

White Paper

Empowering Shippers: How Book and Claim Plus a Clear Action Plan Can Unlock Heavy Road Freight Decarbonization

December 2025

Authored by SFC with contributions from Procter & Gamble, Normec Verifavia, and Gruber Logistics

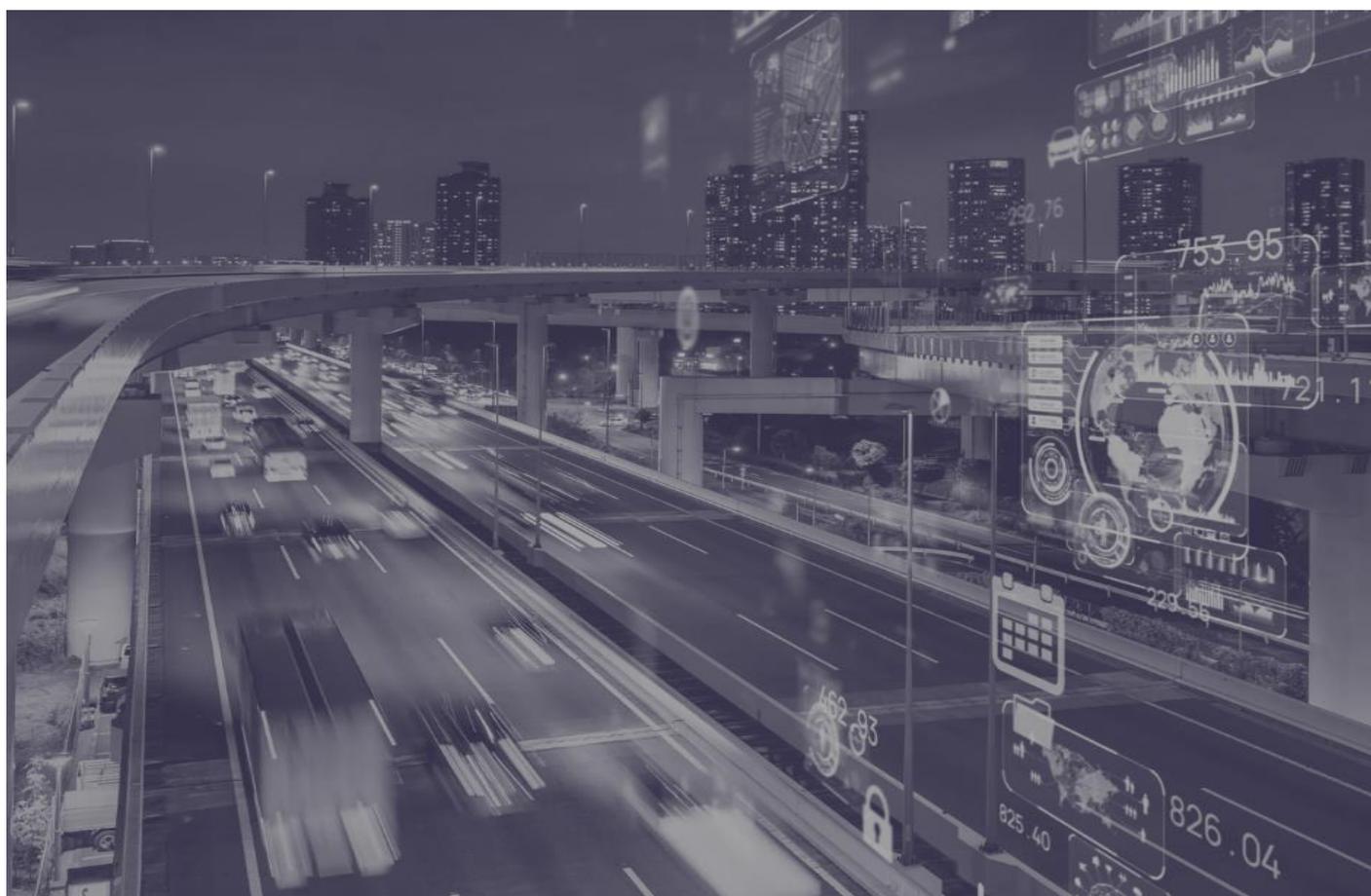


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Executive Summary

Road emissions account for two-thirds of global freight transport emissions. For ambitious cargo owners who endeavor to decarbonize supply chains, "book and claim" can be a useful tool to overcome limitations within their cargo network and focus collaboration with carriers to address this challenge. Increasing the deployment of low emission transportation services (LETS)—via any chain of custody—is critical to achieving net zero logistics. A book and claim model, allowing for the procurement of environmental attributes by transport buyers, independent of the physical produce or service delivery, helps accelerate the deployment of low emission fuels. However, due to the especially fragmented landscape in road transportation, characterized by many small operators, the consistent application of book and claim in road freight presents unique challenges while also offering special opportunity to support sector decarbonization.

This White Paper examines how voluntary, market-based approaches—specifically the book and claim chain of custody model—can enable credible LETS procurement in road freight networks. Alongside a case study, it outlines a structured approach and one shipper's Standard Operating Procedure (SOP) for biofuel procurement, resulting emissions reporting, supported by third-party verification of accounting and reporting in accordance with Smart Freight Centre's (SFC) auditable *Market Based Measures Specification for Logistics Emissions Reporting*. Procter & Gamble's (P&G) SOP addresses common barriers such as limited carrier data and inconsistent practices, ensuring transparency, traceability, and compliance. Their cooperation with a spectrum of carrier experience levels—from relatively low maturity with decarbonized transportation to experienced carriers such as GRUBER Logistics—and collaboration with independent assurance providers such as Normec Verifavia, demonstrates a scalable model for overcoming the "upstream partner problem" faced by the shipper. This refers to limitations encountered when a physically connected carrier is unable to provide actual low emission services for their cargo or data necessary to support high-quality book and claim LETS procurement. A shipper's aspirations should not be limited by the sector's inherent complexity.

The White Paper concludes that book and claim for biofuels and other low emission fuels in road freight, when implemented with robust governance and verification, offers a practical and viable pathway for shippers and carriers to achieve credible emissions mitigation and advance climate goals.

