



**GETTING TO ZERO
COALITION**
GLOBAL MARITIME FORUM



Accelerating market participation in maritime book and claim

Actions needed from the voluntary book and claim market to support maritime decarbonisation and increase uptake of low-emission maritime fuels



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Who is this whitepaper for?

This paper is primarily intended for stakeholders already active in the maritime book and claim market and who are best positioned to act on its recommendations. This includes registries, buyers' alliances, NGOs, market developers, shipping companies, and fuel suppliers. These stakeholders can help reduce current barriers and increase participation from demand-side participants.

The paper should also be relevant to organisations that are newer to book and claim or exploring a potential role in the market. It provides context on key topics such as:

- » Verification and assurance processes
- » Role of registries
- » Interpretations of additionality frameworks
- » Environmental Attribute Certificates (EACs) and pricing

For sustainability managers considering book and claim to address supply-chain emissions, the 'Demand-side user journey' section provides a practical overview of the process, from investment decisions to accounting and reporting.

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Executive summary

Enabled by book and claim chain-of-custody systems, the market for maritime decarbonisation actions is gaining momentum. Emerging infrastructure, evolving standards, and guidance from non-governmental organisations (NGOs) have been key drivers since the market's inception. However, complexities across book and claim systems and the maritime sector, combined with fragmentation and a lack of transparency around market norms, limit broader participation.

To support market development, stakeholders should reduce friction for demand-side participants, namely cargo owners and freight forwarders purchasing or considering Environmental Attribute Certificates (EACs). Three areas are critical to enabling participation:¹

- » Improving market understanding
- » Increasing uniformity in core market components
- » Enhancing transparency in sustainable maritime fuel attributes

Together, these actions can make it easier for participants to navigate the market, compare options, and engage with suppliers.

A multitude of stakeholders can support this transition. [The Book and Claim Community](#) provides a valuable platform for education and stakeholder engagement, while buyers' alliances play a critical role in building demand-side understanding and signalling the uptake of book and claim purchases. Registries, buyers' alliances, and other organisations supporting the development of book and claim can also work with buyers and supply-side participants to facilitate greater uniformity and transparency.

Importantly, impacts from greater participation in book and claim systems can extend beyond individual transactions. It can support the broader sustainable maritime fuel ecosystem, ultimately helping to accelerate the adoption of low-emission fuels and decarbonisation of the shipping sector.

1 Other frequently cited barriers are 1) the cost associated with low-emission fuel certificates and 2) lack of prioritisation in reducing maritime emissions within a company's supply chain. Although both barriers are critical, they fall outside the scope of this paper and are therefore not explored further.

Introduction

The global maritime shipping industry is responsible for emitting approximately 860 million tonnes of carbon dioxide equivalent (CO₂e) annually, accounting for [nearly two percent of total global greenhouse gas \(GHG\) emissions](#). Without meaningful intervention, these emissions are expected to increase as global shipping activity continues to grow.

As with many hard-to-abate sectors, maritime decarbonisation is notoriously challenging, and progress has been slow due to high fuel costs, the need for coordinated investment across assets, and operational changes required to utilise low-emission fuels. These issues are compounded by the challenge of physically matching low-emission shipping operations to the specific vessels used by customers willing to pay a premium for decarbonised shipping.

The book and claim chain-of-custody model helps overcome the physical barriers to matching high-integrity decarbonisation actions with voluntary market investment. Companies willing to pay for low-emission shipping services that burn low-emission maritime fuels may purchase the associated environmental attributes, even when their physical products are not transported on said vessel. These environmental attributes exist in the form of environmental attribute certificates (EACs)² that act as transferable units between supply-side participants and buyers.

As the maritime book and claim market continues to mature, this is a timely opportunity to define what is needed to scale participation and support long-term market health. This paper draws on stakeholder surveys and interviews to assess the current state of the market and identify the systematic improvements needed to accelerate the adoption of low-emission maritime fuels.

