

REGULATORY BARRIERS TO A EUROPEAN MARKET FOR CO₂ TRANSPORT BY SHIP

This article is based on our contribution to the CCSA-ZEP Report: CCUS and maritime transportation of CO₂

The European Commission's ambitious recommendations to dramatically reduce the EU's net greenhouse gas emissions by 90 per cent by 2040, published last week, foreshadow new regulatory measures to establish a European carbon dioxide (CO₂) transport and storage market. In this article, we investigate certain regulatory barriers that the Commission may seek to address. At the outset, several interlocking international legal instruments regulate the transboundary shipment of CO₂. While recent international and European law developments support CCUS, certain elements of the applicable legal frameworks require further attention to incentivise transboundary transport and sub-seabed storage activities within Europe, as well as between European and non-European countries. It is necessary to examine, firstly, regulatory barriers emanating from the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter of 1972 (the "London Convention")¹, and the 1996 Protocol to the London Convention (the "London Protocol")². Secondly, there are barriers to CO₂ transport emanating from the 1996 International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea and its 2010 Protocol ("HNS Convention"). Finally, a key question is how the EU Emissions Trading System ("EU ETS") applies to certain shipping related CCUS activities.

1. Prevention of Marine Pollution by Dumping of Wastes

International rules on marine pollution regulate transboundary shipping and maritime geological storage of CO₂. For example, the 1982 United Nations Convention on the Law of the Sea obliges its parties to "prevent, reduce and control pollution of the marine environment by dumping".³ The London Convention and the London Protocol are additional treaties restricting maritime dumping. Moreover, regional agreements—including the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic ("OSPAR Convention")—regulate marine polluting activities.⁴

The 1972 London Convention and 1996 London Protocol

The London Convention was one of the first international treaties on protecting the marine environment. It sought

to place limitations on the uncontrolled dumping of waste at sea. Generally, under the London Convention, disposal of certain types of wastes was prohibited outright, whilst other wastes were subject to prior permitting.

Despite its innovative legal framework, some observers criticised the London Convention for its perceived lack of ambition and regulatory stringency in controlling marine pollution. Following this, states agreed the London Protocol in 1996 (it entered into force in 2006) to modernise and eventually replace the London Convention. Most EU member states and European Economic Area ("EEA") countries are contracting parties to the London Protocol. Although the USA is a party to the London Convention, it has not yet ratified the London Protocol. Compared to the London Convention, the London Protocol's dumping regime raises environmental ambition by operating on a "positive listing" basis.⁵ This approach means that the Protocol prohibits any dumping of any

¹ Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (opened for signature on 29 November 1972, entered into force on 30 August 1975) 36 ILM 7.

² 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (opened for signature on 7 November 1996, entered into force 24 March 2006) 36 ILM 7.

³ Article 194(1), United Nations Convention on the Law of the Sea, opened for signature on 10 December 1982 (entered into force on 16 November 1994).

⁴ Convention for the Protection of the Marine Environment of the North-East Atlantic (opened for signature on 22 September 1992, entered into force on 25 March 1998).

⁵ Article 4, London Protocol.

wastes or other material at sea, unless the type of material falls within an exception listed in Annex 1. Any permitted disposal is subject to adequate regulation and the issuance of permits by its parties.

Significantly, the London Protocol also expands the definition of “dumping” to include “any storage of wastes or other matter in the seabed and the subsoil thereof”. The parties have resolved that offshore CCUS activities constitute a prohibited form of dumping under the London Protocol. The London Convention’s and London Protocol’s scope covers all marine waters, other than the internal waters of states and “sub-seabed repositories accessed only from land”.⁶ Notably, Article 6 also prohibits the export of waste for the purposes of dumping at sea. Its rationale is that prohibiting dumping alone is not effective if waste can be exported for dumping by another state.

The 2006 and 2009 Amendments

An amendment to Annex 1 of the London Protocol in 2006—proposed by Australia, the UK, Norway, France, and Spain—added captured CO₂ streams—which “consist overwhelmingly” of CO₂ (and “no other waste or matter”) disposed into sub-seabed geological formations—as a category of waste to the list of exceptions permitted for disposal at sea. This exception is subject to adequate permitting, monitoring, and risk assessment outlined in Annex 2. The amendment entered into force for all contracting parties in 2007, making offshore carbon storage permissible under international law.

