the definition of "emissions monitoring plan" will have the meaning set out in paragraph 9(1) of Schedule 2A in relation to maritime operators. It also outlines other definitions introduced to expand the principal Order to the maritime sector.

4.110 **Paragraph 3** amends the meaning of regulators in **Article 9** of the principal Order to cover maritime operators.

.

4.111 **Paragraph 4** inserts **Article 13A** into the principal Order, to define the regulator for maritime operators. Each nation's regulator will regulate those operators whose registered office or place of residence is within that country. The Environment Agency will regulate those operators who do not have a registered office or a place of residence in the UK.

4.112 **Paragraph 5** amends **Article 16** of the principal Order to include "maritime activities by maritime operators" within the scope of the UK ETS.

4.113 **Paragraph 6** amends **Article 19** of the principal Order to change the cap for the 2026-2030 trading period from 302,924,924 to 312,248,470.

4.114 **Paragraph 7** amends **Article 22** of the principal Order to change the cap base for each year from 2026-2030.

4.115 **Paragraph 8** amends **Article 24** of the principal Order to dis-apply Commission Implementing Regulation (EU) 2018/2066[5] (as it applies in domestic law) to the monitoring and reporting of maritime emissions.

[5] Commission Implementing Regulation (EU) 2018/2066 of 19 December 2018 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council and amending Commission Regulation (EU) No 601/2012.

4.116 **Paragraph 9** amends **Article 25** of the principal Order to dis-apply Commission Implementing Regulation (EU) 2018/2067[6] (as it applies in domestic law) to the verification of maritime emissions.

4.117 **Paragraph 10** inserts maritime operators into **Article 35** of the principal Order, allowing the regulator or registry administrator to charge them, to recover costs incurred them in performing certain activities in accordance with or by virtue of the principal Order. It also adds, to those activities, the determination of maritime emissions under Article 45A of the principal Order, and a determination of the emissions figure for surrender under Article 45B of the principal Order. Finally, it extends the ability to impose an annual or other periodic charge that does not relate to any specific activity, to a marine operator.

4.118 **Paragraph 11** inserts maritime operators into **Article 44A** of the principal Order, to allow a deficit notice to be served where they have failed to surrender allowances in accordance with paragraph 15 of Schedule 2A. It also amends what the deficit notice must contain. Finally, it sets out that a deficit notice may not be given to a maritime operator in relation to a scheme year, if the maritime operator holding account has been closed under paragraph 28A of Schedule 5A.

4.119 **Paragraph 12** inserts **Articles 45A and 45B** into the principal Order. **Article 45A** requires the regulator to make a determination of emissions of a maritime operator that fails to submit an annual emissions report in accordance with paragraph 15 of Schedule 2A. It also sets out that a regulator may make such a determination if the regulator considers that the determination of maritime emissions is necessary for the purpose of imposing, or considering whether to impose, a civil penalty until Article 47. Additionally, it sets out what must happen where a verifier states in a verification report under paragraph 59 of Schedule 2A that there are non-material misstatements in the annual emissions report which have not been corrected. Finally, it makes other provisions in relation to determinations of emissions.

4.120 **Article 45B** sets out the circumstances in which a regulator must make a determination of a maritime operator's emissions figure for surrender in a scheme year. It also makes other provisions in relation to determinations of an emissions figure for surrender.

4.121 **Paragraph 13** amends **Article 47** of the principal Order to bring maritime operators within the penalty notice regime under the UK ETS.

4.122 **Paragraph 14** amends **Article 52** of the principal Order to ensure that maritime operators are subject to the surrender obligations of the UK ETS, and that they must pay a civil penalty if they do not comply with them.

[6] Commission Implementing Regulation (EU) 2018/2067 of 19 December 2018 on the verification of data and on the accreditation of verifiers pursuant to Directive 2003/87/EC of the European Parliament and of the Council.

4.123 **Paragraph 15** inserts **Articles 64B, 64C, 64D, and 64E** into the principal Order. **Article 64B** sets out the civil penalty that will apply to maritime operators who fail to apply to the regulator for an emissions monitoring plan, contrary to paragraph 9 of Schedule 2A, or to make a revised application for such a plan, where required to do so under paragraph 11 of Schedule 2A. **Article 64C** sets out the civil penalty that will apply to maritime operators who fail to comply with a condition of an emissions monitoring plan, contrary to paragraph 13(2) of Schedule 2A. **Article 64D** sets out the civil penalty that will apply to maritime operators who fail to monitor maritime emissions in accordance with paragraph 13 of Schedule 2A. **Article 64E** sets out the civil penalty that will apply to maritime operators who fails to submit a verified report of maritime emissions to the regulator, contrary to paragraph 14 of Schedule 2A.

4.124 **Paragraph 16** amends **Article 67** of the principal Order to make a person liable to a civil penalty where they provide false or misleading information, or make a statement that is false or misleading in a material respect, where the information is provided, or the statement is made, in a report of maritime emissions under paragraph 14 of Schedule 2A.

4.125 **Paragraph 17** amends **Article 70** of the principal Order to expand various rights of appeal to maritime operators.

4.126 **Paragraph 18** amends **Article 72** of the principal Order to provide that the bringing of an appeal under Article 70 does not suspend the effect of sub-paragraphs 12(4), (5) and (6) of Schedule 2A (which concern the variation of an emissions monitoring plan), nor paragraph 13A(4) of Schedule 5A (which concerns a notice suspending a maritime operator holding account). It also makes other provision about the effect of an appeal in the context of maritime emissions.

4.127 **Paragraph 19** amends **Article 75C** of the principal Order to add maritime operator holding accounts to the list of matters under a relevant provision that can be excluded from a notice because inclusion would be contrary to the interests of national security.

4.128 **Paragraph 20** states that amendments will be made to Schedule 5A to the principal Order.

