Smart Freight Centre

June 2025

ANNUAL REPORT 2024

Driving Climate Action Across Global Logistics

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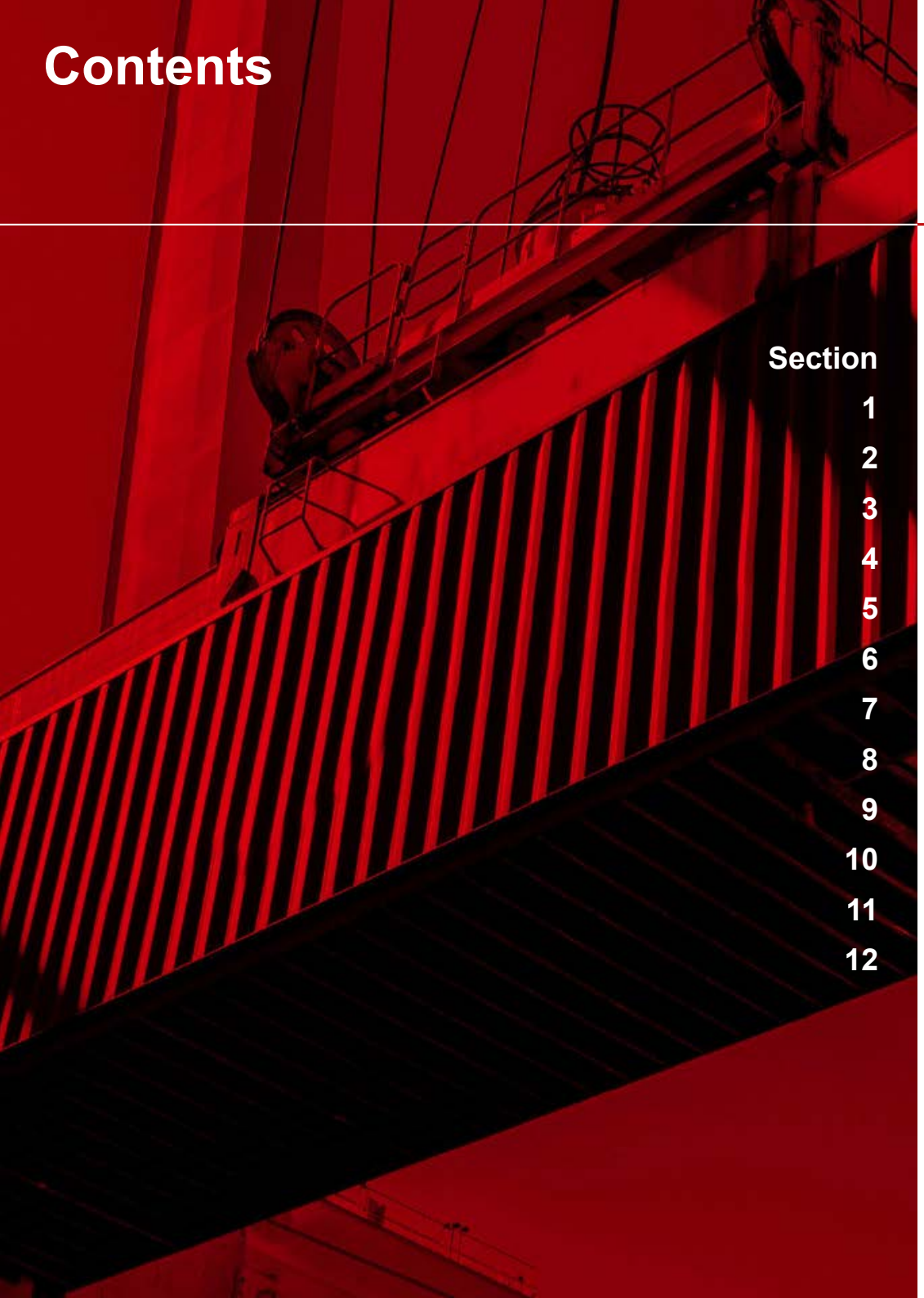


1 Introduction

Since early 2024, we all had to consider that 2024 could be a turning point for sustainability efforts at global scale. With geopolitical headwind now a reality, more industry leadership is needed to maintain and further strengthen Net-Zero commitments in logistics. At Smart Freight Centre (SFC), we are in close touch engaging with our nearly 200 members, supporting them in navigating this uncertain landscape. Together, we explore how to make a compelling business case for logistics decarbonization as a sensible business proposition, even when geopolitical signals point the other way.

At our 2025 Annual flagship event, Smart Freight Week, the resolve across our community, shippers, logistics service providers, carriers, public officials, and other stakeholders, was clear: despite headwinds, the commitment to sustainability remains strong. In response, we double down on our mission to move the sector from “signaling to signature” and from “intent to impact”.

We continue to make significant progress on three strategic priorities:

1. Primary data: We strengthened our emphasis on using primary data as the backbone of credible emissions reporting. Unlike modelled estimates, primary data offers a clearer, more nuanced picture of real-world progress. Our Methods, Standards & Assurance team continued its work refining how this data is gathered, verified, and applied.

2. Market-Based Measures: We advanced Book & Claim and other scalable mechanisms to accelerate the uptake of low-carbon freight solutions, particularly where infrastructure constraints limit direct decarbonization.

3. System change in road freight: We accelerated our efforts to zero emission fleets for medium- and long-haul trucking, recognizing that fleet electrification is central to net-zero pathways.

Smart Freight Centre continued to bring logistics decarbonization to key markets around the globe, further building momentum in driving logistics decarbonization in China and India. 2024 saw the launch of our Green Freight Support Program in Eastern Africa, with plans to become active in more geographies of critical size, and significant. These initiatives demonstrate that while the global landscape may shift, Smart Freight Centre remains steadfast in driving logistics decarbonization forward, globally, collaboratively, and credibly.

As we look ahead, we remain committed to turning challenges into opportunities, and ambition into measurable action.

Christoph Wolff,
Chief Executive Officer,
Smart Freight Centre

Christoph Wolff
Christoph Wolff has been the CEO of Smart Freight Centre since May 2022. Prior to SFC he was a member of the Executive Committee for the World Economic Forum, heading the Global Mobility platform that includes the Forum´s initiatives around sustainability and digitization in the supply chain, automotive, aviation and aerospace industry. Before, he was Managing Director of the European Climate Foundation 2014-18, following 16 years at McKinsey as a Senior Partner heading the global travel, logistics and infrastructure practice.

As Board member of DB Schenker, Christoph was responsible for the international growth and operations of the company’s rail division. He has been the CEO of companies in the renewable energy sector. A chemical engineer by training from Universities of Aachen and Zurich, Christoph is on the Board of several energy start-ups and Honorary Professor in Energy and Resource Economics at the University of Cologne and Visiting Professor at the HSG St. Gallen, teaching in Mobility and Sustainability.

2 At a Glance

"After over a decade of shaping global standards and driving practical change, Smart Freight Centre is stepping into a new era, one defined by catalyzing collaboration and accelerating impact. As the freight and logistics sector transforms, so do we, adapting our strategy to meet new challenges and mobilize the global logistics ecosystem."

Christoph Wolff Chief Executive Officer

Logistics industry

23%

According to the Intergovernmental Panel on Climate Change, the transport sector accounts for almost a quarter of global energy-related carbon dioxide (CO_2) emission (23%).[1]

The transport sector is facing a challenge in meeting increased demand while reducing carbon dioxide emissions.[2] As part of Smart Freight Centre's goal to achieve a zero-emission global logistics sector by 2050 or earlier, in accordance with 1.5° pathways, Smart Freight Centre has further strengthened its impact in 2024.

2024 Achievements

- **Establishing a Green Freight Support Program in Eastern Africa**
- **Celebrated 10 years of presence and impact with Smart Freight Centre China**
- **Convened a new maritime community (Global Ro-Ro Community)**
- **We (co)-launched 17 + publications [see page 22 of report] including. the "Procurement Playbook"**
- **Onboarded 51 new members growing to a total of 186.**
- **Certified 18 new calculation tools as reporting logistics GHG emissions against the industry standard**

Training

4 new self-paced courses

5 Custom Courses

+110 Companies trained

3 new live trainings

18 Educational Media Content Pieces

+300 Individuals

Read more in Chapter 7 on Smart Freight Centre Academy

People and culture

62 Total number of staff

27 Total number of nationalities

Split of gender

1. Intergovernmental Panel on Climate Change, [2022] 'Working Group III Contribution to the IPCC Sixth Assessment Report', Technical Summary p68 https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf accessed 28 May 2025.
2. International Transport Forum, [2023] 'ITF Transport Outlook 2023: Summary', p8 https://www.itf-oecd.org/sites/default/files/repositories/itf-transport-outlook-2023-summary-en.pdf accessed 28 May 2025.