Current state of the market: Drivers of demand-side activity

Based on interviews and surveys with cargo owners and freight forwarders, demand-side participation in the book and claim market is shaped by several drivers.

Demand-side participants have internal decarbonisation targets that include maritime shipping emissions.

For many demand-side participants, book and claim is the only viable pathway to invest in sector-specific decarbonisation and meet internal climate targets. It bypasses the logistical challenges of linking low-emission fuel deployment to a specific cargo owner's shipment, while still driving in-sector fuel switching. Book and claim is also currently the only mechanism available to address emissions far upstream, where companies may have limited influence (e.g., transportation of metal used in the production of a warehouse). Some companies engage in book and claim through buyers' alliances such as the Zero-Emission Maritime Buyers Alliance (ZEMBA), which offers a turnkey pathway for sourcing high-integrity EACs.

² Stakeholders may use several terms to describe the transferable environmental attributes, including transferable instruments with entitlement to claim and book-and-claim units. Within maritime, some stakeholders may specifically identify EACs as sustainable maritime fuels certificates.

Participants are interested in scaling low-emission fuel markets.

Stakeholders expressed interest in decarbonisation opportunities that can also drive durable market growth for low-emission fuels, specifically through increased supply and lower costs over time. By providing flexibility to invest beyond a company's direct supply chain, book and claim enables companies to support solutions that may not be physically accessible to them. It also helps aggregate demand around high-integrity, scalable solutions, strengthening investment signals and accelerating market growth.

Participation is strongly dependent on confidence in the market's credibility.

Most demand-side participants interviewed or surveyed indicated that the current voluntary book and claim market meets key expectations around credibility, transparency, and assurance. Several system design features contribute to these discernments:

- *Verification and assurance processes:* Regulatory and voluntary sustainability certifications, such as the International Sustainability & Carbon Certification (ISCC) and Roundtable on Sustainable Biomaterials (RSB), are widely used to document and verify the sustainability qualities of fuel. Separately, third-party verification bodies check the calculations and relevant documentation to ensure the integrity of certification schemes. Independently, registries track the transfer of certificates, verify attributes against certifications, and mitigate the risk of double issuance or double claiming of certificates.
- *Accounting guidance and standards-setting:* The Science Based Targets initiative (SBTi) [Corporate Net Zero Standard 2.0](#) acknowledges market instruments like EACs as a credible decarbonisation tool—unlike out-of-sector carbon offsets, which have limited eligibility under the initiative. [The Greenhouse Gas Protocol Actions and Market Instruments](#) (GHGp AMI) is expected to explain how to account for and report EACs with greater credibility and clarity.
- *Complementary market guidance:* Additional guidance from organisations such as the [Advanced and Indirect Mitigation \(AIM\) Platform](#), Smart Freight Center, and the International Organization for Standardization (ISO) has helped define how credible book and claim markets should operate. In parallel, independent NGOs like the Center for Green Market Activation are helping to shape market norms and best practices.

Traits describing the current book and claim market	% of respondents
Voluntary book and claim markets uphold strict criteria that assure credibility, transparency, and assurance.	92%
Voluntary book and claim markets facilitate standardised accounting guidelines.	25%
It is easy to understand how to navigate voluntary book and claim markets.	17%
There is strong alignment in interactions between existing regulatory schemes and the voluntary book and claim markets.	17%
There are standardised procedures for participating in voluntary book and claim markets.	8%
The current structure of book and claim markets meets the needs of my organisation.	0%

Exhibit 1: Traits describing the current book and claim market how they are perceived by respondents

However, as survey results indicate (Exhibit 1), most participants do not believe the current book and claim market structure is easy to understand, and not a single respondent said it meets the needs of their organisation. As the market evolves, sustaining momentum will depend on reinforcing current drivers of participation and improving market infrastructure.