4.129 **Paragraph 21** amends **paragraph 5 of Schedule 5A** to include maritime emissions, maritime operators, and maritime operator holding accounts in the UK ETS registry.

4.130 **Paragraph 22** amends **paragraph 6A of Schedule 5A** to require a maritime operator's maritime emissions, less any surrender deduction, to be included in their operator holding account in the UK ETS registry, including where determined by the regulator.

4.131 **Paragraph 23** inserts **paragraph 13A into Schedule 5A** to create the concept of maritime operator holding accounts.

4.132 **Paragraph 24** amends **paragraph 16 of Schedule 5A** to allow an maritime operator holding account holder to appoint an authorised representative with the same account permissions currently held by an aircraft operator holding account authorised representative.

4.133 **Paragraph 25** amends **paragraph 20 of Schedule 5A** to make the transfer of allowances from one account to another subject to paragraph 13A(3)(b) (which allows the registry administrator, if they do not consider that a person is fit and proper to hold a maritime operator holding account, to open and immediately suspend the account).

4.134 **Paragraph 26** amends **paragraph 24 of Schedule 5A** to make provision for the surrendering of allowances from a maritime operator holding account to the surrender account, and to make provision for the reversal of such a transfer to the surrender account.

4.135 **Paragraph 27** inserts **paragraph 28A into Schedule 5A** to allow for the closure of maritime operator holding accounts.

4.136 **Paragraph 28** amends **paragraph 30 of Schedule 5A** to make provision for a balance in a maritime operator holding account that is to be closed.

4.137 **Paragraph 29** amends **paragraph 31 of Schedule 5A** to provide that the UK ETS authority must publish information about maritime operator holding accounts, and that this information is that referred to in paragraph 33A.

4.138 **Paragraph 30** inserts **paragraph 33A into Schedule 5A** to provide the information that must be provided under paragraph 31, in respect of maritime operator holding accounts.

Article 6 and Schedule 3 – Amendments to the Greenhouse Gas Emissions Trading Scheme Auctions Regulation 2021

4.139 **Article 6 of, and Schedule 3 to**, the amending Order amend the Greenhouse Gas Emissions Trading Scheme Auction Regulations 2021 ("the 2021 Regulations").

4.140 **Paragraph 1 of Schedule 3** states that amendments will be made to the 2021 Regulations.

4.141 **Paragraph 2** amends **Regulation 9**. Regulation 9 sets out the formula for calculating the annual volume of allowances to be auctioned in a calendar year. The formula takes into account the 'base', which is the number of allowances set out in the corresponding entry in column 2 of the table at Regulation 9(10). Paragraph 2 changes the 'base' number in column 2 for the years 2026-2030.

4.142 **Paragraph 3** amends **Regulation 10**. Regulation 10(1) sets out that adjustments to the auction calendar may not be made, except for a number of circumstances. Paragraph 3 adds a circumstance, being the addition of an activity to Article 16(2) of the principal Order. Paragraph 5 of Schedule 2 to the amending Order is adding an activity to Article 16(2).

4.143 **Paragraph 4** amends **Regulation 16** to expand eligibility to bid in an auction to a maritime operator having a maritime operator holding account.

4.144 **Paragraph 5** amends **Regulation 25**. Regulation 25 concerns the appointment requirements applicable to an auction platform appointed to hold ETS auctions. When appointing, the auctioneer must under Regulation 25(5)(b) have regard to the extent to which candidates demonstrate fulfilment of ensuring full, fair and equitable access to bid in the auctions for SMEs. Paragraph 5 amends Regulation 25(8) to include, as an "SME", maritime operators (within the meaning of paragraph 3 of Schedule 2A to the principal Order) that are small and medium-sized enterprises within the meaning of Commission Recommendation 2003/361/EC[7].

4.145 **Paragraph 6** amends the **Schedule** to the 2021 Regulations. The Schedule lists the elements which must be included in an application for admission to bid under Regulation 18 (see Regulation 18(5)). Paragraph 6 adds **paragraph 10A to the Schedule**, requiring maritime operators to provide an emissions monitoring plan issued under paragraph 10 of Schedule 2A, when applying for admission to bid in an auction.

5. Consultation

5.1 Before making an Order in Council under section 44 of the CCA, the Welsh Ministers as a "national authority"[8] are required to obtain, and take into account, the advice of the Committee on Climate Change[9] (section 48(1)(a) CCA). They are also required to consult such persons affected by the draft legislation as they consider appropriate (section 48(1)(b) CCA).

5.2 Stakeholders were consulted through the UK Emissions Trading Scheme Scope Expansion: Maritime Consultation (November 2024 – January 2025)[10]. An Interim Authority Response to this consultation was published in July 2025 and a full Authority was published on 25 November 2025. A copy is available on request.

5.3 The Committee on Climate Change was consulted and advised against adjusting the cap to account for maritime emissions as they were concerned

[7] Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises.

[8] See section 47(3) of the CCA.

[9] Now known as the Climate Change Committee.

[10] UK ETS scope expansion: maritime sector.

that the number of allowances in the scheme is too high and the price of UK ETS allowances is too low to drive decarbonisation. However, the Authority decided to proceed with increasing the cap to account for maritime emissions. The cap is consistent with UK Net Zero and would continue to be so with the additional allowances for maritime. Any decisions to tighten the cap should be made through a formal resetting of the cap or via market stability mechanisms. Allowances in the scheme are not ringfenced for sectors and therefore not adding allowances to cover the maritime emissions would result in a reduction of allowances available to existing sectors, which would have a significant impact on Welsh participants. While the price of UK ETS allowances has been lower than the price of EU ETS allowances over the last year, it is gradually increasing.