Subsequently, the International Maritime Organization (“IMO”) examined the feasibility of cross-border exports of CO₂ for CCUS purposes. Its secretariat concluded that Article 6 of the London Protocol had initially intended to prevent contracting parties from exporting waste to non-parties (in attempts to circumvent the London Protocol’s controls). However, it noted that the article could pose a significant barrier to deploying CCUS projects. The export prohibition enshrined in Article 6 would capture all exports of CO₂ designated for storage at sea—including to the London Protocol’s contracting parties—rather than merely exports to non-parties. In 2009, the contracting parties adopted an amendment, adding a new paragraph to Article

⁶ Annex 1, paragraphs 1.8 and 4, London Protocol, as amended by IMO Resolution LP.1(1) (Adopted on 2 November 2006).

⁷ The IMO parties clarified the responsibilities of parties and requirements of the agreements and arrangements which must be entered into by Parties and non-Parties wishing to undertake export of CO₂ in its 2013 Guidance on the Implementation of Article 6.2 on Export of CO₂ Streams for Disposal in Sub-seabed Geological Formations for the Purpose of Sequestration, LC 35/15, Annex 6 (2013). In particular, a contracting party is responsible for issuing permits where a CO₂ stream is loaded onto a vessel in its territory, and also where a vessel flying its flag loads a CO₂ stream in the territory of a non-party for export to another country. In the case of exports to non-parties, it is the full responsibility of the contracting party to ensure “that the provisions of the agreement or arrangement would need to reflect the appropriate permitting responsibilities of each”. This requirement ensures the same level of environmental

6 allowing countries to export and receive CO₂ for offshore geological storage (the “2009 Amendment”). The 2009 amendment applies two main conditions to such exports:

1. Firstly, there must be an agreement or arrangement between the countries concerned, allocating permitting responsibilities between the parties.⁷ For exports to non-contracting countries, such an arrangement must include provisions consistent with the London Protocol (including the minimum regulatory requirements prescribed in Annex 2).⁸
2. Secondly, parties to such an agreement or arrangement must notify the IMO.⁹

The 2009 Amendment now permits countries wishing to participate in CCUS activities—but which do not have access to offshore storage sites within their national boundaries—to do so under international law. However, the 2009 Amendment’s entry into force requires ratification by two-thirds of the London Protocol’s contracting parties (or 36 countries), which has not yet happened. Ten parties have ratified the 2009 Amendment: Norway, the UK, the Netherlands, Iran, Finland, Estonia, Sweden, Denmark, Belgium, and the Republic of Korea.

In the interim, the parties adopted a resolution in October 2019 allowing provisional application of the CO₂ export amendment to Article 6.¹⁰ Provisional application means that any party may implement the Article 6 amendment before the article’s formal entry into force. The IMO reports that Belgium, Norway, the Netherlands, Denmark, Sweden, the Republic of Korea, and the United Kingdom have commenced provisional application of this amendment.¹¹ Nevertheless, some commentators have suggested that this is not the most appropriate solution, and that the contracting parties should have instead issued an interpretative resolution stating that Article 6 does not

protection when a non-party stores a party’s CO₂.

⁸ It is also understood that the bilateral agreement is only required for storage and that a ship carrying CO₂ can pass through territorial waters of a third country without such country being required to either deposit a declaration, or enter into a bilateral agreement.

⁹ IMO Resolution LP.3(4) (Adopted on 30 October 2009).

¹⁰ IMO Resolution LP.5(14) (Adopted on 11 October 2019).

¹¹ International Maritime Organization, Status of IMO Treaties (5 September 2023), available at: <https://wwwcdn.imo.org/localresources/en/About/Conventions/StatusOfConventions/Status%202023.pdf> p. 582.

apply to cross-border transfer of CO₂. In the latter case, no formal amendment would be necessary.¹²

In any case, the 2019 resolution removed the final significant international legal barrier to the export and receipt of CO₂ for offshore storage. The first bilateral agreement under Article 6 of the London Protocol (as amended by the 2009 Amendment) was signed between Belgium and Denmark on 26 September 2022. Other countries have also declared plans to formalise bilateral arrangements (including Belgium and Norway, Norway and Sweden, as well as the UK and Norway).¹³

Other types of international law arrangements can satisfy the requirements of Article 6.2 (as amended by the 2009 Amendment). For instance, in September 2022, the European Commission published a paper on the compatibility of EU law and the London Protocol requirements¹⁴ concluding that EU law, and the EEA legal regime incorporating relevant EU law, are sufficient to constitute “an arrangement” under the amended Article 6 of the London Protocol. The European Commission’s view is that any bilateral arrangements should be limited to residual matters falling outside EU law.¹⁵ On this interpretation, arrangements between EU/EEA member states that are contracting parties to the London Protocol would only require limited bilateral agreements. The bilateral agreement between Belgium and Denmark is one example of such an agreement.