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Disclaimer

The views expressed in this publication are those of Smart Freight Centre, P&G, GRUBER Logistics, and Normec Verifavia teams, contributors, and consultants, and do not necessarily reflect the views or positions of the Boards or management of these organizations. While every effort has been made to ensure the accuracy of the information contained in this publication, P&G, GRUBER Logistics, Smart Freight Centre, and Normec Verifavia do not guarantee its completeness or accuracy and accept no responsibility for any consequences arising from its use. This publication is for informational purposes only and does not constitute legal, financial, or technical advice.

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- Procter & Gamble
- Normec Verifavia
- GRUBER Logistics

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The IKIGAI Project aims to develop common standards and foster collaboration over competition within the logistics sector. A central theme of this White Paper is the development of key elements for emissions reporting, where ensuring the full respect of the chain of custody is essential, regardless of the specific custody chain model applied.

The ambition of this White Paper is therefore also to contribute to setting new standards for the sector, serving as a starting point for future developments.

Disclaimer



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About Smart Freight Centre

Smart Freight Centre (SFC) is a globally active non-profit organization for climate action in the freight sector. SFC's goal is to mobilize the global logistics ecosystem, in particular our members and partners, in tracking and reducing its greenhouse gas emissions. SFC accelerates the reduction of logistics emissions to achieve a zero emission global logistics sector by 2050 or earlier, consistent with 1.5° pathways.

About Procter & Gamble

Procter & Gamble (P&G) is a global leader in consumer goods and serves consumers around the world with one of the strongest portfolios of trusted, quality, leadership brands, including Always®, Ambi Pur®, Ariel®, Bounty®, Charmin®, Crest®, Dawn®, Downy®, Fairy®, Febreze®, Gain®, Gillette®, Head & Shoulders®, Lenor®, Olay®, Oral-B®, Pampers®, Pantene®, SK-II®, Tide®, Vicks®, and Whisper®. The P&G community includes operations in approximately 70 countries worldwide. P&G has set an ambition to achieve net zero greenhouse gas (GHG) emissions across their operations and supply chain, from raw material to retailer, by 2040.

About Normec Verifavia

Normec Verifavia is an independent verifier with over a decade of experience assessing emissions across aviation, maritime, road, rail, and industrial sectors. Accredited by COFRAC, UKAS, and the Singapore Accreditation Council, it delivers emissions verification services in accordance with ISO 17029:2019 and ISO 14065:2020. The company is also an approved verifier under the Smart Freight Centre's Conformity Assessment Scheme (CAS).

About GRUBER Logistics

GRUBER Logistics is an international transport and logistics group offering comprehensive transport and logistics services in Europe and worldwide freight forwarding. Founded in 1936, the family-owned company, now in its third generation, is a reliable partner for B2B customers from various industries, ranging from heavy industry to consumer goods. With a strong commitment to ethical standards, employee development, sustainability, and digital innovation, GRUBER Logistics is driving the further development of the logistics sector. In 2024, GRUBER Logistics achieved a turnover of 710 million euros.

1. Introduction

Cargo owners with aggressive greenhouse gas (GHG) emissions mitigation targets face steep obstacles to decarbonize their supply chains, especially in road freight. Purposeful use of a book and claim chain of custody is a key tool to overcome headwinds and focus collaboration with key partners, such as road carriers. Across all transport modes, freight transportation and logistics account for approximately 8% of global GHG emissions, a share that is expected to double between now and 2050.¹ Road transportation accounts for nearly two-thirds of all freight-related emissions. Addressing road freight transportation emissions is therefore imperative to achieve the climate goals outlined in the Paris Agreement.² Despite significant progress on regulatory developments for road freight decarbonization strategies, the uptake of low emission transportation services (LETS)³ continues to lag.

To accelerate climate action beyond regulation, the logistics industry is increasingly turning to voluntary, market-based approaches to help overcome entrenched barriers such as the high cost of low emission solutions and global supply chain complexity. “Book and claim”—a robust and traceable chain of custody model—provides strong benefits for today’s transportation market and is central to a suite of approaches the Smart Freight Centre (SFC) calls “Market Based Measures” (MBM).⁴

Book and claim is one of three principal chain of custody models that deliver and trace physical products and their environmental attributes.⁵ The first two chain of custody model approaches—“physical separation”⁶ and “mass balance”—have greater *physical* traceability and can be respectively described as: the distinct, physical delivery of solutions⁷ and services and the mixed (yet physical) delivery of solutions and services (e.g., in a mixed fuel depot or trade lane)⁸. In contrast, the book and claim model, however, enables the environmental attributes of low emission transportation solutions and attributes of LETS to be decoupled, traced, and accounted separately from the physical delivery. Greater use of this model could unlock significant decarbonization by connecting otherwise separated supply and demand.

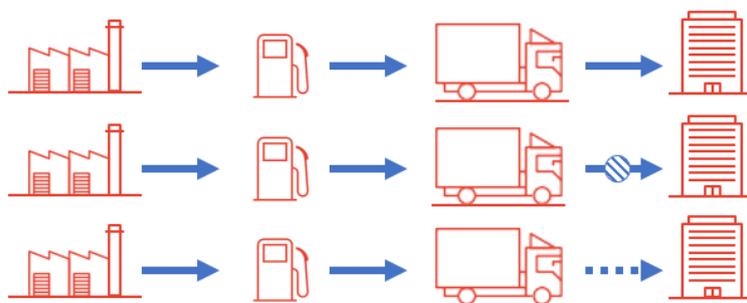


Figure 1. Three examples of delivery of a low emission transportation service (LETS) to a cargo owner. Situation 1 illustrates a physical separation delivery of LETS; situation 2: a mixed delivery of LETS and traditionally-fueled services (i.e., mass balance); situation 3: a book and claim model where the environmental attributes of LETS are decoupled, traced and accounted for separately from the physical flow of transport services.

Application of book and claim remains challenging in the road freight sector. Its fragmented market structure, vast network of carriers and logistics service providers (LSP), limited access to primary data, and varied GHG-accounting capabilities of transport operators create significant roadblocks to realizing the decarbonization potential of book and claim, especially in comparison to the maritime and aviation sectors.