6. Regulatory Impact Assessment (RIA)

Introduction

6.1 The Emissions Trading Scheme (ETS) operates at a UK level, to encourage cost-effective emissions reductions from the power, industry, and aviation sectors. The scheme works by requiring operators of energy intensive industrial installations, power generators, and aircraft operators to monitor and report on their emissions and obtain and surrender "allowances" equivalent to their greenhouse gas emissions in each scheme year. This Impact Assessment (IA) accompanies the UK ETS Authority's (henceforth 'the Authority') final response to the "UK Emissions Trading Scheme Scope Expansion: maritime sector" consultation (November 2024). It outlines the expected impacts on Welsh operators of the decision to expand the UK ETS to cover domestic maritime emissions.

6.2 Decisions around changes to the ETS are made collectively between UK government and the governments of Wales, Scotland and the Northern Ireland Executive, who jointly operate the UK ETS as the UK ETS Authority ("the Authority"). For the scope expansion to include maritime, the Authority completed a detailed impact assessment appraising the options and modelling their impact across the whole scheme. The modelling used for the whole scheme cannot be directly disaggregated to countries within the scheme so, to approximate the impacts in Wales, we estimate the impact on maritime operators by apportioning the UK impacts based on the proportion of operators in Wales. It has not been possible to apportion the impacts on the rest of the ETS operators in Wales. The full options appraisal and detailed modelling can be found in the Authority IA.

6.3 The ETS can only operate on the basis of consistent approaches in all four nations, therefore this impact assessment is not intended to appraise different available options or outline the costs and benefits of being in the ETS, it is to estimate the costs and benefits of the changes that have been agreed by all four nations.

Summary of impacts

6.4 This impact assessment examines the effects of expanding the scope of the UK Emissions Trading Scheme (UK ETS) to the domestic maritime sector, specifically focusing on the impact on Welsh maritime operators.

6.5 Under the preferred policy package (Option A), scope expansion of the UK ETS to domestic maritime is estimated to lead to a net reduction of approximately 645,000 tonnes of carbon dioxide equivalent (CO_2e)[11][12] in total across the entire traded sector in the UK over the appraisal period (2026–

[11] All figures on tCO2e presented in this analysis are rounded to the nearest 1,000.

[12] CO_2e (carbon dioxide equivalent): A metric measure used to compare the emissions of various greenhouse gases based on their global warming potential, expressed as the amount of CO_2 that would have the same warming effect over a given time period.

2046). This figure reflects changes in GHG emissions from all sectors covered by the UK ETS, not just domestic maritime, and accounts for the broader impact of scope expansion during Phase I. These reductions are driven by operators responding to the carbon price signal through investment in cleaner technologies and behavioural changes. The social value[13] of these GHG emission savings[14] is estimated at £155m[15] for the UK over the appraisal period (2026–2046) (discounted to 2026 base year, expressed in 2024 prices).

6.6 Initial estimates indicate that, in the central scenario, scope expansion could yield air pollution benefits of around £179m for the preferred option over the appraisal period.

6.7 Social transfers[16] between UK ETS operators and the UK Government, in the form of allowance purchases, are projected to increase by £1,900 million over the appraisal period (2026–2046) (discounted to 2026 base year, expressed in 2024 prices). This figure captures the net impact of scope expansion across the traded sector, with the majority of revenue impacts generated from new maritime operators entering the scheme.

6.8 The preferred policy package is designed to maintain market stability by adjusting the cap to account for the new sector. This avoids placing unnecessary abatement pressure on other sectors and ensures emissions reductions are distributed proportionately. By contrast, not adjusting the cap, as in Option C, results in tighter market conditions and significantly higher costs to operators in the rest of the traded sector. Given that the current cap is already assessed as consistent with the UK's Net Zero Strategy, driving additional abatement in other sectors without adjusting the cap to reflect the inclusion of domestic maritime may result in unnecessary cost and effort that exceeds what is needed to stay on the net zero pathway.

6.9 Scope expansion to domestic maritime also facilitates future inclusion of international voyages within the UK ETS. Emissions from vessels at berth in

[13] The social value of emissions abatement reflects the estimated monetised benefits to society of avoided GHG (e.g. reduced climate damages), as distinct from standard financial or private benefits accruing to firms or individuals.

[14] The value of greenhouse gas emission savings is estimated using the government's carbon values, which reflect the societal cost of emissions. This represents the monetised benefit of avoided greenhouse gas emissions over the appraisal period. Further detail on the methodology and assumptions is provided in Annex C of the Authority IA.

[15] All monetised values presented in this analysis are rounded to the nearest £1,000,000 except where they exceed a billion, or are less than a million, then they are rounded to the nearest £100,000,000 or £100, respectively, for ease of presentation.

[16] Social transfer refers to the financial flow from UK ETS operators to the UK Government through the purchase of UK allowances (UKAs). This reflects the Department for Energy Security and Net Zero's (DESNZ) assessment of the change in social transfer value resulting from the expansion of the UK ETS to include domestic maritime. It is based on the projected value of UKAs purchased by UK ETS operators, using traded carbon values derived from DESNZ's Carbon Market Model (CMM). This approach differs from revenue estimates used for fiscal planning, which are separately quantified by the Office for Budget Responsibility (OBR) using its own assumptions on UKA pricing. See Annex C of the Authority IA for more detail.

UK ports are already captured, meaning future expansion would increase emissions coverage and abatement potential without introducing new operators. This sequencing means the current NPSV reflects early administrative costs but not future benefits.

6.10 In summary, the preferred policy package delivers proportionate emissions reductions at low cost to operators, maintains market stability and supports the UK's Net Zero Strategy. The positive NPSV reflects the combined value of GHG emissions reductions and air quality improvements. Sensitivity testing confirms the robustness of the policy across a range of assumptions, reinforcing the case for scope expansion.

6.11 The cost-benefit analysis is conducted over a 20-year period (2026–2046), in line with HM Treasury Green Book guidance for major infrastructure and decarbonisation policies. Further details on the modelling approach and assumptions are provided in Annex A of the Authority IA.