3 Mission, Vision, Goal: How Smart Freight Centre Advances Global Transformation

> "The transport sector continues to grapple with the dual challenges of accommodating growing demand and achieving significant reductions in carbon emissions."
>
> **Rik Arends**, Senior Director, Smart Freight Centre

Smart Freight Centre is a globally active non-profit organization for climate action in the freight sector with the goal to mobilize the global logistics ecosystem, in particular its members and partners, in tracking and reducing its greenhouse gas emissions.

Smart Freight Centre accelerates the reduction of logistics emissions to achieve a zero-emission global logistics sector by 2050 or earlier, consistent with 1.5° pathways.

Our vision
A zero emission global logistics sector by 2050 or earlier, consistent with 1.5° pathways.

Our mission
To accelerate the reduction of logistics emissions by fostering collaboration within the global logistics ecosystem.

Our goal
Mobilize the global logistics ecosystem, in particular its members and partners, in tracking and reducing its greenhouse gas emissions to achieve 1.5° pathways.

Smart Freight Centre's Core Strategies

Facilitating emissions data exchange and establishing reference platforms at global scale to exchange emissions insights within and across transport modes, enabling low emission choices for shippers and tracking progress.

For example, through the ILEAP project that aims to automate peer-to-peer emissions data exchange across global supply chains.

Shaping and convening communities of logistics practitioners at regional, sectorial, and functional level to exchange best practices, engage in programs to jointly set up decarbonization pathways and support advocacy for zero carbon solutions and policies.

For example, the launch of the Green Freight Support Program in Eastern Africa.

Creating and scaling capacity building programs within the logistics ecosystem in partnerships, with a focus to spread implementation of standards, foster collaboration, and support impact.

For example, by expanding training of people and companies through the Smart Freight Centre Academy.

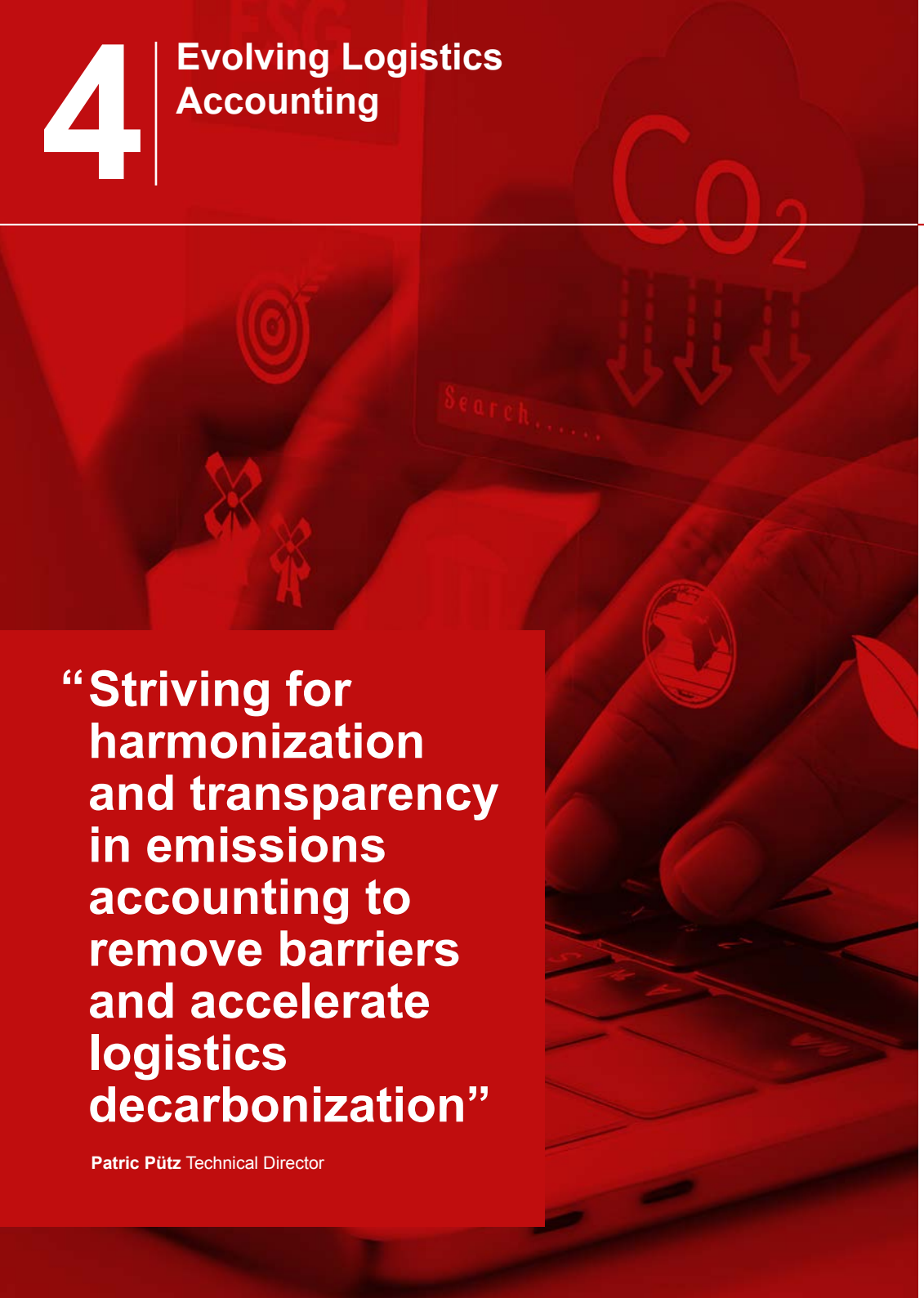
Shaping collaborative initiatives for action, focusing on high impact scalable decarbonization levers, that require joint action across the logistics ecosystem.

For example, through the Fleet Electrification Coalition I10, piloting long-haul electric trucking along the I-10 freight corridor to demonstrate feasibility, unlock investment, and catalyze scalable, zero-emission freight in North America.

Setting global standards for emission accounting in logistics and maintaining recognition as global authority to enable validation and impact/tracking.

For example, in 2024 the Auditable Market Based Measures Specification was introduced to enhance transparency and accountability in reporting of greenhouse gas (GHG) reductions.

4 Evolving Logistics Accounting



“Striving for harmonization and transparency in emissions accounting to remove barriers and accelerate logistics decarbonization”

Patric Pütz Technical Director

Logistics emissions accounting is the foundation for decarbonization strategies to achieve a zero-emission global logistics sector. The publication of ISO 14083 standard in 2023 set a solid cornerstone to standardize the calculation and reporting of GHG emissions.

On this basis, Smart Freight Centre is dedicated to continuous research, addressing weak spots and enhancing our guidance on emission calculation and accounting. Multiple publications were released in 2024 on this, including the Electric Freight Vehicle Reporting Whitepaper, Breakbulk Methodology, the China default Emission Value report, and the annual update of the GLEC Framework; GLEC FW v3.1. SFC also commenced two projects with research partners in 2024 to further strengthen our methodology – the Black Carbon Project to update the Short Lived Climate Pollutant methodology published back in 2017, and the CLEVER project that aims to provide accurate, consistent and scientifically robust emissions factors to foster transport emissions reduction.

On top of the project and methodology work, SFC is actively engaging with other non-profit organizations and standardization bodies for collaboration opportunities to help drive transparent emissions accounting and reporting in logistics. SFC is represented in two GHG Protocol Technical Working Groups to help develop standards on Scope 3 and Actions & Market Instruments. SFC is a strategic partner to SBTi, working closely in various projects and fosters a strategic partnership with CDP, based on a shared mission to advance logistics decarbonization.

Market Based Measures: Further defining the Market-based approach, Book and Claim, in transportation

The Smart Freight Centre Market Based Measures program is in its fifth year and expanded activities with a suite of efforts:

- Smart Freight Centre released the Market Based Measures Specification. This auditable version of the Market Based Measures Framework responds to demand for verification of market-based reporting in business-to-business reporting and end-of-year GHG inventories.
- To help scale market based practices as well as support Methods Standards & Assurance standards and guidance work, Smart Freight Centre launched an interpretation service to answer technical queries on its normative standards, leading to its first release in Q1 of 2025.
- Smart Freight Centre joined ISO Technical Committee 308 on 'Chain of Custody' which supports one new standard each on book and claim and mass balance.
- In 2024, SFC Academy offered an expanded training, launching a scalable eTraining and conducted the first "Book and Claim in Practice" training for in-person attendees.
- The Book and Claim Community continued into its second year with an expanded board and workplan. Summer publication of the Principles & Best Practices for Book and Claim in Heavy Transport was a sector-defining text.

Assurance: Conformity Assessment Scheme

In 2023, Smart Freight Centre launched its Conformity Assessment Scheme to promote credible and reliable sustainability reporting in logistics.

Throughout 2024, the organization continued to advance assurance efforts by publishing its first normative document, Market Based Measures Specification for Logistics Emissions Reporting. In addition to this, three new Verification Bodies were approved for certifying against the ISO 14083 scope. These are Müller-BBM Cert, SGS Tecnos, and Bureau Veritas Taiwan, joining the first approved verification body, Verifavia.