A common and basic stalemate arises when a shipper (cargo owner) wishes to procure LETS but the upstream carriers physically transporting their cargo are unable to satisfy this demand due to lack of physical access to low emission solutions or limitations with reporting and emissions accounting know-how. A second problem occurs when an upstream carrier partner, though willing to use the low emission fuel for the shipper’s exact cargo or on an alternative route, does not yet track emissions or lacks the technical capacity to formally “book” and report the LETS. These gaps stall decarbonization efforts before they can even begin.

¹ ITF Transport Outlook, 2023. MIT Climate Portal, “Freight Transportation.”

² Paris Agreement, see: <https://unfccc.int/process-and-meetings/the-paris-agreement>.

³ LETS is a term used by the SFC’s MBM program for a low emission transportation service via any chain of custody: via physical separation, mass balance, or book and claim. Definition: “a transportation service generated using a low emissions solution”.

⁴ Market Based Measures program and [SFC MBM Framework Homepage](#).

⁵ For further, detailed exploration of chain of custody models, see ISO 22095: <https://www.iso.org/standard/72532.html>.

⁶ “Physical separation” is a simplified reference to chain of custody models that have this physical nature in their produce delivery—see specific chain of custody models “identity preserved”, “segregated”, and “controlled blending” in ISO 22095 *Chain of custody — General terminology and models*: <https://www.iso.org/obp/ui/en/#iso:std:iso:22095:ed-1:v1:en>

⁷ SFC’s Market Based Measures program uses “solution” to describe a variety of low emission products that enable low emission transportation services, not all of which are fuels (e.g., an electric-powered engine).

⁸ See SFC blog posts for a summary of how these chain of custody models commonly appear in transport decarbonization: “PART I—The Two Ways You “Mass Balance” in Market-based Transportation Emissions Accounting and Reporting” and “PART II—The Three Ways You “Book and Claim” in Market-based Transportation Emissions Accounting and Reporting”

To overcome these hurdles, high-quality use of a book and claim chain of custody model can be employed to procure high quality LETS, underpinned by a common set of rules and guidance. SFC's [Voluntary Market Based Measures Framework for Logistics Emissions Accounting and Reporting \(MBM Framework\)](#) and the auditable [Market Based Measures Specification for Logistics Emissions Reporting \(MBM Specification\)](#) provide this common set of rules and guidance. Together, these documents—one as guidance, the other as an auditable standard—establish a credible pathway for companies to account for their market-based procurement by establishing clear, unambiguous reporting requirements for booked and claimed emissions profiles, while ensuring high integrity and preventing issues such as erroneous double counting.

Yet, users still encounter blocks in the real world.

Road freight decarbonization progress hinges on collaboration between partners committed and willing to navigate these new approaches together, and the particularly-fragmented nature of the road market often requires the sustainability-minded shipper, LSP, and carrier to make an extra effort to implement market-based measures and properly claim, account, and report the low emission profile of the transportation services they are investing in.

This White Paper explores how a shipper, Procter & Gamble (P&G), navigates an imperfect data environment while still procuring high-quality decarbonized transport for its cargo and for its GHG emissions reporting. By following a defined standard operating procedure (SOP), collaborating closely with its carriers, and verifying the corresponding emissions reporting with Normec Verifavia, a validation and verification body (VVB) approved under the SFC Conformity Assessment Scheme (CAS). This case study offers insights from the perspectives of the involved partners and provides a blueprint for resolving the “upstream partner problem”. It presents a credible and scalable model for other shippers to help them procure credible LETS through book and claim. The study also accounts for lower GHG emissions using the transportation sector's standard methodology and highlights the essential role of third-party verification

In road freight, it is common for upstream carriers to be relatively novice actors in emissions accounting and reporting, let alone book and claim. A carrier must first establish its underlying accounting practices using standardized methodology for emissions accounting such as GLEC and ISO 14083. It then follows a market-based approach to transportation activity attributes, generating necessary information for reliable emissions accounting for both a ‘physical’ LETS as well as a LETS procured through book and claim. The White Paper closes with the perspective of a carrier familiar with the task, Gruber Logistics.

The theoretical world only helps so much, and real-world practices are still maturing. In reality, and for the foreseeable future, shippers will encounter upstream stakeholders who can provide emissions data and those who cannot. Clearly defined SOPs and operational agility are essential in securing the low emission profile of a LETS and reporting in-value-chain decarbonization with high-integrity, even when data or technical know-how from upstream partners is imperfect.

2. The challenge, shipper-specific needs, and solution

As a company with clear GHG mitigation ambitions, P&G, like other leading shippers, acknowledges the role that freight transportation plays in its overall GHG emissions footprint. Many organizations are committed to incorporating low emission transportation solutions—especially biofuels in the near-term and where electrification is not yet feasible—as part of a comprehensive strategy to reduce environmental impact while ensuring operational efficiency. However, transitioning to sustainable road transport presents significant challenges due to the:

- Fragmented nature of the road transport sector;
- Absence of road registries and fuel-tracking systems;
- Need to merge existing Scope 3 modeled transportation emissions reports with MBM reporting of low emission fuels;
- Evolving understanding of sector accounting and reporting conventions, including ISO 14083 for transportation GHG accounting and SFC's MBM Framework for applying market-based measures.

To overcome these challenges and realize the environmental benefits of these low emission solutions in today's system, it is crucial to implement a robust mechanism for tracking and verifying low emission transportation procurement and biofuel usage across the supply chain from producer via user, to claimant. This section outlines P&G's approach as a shipper to achieving transparent, and auditable biofuel-based transport service procurement in partnership with third-party verifiers and road carriers.

Accurately reflecting the benefits of market-based procurement through substantiated environmental claims is essential for proper accounting, especially at the end of the supply chain. However, shippers and carriers face significant challenges in data quality due to the complexity of the physical biofuel supply chain as well as current data exchange practices that underpin the fuel's environmental attributes. From the shipper's perspective, the first layer of complexity in qualifying an environmental claim lies in ensuring that the supply chain provider uses the correct

feedstock, and that the resulting transportation service’s emissions profile is produced and calculated accurately. This must be accompanied by a traceable chain of custody that tracks the movement from producer to trader and finally, to the end user. However, not all road carriers have the sophistication or systems to supply this certainty and data.