Current state of the market: Demand-side user journey

Demand-side participants generally engage in book and claim through the following sequence of actions and decision points.

Step 1: Strategic decision to invest in maritime decarbonisation through book and claim

Before procuring certificates, companies assess several key considerations, informed by the drivers discussed previously.

At a foundational level, companies assess their broader supply chain decarbonisation ambitions, including whether maritime emissions are a priority and whether book and claim is an appropriate mechanism to address them.

Credibility and cost are key factors in assessing EACs as a decarbonisation tool. From a credibility standpoint, demand-side participants assess whether book and claim enables meaningful in-sector emissions reductions that can support decarbonisation targets.

From a cost perspective, companies assess certificate prices relative to their overall ocean freight spend and alternative decarbonisation options. Alternatives are primarily out-of-sector solutions, such as offsets or EACs from other transport modes (e.g., road freight or aviation). While in-sector emissions reductions through physical supply chain changes are theoretically possible,³ precise matching of low-emission fuels to specific cargo is prohibitively complex and costly to implement at scale at this time.

Ultimately, companies that choose to invest in EACs have determined that book and claim is a credible and cost-viable mechanism for driving in-sector emissions reductions.

Step 2: Development of sustainability and commercial criteria

Considerations may include sustainability qualities, preferred fuel types, existing supplier relationships, preferred trade routes,⁴ approximate budget, or preferred contract length.⁵ Criteria may be developed independently or aligned with external frameworks, such as the Book and Claim Community's [Principles and Best Practices for Book and Claim Systems in Heavy Transport](#) or [ZEMBA's Sustainability Framework](#).

Step 3: Discovery of EACs through buyers' alliances, direct engagement with suppliers, or marketplaces

Companies may participate in one or multiple pathways for market discovery.

- *Participation in a buyers' alliance, such as ZEMBA:* These alliances conduct collective procurements by issuing requests for proposals to source suppliers that meet predefined eligibility criteria.
- *Direct engagement with shipping companies or freight forwarders:* Carrier-specific decarbonisation programmes may appeal to companies that prefer to procure certificates through suppliers already within their physical supply chains.
- *Access to various certificate offers through emerging marketplace platforms:* Though these platforms are relatively early-stage, marketplaces are intended to centralise offerings from a range of suppliers, allow for direct comparison of certificates, and integrate their delivery directly into the platform.

3 Some cargo owners that charter vessels may have the option to "match" voyages with a specific fuel choice.

4 While book and claim enables location-agnostic investment in decarbonisation solutions, companies may still prioritise specific geographies for deployment. For example, a company with primarily European operations and stakeholders may prefer investment in European trade routes.

5 Companies may have preferences between spot purchases and forward commitments. The former is preferable for companies seeking a near immediate transaction. Forward commitments are often used to support the development and commercialisation of emerging fuel pathways (e.g., green hydrogen-based fuels) by providing producers with future offtake certainty.

Step 4: Evaluation of EACs

Companies directly engaging with shipping companies will assess certificates from their respective ocean shipping suppliers. For companies participating in buyers' alliances, the alliance's managers will evaluate certificate options and select supplier(s) based on predetermined criteria on behalf of alliance members. Companies participating in buyers' alliances may also simultaneously engage in carrier specific programmes, in which they evaluate offers from both pathways and identify the most suitable option.

Step 5: Negotiation with maritime EAC suppliers

Once a preferred offer has been identified, a certificate buyer enters bilateral negotiations with the supplier. Discussions may involve pricing of associated volumes, alignment with SBTi's market instrument integrity criteria,⁶ alignment on other sustainability characteristics of the fuel, delivery cadence, term/duration of contract, or additionality assurances. A contract incorporating specific book and claim considerations is then signed. For buyers' alliances, the managing entity will likely have negotiated key commercial details with the certificate supplier on behalf of the alliance. The buyers' alliance will also typically provide contract templates socialised with the supplier to streamline agreements.