6.12 The policy objectives are to:

- Promote cost-effective decarbonisation across the UK ETS, including the domestic maritime sector, by incentivising emissions reduction through carbon pricing.
- Support delivery of the UK's legally binding carbon budgets and net zero target by 2050.

6.13 The inclusion of domestic maritime emissions in the UK ETS is expected to provide a long-term carbon price signal, encouraging investment in emission reduction and complementing existing UK domestic maritime decarbonisation measures (see the Maritime Decarbonisation Strategy[17] and Annex A of the Authority IA for detail). Crucially, this also strengthens the UK ETS as a whole. By expanding the range of abatement opportunities within the cap, the scheme is better able to deliver emissions reductions where they are most cost-effective.

Options

6.14 A long list of options was considered by the Authority, as outlined in the Authority IA. For the purposes of this summary, we focus on the agreed final policy package.

The final policy package agreed upon by the Authority is as follows:

6.15 **Gross Tonnage threshold:** Vessels of 5,000 GT and above

6.16 **Activity scope:** UK domestic maritime only. Broader scope options are being explored separately through the international scope consultation, and any related analysis will accompany the Authority's response to that process.

[17] Department for Transport (2025) Maritime Decarbonisation Strategy https://www.gov.uk/government/publications/maritime-decarbonisation-strategy

6.17 **GB-NI equivalence:** To maintain carbon price parity across the Irish Sea, the UK ETS Authority has chosen to apply a 50% surrender deduction for voyages between GB and NI. This approach reflects stakeholder preferences and recognises the unique regulatory and operational context of NI–GB routes. It also aligns with the decision to limit initial scope expansion to domestic maritime only, which precludes inclusion of UK–EEA or wider international voyages at this stage.

6.18 **Exemptions:** The preferred approach includes targeted exemptions for Scottish island ferries, offshore ships[18], fishing ships, and government maritime activity. See Annex B of the Authority IA for more detail.

6.19 **Cap Adjustment:** The Authority has opted to adjust the UK ETS cap in line with a net zero consistent pathway for domestic maritime. This decision reflects the core principle that scope expansion during a trading phase should be accompanied by a cap adjustment, provided the principles underpinning the original cap remain valid.

6.20 The cap for Phase I was set in 2023 at the top of the net zero consistent range, based on the traded sector's effort share and anticipated overperformance in the non-traded sector[19]. The inclusion of domestic maritime emissions represents a material expansion of scheme coverage, and the Authority judged that not adjusting the cap would be inconsistent with the scheme's design logic, which is already set on a Net Zero Strategy-consistent trajectory. Maintaining the existing cap without adjustment would effectively tighten the scheme beyond what was intended in the 2023 cap reset, rather than reflecting the planned balance of ambition and deliverability.

6.21 **Criteria used to assess the cap adjustment approaches included:**

- Environmental alignment: consistency with net zero and carbon budget delivery.
- Market integrity: avoiding distortions or shocks to the UK Allowance (UKA) market.
- Policy coherence: alignment with the Authority's stated consultation position and long-term cap-setting principles.
- Administrative feasibility: deliverability within the Phase I timeline.
- Future linkage readiness: consider alignment to reduce administrative burdens on operators and maintain compatibility with any potential future EU ETS linkage.

6.22 Three options were considered: no adjustment, use of reserve allowances, and a net zero consistent cap increase. The preferred option, an explicit cap increase, was selected because it best upheld the principles

[18] Exemption for offshore ships extends only to 2027.

[19] The Greenhouse Gas Emissions Trading Scheme (Amendment) Order 2023 – Page 8.

above, provided long-term clarity to the market, and avoided the ambiguity and stakeholder uncertainty associated with using the reserve.

6.23 While the Climate Change Committee (CCC) advised against adjusting the cap[20], citing headroom in the existing Phase I cap, the Authority concluded that scope expansion is not the appropriate mechanism to absorb that headroom. Instead, the cap should reflect actual emissions coverage to preserve scheme credibility and ensure consistency with the Authority's stated policy intent.

6.24 Gas Coverage: As confirmed in the interim Authority response, the proposed approach covers CO_2, methane, and nitrous oxide.

6.25 Emissions Accounting: The Authority has selected Tank-to-Wake[21] accounting with zero-rating for sustainable fuels. This approach aligns with other existing policies and reporting systems, such as the EU ETS and EU MRV system, and is simpler to implement by 2026. While Well-to-Wake accounting would be preferable to ensure that the full lifecycle emissions of fuels are captured in the scheme, it has not been adopted for the start of the scheme due to data complexity and readiness concerns, namely the need to develop a Lifecycle Assessment (LCA) framework that will be compatible with other planned schemes, such as the IMO Net-Zero Framework[22].

6.26 The table below summarises the preferred policy package against the other shortlisted options. The shortlisted options are explained in further detail in the Authority IA.

[20] Letter: Advice on implementing the expansion of the UK ETS to include some domestic maritime emissions - Climate Change Committee

[21] Tank-to-Wake (TtW) emissions refer to those generated by the operation of domestic maritime vessels. Well-to-tank (WtT) emissions include those generated by the production and distribution of the fuels and other energy sources used by domestic maritime vessels, while Well-to-Wake (WtW) is the sum of both TtW and WtT emissions, and covers the whole fuel lifecycle.