The second layer of complexity arises from how the fuel is utilized within the carrier’s network, along with the processes and systems in place for tracking and tracing the fuel, the resulting transportation services, and its allocation to specific customers. In combination with the above-mentioned challenges, this often results in inconsistencies in biofuel accounting and complicates the assessment of the true impact of initiatives.

To navigate these complexities, P&G developed an in-house, comprehensive Road Biofuel Standard Operation Procedure (SOP) for their own operations. P&G then implemented a preliminary system assessment with Normec Verifavia as an independent third-party assurance provider for reporting according to the SFC MBM Specification. The SOP increases transparency and auditability of supplier accounting for low emission transportation and biofuel procurement via any chain of custody, not only book and claim. It also outlines overarching principles and specific requirements for biofuel use, including feedstock, governance, calculation methods, and reporting. The SOP is built on three pillars:

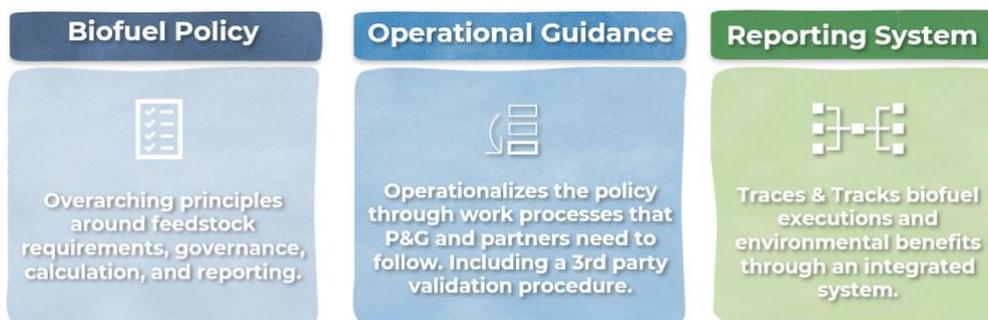


Figure 2. Three pillars of P&G’s Standard Operating Procedure (SOP)

P&G is a shipper working with a variety of carriers that reflect the full spectrum of accounting and reporting maturity for low-emissions transportation. This includes carriers that are just beginning to procure low-emissions solutions and learning about data requirements, including tracking and tracing, as well as those that are highly knowledgeable in GHG accounting and have developed robust self-built systems. The SOP was designed by P&G in order to have a standardized approach to engage with all carriers, irrespective of their maturity, provided the carrier successfully completes a third-party supplier assessment of the quality and trustworthiness of the provided data by focusing on the following three P&G “Elements”:

1 - Fulfils the P&G biofuel requirements	<ul style="list-style-type: none"> • Proof of sustainability (PoS) profile of the biofuel, stating the attributes of a low emission solution, is established and demonstrated via ISCC or RSB compliance • Physical usage of biofuel within the carrier’s network • Provision of existing third-party conformity assessment or positive outcome of P&G-requested third-party conformity assessment • Provision of monthly biofuel consumption reports with necessary fuel attributes
2 - Has a proper book and claim procedure and/or system that guarantees transparency and clear customer allocation processes	<ul style="list-style-type: none"> • Vintage, validity and allocation of the low emission profile, within a “modal” constraint (i.e., road) • Carrier-specific biofuel program documentation • Total amount of transport energy from consumption of biofuel can be balanced against transport energy calculated and compiled by carrier in yearly period (i.e., fuels add up and are “real”) • Design, implementation, and maintenance of internal controls are relevant to ensure that the carrier’s book and claim system reporting are free of material misstatements, whether due to fraud or error • Prohibits and documents erroneous double counting approach
3 - Has regular third-party volume verification that ensures the fuel ingested in the book and claim system has been bought and only allocated once	<ul style="list-style-type: none"> • Volumes and related attributes of the emissions profile are regularly verified by a third-party

The SOP was designed to ensure flexibility for different chain of custody model deliveries and facilitate engagement with all carriers used by P&G, irrespective of their maturity. All three elements need to be in place. If more mature carriers already have assurance for their book and claim system, this can also be recognized.

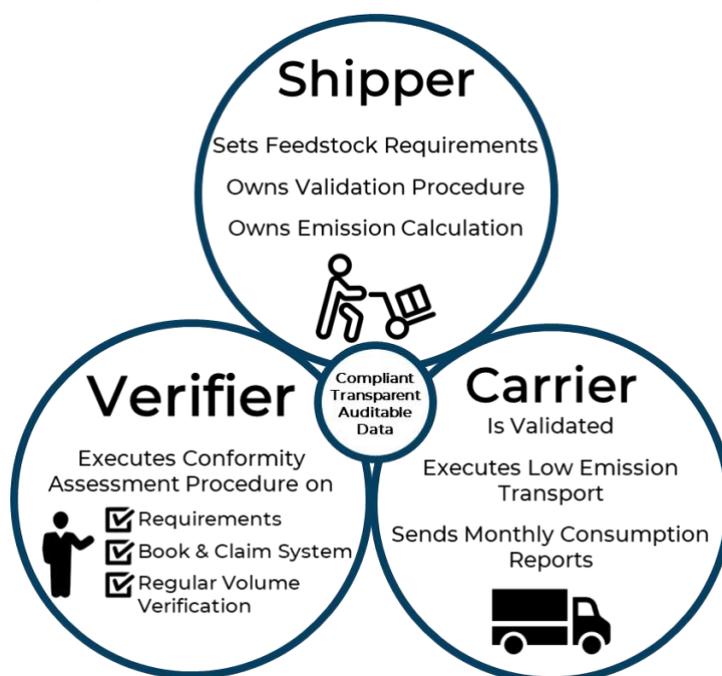
For a detailed view of the third-party assessment, Normec Verifavia outlines its role as the assessment body further in this White Paper, explaining the requirements and assessment process. This is particularly relevant when working with upstream carrier partners who are not (yet) fully clear about how to support shippers in their decarbonization goals yet are still willing and eager to deploy LETS. On the other end of the spectrum, there are carriers such as Gruber Logistics who offers insight into their approach to generating LETS via book and claim, demonstrating the practical application and benefits of the shipper’s Road Biofuel SOP in logistics operations.