Step 6: Retirement of certificates through a registry

Registries⁷ serve as the 'source of truth' for monitoring how environmental attributes are transferred and claimed within the market. They are intended to prevent erroneous double-counting and verify the sustainability qualities of each certificate. While internal ledgers maintained by shipping companies or freight forwarders are also used in the market, third-party registries are growing in popularity, following the trend of more mature book and claim markets, such as those for renewable electricity and sustainable aviation fuel certificates.

Step 7: Accounting for and reporting emissions reductions

Companies disclose the emissions benefits from EACs in their sustainability reporting, although approaches may vary slightly as GHGp's guidance continues to develop.

⁶ In section 4.2, the SBTi describes several integrity criteria required from market instruments to credibly count towards science-based targets (e.g., activity matching, verifiability, accounting basis).

⁷ Current external registry options include [Katalist](#) and [123 Carbon](#). The Roundtable on Sustainable Biofuels' Book & Claim Registry is piloting a maritime sector expansion.

Guidelines / Standards	Accounting / Reporting guidance
<u>SBTi Corporate Net-Zero Standard v2.0</u>	<i>(Released in June 2026)</i> Acknowledges EACs as credible tools that can count towards science-based decarbonisation targets ⁸
<u>Greenhouse Gas Protocol Advanced Market Instruments</u>	<i>(Expected to be released in 2028)</i> Provides companies detailed guidance on how to account for advanced market instruments across sectors in emissions reporting
<u>Advanced and Indirect Mitigation Platform Standard and Guidance</u>	<i>(Released in April 2026)</i> Provides requirements and cross-sectoral guidance for companies on how to identify and account for high-integrity, value chain associated interventions. This standard is intended to be complementary to the work of other standards such as SBTi, GHGp, and sector-specific guidance
<u>Smart Freight Center Voluntary Market Based Measures</u>	<i>(Updated framework expected to be released in 2027)</i> Provides transportation-specific guidance on how to account and report logistics emissions impact from voluntary market-based measures

Exhibit 2: Current certificate accounting and reporting guidelines

Barriers to engagement: Challenges in the demand-side user journey

While the user journey outlines how companies engage in the market, it also reveals where barriers limit participation. These points of friction make it difficult for buyers to enter, navigate, and scale engagement in the book and claim market.

8 Specifically, market instruments are eligible when activity-level solutions are not feasible.



Exhibit 3: Current barriers within demand-side user journey

Barrier #1: Steep learning curve

The book and claim mechanism can be complex to understand, especially for newcomers. Definitions of book and claim are not consistently understood among demand-side participants, particularly in relation to mass balance systems. In practice, the distinction comes down to the system boundary applied to each chain-of-custody model. In regulatory contexts (e.g., sustainability certifications under the European Energy Directive), the system boundary for mass balance exists at the site level.⁹ The sustainability attributes of fuels can be allocated freely to identical fuel molecules within the site or distribution system where those fuels are present. On the other hand, book and claim operates across broader boundaries, decoupling environmental attributes from physical delivery and allowing their transfer to entities with no physical connection to the underlying fuel.

However, the definition of mass balance is not yet fully harmonised across standards. Notably, ISO 22095-2:2026 does not limit the application of mass balance to physically co-mingled fuels or fuels connected at the site level.¹⁰ As a result, some supply-side participants and corporate end users may apply company-level chain-of-custody approaches and interpret them as mass balance, even though these approaches may align more closely with book and claim principles. Thus, perceptions of credibility can differ, with some viewing book and claim as less robust, even when their own approaches align closely with it.¹¹

⁹ In order to be transferred through a mass-balance chain of custody, the International Sustainability & Carbon Certification programme says that fuels must be “stored in the same interconnected infrastructure, processing or logistical facility, transmission and distribution infrastructure or site” ([ISCC EU 203-02 MASS BALANCE GUIDANCE Version 1.2](#)).