In 2024, Smart Freight Centre also expanded its conformity assessment scheme to cover additionally Market Based Measures. A pilot program involving seven stakeholders tested the Market Based Measures Specification, while ongoing training programs qualified verifiers for both ISO 14083 and the Market Based Measures Specification. Verifavia and Müller-BBM Cert applied under this additional framework in 2024 and were officially approved in 2025.

As an ISO liaison to Technical Committee 308, SFC actively contributed to the development of ISO 22095, a Chain of Custody standard covering Book and Claim and Mass Balance approaches, further strengthening the integrity of sustainability claims.

Primary data as a foundation

Smart Freight Centre continues to support its members in achieving ambitious climate targets through the Data and Digitalization Program, improving access to reliable data from all stakeholders in the supply chain.

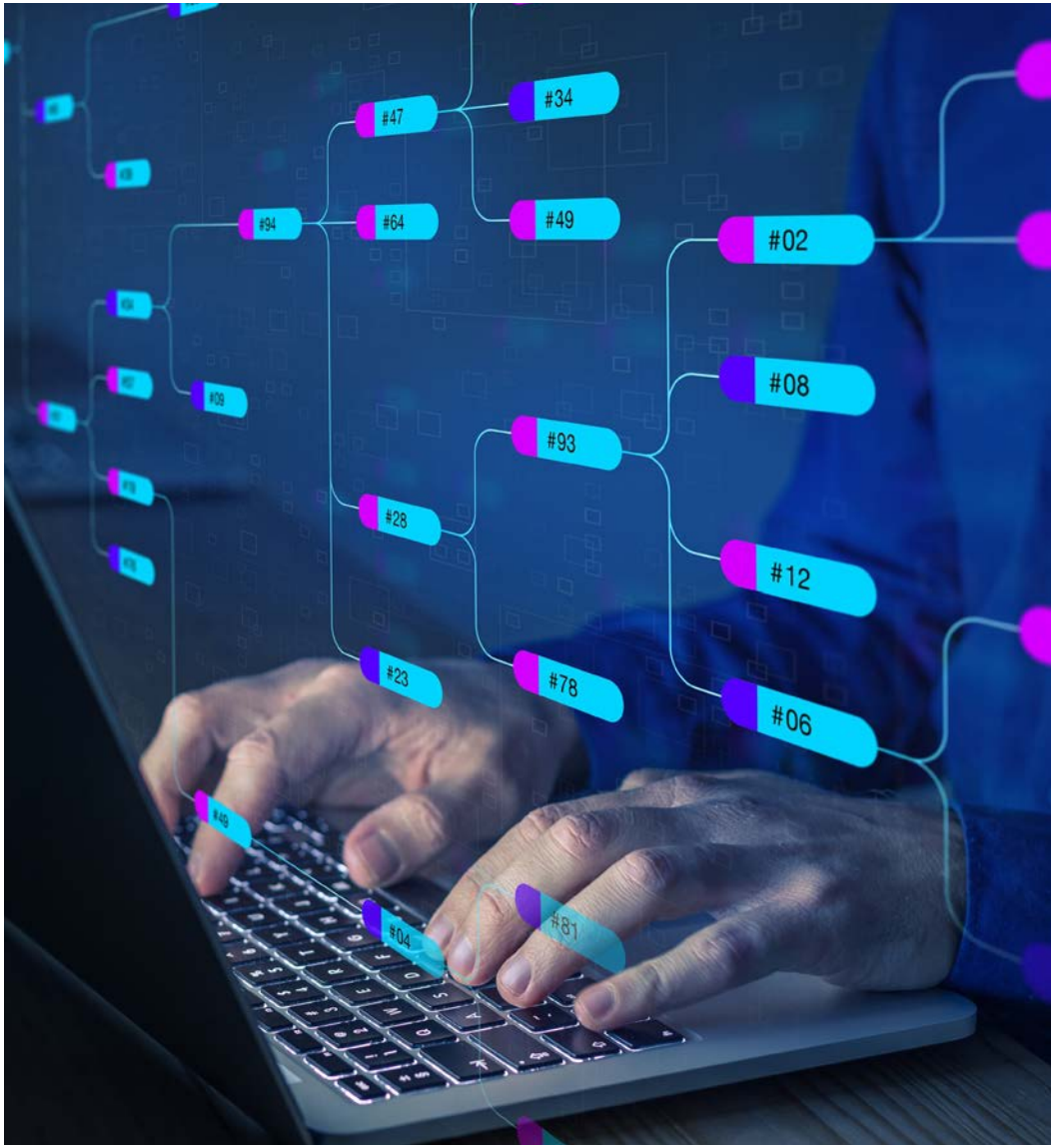
The SFC Exchange Network aimed to facilitate emissions data exchange between actors in the transport logistics sector based on principles of “dataspaces”: A network of actors for transparent and accurate data sharing is critical to overcome challenges like limited availability of primary data and barriers to accessing and exchanging logistics emissions data.

In 2024, the SFC Exchange Network continued to bridge the data gap to drive improvements in accurate carbon data exchange and subsequent carbon reduction. This included improved and enhanced data model validation rules, based on the 2024 version of the iLEAP data model, adapted to cater to specific use cases nominated by the project participants. The SFC Exchange Network Report was also launched, building upon a solid Proof of Concept foundation, showcasing scalability and ease of deployment of the custom Application Programming Interface (API) technology, and built on AWS technology.

iLEAP (Integrating Logistics Emissions and PCFs)

Smart Freight Centre and SINE Foundation are the joint sponsors and operators of the open source, iLEAP project. The iLEAP project aims to create emission transparency throughout the logistics supply chain by facilitating the exchange of logistics emissions data across the supply chain. The project builds and expands on the Product Carbon Footprint Data Model delivered by WBCSD’s PACT team. In 2024, iLEAP progressed towards establishing a global protocol for logistics emissions data exchange. A protocol means the combination of an application programming interface along with a detailed data model. As part of ongoing feasibility and interoperability testing, multiple companies contributed directly, supported by the development of an automated conformance testing tool to fast-track uptake and scalability. Participation grew to over 25 companies representing key roles across the logistics value chain, reflecting strong industry engagement and broad stakeholder interest. Content was also developed in collaboration with the SFC Academy to support training and knowledge-sharing activities.

As a result, three data transactions representing key business cases are proposed. This groundwork in the data model can be further validated as part of a potential “Road Telematics” initiative. This initiative aims to create a methodology guidance for using primary telematics data to calculate ISO14083 conformant emission intensity values.



5 Global Programs Decarbonizing the Freight Sector

Decarbonizing freight transport is critical in achieving the global goals of zero greenhouse gas emissions by 2050. At Smart Freight Centre, communities are conveyed through global and regional programs. These communities provide a space for members and partners to collaborate and find solutions which address the needs of their respective sectors, while developing ways to accelerate the decarbonization journey.

> **"Through our global programs, we collaborate with our members and partners to address the needs of their respective sectors in accelerating their decarbonization journey"**
>
> **Neha Tripathi**
> Senior Program Manager, Sustainable Freight Buyers Alliance

Global Logistics Emissions Council

At the heart of Smart Freight Centre is the GLEC Framework which is the foundation of all logistics emission calculation methods and newly released standards, including the ISO 14083 standard launched in early 2023. This follows the publication of GLEC Framework version 3.0 in 2023 which serves as an implementation guideline to support businesses in becoming ISO 14083 compliant. SFC updated the GLEC Framework to version 3.1 in October 2024 incorporating revisions from new versions of source information to update the Fuel Emission Factor and Emission Intensity values; inclusion of biogenic GHG emissions; incorporation of distance uplift factor, and new content regarding Electric Freight Vehicle Operations and Chinese default values.

In 2024 the GLEC program kept its 145 members informed on methodology and data updates, best practices and emerging projects from across the logistics emission accounting ecosystem. Members received quarterly newsletters, attended eight webinars and participated in workshops pertaining to the CLEVER project. Additionally, members were supported to implement and use the GLEC Framework through ad-hoc technical advice and training across beginner to advanced topics.

Decarbonizing the Maritime Sector

Smart Freight Centre launched Global Ro-Ro Community to tackle the decarbonization of deep-sea Ro-Ro (Roll-on roll-off) shipping for the finished vehicles sector and now convenes three maritime communities including Clean Cargo and the Ship Recycling Transparency Initiative.

Clean Cargo

"Clean Cargo" is a collaborative program between ocean container carriers, freight forwarders and cargo owners, focusing on tracking and reducing greenhouse gas emissions from ocean container shipping lines. Clean Cargo was founded more than 20 years ago and integrated into Smart Freight Centre in 2022.

The Maritime team expanded stakeholder engagement and knowledge sharing throughout the year, hosting nine webinar sessions on critical industry topics such as methanol as alternative fuel, global and regional maritime policies, Book and Claim systems, and green shipping corridors, etc. Further, two in-person events at Smart Freight Week in Amsterdam and the Fall meeting in Tokyo and two virtual member meetings were also organized. The Steering Committee was launched to co-steer the program.