This structured approach of adopting a detailed SOP then assessing accounting and reporting to the SFC CAS standard by an approved VVB is an example of a proactive shipper enabling a broader range of carriers to adopt low emission solutions while ensuring dependable results, thereby increasing industry participation in road freight decarbonization.

Once a carrier completes onboarding and begins using biofuel for P&G, it submits monthly consumption reports detailing the volumes used and allocated, along with the necessary environmental attributes for subsequent transport service emissions profile calculations. Using an internal tracking and tracing system, P&G replaces the emissions profile associated with the diesel emissions baseline with the biofuel emission profile when calculating emissions for its procured freight activity.

As mentioned, one challenge for shippers is integrating existing Scope 3 transport emissions reports—which are based on modeled data—with the reporting of low emission fuels. Even though the GHG emissions reporting model-based approach offers the functionality to overwrite selections of the inventory with primary data, it requires precise knowledge of which type of fuel was used for each shipment. In practice, the allocated amount of fuel never matches the modelled fuel requirement exactly. Such specificity would greatly limit the advantages of decoupling the physical fuel from its environmental attributes and would make additional verification disproportionately complex.

To address this, P&G has implemented a reporting structure—guided by the MBM Framework and verified by the MBM Specification—that distinguishes between location-based and market-based emissions. The conventional reporting provides location-based figures, while the market-based values reflect the lower emissions achieved from the consumption reports within the tracking and tracing system. This comprehensive approach, which includes biofuel policy, operational guidance, and a tracking and tracing system, enables P&G to confidently account for low emission transport executed by carriers at varying maturity levels, ensuring that all processes are properly documented and can be verified annually under the SFC CAS—MBM scope. Additionally, P&G will transparently disclose market-based GHG in their published emissions inventories and progress reporting - an element important to the Greenhouse Gas Protocol and the Science-based Targets Initiative.



3. Verification: ensuring and assuring the structured approach

Third-party verification by approved auditors is essential for ensuring confidence in the systems, processes, and claims involved. As part of P&G’s second pillar—Operational Guidance—Normec Verifavia provides assessment for

carriers that generate and supply LETS for P&G's Scope 3 road-transportation claims. Normec Verifavia is approved under the SFC CAS for both ISO 14083 and the MBM Specification scopes. Verification and assessment, in alignment with the SFC MBM Specification, was the foundation for evaluating solution and LETS reporting and implementation processes.

Additionally, the requirements of P&G's SOP were considered, acknowledging that specific shipper requirements may vary and must be incorporated alongside the MBM Specification requirements. As part of the initial system assessment, P&G and Normec Verifavia selected a level of desired assurance in order to inform the appropriate audit scope requirements and necessary impartiality measures. A limited assurance level was selected, reflecting its primary objective for this initial assessment: to reach a conclusion on the carrier's processes rather than confirming the exact quantity of LETS generated by the carrier for P&G.

In selecting the initial carriers for the assessment, P&G's approach included pre-screening carriers that were already able to provide comprehensive documentation on biofuel procurement and had previously undergone validation and/or verification in accordance with either the MBM Specification or ISO 14083 standards.

When possible, the assurance covered the carrier's book and claim processes, focusing on the minimum parameters required to enable the creation of LETS. These included:

- Mode of transportation (with a current focus on road);
- Amount of transportation activity conducted (tkm);
- GHG emissions intensity of the LETS (CO₂e/tkm);
- Total GHG emissions resulting from the transportation activity (CO₂e);
- Supplementary transportation service data (e.g., vehicle type).

The shipper's SOP outlines the need for rigorous third-party assurance to ensure that LETS claimed into their reporting is accurate, traceable, and compliant with applicable standards and methodologies. Assurance activities included a thorough review of:

- Proof of Sustainability (PoS) certification or equivalent;
- Data collection and monitoring processes;
- Additionality assessments;
- Controls to prevent double counting;
- Vintage constraints;
- Methodological conservativeness.

If, during the assurance process, it is not possible to confirm availability of one or more of these parameters, or non-compliance with the shipper's SOP is identified, the following procedure applies:

1. Finding Identification: the auditing team documents any gaps, inconsistencies, or missing data related to the LETS parameters or carrier documentation.
2. Communication: Findings are formally communicated to the carrier for corrective action and reported to the shipper for transparency.
3. Corrective Action & Timeframe: The carrier must address and close the findings within a defined time limit established by the shipper's internal procedure (60 days).
4. Verification of Closure: Once the carrier provides evidence of correction, the auditing team verifies closure before confirming compliance. If an issue remains unresolved past the stated deadline, it may impact the carrier's eligibility to provide LETS data to P&G. In such cases, the carrier will be required to undergo a new audit process.

3.1 Key criteria for providing assurance to a claim in a book and claim framework

To ensure the credibility of claims under a book and claim system, as outlined under the SFC CAS (MBM) and adapted by the shipper's SOP, key criteria must be assessed during the assessment process:

1. Proof of Sustainability Certification: Carriers must demonstrate the sustainability profile of the low emission fuel used through recognized **certification systems** (e.g., ISCC, RSB). Acceptable documents include:

- PoS, or equivalent;
- Proof of Compliance (PoC), if applicable;
- Fuel declarations;

Or alternative documentation from the fuel supplier when PoS is unavailable. Documentation should include, at minimum:

- Fuel type;
- Certification scheme;
- Volume and lifecycle GHG intensity;
- Feedstock and production process⁹;

Additional information—such as baseline emissions intensities, delivery dates, proof of mode of transport, and feedstock impact—should be requested to align with the reporting company’s sustainability policy (e.g., P&G’s biofuel quality criteria) and to assess compliance with the MBM Specification and integrity measures (e.g., vintage). This data is often already included in the above documentation and PoS/PoC. Evidence of environmental attribute ownership at the time of book and claim transactions is required, with specific documentation varying based on the intervention model.

2. Data Collection and Monitoring Parameters: Assurance assessments evaluate the processes and documentation related to data collection and monitoring distinctly in reasonable and limited assurance engagements. Carriers submit periodic (e.g., monthly) reports detailing:

- Fuel volume or energy content consumed;
- Lifecycle GHG emissions;
- Feedstock type and production process.