Consequently, we might consider that any regulatory barriers emanating from the London Protocol flow from a lack of political will by contract parties, as opposed to any inherent regulatory issues. That is to say, it is not so much the London Protocol regime that precludes the shipping of CO₂ for storage. Instead, the lack of coordinated efforts by contracting parties to ratify, provisionally apply, or enter into bilateral agreements impedes the implementation of the 2009 Amendment. However, as governments increasingly recognise the importance of CCUS as part of their energy strategies and decarbonisation efforts—and major cross-border CCUS projects are developed—we envisage that more

arrangements will soon be required to facilitate cross-border movement of CO₂ for storage.

Nevertheless, countries’ insufficient domestic regulatory and bilateral efforts pose challenges to deploying international CCUS projects. Many countries have not yet ratified the London Protocol, including the USA, India, Russia, Indonesia and Brazil (along with most of South-East Asia and South America, and the majority of African states). Their ratification status does not preclude those countries from exporting CO₂ streams to London Protocol contracting parties. However, it may complicate CO₂ exports to non-contracting parties, as the bilateral arrangements underpinning those exports must likely include detailed provisions incorporating safeguards consistent with the London Protocol.

OSPAR Convention

Regional instruments, such as the Convention for the Protection of the Marine Environment of the North-East Atlantic (“OSPAR”)—which include the EU countries, Iceland, Norway, Switzerland, and the UK as signatories—are also relevant. In particular, OSPAR regulates the storage of CO₂ in geological formations under the seabed.¹⁶ The OSPAR Parties have set out minimum standards on CO₂ marine disposal activities and published guidelines on risk assessment and management. Importantly, there is no export prohibition on wastes under OSPAR.

2. CO₂ Transport under the Convention on Hazardous and Noxious Substances

The HNS Convention has 45 signatories and aims to establish an international liability framework for hazardous and noxious substances. The HNS Convention’s provisions were modelled on the international legal regime applicable to the carriage of oil and gas. Neither the Convention, nor its 2010 Protocol, has entered into force: although six states (Canada, Denmark, Norway, South Africa, Turkey, and Estonia) have now ratified both agreements¹⁷ twelve states are needed for entry into force. However, the IMO anticipates several additional states may ratify the agreements in the near future,

¹² Viktor Weber, “Are we ready for the ship transport of CO₂ for CCS? Crude solutions from international and European law” (2021) *RECIEL* 387.

¹³ Naida Hakirevic Prevljak, “Danish-Belgian CCS agreement paves way for creating ‘actual market’ for maritime transport of CO₂” (3 October 2022), *Offshore Energy*, available at: <<https://www.offshore-energy.biz/danish-belgian-ccs-agreement-paves-way-for-creating-actual-market-for-maritime-transport-of-co2/>>.

¹⁴ European Commission, *EU - London Protocol Analysis paper final 0930*, 30 September 2022, available at <https://climate.ec.europa.eu/document/dfbbc90c-071e-4088-ada2-7af467084b30_en>.

¹⁵ European Commission, *Report on Implementation of Directive 2009/31/EC on the Geological Storage of Carbon Dioxide*, 24 October 2023, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2023%3A657%3AFIN&qid=1698140668357>

¹⁶ Article 5, OSPAR Convention (1992).

¹⁷ Under the agreement, the HNS Protocol will enter into force 18 months after the date on which it is ratified by at least 12 states, including four states with not less than 2 million units of gross tonnage, and having received during the preceding calendar year a total quantity of at least 40 million tonnes of cargo that would be contributing to the general account.

enabling entry into force.¹⁸ Upon entering into force, the HNS Convention will apply to ships carrying CO₂, with the regulation of liquified bulk CO₂ falling within its regulatory scope.¹⁹

However, maritime transportation of CO₂ for CCUS purposes was not envisioned during negotiations of the HNS Convention. As a result, CO₂ transport would fall under the HNS regime. This regime is arguably inappropriate for early-stage CO₂ transportation activities, particularly given the anticipated low environmental risk profile of CO₂ streams transported by sea.²⁰