[22] IMO approves net-zero regulations for global shipping

Table 1. Shortlist appraisal options

Policy consideration	Do Nothing	Option A - Preferred option	Option B - Do maximum	Option C - No Cap Adjustment
Vessel scope	No expansion of the UK ETS to domestic maritime	Vessels of 5,000GT and above	Same as preferred option	Same as preferred option
Activity scope		UK domestic maritime	Same as preferred option	Same as preferred option
Exemptions		Exemptions for fishing-catching and fish processing ships, offshore ships[23], ferries serving Scotland's islands and peninsula communities, government maritime activity	No exemptions	Same as preferred option
GB-NI equivalence		50% surrender deduction for GB-NI journeys	Same as preferred option	Same as preferred option
Cap adjustment		Adjust cap according to NZ consistent pathway for the sector	Same as preferred option	No cap adjustment
Gas coverage		CO_2, methane, and nitrous oxide	Same as preferred option	Same as preferred option
Emissions accounting		Tank to Wake with zero-rating	Well to Wake	Same as preferred option

6.27 Three policy packages were shortlisted for appraisal as part of the UK ETS domestic maritime scope expansion alongside a counterfactual 'Business-as-usual' scenario. These options reflect a range of ambition levels in terms of

[23] Exemption for offshore ships extends only to 2027.

emissions coverage, while maintaining consistency in vessel size threshold, activity scope and gas coverage to ensure comparability and policy coherence. (See Annex B of the Authority IA for more detail).

- Business-as-usual (Do nothing) – This counterfactual scenario assumes no expansion of the UK ETS to include the domestic maritime sector.
- Option A (Preferred policy package) – As described above, with targeted exemptions and cap adjustment.
- Option B – This high-ambition scenario maximises GHG emissions coverage in the domestic maritime sector, with no exemptions[24]. It applies a well-to-wake (WtW) accounting methodology and assumes full coverage of all eligible emissions sources. This option tests the upper bound of potential emissions coverage under scope expansion and associated impacts on the cap and market.
- Option C – This option mirrors the preferred policy package but retains the existing Phase I cap, rather than adjusting it to account for domestic maritime emissions. It is included in the shortlist to test the implications of absorbing domestic maritime within the current cap trajectory, including potential impacts on carbon prices, market dynamics, and the distribution of abatement across sectors. While similar in structure to the preferred package, it provides a useful comparison to assess the role of cap design in delivering emissions reductions and the wider carbon market impacts associated with scope expansion. This option reflects the CCC advice, as discussed above.

Costs and benefits

6.28 As the costs and benefits of expanding the ETS to include domestic maritime reflect those of the whole ETS sector, we have not been able to apportion these to Wales. The values below reflect the impacts for the whole of the UK but, as Wales will account for a proportion of the sector, we can assume that the NPSV for Wales is also positive in all options, albeit considerably lower. Welsh operators account for around 2% of UK maritime operators.

Table 2. Outline costs and benefits

This table may be reformatted provided the side-by-side comparison of options is retained	**1. Business as usual (baseline)**	**2. Option A (Preferred Policy Package)**	**3. Option B (Do Maximum)**	**4. Option C (No Cap Adjustment)**
Net present social value (with brief description,	No change to current UK ETS or domestic maritime sector.	NPSV: **£132m** (2024 prices, discounted to 2026).	NPSV: **£245m** (2024 prices, discounted to 2026).	NPSV: **£2,400m** (2024 prices, discounted to 2026).

[24] Whilst elements of this policy package are not considered deliverable (e.g., no exemption for Scottish island ferries) it is designed to test a hypothetical upper bound of emissions coverage and its associated impacts on the modelled impacts presented in this analysis.

including ranges, of individual costs and benefits)	No additional abatement, costs, or transfers.			
Public sector financial costs (with brief description, including ranges)	No additional public sector costs.	Regulator costs included in admin costs, recovered via operator charges. No net increase in public sector spending.	Same as Option A	Same as Option A
Significant un-quantified benefits and costs (description, with scale where possible)	None.	Innovation incentives for maritime decarbonisation; improved market stability; alignment with EU ETS. Risks of competitive disadvantage, carbon leakage, and mode shift assessed as low.	Greater innovation incentive and market signal, but higher risk of competitive due to no exemptions.	Large emissions reduction, but risk of market distortion, higher allowance prices, and disproportionate costs for non-maritime sectors.
Key risks (and risk costs, and optimism bias, where relevant)	…	Risks of cost pass-through to consumers and regional impacts (e.g. NI), partially mitigated by exemptions or reduction in surrender obligation.	Higher risk of disproportionate impacts on specific sub-sectors and Scottish island ferries due to lack of exemptions.	High risk of market disruption, increased costs for all UK ETS sectors, and potential for unintended economic impacts.
Results of sensitivity analysis	Not applicable—no new policy, so no sensitivity to input assumptions.	NPSV remains positive across all tested scenarios. Varies from **£24m to £208m** under different administrative cost assumptions, and from **£54m to £209m** based on carbon value. Complementary policy delivery affects NPSV,	Sensitivities mirror Option A but with higher abatement and cost base. Central NPSV is **£245m**, with wider variation depending on admin costs and carbon value. Fuel mix and carbon value assumptions	Delivers large positive NPSV (**£2,400m**) due to forced abatement across UK ETS. Admin cost and carbon value assumptions affect scale but NPSV remains positive. Fuel mix and BAU scenarios reinforce robustness,

		rising to **£442m–£691m** in stress test scenarios. Fuel mix assumptions also impact air quality benefits, with NPSV reaching up to **£370m.**	significantly influence outputs.	though risks of market disruption are elevated.