Additionally, carriers maintain documentation outlining:

- Biofuel procurement practices;
- Roles and responsibilities of program participants;
- Methodologies for emissions calculation and biofuel-based LETS attribution;
- Control activities to ensure program integrity.

A **registry** or **ledger** (developed in-house or procured externally) is utilized to track and allocate low emission fuel use and LETS to the customer:

- Within the same transport region and mode (regional granularity is a P&G preference in this case);
- Ideally, matched to the relevant transport activity (i.e., to ensure the value chain tie and avoid similarity to offsetting).

Further segmentation by transport operation category (TOC) or high emission product lines (e.g., vehicle size) are reported and can be used to prioritize attribution to the shipper’s similar transportation services.

3. Additionality: When no physical link exists between the carrier and the utilized biofuel, as in some cases of the upstream partners described above, additionality must be evaluated to ensure that the fuel nor service were required by regulation before allocating the emission profile to a voluntary purchaser.¹⁰ For example, the booked biofuel profile cannot be used to meet existing blending mandates. Verification assessment focuses on:

- How the carrier establishes additionality with the supplier;
- The presence of any mandates that could disqualify the claim;
- Communication with claiming parties (e.g., downstream shipper).

It is recommended that a clear definition of additionality (for various modalities, considering existing and upcoming regulations) is included in a shipper’s book and claim SOP and communicated to all relevant stakeholders. If an additionality status is communicated, the shipper’s categorization of additionality is subject of the assessment activities.

4. Avoidance of Erroneous Double Counting: To prevent multiple parties from claiming the same low emission profile attribute:

- Carriers must document practices.
- Carriers demonstrate exclusive ownership of the environmental attributes, ideally supported by contractual agreements with suppliers.
- A formal agreement with the customer (e.g., a Biofuel Amendment) confirms that the low emission CO₂ benefits are transferred solely to the claimant.

⁹ Ideally and/or to confirm conformance with shipper biofuel policy.

¹⁰ See SFC MBM guidance worksheet in [SFC document library](#) for assistance conforming to the additionality constraint (MBM-GUID-001 Integrity Measures and Constraints Worksheet v01).

- Reports include formal declarations of emissions profile rights transfer to enhance transparency and traceability.

5. Vintage Constraints: Environmental claims must be time-bound to ensure accurate alignment between LETS profile generation and usage:¹¹

- The LETS generation date and associated booking date must be documented. A 12-month vintage constraint from generation to booking is mandatory per the SFC MBM vintage integrity measures.
- The shipper's claim and retirement to its inventory are documented and made within 24 months of the year of booking.

Verification assessment includes evaluating whether these constraints are documented and respected.

6. Conservativeness in Methodology: To uphold environmental integrity, the principle of conservativeness should guide the choice of:

- Baseline/residual¹² values;
- Default factors;
- Methodologies for emissions calculation.

Where possible, primary data from carriers should be used. In the absence of such data, well-justified and conservative secondary data (e.g., default) baselines and residual emissions data must be applied (see [ISO 14083](#) or the [GLEC Framework](#) for guidance on standard approaches to data quality).

By meeting these criteria and ensuring transparent documentation, assurance providers can verify that book and claim-based claims are credible and aligned with the shipper's (P&G) sustainability policy. These practices lay the foundation for a robust, auditable, standardized assessment process, supporting trustworthy climate action and reducing reputational and regulatory risks in the transport sector.

4. MBM Specification provides an auditable, credible pathway for book and claim accounting verification

Competent independent assurance increases the credibility of environmental statements in all applications. This is integral for overall quality in book and claim-based inventory approaches and is especially important when first-movers want to distinguish and illustrate confidence in their market-based procurement and associated reporting.

The SFC CAS for validation and verification of GHG emissions statements for transport chains provides a global assurance program that supports the independent assessment of transportation GHG emissions reporting. It helps emissions reporters (ERs), such as carriers, LSPs or shippers, first demonstrate conformance with the transportation sector's accounting standard (ISO 14083) and, for those applying a market-based approach, also demonstrate conformance with the MBM Specification.

The scheme is based on the MBM Specification standard, which can be used by organizations to transparently document, report, and independently assure their in-value chain, market-based activities such as those enabled by a book and claim chain of custody. The Emissions Reporter Manual¹³ sets out the specific criteria and procedures under which an emissions reporter's disclosures are accepted under the SFC CAS. It also outlines the steps emission reporters must follow when preparing their "monitoring plans" (e.g., an SOP) and emissions reports prior to independent verification. The SFC CAS provides a platform for emissions reporters to find independent and competent assurance.

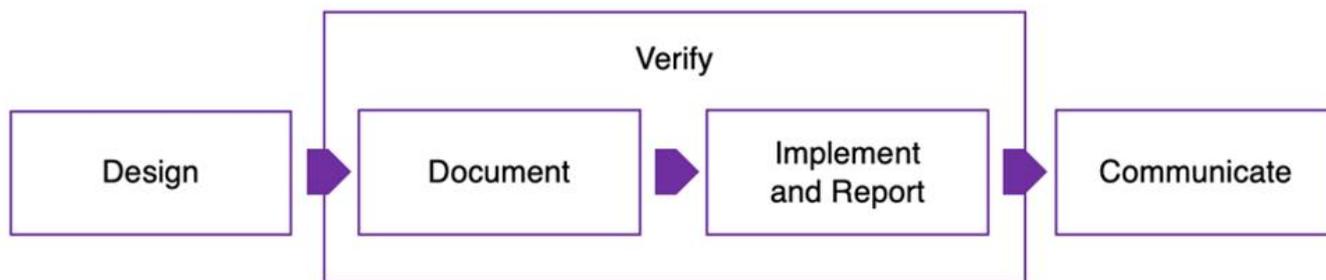
There are three fundamental stakeholders in Assurance:

- the Scheme Owner (SFC, in this case);
- the Validation and Verification Body (VVB);
- the Emissions Reporter (ER).

¹¹ See SFC MBM Framework for guidance (Chapter 8), MBM Specification for verification purposes (section 7.3), and for visual examples, the SFC MBM Framework homepage [resource](#).