The HNS Convention imposes liability on ship owners to compensate those suffering loss or damage from an HNS incident. This includes liability for accidents in which fault rests with third parties.²¹ The HNS Convention limits ship owners' liabilities to a certain amount, beyond which the HNS Fund compensates those affected parties. Each limit depends on the ship's size and the cargo type,²² and is denominated in terms of Special Drawing Rights ("SDRs"). An SDR is a supplementary international reserve asset, created by the International Monetary Fund ("IMF"). The IMF defines the SDR as equivalent to the value of a basket of world currencies. IMF members can hold and exchange SDRs for currency, when required. The applicable limits apply only when cargo is on board, rather than awaiting transfer to the vessel from onshore storage tanks or following discharge to the storage site.

The HNS Fund is financed by contributions from cargo receivers to which the HNS Convention applies.²³ The regime creates a general account—for bulk solids and other hazardous or noxious substances—along with a separate oil account, an LNG account, and an LPG account. These different accounts arise from the unwillingness of less hazardous sectors to cross-subsidise damages from other sectors. Upon the HNS Convention's

entry into force, the HNS's general account will likely fund liabilities arising from CCUS incidents.

A legal question arises regarding whether CO₂ cargo shipped to storage sites should trigger the need for storage site operators to contribute funds to the general account, particularly given CCUS projects' nascent stage of maturity, commercial viability, and reliance on public subsidies. CCUS participants also do not import or trade in the same way as other entities covered under the HNS Convention. Specifically, those participants are, at present, unlikely to sell CO₂ on the market, or use CO₂ to produce other goods in material volumes. These factors may justify an exception or reduced contribution, particularly in promoting CCUS activities for accelerating global climate change mitigation.

Furthermore, CO₂ is not flammable, and many experts suggest its inadvertent release at sea is not anticipated to have the same long-term environmental effects as crude oil spills.²⁴ Marine transport of CO₂ is also likely to have a similarly strong safety record as other transportable gases. Therefore, if contributions for CO₂ are deemed necessary under the HNS Convention, it may be appropriate to create a separate account, applicable specifically to CO₂.

3. The regime for shipped CO₂ under the EU ETS

The EU ETS applies in the EEA. It requires operators of certain covered installations to purchase and surrender allowances—corresponding to the amount of CO₂ they produce—unless they capture and “permanently” store that CO₂ for CCUS purposes.²⁵ Consequently, operators are incentivised to participate in CCUS activities, where the costs of capture, transport, and injection of CO₂ are less than the price of emitting the CO₂ (as determined by EU allowance prices). However, the EU ETS drafters focused

¹⁸ “Status of the HNS Convention and 2010 Protocol”, available at: <<https://www.hnsconvention.org/status/>>.

¹⁹ More specifically, “[h]azardous and noxious substances” under Article 1(5)(a)(v) of the HNS Convention include “liquified gases as listed in chapter 19 of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk”, such as liquified bulk CO₂.

²⁰ Bert Metz, Ogunlade Davidson, Heleen de Coninck, Manuela Loos, and Leo Meyer (eds), *Carbon Dioxide Capture and Storage* (Cambridge: Cambridge University Press, 2006), Sections 4.3 and 4.4.4.

²¹ Articles 7(1), (5), and (6) of the HNS Convention.

²² Under Article 9 of the HNS Convention, the general formula limits liability for the first 2,000 units of tonnage to 10 million Special Drawing Rights. It adds 1,500 SDRs per tonne between 2,001 to 50,000 tonnes, and 360 SDRs per tonne above 50,000 tonnes, to the liability cap.

²³ *Ibid*, Articles 16-20 and Annex II.

²⁴ Bert Metz, Ogunlade R Davidson, Heleen de Coninck, Manuela Loos, Leo Meyer, *IPCC Special Report on Carbon Dioxide Capture and Storage* (Cambridge: Cambridge University Press, 2005), pp. 188-189.