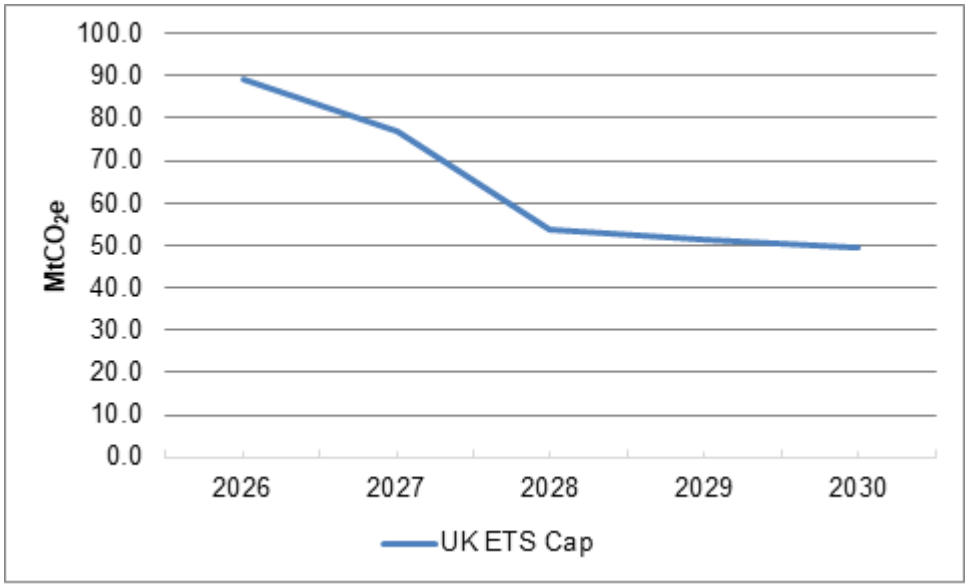
6.29 The modelled impacts reflect four key outcomes of introducing a carbon price in the domestic maritime sector:

- **Abatement:** Net change in GHG emissions achieved by UK ETS operators in response to scope expansion to domestic maritime.
- **Air quality improvements:** Changes in emissions of primary air pollutants from the domestic maritime sector, as a result of wider abatement actions taken in response to UK ETS scope expansion.
- **Cost to operators:** The financial cost incurred by operators when investing in abatement measures to reduce emissions driven by scope expansion, alongside any new administrative cost burden.
- **Resource transfer:** Any change in the payment made by UK ETS operators to purchase allowances as a result of scope expansion, representing a transfer of value from the private sector to government.

6.30 **It is important to note that whilst resource transfer is not a net cost to society and is excluded from net present social value (NPSV) calculations, it is significant in cost-benefit analysis as it reflects the distributional impact of the policy and the full financial responsibility placed on operators.**

6.31 In the counterfactual scenario, the UK ETS cap remains unchanged from its current Phase I trajectory (2021–2030), as shown in Figure 1.

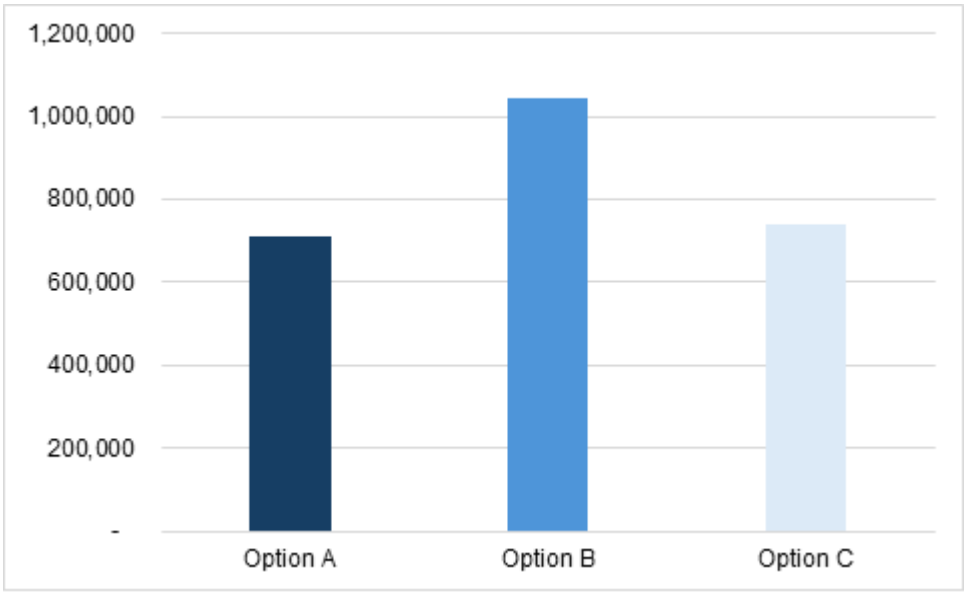
Figure 1: The UK ETS cap over Phase I (2026-2030) in the counterfactual scenario with no expansion to domestic maritime. (Source: DESNZ's Carbon Markets Model)



6.32 The introduction of a carbon price in the domestic maritime sector incentivises emissions abatement by encouraging operators to adopt lower-emission technologies and practices. This occurs where the cost of abatement is lower than the prevailing carbon price.

6.33 Figure 2 presents absolute GHG abatement generated under each option in the domestic maritime sector over the appraisal period.

Figure 2: Total abatement in the domestic maritime sector from 2026-2046 for each of the shortlist appraisal scenarios (tCO_2e).



6.34 UK firms make up a small proportion of the total domestic maritime sector, accounting for around 4% of vessels. Table 3 shows the cost of

abatement to all maritime operators, those based in the UK and those based in Wales.

6.35 In the preferred option the abatement cost to Welsh operators is estimated at around £21,400 over 20 years from 2026 to 2046.

Table 3: Cost to domestic maritime sector operators from UK ETS scope expansion to domestic maritime across modelled scenarios. (2024 prices, discounted). Figures rounded to the nearest £m.

Discounted to 2026 base year, expressed in 2024 prices (£)	**Option A**	**Option B**	**Option C**
Total Maritime Operator Cost of Abatement (£)	£31m	£41m	£33m
Abatement cost to UK operators (£)	£1m	£2m	£1m
Abatement cost to Welsh operators (£)	£21,400	£42,800	£21,400
Average £/t of abatement	£44	£39	£45

6.36 In addition to emissions abatement and the associated investment costs, operators will incur ongoing compliance costs related to the purchase of allowances to cover residual emissions. These are emissions that are not abated in response to the UK ETS carbon price or through complementary decarbonisation policies.