In 2024, bi-annual reporting and port-to-port aggregation of GHG emission intensities for direct connections was implemented successfully. The Methods Committee approved a 3-year roadmap to streamline fuel types reporting and to introduce transport activity reporting in TEU-km and tonne-km.

Clean Cargo collected data from 18 ocean container carriers with almost 4,300 vessels, representing around 65% of the total container vessels at the end of 2024, to publish the Global Average GHG Emission Intensities report supporting transparent tracking of emissions of ocean containerized cargo transportation. In this, 18 Clean Cargo carriers reported, representing over 85% of global ocean container freight capacity. GHG intensity averaged 62.3 gCO2e/TEU-km for dry containers and 123.7 gCO2e/TEU-km for refrigerated, reflecting higher energy use for refrigerated cargo. These values assume 70% vessel capacity and include full fuel life-cycle emissions of all major greenhouse gases.

5 Global Programs Decarbonizing the Freight Sector

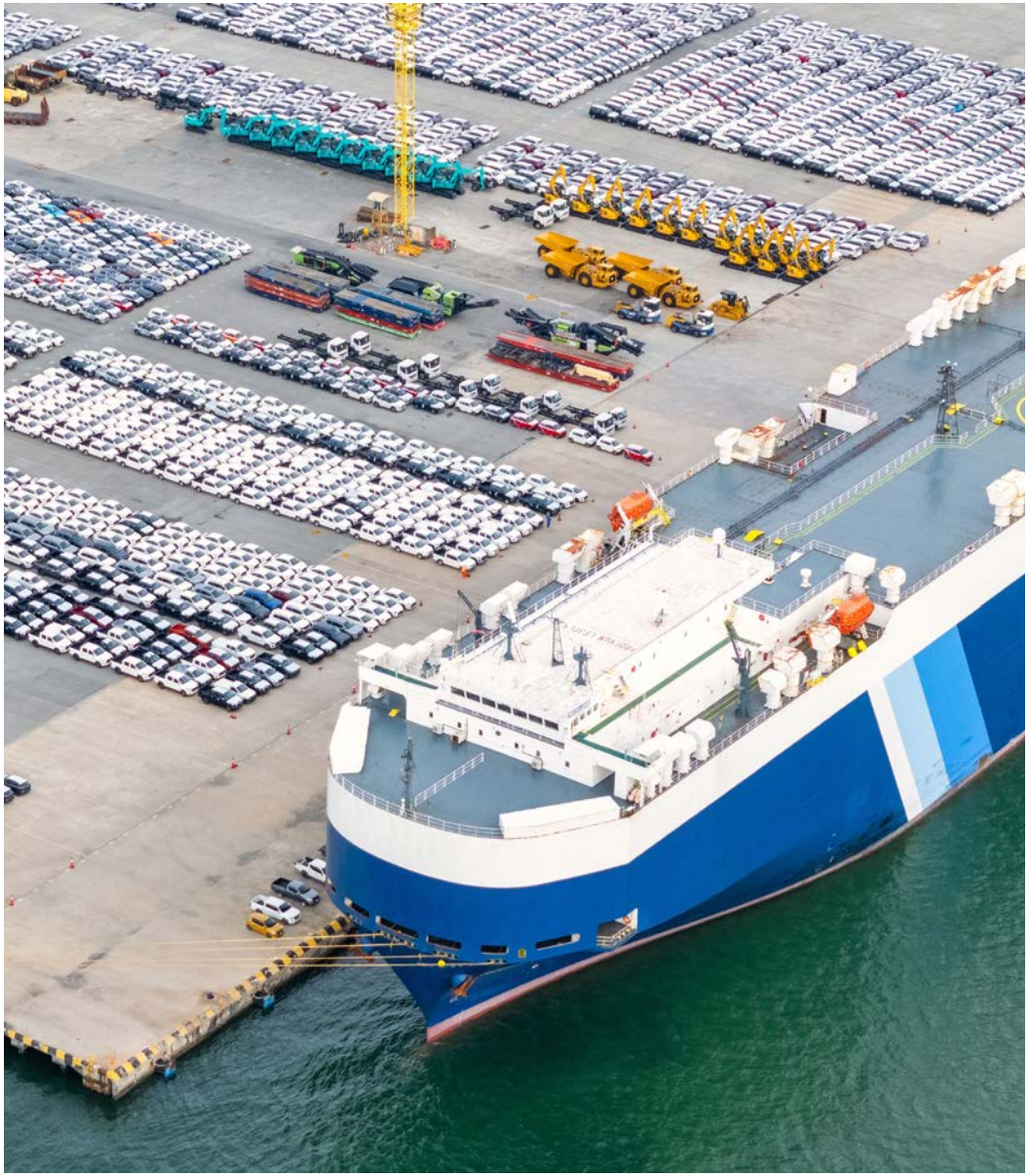
Ship Recycling Transparency Initiative

In 2024, the Ship Recycling Transparency Initiative (SRTI) strengthened its role as a catalyst for transparency and responsible ship recycling. Over the year, SRTI contributed as speaker to five major industry conferences, including the Economist World Ocean Summit and Tradewinds Ship Recycling Forum, and launched a webinar series with three episodes covering ship recycling salient topics. 2024 marked the first in-person meeting held in Copenhagen, where 22 signatories convened together. Membership increased to 26, with five new signatories including Petrobras, HFW, GSR, CalmOcean and Höegh Autoliners. Key developments included the launch of a bespoke data platform, a revised Disclosure Questionnaire, and updates to the governance model. SRTI also contributed to the broader sustainability agenda through collaborations with the India Green Steel Network and SteelZero, highlighting ship recycling's potential to support greener steelmaking.

Roll On – Roll Off

Smart Freight Centre launched the Global Ro-Ro Community at Smart Freight Week 2024 with an aim to establish an ISO 14083 / GLEC compliant global standard for scope 3 Greenhouse Gas (GHG) emissions accounting for deep-sea Ro-Ro shipping, by bringing together stakeholders involved in the transportation of finished vehicles by sea i.e. carriers (shipping lines) and shippers (vehicle manufacturers).

The Global Ro-Ro Community was launched with two carriers and a third-party verifier, who among other stakeholders took part in the kick-off meeting in April. In October, Global Ro-Ro Community members met in Tokyo at the Maritime Fall meeting, where high level principles of emission intensity calculation methodology were agreed upon by seven participating carriers.