¹² Residual values are the values provided to non-participants in the market-based LETS (i.e., the one whose cargo was physically transported on the LETS but does not receive this low emissions attribute).

¹³ See SFC Library for [Emissions Reporter Manual](#), templates, and related documents.



MBM Framework



MBM Specification



Scheme Owner

The SFC CAS is managed by SFC, a third-party and independent organization, which is responsible for developing and managing the scheme. SFC has incorporated best-in-class emissions accounting and reporting standards (ISO 14083, ISO 14064-1) and translated the *MBM Framework* guidance into the auditable *MBM Specification*. SFC maintains an impartial position in the freight/transportation market and does not develop emissions calculation tools, nor does it provide consultancy or verification services. SFC runs an approval process for accredited VVBs to provide verification services under the SFC CAS. SFC also operates a database of verified disclosures from emissions reporters.

VVB

VVBs assess whether the emissions reporters' monitoring plan, assumptions, calculations and claims are transparent and whether they conform to the MBM Specification and ISO 14083, and that the declared emissions are accurate.

In addition to a verification engagement on the data, involvement of an experienced VVB for an initial system assessment during setup is highly recommended to identify potential challenges early on (tip: if not ready for a "full" assessment, ask an auditor about "agreed-upon procedures" which helps identify gaps and prepare for more-complete engagements).

SFC's CAS requires a VVB to apply for approval before providing GHG emissions assurance. Obtaining SFC Approval for the MBM Specification scope is a two-stage process. First, the VVB needs to be approved for SFC's ISO 14083 scope. VVBs are only eligible for SFC approval if they are accredited under ISO 17029 for application of ISO 14065 for verification of GHG statements for the transport sector, by the relevant National Accreditation Body. Additionally, all individual verifiers need to successfully complete training and pass an exam for each scope: for ISO 14083 and subsequently, for the MBM Specification.

Emissions Reporters

The emissions reporter calculates and reports its GHG emissions in conformance with the MBM Specification, along with the traditionally-accounted-for supply chain emissions. The emissions reporter is responsible for the monitoring plan, assumptions, relevant calculations and claims, and for selecting and interacting with the chosen VVB. After the selected VVB completes the assessment, the VVB submits the “Assessment Opinion” to the emissions reporter as an output of the evaluation process. The emissions reporter, in turn, submits these to SFC who then lists the emissions reporter on its website.

Most emissions reporters engage a VVB to assess a component of their emissions reporting to ISO 14083 or the MBM Specification or a subset of B2B emissions reports. Few pursue assessment of full GHG emissions monitoring and reporting. An emissions reporter, such as P&G, determines the scope of their engagement together with its VVB and indicates the type of report for which it wants assurance:

- Organization GHG emissions inventory (or subset): such as an end-of-year or monthly corporate inventory.
- B2B transportation or hub services reporting (or subset): such as a specific set of booked-and-claimed transportation services for key clientele.

For more information and examples of how three organizations roll book and claim up into a corporate inventory—among other physical emissions accounting practices—see this SFC MBM blog post, [“Three Ways You Can Apply Book and Claim in GHG Emissions Inventories”](#).

5. Carrier’s role in conducting low emission cargo services and defining the chain of custody

Carriers are central to the transportation value chain. They operate assets and provide transportation—which is often organized through an LSP—that moves cargo on behalf of shippers. They are key communicators of decarbonized demand signals from the shipper and LSP to the low emission fuel provider. A broader carrier base communicating this demand signal is essential to advancing the development of low emission solutions.

However, the road freight carrier landscape is highly complex. A single LSP may work with thousands of subcontracted carriers in a given region. Many of these carriers operate only a few trucks at low margins. It is common for them to engage on a minimal basis, doing only what is required when a shipper asks, rather than proactively advancing their own decarbonization journey. This dynamic contributes to the “upstream partner” challenges seen in today’s road-carrier landscape.

Against this backdrop, Gruber Logistics intended to overcome these challenges and become the competent upstream partner to many shippers and support them in their decarbonization efforts. It intentionally developed its’ own capabilities in applying flexible chain-of-custody approaches that align with evolving market needs and reliably support their clients’ demand for decarbonized transport.

5.1 Practical application of a physical separation chain of custody model

It is important that carriers and LSPs work together to establish a transparent and reliable reporting system of transportation activity, GHG emissions, and define a more flexible system to match demand and offer of LETS. It is already challenging for most transportation stakeholders to account and report on a purely physical basis. A structured book and claim approach can help overcome these barriers.

When using physical separation¹⁴ chain of custody approaches, a direct link between the fuel source and the end-user is required, which is often impractical in the logistics industry. With multiple stakeholders involved, including carriers, LSPs, and refueling stations, tracing the low emission fuel molecule separately and physically becomes nearly impossible. Moreover, regulatory controls are typically weak at the refueling station level, making it difficult to ensure the actual use of alternative fuels.

Typical examples where physical separation models are in place and easier to trace is when a fueling station *only* offers sustainable fuels, without other fuels. Associated transportation services would likely be managed with owned trucks only to avoid subcontractor control issues. The trucks would only refuel in the mentioned fueling station to avoid mixing fuels in trucks’ tanks, and a shipper’s specific cargo would be deployed on these trucks. For this to be possible, the cargo owners must value and pay for such a dedicated service. Moreover, the carrier must also manage a system that is able to link fueling invoices, sustainability documentation, shipments, and trucks. Such use cases are almost impossible to find in the market today. In practice, physical separation remains largely theoretical and would require significant implementation and management resources to deploy at scale.

¹⁴ See footnote above for specific models referred to with the term “physical separation”.

5.2 A carrier's approach to book and claim application

Gruber Logistics recognized the potential of book and claim as a system to facilitate the demand and supply of sustainable fuels, as well as to enhance controls in the delivery of LETS via flexible chains of custody. While physical separation models are often considered the most certain approach, their practical application would be complex at scale, and costly, as noted above. In contrast, book and claim offers a more practical, traceable, and effective way to ensure the use of sustainable fuels.