¹⁰ ISO 22095-2:2026 also introduces a designation system requiring transparent disclosure of key methodological choices, including physical presence and linkage requirements, mass balance and claim periods, implementation approach, site-to-site credit transfers, and attribution rules.

¹¹ Ongoing work from standards bodies such as GHGP, SBTi, and ISO will provide future clarity for how mass balancing method decisions will impact reporting of solutions delivered through mass balance.

Additionally, the user journey is often unclear to stakeholders entering the market for the first time, particularly regarding book and claim registries. Some demand-side participants may misinterpret registries as market-discovery platforms, rather than understanding their intended role in verifying and tracking certificates. Details about how and when certificates can be claimed may also take time to learn.

Finally, verification and assurance processes are also inherently complex to navigate. This stems in part from the involvement of multiple independent organisations responsible for verifying fuel life cycle emissions and ensuring fuel integrity.

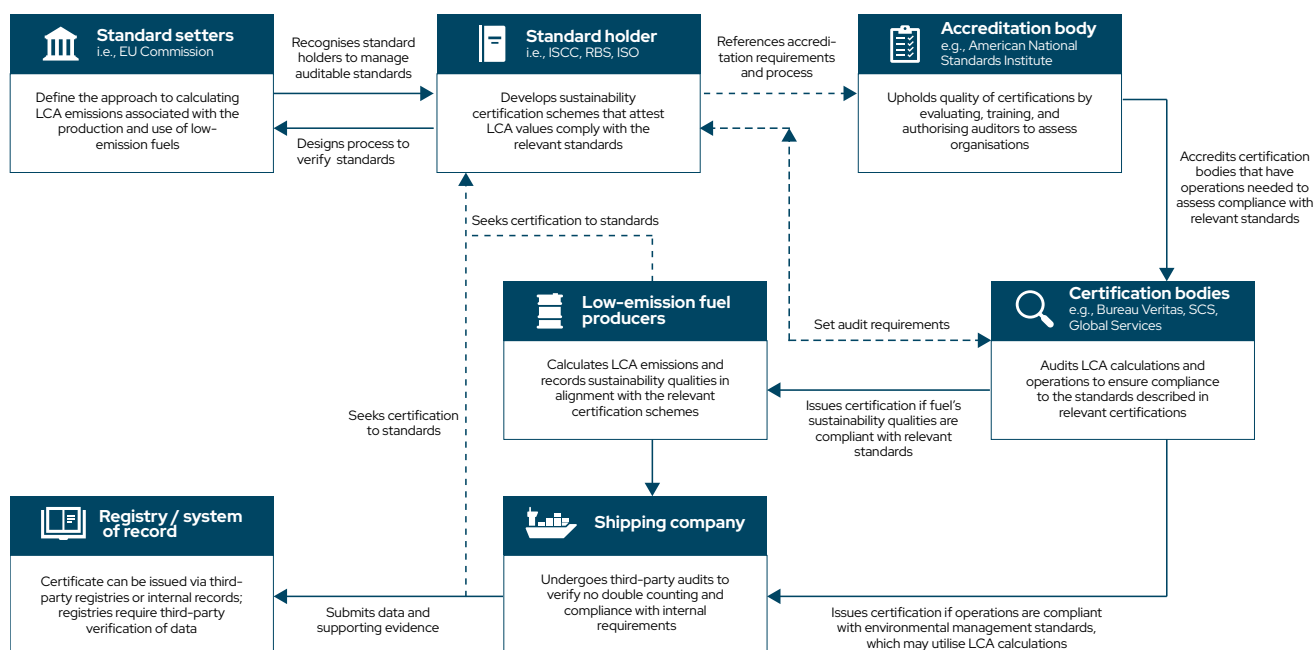


Exhibit 4: Low-emission fuels life cycle assessment (LCA) verification process

Even so, this assurance process is critical to supporting credibility and cannot be compromised. As a result, demand-side participants—particularly those running independent procurements, contracting for certificates, or building internal confidence in the book and claim mechanism—must contend with a steep, often unclear learning curve to understand what is being purchased and how supporting information has been validated. This also impacts supply-side participants, who often bear the burden of educating buyers on book and claim systems. This increases the time investment required per certificate delivered, likely limiting suppliers' ability to scale volumes sold.