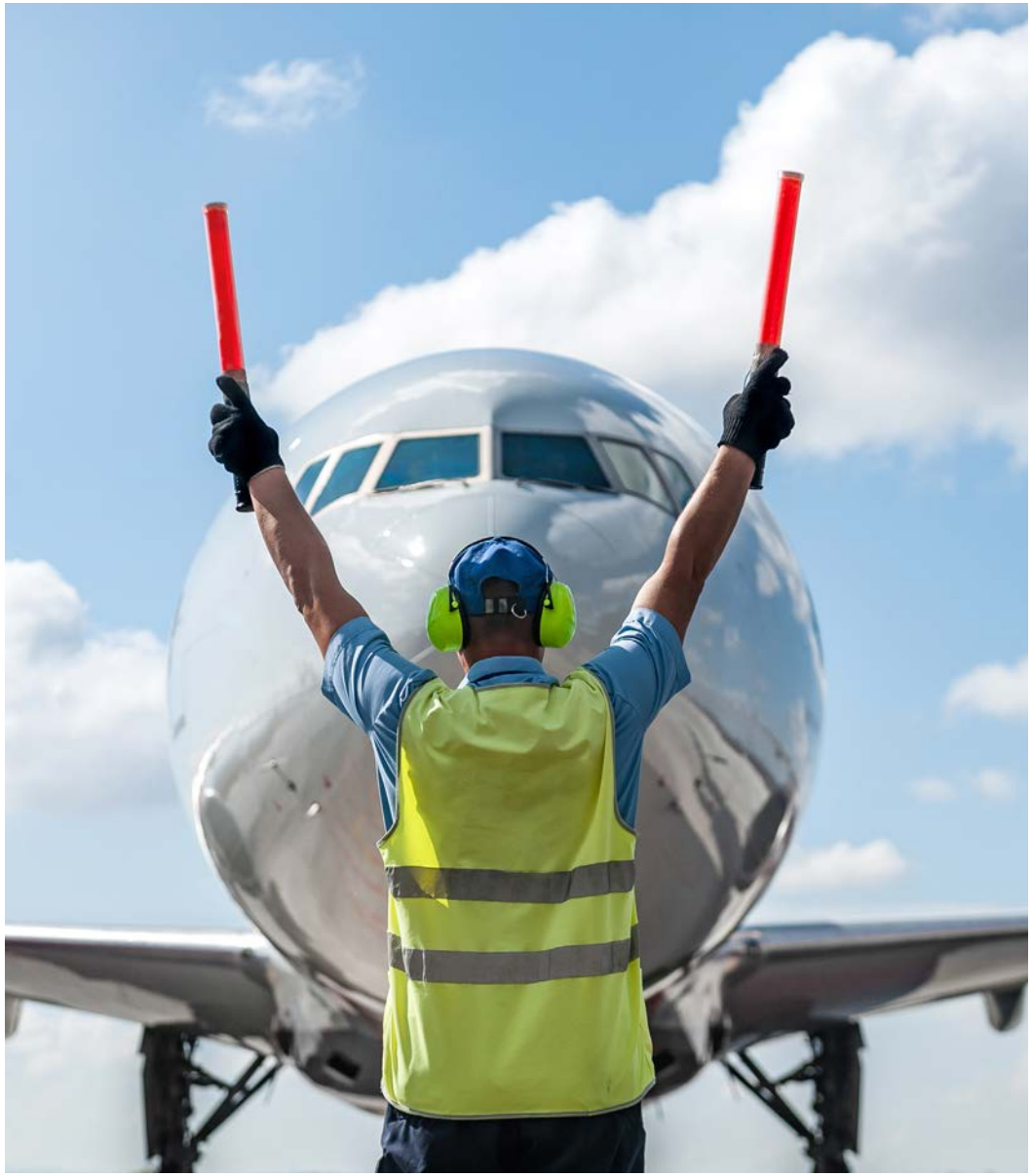


Decarbonizing Air Transport

Smart Freight Centre's Clean Air Transport Program continued to support the decarbonization of air transportation. In its second year of existence, the Clean Air Transport Program continued to drive progress toward the decarbonization of aviation. By the end of 2024, the program had doubled in size, reaching 82 members across the air transport value chain – including shippers, logistics providers, airlines, and fuel producers.

Building on the foundations laid in 2023, the program successfully carried out its first Airline ESG Survey under the Smart Freight Centre umbrella. Sixteen airlines participated, aiming to streamline reporting efforts across the aviation transport chain. The survey found that most airlines emphasize achieving net-zero emissions by 2050, with many aligning their plans with international frameworks such as IATA's Four-Pillar Strategy, the Paris Agreement, or the UN Sustainable Development Goals. Overall, while the commitment to decarbonization and sustainable operations is a common theme, airlines vary in their emphasis on governance, social responsibility, investment strategies, and specific environmental initiatives.
The results informed a public Benchmarking Report authored by Clean Air Transport, supporting greater transparency and accountability in airline sustainability performance.

The Clean Air Transport methodology workstream made strong progress, with active sub-groups addressing key technical issues. Notably, the Book & Claim sub-group completed in December 2024, a guideline on accounting along European legislation (ReFuelEU Aviation) was released. Collaboration with IATA, focusing efforts on developing the cargo component of IATA's CO2 Connect Platform, and the broader aviation community remained a central focus, reinforcing Clean Air Transport's role as a trusted platform for industry alignment on credible emissions accounting and SAF implementation.



Electrifying Road Freight

Truck electrification is a key strategy to decarbonize logistics, reducing emissions by over 90% compared to diesel. With more than 300 electric truck models now available and policy momentum building, zero-emission trucks are expected to reach cost parity across most applications by decade's end. However, challenges remain, including high upfront costs, limited charging infrastructure, and financing hurdles.
To tackle this, Smart Freight Centre's Fleet Electrification Coalition (FEC) unites shippers and fleet owners to large-scale electric truck deployment through demand aggregation across shippers. Fleet Electrification Coalition's goal: 30% zero-emission truck sales by 2030 and 100% by 2040 globally. In 2024 FEC advanced key initiatives:

- **Demand Aggregation** through new consortiums in the U.S. Interstate 10 (I-10), Industry, Poland Corridors, and drayage operations out of the Port of Rotterdam to accelerate the electrification of corridor operations.
- **Joint Procurement** via a buyers alliance with the Center for Green Market Activation.
- **Policy Engagement** supporting EU HDV CO2 standards alongside NGO partners, bringing together transport companies, shippers and stakeholders to urge Members of the European Parliament to support CO2 emission standards for heavy-duty vehicles.
- **Charging Infrastructure** with a shared infrastructure working group and concept note.
- **Finance** with a co-published report on the viability of zero-emission vehicle investment needs by BloomBergNEF in partnership with the Dutch Ministry of Infrastructure and Water Management.
- **Knowledge Services** to scale up tools, guidance, and training to carriers and logistics stakeholders on road freight electrification In 2024, the FEC Knowledge Services was launched to streamline the electrification journey.

Sustainable Freight Buyers Alliance

Sustainable Freight Buyers Alliance (SFBA) unites corporate freight buyers to shift towards zero-emissions freight across all modes of transport in collaboration with their supply chains and partners.

In 2024, Sustainable Freight Buyers Alliance made significant strides in advancing zero-emission logistics through targeted initiatives and publications. Following an extensive dialogue with companies, Sustainable Freight Buyers Alliance released together with Implement Consulting the Procurement Playbook Toward Zero Emissions Logistics Services guiding organizations on embedding sustainability in freight procurement and launch of the required trainings for procurement professionals. SFBA introduced a whitepaper for a fresh perspective on collaboration in the industry SFBA co-published 'Net Zero Logistics Delivered' report with AllChiefs and Erasmus University, sharing 25+ case studies on how companies are working towards zero emission logistics.

At Smart Freight Week 2024, Sustainable Freight Buyers Alliance hosted the first edition of Spotlight on Innovation, showcasing cutting-edge innovations and laid the foundation for advancing the Innovation and Solution track. SFBA established new strategic partnerships with Solar Impulse Foundation, D2XCEL, SET, and ETP-ALICE, and curating a pool of innovative logistics decarbonization solutions.

SFBA expanded membership to 69 premium members and supported member engagement through supply chain interviews, strategic consultations, member meetings/ webinars, as well as initiated the work on high-impact engagement efforts including member feedback survey, account management program.

SFBA initiated and convened multiple sessions to kickstart the finance workstream, exploring innovative financing mechanisms for zero-emission logistics.

6 Regional Progress: Pathways to Zero Emissions

“In 2024, we expanded our regional communities in China and India. We also officially launched the Green Freight Support Program in Eastern Africa to further advance emissions transparency.”

Boyong Wang Director, SFC China

Decarbonizing Freight in India

2024 was a pivotal year for Smart Freight Centre India (SFC India), as it launched a series of initiatives focused on decarbonizing the region’s freight sector. Through collaboration, data, and policy engagement, SFC India worked to lay the groundwork for a cleaner, more efficient logistics ecosystem.

A major step forward was the launch of the Data Partnership Program to shape strategies for charging infrastructure and financing, turning the vision for zero-emission trucks (ZETs) into tangible investment opportunities. This program brought together 20 logistics companies and shippers to share their operational data and evaluate the feasibility for electric truck deployments.

SFC India also helped lead the development of an India-specific emission intensity factor for Road and Rail, working alongside the TCI-IIMB Supply Chain Sustainability Lab, TERI, and the Shakti Foundation. This framework will support consistent, credible tracking of freight emissions nationwide.

Another key achievement was the launch of a new Zero Emission Truck Tool Suite, developed with CoEZET at IIT Madras. The set of tools, which are focused on total cost of ownership, solution design, and range estimation, are designed to support companies in evaluating and planning zero emission truck deployments.

Financing remains a critical barrier, and in response, SFC India partnered with SIDBI to create a Risk Sharing Facility. Unveiled at Smart Freight Week 2024, the program offers partial credit guarantees to support the deployment of up to 2,000 electric trucks.

Throughout the year, SFC India also supported policy analysis with the PSA Office, contributed to Karnataka’s ZET-focused logistics framework, and ran a nationwide awareness campaign under the e-FAST initiative.

Building on this momentum, SFC India was nominated to the Ministry of Heavy Industries’ Task Force, where it is contributing to the development of a national roadmap for the e-truck ecosystem under the Viksit Bharat 2047 vision.

Decarbonizing Freight in China

After a decade of collaboration with China's freight and logistics industry, Smart Freight Centre China (SFC China) is a recognized leader in advancing zero-emission and efficient freight.

Through the Zero Emissions Freight Initiative and Smart Freight Shippers Alliance SFC China strengthened industry collaboration. Quarterly workshops covered environmental protection, fiscal policies, hydrogen cost reduction, and green finance, supporting the transition to zero-emission heavy-duty trucks. At the 2024 World New Energy Vehicle Congress, SFC hosted the Zero Emission Medium and Heavy-Duty Commercial Vehicles Forum, encouraging global knowledge exchange between China, Europe, and the U.S.

SFC China also led two flagship projects: the Shenzhen-Dongguan-Huizhou Heavy-duty Trucks Electrification Demonstration Project and the Beijing-Tianjin-Hebei Zero Emissions Freight Corridor, bringing together key enablers and stakeholders to accelerate adoption of zero-emission freight vehicles in China.