6.37 The resulting cost represents a financial transfer from private operators to government. This is not a net cost to society and does not reflect a loss of economic value. Accordingly, it is excluded from NPSV calculations. However, **it remains significant as an indicator of the financial burden placed on the sector and the strength of the carbon price signal.**

6.38 Table 4 shows the estimated social transfer from domestic maritime operators purchasing allowances as part of the expanded ETS. These are around £1.9bn between 2026 and 2046 in the preferred option. This is the same value, when rounded, as the additional transfers from the whole ETS sector, because the majority of those additional transfers are coming from domestic maritime operators. The small amount of additional transfer from other ETS operators is rounded out. This value also reflects transfers from non-UK based domestic maritime operators as it is assumed that any additional costs incurred by those operators will eventually be passed on to UK consumers.

6.39 If we apportion the total to Wales on the basis of Welsh operators' share of total UK domestic maritime operators the estimated transfers are around £41m from 2026 to 2046.

Table 4: Social transfer from domestic maritime operators to government from UK ETS scope expansion to domestic maritime across modelled scenarios. (2024 prices, discounted). Figures rounded to the nearest £100m

Discounted to 2026 base year, expressed in 2024 prices (£m)	**Option A**	**Option B**	**Option C**
Social Transfer - Maritime Operators	£1,900	£2,400	£2,100

Table 5: Social transfer from Welsh domestic maritime operators to government from UK ETS scope expansion to domestic maritime across modelled scenarios. (2024 prices, discounted). Figures rounded to the nearest £1m

Discounted to 2026 base year, expressed in 2024 prices (£m)	**Option A**	**Option B**	**Option C**
Social Transfer - Maritime Operators	£41	£51	£45

6.40 The scale of the social transfer reflects the fundamental design of the UK ETS as a market-based carbon pricing mechanism. These figures represent a redistribution of financial resources from operators to government, rather than a net economic loss. They are consistent with the long appraisal period and the cost of abatement in the domestic maritime sector.

6.41 The magnitude of the transfer illustrates the strength of the financial signal intended to incentivise decarbonisation. It reinforces the role of the UK ETS in supporting emissions reduction through price-based mechanisms.

6.42 The inclusion of domestic maritime emissions in the UK ETS introduces new administrative requirements for operators. These costs are distinct from abatement costs, as they relate to the processes of complying with the UK ETS MRV scheme, as well as engaging with regulators.

6.43 Compliance actions include scheme familiarisation, preparation and submission of monitoring plans and emissions reports, verification, and regulatory charges. This includes both one-off and recurring actions. The Authority Impact Assessment quantifies administrative costs using estimates of the expected time taken for each operator to comply with the MRV scheme, provided by the Environment Agency. In the central case this is around 80 hours a year on average for new operators.

6.44 These estimates of time are then monetised using ONS wages data[25]. Other costs include the costs associated with verification of Annual Emissions

[25] ONS, 2023, Annual Survey of Hours and Earnings (ASHE) https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/occup_ation4digitsoc2010ashetable14 Table 14.5a. The mean, 25th and 75th percentile wage for 'Managers in Logistics, Warehousing and Transport' is used. A 26.5% non-wage uplift is applied, in line with DfT Transport Appraisal Guidance.

Reports (AERs), and regulatory charges, which include an application fee for emissions monitoring plans (EMPs), an annual subsistence charge, and determination charges where applicable.

6.45 The average annual administrative cost per operator is assumed to be approximately £5,700 in the central case. The lower end of this range, reflecting a world in which many of the costs are not additional for operators already in scope of the existing UK MRV scheme, is £3,285 per operator per year. At the upper end of the range, where all costs are assumed to be additional and we assume no streamlining for operators that are already familiar with existing UK and EU MRV schemes, is £9,151 per operator per year on average. This range is comparable to the estimate used in the original EU MRV Impact Assessment, of EUR 6,700 per year (or approximately £7,500 in 2024 prices).

6.46 Total discounted administrative costs to all operators are therefore estimated to be £179m in the central case, within a range of £103m to £287m, over the appraisal period. As UK businesses are expected to make up just 4% of the impacted operators, the central estimate of administrative costs to UK businesses is around £7m. These costs are the same for Option C, as the administrative requirements are the same. For Option B, a small number of additional operators – those operating fishing vessels and Scottish island ferries - are brought into scope, which increases the total discounted admin costs slightly to £181m.

6.47 As Welsh businesses are expected to make up just 2% of UK operators, the central estimate of administrative costs to Welsh business is around £140,000.

6.48 The expansion of the UK ETS to include domestic maritime emissions also introduces new administrative responsibilities for regulators. These include onboarding new operators, reviewing and approving emissions monitoring plans, processing compliance documentation, and maintaining the digital infrastructure required to support scheme delivery.

6.49 These costs are recovered through charges applied to obligated parties. The Environment Agency has proposed an application charge of £2,246 for emissions monitoring plans, an annual subsistence charge of £2,725, and a determination charge of £151 per hour[26]. Equivalent charges from other regulators, including Natural Resources Wales (NRW), are expected to be broadly similar and will be confirmed in due course.

6.50 As a result, while administrative responsibilities are shared, the financial burden of regulator costs is ultimately passed through to operators. The overall

[26] Environment Agency (2024) Environment Agency charges proposal for greenhouse gas emissions Environment Agency charges proposal for greenhouse gas emissions - GOV.UK

administrative cost burden of the scheme is therefore primarily held by the private sector.

6.51 The Authority IA estimates monetised benefits of the change in emissions and air quality improvements for the whole scope expansion, as well as the total cost to operators of investing in abatement, total administrative and enforcement costs and the net present social value (NPSV). It has not been possible to estimate these for Wales as this captures the impact of the whole scheme, including the impact of scope expansion on other ETS operators and the vast majority of domestic maritime operators being based outside the UK. The top-down modelling does not allow for disaggregation to the level of nations within the UK.

Table 6. Final outputs for shortlisted appraisal options for the proposed UK ETS scope expansion to domestic maritime.