Maritime-specific nuances also introduce additional complexity. Teams procuring EACs are often responsible for decarbonisation across multiple sectors, limiting bandwidth to engage with maritime-specific nuances.

This makes it challenging to determine which data inputs to require from suppliers, evaluate fuel pathways (e.g., biofuels vs e-fuels), assess feedstock sustainability (waste-based or land-use-based), and take clear positions on emerging technologies such as e-methanol or e-ammonia. These decisions are particularly consequential due to asset lock-in; unlike sectors such as aviation, some maritime decarbonisation pathways require significant capital investment beyond fuel production, such as new or retrofitted vessels and bunkering infrastructure.

As a result, newer participants or those operating in highly scrutinised environments may struggle to determine which attributes are most important for sectoral change, leading to slower and more cautious engagement.

Barrier #2: Market fragmentation

Market participants use a wide range of functional units to structure transactions—including transport work (e.g., twenty-foot equivalent unit containers per nautical mile (TEU-nm), tonne-km), number of TEUs shipped, volume of fuel consumed (e.g., tonnes of low-sulphur fuel or low-sulphur fuel oil equivalent), and direct emissions reductions (tonnes of CO₂e). These choices reflect differing commercial and accounting needs and shape how pricing, emissions reductions, and volumes are calculated.

Several approaches currently exist in the market. One approach allows customers to purchase transport work, with emissions reductions calculated after a voyage is completed based on the actual fuel consumption of a specific vessel and the associated unit of transport work. Another allows customers to purchase emissions reductions directly by predetermining the volume of low-emission fuel to be used during voyages.

These approaches differ in two important ways. First, they differ in which outcome is fixed upfront. If considering operational variability across voyages (e.g., weather, loading, vessel efficiency), suppliers can only deliver based on either transport work or emissions reductions, but not both. When treating transport work as the predetermined value, emissions reductions are determined after a voyage is complete; when fixing emission reductions (and thus the corresponding low-emission fuel usage), actual transport work is determined afterwards. Some suppliers use industry benchmarks rather than operational data in efforts to predetermine both transport work and emissions reductions, creating additional variation in methodologies. As a result, a common approach to unit conversion is needed to improve comparability across offerings.

Second, the two approaches have different implications for pricing and abatement costs. When transport work serves as the primary transaction unit, carriers must establish a price for the transport service itself rather than relying directly on the market value of the fuel. Thus, buyers may face challenges comparing offerings across suppliers.

Interpretation of additionality requirements is another major source of inconsistency. While frameworks are emerging, there is no universally accepted approach to determining whether certificates provide emissions reductions that are truly additional to regulation.

For one, the [AIM Platform](#) assesses additionality at the intervention level and provides a decision tree to evaluate whether regulatory drivers are compatible with voluntary book and claim systems. On the other hand, the [Roundtable on Sustainable Biomaterials Book & Claim System](#) does not prescribe inclusion or exclusion from the voluntary market; rather, it categorises regulatory contexts to provide transparency into how fuels are affected by regulation. The 2023 version of [Smart Freight Centre's Market Based Measures Framework](#) categorises select regulatory scenarios and outlines how suppliers may demonstrate regulatory additionality under each case.

And finally, [SBTi's Corporate Net-Zero Standard 2.0](#) does not give explicit guidance in defining additionality.