By 2024, SFC China's Zero Emission Freight Initiative (ZEFI) had grown to 78 formal members, including 20 steering committee members. ZEFI partners deployed 83,000 electric heavy-duty trucks and built 1,100 battery swap stations. Within the Beijing-Tianjin-Hebei corridor, an additional 400 electric trucks were deployed.

To support consistent freight emissions tracking, SFC China introduced the GLEC Framework and ISO 14083 to the local market and contributed to national standards such as the Evaluation Index for Green Logistics and GHG Emissions Accounting Requirements for Logistics Enterprises.

Smart Freight Shippers Alliance (SFSA) united shippers to increase demand for smart freight services. In 2024, it organized four Smart Freight Forums and brought in 20 new shippers and 200 logistics providers, advancing emissions reporting, low-carbon practices, and smart freight advocacy.

SFC China also developed a comprehensive training curriculum, laying the groundwork for the SFC China Academy. Supported by the Trafigura Foundation, World Bank, and Chinese Ministry of Transport, the training program ran from January 2023 to December 2024.

A market survey identified capability gaps in the industry. In response, SFC enhanced the Sustainable Logistics Roadmap training and developed updated GLEC training aligned with GLEC 3.0 and ISO 14083. Together, these programs trained 193 senior managers from major logistics companies.

A dedicated delivery system now embeds the training into SFC's initiatives and China's national training system, ensuring long-term industry capacity building.

Decarbonizing Freight in Eastern Africa

After a year of consultative stakeholder scoping study, The Green Freight Support Program in Eastern Africa officially launched by Smart Freight Centre and the Kuehne Climate Center in August 2024 at the Global Logistics Convention in Dar es Salaam, Tanzania.

The main aim of the Green Freight Support Program in Eastern Africa is to achieve efficient, low emissions, safe and inclusive freight supporting and partnering with The Northern Corridor Transit and Transport Coordination Authority of Eastern Africa and The Central Corridor Transit Transport Facilitation Agency. This is done by focusing on five anchor areas--ecosystem establishment, capacity development, emissions transparency, fleet efficiency, and the introduction of electric trucks to showcase the viability of zero emission trucks in Eastern Africa.

Throughout the past year, the program made substantial progress through an action-oriented network strengthening industry partnerships and fostering collaboration among logistics associations, shippers, and regional actors. Moreover, the team has initiated solid foundation in galvanizing the GLEC Framework as the recognized, standard methodology and launching a scoping study for the development of Eastern Africa specific emission intensity values and identification of fuel emission factors. Further, capacity building activities have been far-reaching and significant with workshops across Kenya, Tanzania and Uganda under the thematic focus of logistics emission accounting principles, data exploration and standardization mean, and raising awareness around sustainable logistics and freight. Lastly, the groundwork for electric truck deployment including a pilot program and feasibility studies is ongoing and underway.

Moving forward, the Green Freight Support Program in Eastern Africa will continue to refine its approach, scale pilot programs, and deepen its engagement with key actors to accelerate the transition toward a zero-emission, safe, and efficient freight ecosystem in Eastern Africa.

7 Academy - Educating Towards Zero Emissions

“Gain industry-leading insights and drive change in decarbonizing the logistics industry”

Andy Golding Head, SFC Academy

The Smart Freight Centre Academy is the knowledge and education hub of Smart Freight Centre.

2024 saw the successful rollout of the revamped Develop Your Sustainable Logistics Roadmap training and the GLEC & ISO 14083 Calculation Workshop. Three new live training programs were introduced and run in the later part of the year: Book and Claim in Practice, Aviation Emission Calculation in Practice and Road Freight Electrification in Practice.

Additionally, over the course of the year a suite of new self-paced eLearning was launched, including the following courses: Introduction to the GLEC Framework (updated), Introduction to Book and Claim, Introduction to Sustainable Logistics Procurement, and Introduction to Road Freight Electrification.

Smart Freight Centre Academy

The Educational Media initiative from the SFC Academy was introduced, whereby we create and share ‘snackable’ learning content in the form of podcasts, articles, infographics, videos, and e-books. All educational media content is freely accessible to the general public.
The first ‘custom training’ from the SFC Academy was also rolled out, whereby ‘fit-for-purpose’ training is created to suit the unique learning and education needs of an organization. The SFC Academy worked on a number of custom courses covering a variety of topics. The custom training offering has been greeted with enthusiasm from members and the SFC community.

Plans for the continued growth of the SFC Academy include further expanding the course catalog and custom training offering while continuing to develop meaningful education media content.

8 Events and Engagements 2024

"Each gathering strengthens a global community committed to transforming freight. Through these shared spaces, we turn ambition into alignment, and alignment into action"

Ellen Luning Event Manager

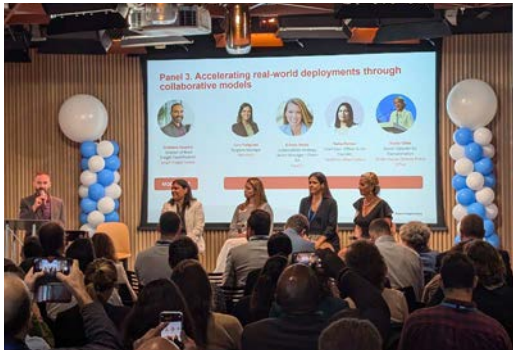
In 2024, Smart Freight Centre strengthened its position as a leading voice in the sustainable freight sector through expanded communications and stakeholder engagement to further build its reputation as a trusted partner and raise awareness. Our digital presence grew substantially, supported by increased website traffic, social media reach, and newsletter engagement.

Smart Freight Week 2024, Amsterdam (April 2024) Reflecting our continued growth, this year's Smart Freight Week, held April 23 - April 25, brought together 600 + attendees for more than 60 engaging sessions and emphasized the urgent need for collaboration, innovation, and bold commitments to achieve net-zero logistics.

Smart Freight Fall meeting, Chicago U.S. (October 2024) We hosted our second Smart Freight Fall Meeting October 22 -24 2024, this year co-hosted by our valued member C.H. Robinson in Chicago. Nearly 160 members and partners attended this successful edition, discussing a range of topics, including aviation decarbonization, fleet electrification, and book and claim.

Maritime Fall Meeting (October 2024)

For two of our maritime programs, container and roll-on/roll-off shipping, a meeting was hosted in Tokyo, Japan, from October 17 - October 18, providing APAC members with a great opportunity to come together for an in-person event. The covered topics included program updates, Book & Claim workshops, and included presentations by members and external speakers on shipping and sustainability insights.



NYC Climate Week (September 2024)

Between September 22-29 Smart Freight Centre participated in Climate Week NYC and hosted several sessions including a High Level CEO Roundtable jointly with the World Business Council for Sustainable Development (WBCSD).Fleet Electrification Coalition co-hosted “Road to Action”—towards Accelerated Truck Electrification, with Amazon where the role of truck electrification in decarbonizing road freight globally was discussed. SFC launched a new report, highlighting the viability of investment in Zero-Emission Commercial Vehicles, published by BloombergNEF in partnership with SFC and the Dutch Ministry of Infrastructure and Water Management. Next to this, SFC co-hosted the Book and Claim Community’s “Community Table” dinner event, as well as focused sessions on registry interoperability and accounting and reporting.

29th Session of the Conference of the Parties (November 2024)

COP29 was held in Baku, Azerbaijan between 11-22 November 2024. At COP29, Smart Freight Centre actively participated in key sessions including the “Finance Day Implementation Lab,” event, addressing how insurance can de-risk climate solutions and support zero-emission vehicle goals.

SFC also engaged in “Decarbonization Agenda for Businesses – Challenges and Practical Solutions,” hosted by SGS, supporting alignment of ESG strategies with net-zero targets, and co-hosted “Implementing Zero Emission Transport through Policy and Finance” alongside CALSTART, ICCT, the

World Business Council for Sustainable Development, and the governments of the Netherlands and the United Kingdom.

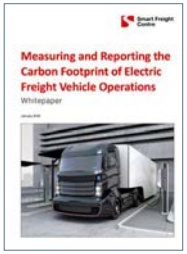
Smart Freight Centre supported the Call to Action: Green Hydrogen and Green Shipping launch, endorsing the ITA open letter and showcased the impact of SFC’s Fleet Electrification Coalition. These engagements reinforced SFC’s commitment to enabling systemic change towards a low-carbon future

9 Publications and Releases

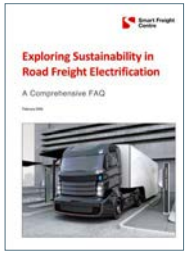
> “Actively sharing, advocating and publishing news and knowledge with our external stakeholders”

Megan de Langen
Senior Communications Manager

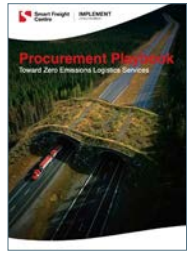
Smart Freight Centre offers a broad range of publications that support sustainable freight management and help companies decarbonize their logistics operations. This section highlights key documents released in 2024 that advance sustainable freight practices. Available for download through the Smart Freight Centre Library, these resources are essential guidance designed to inform, support, and engage stakeholders on their journey toward logistics decarbonization.