As a logistics company operating both as a carrier and LSP, Gruber Logistics recognized the importance of adapting its approach to specific operational contexts. In some cases, it is practical to operate as a carrier with own trucks, while in other situations, it is possible to operate as the LSP, through third-party carriers. When it comes to chain of custody, a key distinction arises between carriers and LSPs. Carriers have direct control over fuel purchases, whereas LSPs must implement specific strategies to control their supply chain, such as providing fuel cards to their subcontractors. Despite other more flexible approaches, Gruber Logistics currently utilizes a book and claim model exclusively for low emission transport operations of its own trucks. This cautious approach stems from a desire to increase control and quality, and because of the limited availability of reliable models that enable LSPs to ensure chain of custody compliance among their subcontractors.

Gruber Logistics' approach is built on the following three key elements:

1. Direct control of fuel purchases and use of primary data: By purchasing fuel directly, Gruber Logistics ensures that it selects the most sustainable options and can assure declared quantities. By collecting and utilizing actual data from its own operations, the company can ensure the correct calculation of emissions and better sustainability results. This approach enables Gruber Logistics to accurately track and report its progress towards reducing road transport emissions, thereby maintaining the integrity of its sustainability claims.

2. External audits to ensure compliance: Gruber Logistics requires external audits to certify its methodology for calculating emissions is in line with GLEC Framework and ISO14083 (its internal tool is SFC GLEC-certified) and to verify the sustainability of the fuels it purchases. Fuel purchasing is controlled directly on invoices of refueling stations or fuel traders. Declarations of emissions data that are not connected to the invoice or refueling activity are not accepted.

3. Digital platform for traceability and transparency: Gruber Logistics uses a digital platform to document environmental attributes for customers, deducting the quantities of declared LETS. This system allows the company to avoid double counting and ensures transparency.

Gruber Logistics labels delivered services as book and claim as a way to enhance transparency of its market-based approach, standardizing the information and description provided to its clients while embracing a flexible chain of custody approach in its operations. The carrier also cautions against simple declarations without proof, lack of erroneous double-counting measures, or unfamiliarity with foundational methodology such as GLEC and ISO 14083, noting that integrity measures are key early in the sector's application of book and claim.

5.3 System integrity

Gruber Logistics maintains skepticism towards the application of book and claim where quantities are simply declared by carriers or by fuel providers or in cases where the emissions attributes of the LETS are directly sold to shippers without proof that the fuel has been used in the logistics chain to conduct real services.

Even in physical separation chain of custody models, stakeholders do still often report the low emission profile from biofuel use without basing reporting on standards such as the GLEC Framework and ISO 14083, or without clear invoice references and documentation to demonstrate the actual purchase and use of biofuels to generate transportation services by carriers. The use of primary data is crucial. By collecting and utilizing actual data from its operations, the company can ensure the correct calculation of emissions and better sustainability results. This approach enables Gruber Logistics to accurately track and report its progress towards reducing road transport emissions, thereby maintaining the integrity of its sustainability claims.

By adopting a practical and transparent approach to flexible chain of custody models such as book and claim, Gruber Logistics aims to address road transport emissions, ensure the integrity of its own sustainability claims, and support the shipper in its path towards decarbonized cargo services. By implementing the above approach, a carrier is able to more-efficiently respond to the needs of its customers, such as P&G, by providing the correct attributes upfront (complying with the shipper's SOP or reducing the need to develop and provide a SOP), securing the customer's claim, and working together to satisfy mutual emissions mitigation objectives.

6 Conclusions for carriers and shippers

Lessons abound in the practice of first-movers. When applied correctly, voluntary market-based approaches—such as book and claim—offer a credible, flexible and scalable decarbonization model for road transport, especially in complex logistics environments with less than perfect data.

By working through the complexity of these emerging processes now, organizations build familiarity and make future implementation easier and more repeatable. Over time, the landscape will also become simpler for new stakeholders. Additional tools—such as road and fuel registries—are becoming available, and market-based reporting practices will mature alongside increasingly harmonized accounting approaches as more organizations adopt ISO 14083 and utilize the SFC CAS to distinguish credible accounting and reporting.

Organizations can use the tools and structure provided in SFC’s MBM document family to design, implement, independently assess, and credibly communicate and account for their low emission transportation procurement and the associated decarbonization achieved. Case studies like P&G’s SOP and structured approach to low emission transportation procurement show that even in imperfect data environments, shippers can successfully procure and verify high quality LETS via book and claim. They can also verify reporting with VVBs such as Normec Verifavia. P&G’s SOP design and market-based approach offer a credible and replicable model to help overcome the “upstream partner problem” and engage with carriers, irrespective of their maturity. It enables more-structured collaboration with proactive road carriers such as Gruber Logistics as well, demonstrating key elements of the application of book and claim in real world implementation.

Book and claim enables broader participation in climate action and remains both credible and traceable. It also strengthens the fundamentals of accounting and reporting by elevating quality expectations across the transportation sector. Robust practices lead to reliable claims for all stakeholders. By working together, the road sector—and transportation as a whole—can move beyond its current fragmentation, address inconsistent data practices, and support carriers and logistics providers in building a collective, low emission delivery system.

Frameworks, standards, and monitoring plans form a critical foundation, yet tangible progress relies on coordinated efforts among shippers such as P&G, accredited third-party verifiers including Normec Verifavia, and biofuel-enabled carriers such as Gruber Logistics. Broader adoption of similar tools and sustained collaboration across the sector will be essential to realizing this vision for a decarbonized road freight sector.

7 Glossary

Acronym	Definition
CAS	Conformity Assessment Scheme
ER	Emissions Reporter
GHG	Greenhouse Gas
GLEC	Global Logistics Emissions Council
ISO	International Organization for Standardization
LETS	Low Emission Transportation Services
LSP	Logistics Service Provider
MBM	Market-Based Measures
PoC	Proof of Compliance
PoS	Proof of Sustainability
P&G	Procter & Gamble
SOP	Standard Operating Procedure
SFC	Smart Freight Centre
TOC	Transport Operation Category
VVB	Validation and Verification Body

For more information about the featured organizations:

SFC: [Market Based Measures \(MBM\) Program homepage](#)

P&G: [Environmental Sustainability | P&G](#)

Normec Verifavia: [Sustainability Services and Initiatives](#)

GRUBER Logistics: [Sustainable fuels | GRUBER Logistics S.p.A.](#)