The lack of alignment across frameworks affects multiple aspects of the market. From a pricing perspective, shipping companies sourcing low-emission fuels within regulated contexts may offer price advantages to the voluntary book and claim market. For example, under frameworks that treat low-emission fuels reported under the EU Emissions Trading System (ETS) as additional, shipping companies may pass through avoided EU ETS costs as certificate-pricing benefits. Conversely, companies that seek to avoid fuel reported under the EU ETS or any other regulatory mandate would not receive these avoided cost benefits, resulting in higher premiums.

From an implementation perspective, differences in the interpretation of additionality influence how registries represent certificates on their platforms. Katalist currently screens certificates against additionality criteria outlined in [Defining Additionality in the Voluntary Book and Claim Market in Deep Sea Shipping](#), guidance developed by the Global Maritime Forum and the [Maersk McKinney-Møller Center for Zero Carbon Shipping](#) in partnership with numerous industry stakeholders. In contrast, [123Carbon](#) takes a disclosure-based approach, outlining relevant regulatory conditions underlying the fuel while leaving eligibility determinations to certificate buyers and suppliers.

Due to differing approaches, stakeholders must navigate and interpret multiple frameworks before selecting the approach that best aligns with their internal priorities and risk tolerance. The additional burden on market participants introduces additional complexity and contributes to uncertainty in procurement decision making.

Barrier #3: Lack of market transparency

Limited transparency into certificate offerings makes it difficult to navigate the market. Many offerings do not publicly disclose underlying fuel inputs, including feedstocks and production pathways. At the same time, stakeholders report that methodologies for calculating emissions reductions are often unclear, thereby reducing transparency around both the costs and impacts of EACs. Tangentially, pricing structures can be similarly opaque, with little visibility into how low-emission fuel costs translate into fuel premiums and ultimately abatement costs. As a result, demand-side participants spend much of their time clarifying the details of what they might be purchasing, rather than evaluating which solutions are best aligned with their decarbonisation goals.

According to a [Boston Consulting Group survey](#), cargo owners are nearly twice as likely as shipowners to prioritise pricing transparency and emissions traceability. As such, the current misalignment in priorities between the demand and supply sides of the market, including current limited transparency, creates additional friction in procurement and slows market participation.

Addressing barriers: Approaches to scaling book and claim activity

Three key initiatives can help address current market barriers and reduce friction throughout the user journey:

- 1. Build market understanding** among both prospective and existing participants

to ameliorate the steep learning curve and market navigation challenges.

2. Increase uniformity across core maritime market elements—particularly in areas not addressed by formal standards—to reduce fragmentation and improve comparability across certificates.

3. Increase transparency to strengthen certificate comparability and market credibility, thus driving engagement.

Taken together, these actions lower barriers to entry, ease market navigation, and enable more informed decision-making. Their application will vary across different stages of the user journey.

Building market understanding around the user journey, verification and assurance processes, and additionality frameworks can help reduce confusion and increase engagement among demand-side participants.

Within the user journey, greater clarity around the role of registries may be particularly helpful. To address this, registries could publish rulebooks and clear guidance that situate their function within the broader maritime fuel certificate procurement process. Shipping companies can then reference these public resources to clearly articulate their role within the broader system during customer engagement. These actions help standardise demand-side user journeys and certificate processes.

From the perspective of corporate end users, key information could include:

- The intended role of registries within book and claim systems
- Who is expected to use the registry, and what actions they can perform
- How corporate buyers can claim certificates through the registry, including the key parameters they must understand in advance

Existing examples include Katalist, which has published a [public manual](#) outlining the core objectives and functionality of its registry. Other registries in adjacent sectors, such as the [SAFc Registry](#) in aviation, also provide public rulebooks to guide user understanding.

Illuminating registries is only part of the challenge. As discussed previously, verification and assurance processes are complex, yet foundational to the credibility of book and claim. Additionality presents a similar challenge—while it is critical to ensure impact, fragmentation from differing frameworks is difficult to navigate. Although full convergence across frameworks is unlikely in the near term, there is a clear opportunity to improve understanding of how existing approaches work and how they differ.