January 2024
Measuring and Reporting the Carbon Footprint of Electric Freight Vehicle Operations Whitepaper
Electric trucks / Emissions accounting

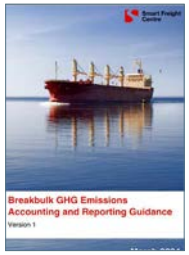


February 2024
Exploring Sustainability in Road Freight Electrification, A Comprehensive FAQ
Electric trucks / Global



March 2024
Smart Freight Centre, Implement Consulting Group, Procurement Playbook Toward Zero Emissions Logistics Services
Procurement / All modes / Global

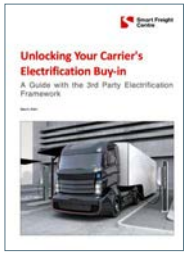
9 Publications and Releases



March 2024

Breakbulk GHG Emissions Accounting and Reporting Guidance, Version

Maritime / Emissions accounting / Global



March 2024

Unlocking Your Carrier's Electrification Buy-in A Guide with the 3rd Party Electrification Framework

Procurement / Road freight electrification / Global

April 2024

SFC Exchange Network Stable Release 1.0 Report

Emissions accounting / All modes / Global

May 2024

GLEC Framework for Logistics Emissions Accounting and Reporting version 3.0 - Chinese

Emissions accounting / All modes / Global

June 2024

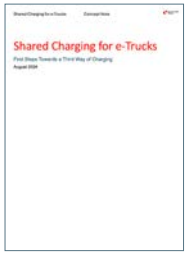
China Default GHG Emission Values V1.0– Complementing GLEC Framework v3.0 A brief description of China's transport-related emission factors and GHG emission intensity values

Emissions accounting / All modes / China

June 2024

Smart Freight Centre India, summary report seminar cum workshop - accelerating low emission logistics in india

Road freight electrification / Asia



August 2024

Shared Charging for e-Trucks First Steps Towards a Third Way of Charging

Road freight electrification / Global

September 2024

Zero-Emission Commercial Vehicles The Time Is Now, A factbook for investors

Road freight electrification / Global

September 2024

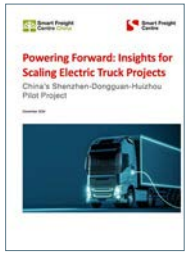
Validation and Verification of GHG emissions statements for transport chains – ISO 14083

Assurance / emissions accounting / Global

October 2024

Market Based Measures Specification for Logistics Emissions Reporting

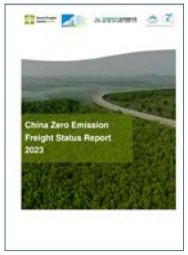
Assurance / Emissions accounting / Global



December 2024

Powering Forward: Insights for Scaling Electric Truck Projects China's Shenzhen-Dongguan-Huizhou Pilot Project

Road freight electrification / China



December 2024

China Zero Emission Freight Status Report 2023

Global / Road freight electrification

December 2024

Net Zero Logistics Delivered

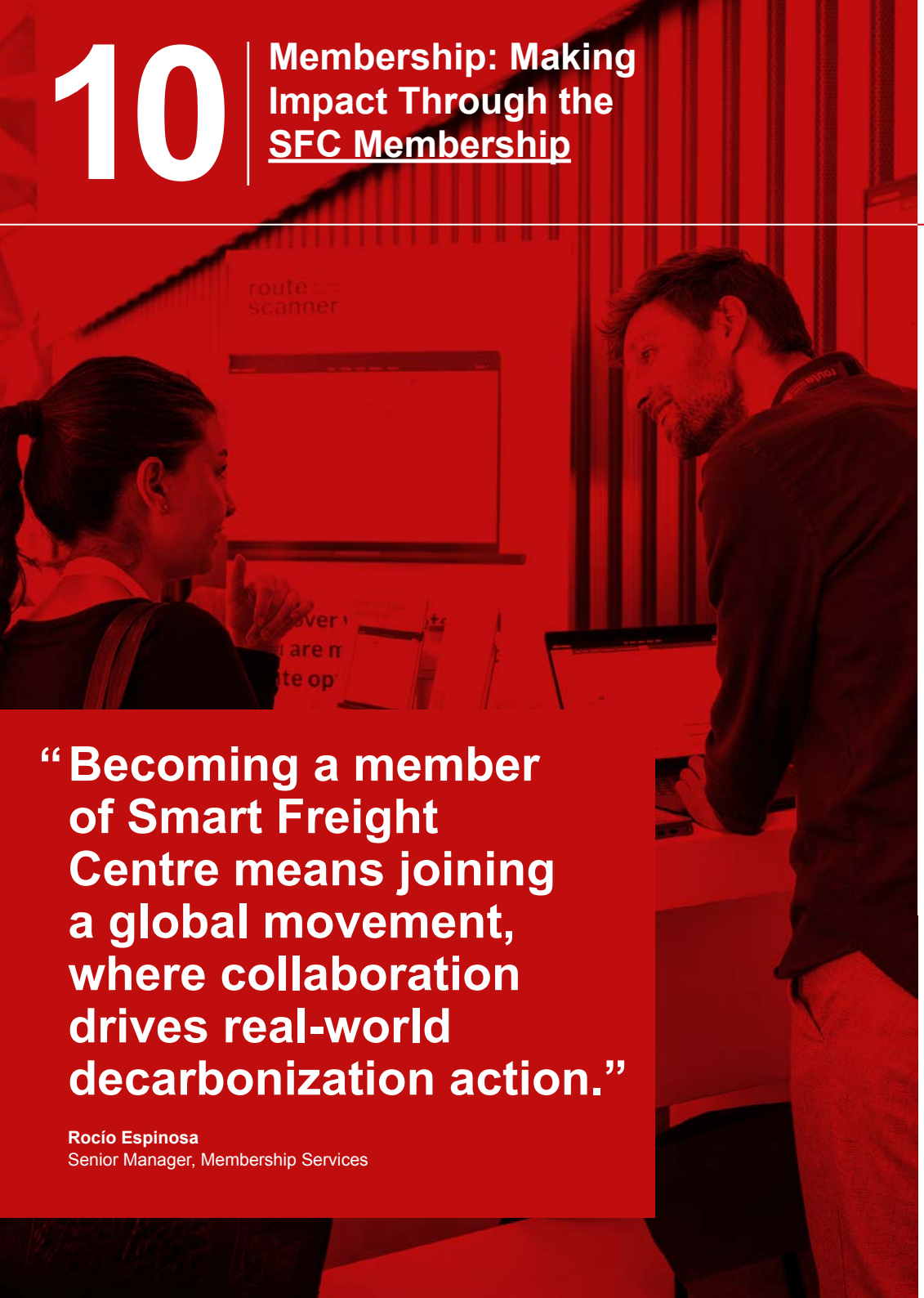
Global / All modes

October 2024

GLEC Framework v 3.1

Emissions accounting / All modes / Global

10 Membership: Making Impact Through the SFC Membership



> "Becoming a member of Smart Freight Centre means joining a global movement, where collaboration drives real-world decarbonization action."

Rocío Espinosa
Senior Manager, Membership Services

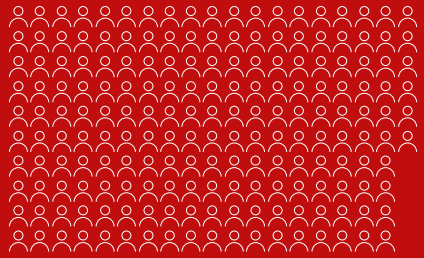
SFC members are united by a shared commitment to accelerate freight decarbonization and transform global logistics. Through the SFC membership, organizations join a global community, with access to a wide portfolio of programs and initiatives that foster collaboration, enhance GHG emission performance and promote knowledge sharing to accelerate the adoption of decarbonization solutions, including:

- Emissions Accounting via the Global Logistics Emission Council,
- Mode specific, including Maritime (Clean Cargo and the Global Ro-Ro Community), Air (Clean Air Transport) and Road (Fleet Electrification Coalition)
- Freight Buyers engagement through the Sustainable Freight Buyers Alliance.

Smart Freight Centre offers a two-tiered membership structure: Premium and Base.

- Premium Members have access to Sustainable Freight Buyers Alliance, Fleet Electrification Coalition
- Base Members have access to the GLEC, Clean Cargo, Global Ro-Ro Community and Clean Air Transport programs.