Discounted to 2026 base year, expressed in 2024 prices (£)	**Option A**	**Option B**	**Option C**
Total Reduction in Emissions (tCO2e)	645,000	1,045,000	11,416,000
Total Monetised Benefit of Change in Emissions	£155m	£263m	£3,400m
Total Monetised Benefit - Air Quality	£179m	£203m	£184m
Total Cost to operators of investing in abatement	£22m	£41m	£954m
Total Administrative & Enforcement Costs	£179m	£181m	£179m
NPSV	£132m	£245m	£2,400m
Total Social Transfer	£1,900m	£2,400m	£3,700m

6.52 The outputs of the cost-benefit analysis show that all three shortlisted options deliver positive net present social values (NPSVs), with varying levels of emissions reductions and monetised benefits. Option A, the preferred policy package, delivers 645,000 tCO2e in GHG emissions reductions, £155 million in monetised carbon benefits and £179 million in air quality improvements. Abatement costs are £22 million, while administrative and enforcement costs are £179 million. The resulting NPV is £132 million.

6.53 Option B, which illustrates hypothetical maximum emissions coverage, delivers higher GHG emissions reductions of 1,045,000tCO2e and greater monetised GHG benefits of £263 million. Air quality improvements are estimated at £203 million. Despite higher abatement costs of £41 million, the overall net present value is £245 million. Option B is not the preferred option,

however, because of a higher risk of disproportionate impacts on specific sub-sectors and Scottish island ferries due to lack of exemptions.

6.54 Option C, which does not adjust the cap, delivers the highest GHG emissions reductions at 11,416,000 tCO2e and the highest NPV at £2,500 million. This outcome is driven by accelerated abatement across the rest of the traded sector due to tighter market conditions. However, the associated abatement cost is substantial at £954 million. The cost impact on the traded sector is calculated by multiplying additional abatement effort by the traded carbon value, which assumes all abatement occurs at the marginal cost. This may overstate the true cost, especially in scenarios with significant abatement shifts. In contrast, the cost to domestic maritime operators is calculated using the marginal abatement cost curve, providing a more realistic estimate.

6.55 Despite its high NPSV, Option C is not the preferred choice. The current cap trajectory is already judged to be consistent with the UK's Net Zero Strategy. Forcing additional abatement through a tighter cap may impose unnecessary costs on the traded sector, which are likely to be passed on to UK consumers. This raises concerns about cost-effectiveness, deliverability and proportionality.

Sensitivity Testing

6.56 Estimates of the Welsh impact of scope expansion to domestic maritime are based on a central estimate of the proportion of operators based in Wales. Maritime corporate structures are complex: vessels often have a registered owner (RO) and a separate International Safety Management (ISM) manager; company addresses don't always reflect where economic control sits or where operators base their activity. To estimate the proportion of maritime activity that is based in Wales we use a central estimate based on unpublished internal data, suggesting that Welsh operators account for around 2.15% of the UK total. For sensitivity we compare the Welsh impacts based on a lower estimate of operators (1.5%) and an upper estimate (2.8%).

6.57 These proportions are applied to the central Authority values, for a more comprehensive sensitivity analysis of the whole expansion see the Authority IA.

6.58 The estimated abatement cost to Welsh operators in the preferred option ranges from around £15,400 in the lower estimate, to £27,500 in the upper estimate, across the appraisal period.

6.59 The estimated Welsh social transfer from domestic maritime operators purchasing allowances in the preferred option ranges from around £29m in the

lower estimate to around £52m in the upper estimate, across the appraisal period.

Competition Assessment

6.60 As the UK ETS is expanded to include domestic maritime, shipping operators will face increased costs in the form of UK ETS allowance requirements, unless they take action to reduce emissions. The extent to which this could result in competitive disadvantage, carbon leakage or modal shift will depend on several factors:

- Carbon cost exposure. Routes with ship types with high emission intensities and minimal short term abatement options are considered to have a high carbon cost exposure and would therefore be more impacted by the introduction of a carbon price based on their fossil fuel consumption (and therefore more likely to try and find alternative routes to minimise this cost)
- Likelihood of cost pass-through. Operators would be more likely to pass through carbon costs (i.e. to increase the price they charge their customers to cover their higher costs) when market conditions mean their ability to sustainably absorb any cost changes is minimal (e.g. a highly competitive environment)
- Likelihood of a shift to substitute options. Customers may respond to an increase in shipping transport costs (where carbon costs have been passed through) by substituting to other routes that are not subject to a similar carbon cost, or other transport modes where this is feasible.
- Potential degree of customer response. Different types of customers will have different levels of price sensitivity. This is likely to be dependent on the characteristics of the cargo or passengers being transported (e.g. time sensitivity and volume/type of cargo)

6.61 Competitive disadvantage may arise if businesses in the UK domestic maritime sector experience a significant adverse impact on their competitiveness, such as increased costs, relative to competitors.

6.62 Operators may choose to pass through some or all of their additional costs to customers. Customers may respond by accepting higher prices or by reducing demand. The degree of cost pass-through depends on the market conditions in which operators operate, while consumer response is influenced by the elasticity of demand.

6.63 Research by Frontier Economics found that, due to relatively high cost pass-through and low demand elasticity in the domestic maritime sector, a material reduction in UK domestic maritime demand would only be expected at carbon prices significantly higher than current UK ETS allowance prices. This suggests that a substantial change in traffic levels is unlikely following the expansion of the UK ETS.

6.64 The evidence suggests that the expansion of the UK ETS to domestic maritime is unlikely to result in significant competitive disadvantage for UK

operators. Market characteristics, such as low demand elasticity and high cost pass-through, indicate that substantial changes in demand are unlikely at current carbon price levels. The alignment of exemptions with the EU ETS, the high degree of overlap between UK and EU domestic maritime activity, and the 50% surrender reduction for Northern Ireland to Great Britain routes further mitigate competitiveness risks. While some risks remain, particularly in relation to vessel size thresholds and policy divergence, these will be monitored following implementation.