NGOs and buyers' alliances that function as market developers are well positioned to support this effort. As neutral actors with a shared interest in improving market functionality and credibility, they can develop clear, accessible overviews of market structure and dynamics. For verification and assurance, they can develop materials that expand upon Exhibit 4 and explain how these processes operate in practice. For additionality interpretations, market developers can produce summaries of existing additionality frameworks, highlighting key similarities and differences.

Such efforts would reduce the time required for buyers to independently develop a detailed understanding of verification processes, various interpretations of additionality, and the underlying regulatory frameworks, thereby facilitating more efficient participation in maritime book and claim systems.

Increasing uniformity in the functional units and best practices used across the maritime sector would enable buyers to more effectively compare market offerings, and thus may support more effective participation. It can also give supply-side participants greater guidance on market participation and help build the credibility of certificates.

While emerging standards are expected to guide how corporations account for emissions and associated reductions from certificates, the selection of functional units remains highly sector-specific. As a result, stakeholders will likely still need clear guidance on which units—such as transport work, emissions abatement, or fuel volume—are most appropriate. Because several approaches have already been tested, stakeholders using these different methods can provide valuable perspectives on their respective benefits and trade-offs.

While it may be difficult to fully standardise the usage of a single functional unit, stakeholders can still promote comparability by aligning on a common set of supporting data, assumptions, and conversion methodologies. Convening stakeholders, through forums or workshops, can help build consensus and enable conversion across functional units. This would ultimately support comparison across certificate offerings while preserving flexibility for different commercial, operational, and accounting needs.

Increasing transparency around sustainability attributes and commercial details associated with certificates can highlight key points of differentiation, thus improving comparability and strengthening credibility.

Multiple stakeholders can play a role in increasing market transparency. Registries, buyers' alliances, and other organisations involved in book and claim may help develop guidance on which sustainability and commercial inputs are important for supply-side participants to provide, as well as for buyers to consider. For example, in carrier-specific decarbonisation programmes, greater visibility into key factors—such as fuel type, sourcing and bunkering locations, applicable regulatory programmes, expected range of emissions reductions, and calculation methodology—would help demand-side participants better understand what is included in certificate offerings.

It would also be beneficial for demand-side participants to clearly understand which additionality frameworks are applied within registries. This includes how these frameworks influence the types of certificates represented in the registry and how regulatory impact is specified within the platform.

This level of transparency would enable buyers to compare certificate options and simplify decision-making. It also creates space for differentiation beyond price, allowing suppliers to more effectively compete on the attributes of their decarbonisation offerings. Both would boost demand activity in book and claim markets and improve long-term market health.

About the Global Maritime Forum

The Global Maritime Forum is an international not-for-profit organisation committed to shaping the future of global seaborne trade. It works by bringing together visionary leaders and experts who, through collaboration and collective action, strive to increase sustainable long-term economic development and human well-being.

Established in 2017, the Global Maritime Forum is funded through a combination of grants and partner contributions. It operates independently of any outside influence and does not support individual technologies or companies. Most of its roughly 50-person staff is based in the organisation's headquarters in Copenhagen, Denmark.

Learn more about the Global Maritime Forum at www.globalmaritimeforum.org

About the Center for Green Market Activation

The Center for Green Market Activation (GMA) is a US-based, globally focused non-profit. Through innovative procurement approaches and sector-specific buyers alliances, GMA catalyzes and scales the uptake of low-carbon goods and services within carbon-intensive industries including aviation, maritime, trucking, cement and concrete, and chemicals. With collective decades of experience in environmental markets and alternative fuels and materials, the GMA team works to standardize new, green markets and forges mutually beneficial partnerships between climate-focused companies, suppliers, and mission-aligned non-profit organizations to channel funding to critical climate technologies in pursuit of accelerated sectoral decarbonisation.

Learn more about the Center for Green Market Activation at www.gmacenter.org