The programs per base and premium membership

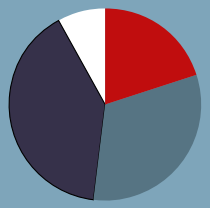


186
Total Members

An increase of **51 members** from 2023 to 2024

117
Base Members

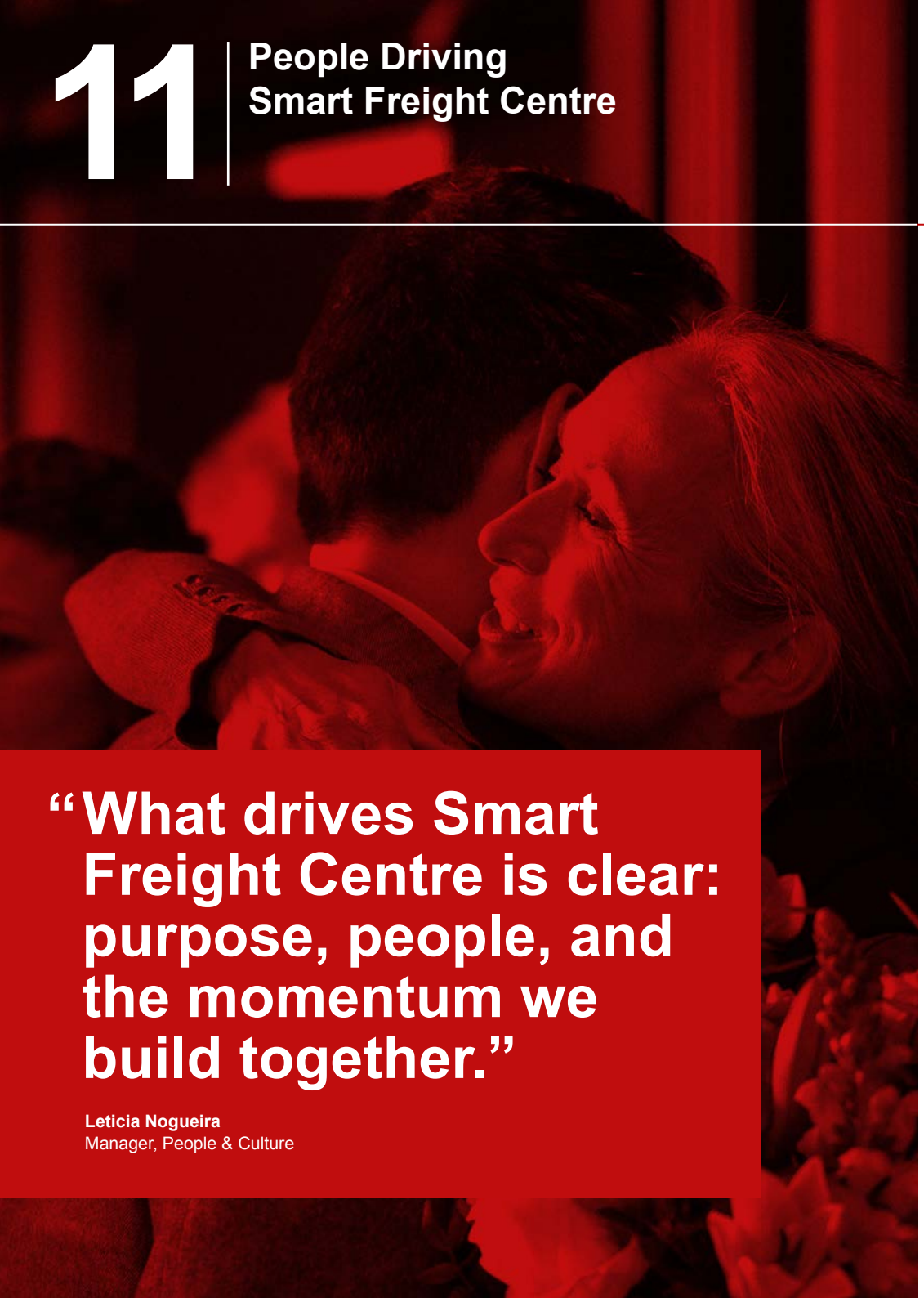
69
Premium Members



Representatives 2024 Membership

- **Carriers** 20%
- **LSPs** 32%
- **Shippers** 40%
- **Others** 8%

11 People Driving Smart Freight Centre



“What drives Smart Freight Centre is clear: purpose, people, and the momentum we build together.”

Leticia Nogueira
Manager, People & Culture

Where People Power the Mission

In 2024, we welcomed 16 new colleagues and continued investing in what matters most: our people. The People & Culture function became more than a support system; it became a driving force. From leadership development to team well-being, we built a workplace where people feel empowered, connected, and ready to grow. Because when our people thrive, so does our mission.

Looking Ahead

As Smart Freight Centre continues to evolve, the focus remains on building a culture that not only supports employees but also empowers them to reach their full potential. By investing in people and embracing diversity, equality and inclusion principles, Smart Freight Centre is shaped into a more dynamic and resilient organization but also contributes to a better, more inclusive future for all.

Building a More Inclusive Workplace

Diversity, equity, and inclusion are not separate from our work. They are part of how we lead, hire, and grow. In 2024, our team reached 62 employees, representing 27 nationalities and working from 8 different countries. We are proud to be 63% women and 37% men. These numbers reflect a team built on difference, collaboration, and equity. Because at Smart Freight Centre, we know that diversity fuels better thinking and stronger outcomes.

Management Team and Board

Smart Freight Centre was pleased to welcome Dick Benschop, Former President and CEO at Royal Schiphol Group to its Board of Directors in 2024, further strengthening the Board’s strategic leadership. Dick’s appointment supports the organization’s continued efforts to drive collaboration and innovation toward zero-emissions freight.

Management Team

Rik Arends
Senior Director

Mirjam Botman
Operations Director

Cristiano Façanha
Director, Road Freight Electrification

Patric Pütz
Technical Director

Andrea Schoen
Program Director, Clean Cargo and Clean Air Transport

Claire Skudder
Director, People & Culture

Boyong Wang
Director, SFC China

Christoph Wolff
Chief Executive Officer

Board of Directors

Dick Benschop
Former President & CEO at Royal Schipol Group

Ann Lee Carpenter
CEO and Co-Founder of Braid Theory

Sophie Punte
Founder,
Smart Freight Centre

Jose Viegas
Chairman of the environment and sustainability board at EDP, and former secretary-general of the international transport forum at the OECD

Jiangyan Wang
Executive Director of the China Sustainable Transportation Center, China

Adrian Weiler
(Chairman), CEP, Inform Germany

Christoph Wolff
CEO,
Smart Freight Centre

12 Financial Summary

> “Transparency and accountability are at the core of how we manage funds, ensuring every contribution supports our mission and drives measurable impact.”
>
> **Mirjam Botman** Operations Director

Stichting Smart Freight Centre (SFC) was established in 2013 as a global non-profit organization dedicated to a zero-emissions global freight and logistics sector. SFC is registered in The Netherlands as a foundation, recognized as a Dutch Public Benefit Organization and is certified as an equivalent to a US public charity.

To allow operation in China, SFC established Smart Freight Centre Asia Ltd, registered in Hong Kong, and Smart Freight Centre China as a Wholly Fully-Owned Enterprise, registered in Beijing. In 2021 SFC established Smart Freight Centre BV to split off the commercial activities of the organization. In 2024, SFC initiated the process to expand and set up a registered entity in India.

12 Financial Summary

Consolidated Balance Sheet

in €	31 December 2024		31 December 2023	
Assets				
Fixed assets				
Fixed assets		197,211		125,849
Tangible fixed assets (equipment)		48,707		55,322
Financial assets		110,376		81,089
Current assents				
Accounts receivable	407,953		397,765	
Taxes and social security charges	5,820		2,009	
Other receivables (prepayments and accrued income)	289,317		375,032	
		703,090		774,806
Cash and cash equivalents		1,756,628		1,496,040
Total		**2,816,012**		**2,533,106**
Liabilities				
Group equity (reserves and earmarked funds)		443,210		352,489
Current liabilities, accruals and deferred income				
Trade payables	294,851		276,783	
Taxes and social premiums	145,933		131,369	
Other liabilities and accrued expenses	1,932,108		1,772,465	
		2,372,892		2,180,617
Total		**2,816,102**		**2,533,106**

Consolidated Income and Expenses

in €	2024	2023
Income	7,763,646	7,764,995
Cost of sales	-5,492,429	-5,873,961
Gross Margin	2,271,217	1,891,034
Expenses		
Employee expenses	1,422,084	1,091,544
Depreciation of intangible and tangible fixed assets	87,608	54,422
Other operating expenses	699,528	692,844
Total sum of expenses	2,209,220	1,838,810
Operating result	61,997	52,224
Other interest and similar income	8	642
Currency translation differences	25,108	-14,565
Financial income and expenses	25,116	-13,923
Result before tax	87,113	38,301
Income tax expense	-1,304	-2,085
Result	**85,809**	**36,216**

These numbers are currently undergoing an audit which will be finalized in July 2024. The official ANBI publication form can be found here.

Smart Freight Centre

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