²⁵ Parliament and Council Directive (EC) 87/2003 of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community [2003] OJ L275/32 (“ETS Directive”). Article 12(3a) of the EU ETS Directive stipulates that: “An obligation to surrender allowances shall not arise in respect of emissions verified as captured and transported for permanent storage to a facility for which a permit is in force in accordance with the CCUS Directive.” Further evidence of permanent containment includes the “conformity of the actual behaviour of the injected CO₂ with the modelled behaviour”, the “absence of any detectable leakage”, and that “the storage site is evolving toward a situation of long-term stability”. See Article 18(2) of the Parliament and Council Directive (EC) 31/2009 of 23 April 2009 on the geological storage of carbon dioxide [2009] OJ L140/114 (“CCUS Directive”); European Commission (DG Clima), *Implementation of the CCUS Directive: Guidance Document 3 (Criteria for Transfer of Responsibility to the Competent Authority)* (2011), available at <https://data.europa.eu/doi/10.2834/21150>.

exclusively on CO₂ transportation by pipeline, and did not anticipate maritime transport of CO₂ to storage sites.

The right to subtract captured and stored CO₂

Annex I of the ETS Directive lists covered sectors. These include electricity and heat generation, oil refining, iron, steel and aluminium, paper, glass, organic chemical production, maritime transport, and aviation within the EEA. As part of its significant “Fit for 55” legislative reforms, passed on 20 April 2023, the EU amended this list of covered sectors to include maritime transport.²⁶

The EU Monitoring Regulation²⁷ requires that operators measure and report both emissions from these activities and fugitive emissions. However, it allows operators to subtract from an installation’s emissions any amount of CO₂ produced from covered activities that is not emitted into the atmosphere, but is transferred—to a capture installation, transport network, or storage site within the EU/EEA—for long-term geological storage purposes.²⁸ In this context, neither the Monitoring Regulation nor the CCUS Directive expressly envisage transport of CO₂ by ship (although they do include provisions relating to transport via pipelines).

As a result, it is unclear whether subtraction of CO₂ from the installation’s emissions is permitted where the transfer from a covered installation is to a ship. Insofar as EU ETS liabilities could still attach to CO₂ shipped and injected into a storage site the regime may lead to unduly restrictive outcomes. The European Commission recently clarified—in response to a request from the Norwegian Environment Agency—that transfer of captured CO₂ to a ship, and subsequent transfer from the vessel to a pipeline transport network or directly to a storage site, does not alter the right of CO₂ producers to subtract that captured and stored CO₂ from their EU ETS liabilities. Upon transfer of the transported CO₂ to the storage site, the CO₂ producer can subtract that transferred CO₂ from their

emissions. However, any CO₂ leaked during transport cannot be subtracted from the CO₂ producer’s emissions.²⁹

Therefore, in the Commission’s view, the transport of CO₂ by ship within the EU/EEA is unimpeded by its lack of explicit inclusion in the EU ETS. Yet, at present, the inclusion of CO₂ transport by ship in the EU ETS relies on this specific legal interpretation, rather than being explicit on the face of the legislation. While highly persuasive, the Commission’s view is merely an opinion, rather than binding legal authority. Amending the EU ETS Directive to include the “transport of CO₂ by ship”, or “transport of CO₂ by means other than pipelines”, could rectify this uncertainty.

The UK ETS closely follows the EU ETS, is similarly silent on non-pipeline transportation of CO₂ and applies the same calculation methodology. It should be noted that in March 2022 the UK government launched a consultation on the UK ETS.³⁰ One of the questions asked was whether respondents agreed that the UK ETS should be expanded to allow for transportation of CO₂ via non-pipeline transport. On 3 July 2023, the government published its response to the consultation and committed to expanding “the existing scope of the scheme to create a level playing field between operators who use pipeline and non-pipeline modes of transport of CO₂”.³¹ However, whilst the government has indicated its intention to bring forward legislation to apply the same treatment to pipeline and non-pipeline modes of transport, such legislation has yet to be brought forward.

In addition, absent further legal clarity, EU/EEA CO₂ producers intending to export CO₂ for storage outside Europe are not eligible to deduct captured and stored CO₂ from their EU ETS liabilities. Similarly, despite ongoing negotiations between the EU and UK, the EU ETS is also not currently linked with the UK ETS.³² This impedes both

²⁶ Parliament and Council Directive (EC) of 20 April 2023 amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union and Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading system.

²⁷ Commission Regulation (EU) 2066/2018 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 [2018] OJ L334/1 (“Monitoring Regulation”).

²⁸ *Ibid.*, Article 49(1).

²⁹ See Letter from the Norwegian Ministry of Climate and Environment to the European Commission, DG CLIMA, “The Norwegian CCS Demonstration Project - Request for Legal Clarifications Related to the ETS Directive and the MR-Regulation” (7 July 2019). In response, see Letter from the European Commission, Directorate-General, Climate Action to the Ambassador of Norway to the European Union” (Ref. Ares(2020)3943156 - 27/07/2020), cited in Weber (2021), p. 394. At the time of writing, the latter letter is not available online.

³⁰ “Developing the UK Emissions Trading Scheme”, a joint consultation of the UK Government, the Scottish Government, the Welsh Government and the Department of Agriculture, Environment and Rural Affairs for Northern Ireland, March 2022, available at: <https://assets.publishing.service.gov.uk/media/624ec31de90e072a04c06520/developing-the-uk-ets-english.pdf>

³¹ “Developing the UK Emissions Trading Scheme: Main Response”, June 2023, available at: <https://assets.publishing.service.gov.uk/media/649eb7aa06179b000c3f7608/uk-emissions-trading-scheme-consultation-government-response.pdf>

³² Note that the EU ETS directive includes the following provision: “When reviewing this Directive [...] the Commission shall analyse how linkages between the EU ETS and other carbon markets can be established without impeding the achievement of the climate-neutrality objective and the Union climate targets laid down in Regulation (EU) 2021/1119”. This provision opens the door to a potential future linkage between the EU and UK ETS. The possibility

EU/EEA and UK CO₂ producers—seeking to export CO₂ to storage sites located in the other jurisdiction—from subtracting the transferred CO₂ from their EU ETS and UK ETS liabilities, respectively. These are significant regulatory barriers to scaling up CO₂ export activities, both within Europe and worldwide. Legal arrangements addressing cross-border CO₂ shipments between EU/EEA and non-European governments could make CO₂ producers eligible for deductions to their ETS liabilities. Such arrangements would generate crucial financial incentives for scaling up CCUS activities.

Monitoring plans and surrendering allowances: the distribution of responsibilities between operators

Assuming the Commission’s view is accurate, potential issues associated with the distribution of responsibilities between operators under the EU ETS remain. Recent legislative amendments phase the shipping sector into the EU ETS from 2024. The Monitoring Regulation also now includes provisions to measure and report shipping emissions. Nonetheless, there remains a question of how these amendments will operate alongside the Commission’s position on CO₂ transport by ship.

For example, the amended legislation requires shipping companies to surrender EU allowances corresponding to greenhouse gases emitted from covered vessels on voyages and port calls within the EU/EEA, or into or out of the EU/EEA. Under this amended legislation, shipping companies transporting CO₂ to a storage site are likely liable for transport emissions. In contrast, CO₂ producers could bear liability for any fugitive emissions caused by CO₂ leakages occurring en route to the storage site.

Nevertheless, EU ETS coverage of shipping emissions will remain limited at the outset. For example, in-scope emissions will be progressively phased in from 2024 onward, and shipping companies are not initially liable for emissions from smaller vessels.³³ Therefore, an issue arises regarding which counterparty will be liable for emissions from uncovered emissions or below-threshold shipping activities. For example, will CO₂ producers be held liable for those residual transport emissions under the EU ETS? While that is potentially a rational outcome, the position has not been confirmed in legislative instruments or by the Commission.

Similarly, the legislation offers limited guidance on methods to calculate and monitor operational or fugitive emissions occurring during specific maritime journeys to transport CO₂ to storage sites. The amended Monitoring Regulation requires shipping operators to report aggregate emissions data only at the company level, rather than for specific journeys. Furthermore, when and under what circumstances might title to the CO₂ stream—and liability for leakages—pass to a party other than the CO₂ producer? How should CO₂ leakages during transport be attributed to individual co-producers?

Absent further legislation or regulatory guidance, these regulatory gaps may give rise to methodological ambiguities—and the possibility of multiple approaches to measurement and reporting—which could compromise the integrity of CO₂ accounting within CCUS supply chains. Ultimately, this may risk dissuading private investment in otherwise promising CCUS projects.

of such linkage and collaboration on carbon pricing is also mentioned in the EU-UK Trade and Cooperation Agreement.

³³ From the introduction of shipping into the EU ETS in 2024, the ETS only covers ships above 5,000 gross tonnes, CO₂ emissions, and

50% of emissions for voyages into and out of the EU/EEA: https://climate.ec.europa.eu/eu-action/transport/reducing-emissions-shipping-sector_en

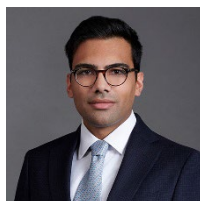
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